

The cover features a dark blue background with several vertical light blue lines running down the center. On either side of the central text, there are horizontal light blue bars. The word "CROSLLEY" is written in a large, light blue, serif font, with a thin red horizontal line passing through the middle of the letters.

CROSLLEY

RADIO

SERVICE MANUAL

~~CROSLEY~~

# RADIO SERVICE MANUAL

Revised and Abridged Edition

Covering

**1943 SETS AND EARLIER**

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## CONTENTS

HOUSEHOLD RADIOS	Pages 1 to 524
ROAMIOS (Auto and Air)	Pages 525 to 581
RECORD PLAYER UNITS	Pages 582 to 615
COMPLETE CHASSIS NUMBER INDEX	Pages I and II
MODEL—CHASSIS CROSS REFERENCE	Pages III and IV

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*Published by*

**THE CROSLEY CORPORATION**

SERVICE DEPARTMENT

CINCINNATI, OHIO

### **DEDICATION**

*This book is sincerely and respectfully dedicated to the Crosley distributors, Crosley dealers and to the independent service people who so very ably performed Crosley service during the difficult years of World War II.*

# INDEX

See Pages III and IV for Cross Reference Listing—Page IV For Record Player Data

## HOUSEHOLD SETS

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
2C1	TRF	1	44BU (Export)	455	93-94	126-1	175	179
4B1	456	2	45	455	95	127	175	179
5B3	456	3	47	TRF	96	127-1	175	180
5C2	181.5	4	48	455	97-98	128	175	180
5H1	456	5	48	TRF	96	129	181.5	181
5M3	456	6	49	455	99-100	129-1	181.5	181
5V1	181.5	7	50BQ (Export)	455	101-102	130	181.5	182
5V2	181.5	8	53	TRF	103	130-1	181.5	183
5-50	TRF	9	54	TRF	103	131	175	184
5-75	TRF	9	55	455	104-105-106	132-1	181.5	184
6-60	TRF	9	55	TRF	107	133	181.5	185
6-85	TRF	9	56	TRF	108	134	181.5	185
6B1	456	10-11	57	TRF	103	134-1	181.5	186
6H2	456	12	57	455	109	135	181.5	186
6H3	456	13	58	455	110	136-1	456	187
6V2	181.5	14	58	TRF	111	137	181.5	188
7 Converter		15	59	455	112-113-114-	141	181.5	189
7-1 Converter		16			115-116	143	181.5	190
7-2 Converter		16	59	TRF	117	146	181.5	191
7H2	455	17	60	455	118-119-120	146-1	181.5	191
7H3	456	18	60S	TRF	121	147	TRF	192
7V2	181.5	19	61S	TRF	121	148	456	193
8B3	456	20	62S	TRF	121	150	181.5	194
8H1	456	21-22	63	455	122-123	154	456	195
10 Converter		23	63S	TRF	121	155	456	196
10	TRF	24	64	455	124-125	156	456	197
10P3	181.5	25-26	65-J-W	455	126-127	157	181.5	197
11-J11	455	27-28	67	455	128	158	181.5	198
12-J12	455	29-30	68	455	129	159	456	198
13-J13	455	31-32	70S	TRF	130	160	181.5	199
14-J14	455	31-32	70	455	131-132-133	163	456	200
15-J15	455	33-34	71	455	134	164	456	201
16-J16	455	35-36	72	455	135	166	456	202
18-J18	455	37-38	73	455	136-137	167	456	203
20	455	39-40	74	455	138	168	181.5	204
20	TRF	41	74U	455	138	169	456	205
21	455	39-40	75	455	139-140	169 Revised	456	206
21	TRF	41	76	455	141-142	170	181.5	207
22	455	42-43	76	TRF	143	171	181.5	208-209
22	TRF	41	77	455	141-142	172	456	202
23	455	39-40	77	TRF	144	173	456	210
24	455	44-45	77-1	TRF	143	173-5	456	210
25	455	46-47-48	78 (Export)	455	145-146	174	456	210
26 Batt.	TRF	49	79	455	147-148	175	181.5	211
26	455	50-51-52	80	455	149-150	176	456	212
27	455	53	82S	TRF	86	178	456	213
27 Batt.	TRF	54	83	455	151	179	181.5	214
28 Batt.	TRF	54	84	TRF	152	180	181.5	215-216
28	455	55-56	85	455	153-154	181	456	217-218
29	455	57-58-59	86	455	155-156	182	456	219
30	455	60-61	90	455	157	184	456	220
30S	TRF	62	RFL90	TRF	158	401	Regen.	221
31	455	63-64-65	91	455	159	401A	Regen.	222
31S	TRF	62	92	TRF	158	415	450	223-224
33	455	66-67-68	93	455	160	416	450	224-225
33 (BG)	455	66-67-68	95	455	161-162-163	417 Chattabox	90	226-227
33S	TRF	62	96	455	164-165	418	TRF	227-228
34	455	69-70-71	100	455	166	425	450	229-230
34S	TRF	62	104	455	167	428	TRF	230-231
35	455	72-73-74	105	455	168	429	455	232-233
35	455	75-76	106	455	169	435	450	233-234
J35	455	72-73-74	110	455	170-171	438	TRF	235-236
36	455	77-78	111	455	170-171	439	455	236-237
36	455	78-79	115	125	172	448	TRF	238-239
37	455	80-81	117 Power Converter		288-289-290	449	455	239-240
38 Field Supply		81	118 Reado Printer		415-416-417	458	455	241-242
38	455	72-73-74	119	181.5	173	459	455	239-240
39 (Export)	455	82-83	120	175	174	468	455	242-243
40BP (Export)	455	84-85	121 Series "A"	175	174	505-525	450	244-245
40S	TRF	86	121 Series "B"	175	175	506	450	246-247
41A	TRF	87	122	175	175	507	455	248-249
41BQ (Export)	455	88-89	123	175	176	515-5515	450	249-250
41S	TRF	86	124	175	176	516-5516-6516	450	251-252
42	TRF	87	124 Revised	175	177	517-547-5517	455	252-253-254
42BR (Export)	455	90-91	124-1	175	177	518-6518 (Export)	455	255-256
42S	TRF	86	125	175	178	519-529	455	257-258
43	455	92	126	175	178	525-505	450	244-245

## HOUSEHOLD SETS—CONTINUED

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
526-5526	450	259-260	666-5666	450	356-357	1019-J819-819- (5Y3)	455	(428-429-430-
527	455	261-262	667	455	358-359	819 (25Z6)		431-432
528	455	262-263-264	668	455	360-361	1026	450	467
529-519	455	257-258	669-6669-6679-7669	455	362	1028	455	468
534	456	265-266	676	450	363-364	1055	450	469-470
535	450	267-268	677	455	365-366	1117	455	471-472-473
536-5536	450	268-269	689	455	367-368	1118-1128	455	474-475-476
537	455	270-271	696	450	369	1126	450	477-478-479
539-J539-5539-J5539	455	272-273-274- 275-276	704	Neut.	370	1127	455	480-481-482
545	450	277-278	704A	Neut.	370	1128-1118	455	474-475-476
546	450	278-279-280	704B	Neut.	371	1137	455	483-484-485-486
547-517-5517	455	252-253-254	705	Neut.	371			
548-558-5548	455	281-282-283	706	Neut.	372	1155	455	487-488-489
549	455	284-285	714	455	373-374	1216	450	490-491-492
555-5555	450	285-286	715	450	375-376	1217-1227	455	493-494
556	450	287-288	716	450	377-378	1218	455	493-494
557 & 117 Power Supply	455	288-289-290	718	455	379-380	1227-1217	455	493-494
558-548-5548	455	281-282-283	719	455	381-382-383	1316	450	495-496-497-498
566	455	291-292	725	450	384-385-386			
567	455	292-293	726	450	387-388-389			
568	TRF	294-295	726-01-11-21-31-41-51 (Export)	462	390-391	1336	450	499-500-501-502
577	455	295-296	726-02-12-22-32-42-52 (Export)	462	392-393	1516	450	503-504
579-5579-6579	455	297-298	728-738-748	455	394-395	1516-13 to 53 (Export)	450	505-506
586	262	299-300	729	455	396-397-398	3716 (WLW)	450	506-507-508-509-510-511-512
587-5587	455	300-301-302	736	450	399-400	5509	455	513-514
588	455	303-304	737 (Export)	455	401-402-403	5515-515	450	249-250
589-5589	455	305-306-307	738-728-748	455	394-395	5516-516-6516	450	251-252
596	450	308-309	739-J739-7739-J7739	455	404-405-406-407-408-409	5517-517-547	455	252-253-254
597-5597	455	309-310	746-61 (Export)	462	410-411-412	5519-J5519	455	515-516-517
598	TRF	311-312	746-62 (Export)	462	410-411-412	5526-526	450	259-260
599	TRF	312-313	748-728-738	455	394-395	5529-J5529	455	515-516-517
601	Neut.	314	749	455	413-414	5536-536	450	268-269
602	Neut.	314	758 & 118 Reado Printer	455	415-416-417	5539-J5539-539-J539	455	272-273-274-275-276
605	450	315-316	804	Neut.	418	5548-548-558	455	281-282-283
608	TRF	317	814	456	419	5549	455	518-519
609	TRF	317	815	450	420-421	5555-555	450	285-286
610	TRF	317	816	450	422-423	5579-579-6579	455	297-298
615	450	318-319	817	456	424-425	5587-587	455	300-301-302
616	450	320-321	818	455	426-427	5589-589	455	305-306-307
617	455	321-322-323	819 (25Z6) J819	455	428-429-430-431-432	5597-597	455	309-310
618	455	324-325	319 (5Y3) 1019	455	433-434	5628-628-638	455	328-329
626	450	326-327	828	455	435-436	5648-649	455	348-349
628-638-5628	455	328-329	855	450	437-438-439	5656-656	450	352-353
629	455	330-331	865	450	440-441-442	5666-666	450	356-357
635	450	332-333	915	450	443-444-445	6516-516-6516	450	251-252
636	450	334-335-336	916	450	446-447-448	6518-518	455	255-256
637	455	336-337-338	926	450	449	6519	455	515-516-517
638-628-5628	455	328-329	926 (Export)	462	450-451-452	6579-579-5579	455	297-298
639	455	339-340	927-11-12 (Export)	455	453-454-455	6615	450	520-521
645	450	341-342	936 (Export)	455	455-456-457	6625	450	522-523
646	450	343-344	955	450	458-459-460	6669	455	362
647	455	345-346	1014	456	461-462-463	6679	455	362
648	455	347-348	1016	450	464-465-466	6689	455	524
649-5648	455	348-349	1018	455		7669	455	362
655	450	350-351				7739-J7739	455	(404-405-406-407-408-409
656-5656	450	352-353						
659	455	354-355						

## ROAMIOS AUTO RADIOS

Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number	Chassis Number	I-F Freq.	Page Number
A-150	455	525-526	A-259	455	544-545-546	F-157 (Export)	455	567-568
A-155	181.5	527	A-266	262	552-553	4A1	456	569
A-156	262.5	528-529	A-267	262	554-555	5A1	181.5	570
A-157	455	530-531	A-268	455	541-542-543	5A3	181.5	571-572
A-158	455	532-533-534	A-350	455	525-526	90	TRF	573
A-160	455	535-536	A-355	450	551	91	TRF	574
A-166	262	537-538	A-358	455	556-557	92	TRF	574
A-167	262.5	539-540	A-359 (Export)	455	558-559	95	181.5	575
A-168	455	541-542-543	A-366	262.5	560-561	96	181.5	575
A-169	455	544-545-546	A-450	455	525-526	98	181.5	576
A-177	262	547-548	A-455	455	562	99	181.5	577
A-250	450	549-550	A-459	455	563-564	102	181.5	578
A-255	450	551	A-555	455	562	103	181.5	579-580
A-258	455	532-533-534	A-559	455	565-566			
						AIR ROAMIO		
						992 (5R2)	181.5	581

# ALPHABETICAL MODEL-CHASSIS CROSS REFERENCE LIST

Model Name	Chassis No.	Model Name	Chassis No.	Model Name	Chassis No.	Model Name	Chassis No.
<b>A</b>		<b>Converter (Short Wave)</b>		<b>G</b>		<b>R</b>	
Administrator	122	Constitution	1055	Galleon	525	Raider	6625
Adventurer	127 & 7-2	Corsair	715	Galleon Console	505	Recorder Comb. & Pa.	33
A-F-M	555	Crosley Show Box	706	Gembox	608	Refrigerator	507
A-F-M Console	5555	Crosley 40	184	Gembox	609	Refrigerator	537
Alderman	129-1	Cruiser	615	Gembox	610	Repose Fire Screen	38
Ambassador	132-1			Governor	136-1	Repose Jr.	174
Announcer	124-1	<b>D</b>		<b>H</b>		<b>S</b>	
Announcer	126-1	Desk	53	Happy Hour	127	Sampler	2C1
<b>B</b>		D-C Fiver	155	<b>J</b>		Secretary	136-1
Barkentine	1155	D-C Show Box	705	Jewel Case	141	Senator	146
Bandbox Jr.	401	Dreadnaught	1155	Jewel Box	704	Septet	158
Bandbox Jr.	401A	Dual Casa	172	Jewel Box	704A	Sextet	150
Battery Chieftain	128	Dual Companion	176	Jewel Box	704B	Seventy	7V2
Bandbox	601	Dual Fiver	167	Jewel Box	804	Seventy-two A. F.	7H2
Battery Eight	143	Dual Fiver DeLuxe	5V2	Jewel Box	804	Seventy-two A. F.	7H3
Battery Eight	815	Dual Four	169	Judge	129	Sixer	628
Battery Eight A-F	8B3	Dual Fourteen	175	Justice	129	Sixer	5628
Battery Five	566	Dual Seven	168	<b>L</b>		Sixer DeLuxe	638
Battery Fiver	156	Dual Seventy	179	Litlfella	135	Six Volt Battery Fiver	587
Battery Fiver	178	Dual Six	173	Leader	154	Six Volt Battery Fiver Console	5587
Battery Fiver	5B3	Dual Six	173-5	<b>M</b>		Sixty-one A. F.	6H2
Battery Fiver	527	Dual Sixty	181	Mayor	146	Sixty	6V2
Battery Fifty-two	535	Dual Ten	170	Merrimac	855	Super Battery Fiver	557
Battery Forty	4B1	Dual Ten	180	Merrymaker	124-1	Super Eight	817
Battery Four	415	Dual Twelve	171	Merrymaker	125-1	Super Eleven	1117
Battery Forty-six	435	Dual Travette	176	Merrymaker	134-1	Super Six	637
Battery Major	128	Dynatrol Eleven	1127	Merrymaker	134-1	Super Six AC-DC	647
Battery Playboy	128	Dynatrol Six	617	Moderne Seven	718	Super Sextet	648
Battery Six	6B1	<b>E</b>		Moniter	865	Super Vanity Fiver	588
Battery Sixty-two	605	Eighty A-W	8H1	<b>N</b>		Symphony	132-1
Battery Sixty-six	6615	<b>F</b>		New Pup	137	<b>T</b>	
Battery Super Six	667	Fiver	148	New Travo	425	Tenace	157
Battery Vanity	458	Fiver	167	Nomad	141	Tenace	164
Bonni Boy	131	Fiver Jr.	5M3	<b>O</b>		Teletune Fiver	547
Book Case	141	Fiver DeLuxe A.	5V1	Olympia	655	Totem	147
Buccaneer	635	Fiver	515	<b>P</b>		Travette	163
Buddy	70S	Fiver Console	5515	Playtime	126-1	Travette Moderne	182
<b>C</b>		Fiver	516	Playtime Jr.	124-1	Trouper	568
Caroler	134	Fiver Console	5516	Playtime	135	Travo	166
Carrier	586	Fiver	517	Playtime Jr.	135	Trouper	568
Casa-D	172	Fiver Console	5517	Playtime	134-1	Twelve	163
Centurion	1014	Fiver	518	Playtime	134	<b>V</b>	
Challenger	955	Fiver A-C, D-C	577	Playboy	126-1	Vagabond	141
Chairside Fiver	567	Five Superhet	597	Portable (N27BE)	27	Vanity	598
Chattabox	417	Five Superhet (Dial Lit.)	5597	Prestotune Eleven	1137	Vanity DeLuxe	428
Cheerio	124	Fiver	5539	Prestotune Twelve	1217	Vanity DeLuxe Comb.	448
Chief	132-1	Fiver	J5539	Prestotune Twelve	1217	Vanity	418
Chum	70S	Fiver	539-5539	Lowboy	1227	Viking	725
Clipper	915	Fiver	6579	Privateer	545	<b>W</b>	
Commissioner	132-1	Fiver	589-5589	<b>Q</b>		Wigit	48
Companion	163	Fifty	5H1	Quicktune Fiver	547	WLW	3716
Congressman	146-1	Fifty-Four	534				
Converter (Power)	117	Fifty-One	5C2				
Converter (Short Wave)	7						
Coriverter (Short Wave)	7-1						

## NUMERICAL MODEL—CHASSIS CROSS REFERENCE LIST

Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.	Model Number	Chassis No.
02CP	70	22AS	22	45CC	45	53TF	73	83CC	96	C629	676
02CQ	70	23AR	23	48CB	48	TA62	63	117-Ser. 2	1026	629	666
02CA	55	24AJ	24	48BF	48	TA62-W	63		1316	634	656
02CB	55	24AU	24	50	5H1	62PA	68	B250	566	B637	586
03CA	95	24AY	24	50LB	5H1	62PB	68	251	536	639M	639
03CB	95	25AX	25	51	5C2	62TA	37	295	515	644	5666
03CC	95	25AY	25	TK52-W	64	62TC	37	299	5536	649	5656
03CP	95	25AW	25	TK52	64	62TD	37	B345	556	649	5659
03CQ	95	26BB	26	52PA	67	62FA	58	B349	526	B667A	667
03CR	95	N27BE	27	TH52	65-J-W	62FB	58	B375	416	B667M	667
4C1	172	27BE	27	TH52-W	65-J-W	63FB	93	395	5526	B675	546
7H1	115	27BD	27	TH52J	65-J-W	63TA	110	B425	556	B695	636
8B1	143	28AZ	28	52TD	77	63CA	111	B429A	429	699	626
8H3AW	814	29BA	29	52TD-U	77	64MD	6H2	438M	438	B699	646
10AA	10	29AT	29	52TE	77	72CA	80	B445	546	744	716
11BY	11-J11	J-30-BC	30	52TE-U	77	72TA	79	449	616	745	716
11AB	11-J11	30BC	30	52TF	76	72CP	85	B449A	449	759	736
11AH	11-J11	31BF	31	52TF-U	76	77A	77	B459A	459	769	726
11AC	11-J11	32DC	119	52TP	72	77B	77	495	616	899	816
CA12	60	32DC	159	52TG	74	77L	77	B495	646	B899	636
12AD	12-J12	32DC6	645	52TG-U	74-U	80AW	8H1	B499	556	989	926
13AE	13-J13	33BG	33	52TA	74	80AW	8H1	C516	506	1199	1126
13BK	13-J13	C33CA	33	52TM	74	Lowboy		525	6516	1211	1216
14AG	14-J14	34BH	34	52FA	57	82S	40S	C526	596	1313	1336
15AI	15-J15	C35AK	35	52FB	57	CB82R	28	529	516	5310AA	10
16AL	16-J16	35AK	35	52PB	71	82CP	75	537	5516	B5579M	579
18AN	18-J18	36AM	36	52TQ	83	82CQ	75	B579A	579	B5587A	5587
20AP	20	38BM	38	52FC	90	83TA	96	B587A	587	B5589M	589
21AQ	21	43FB	91	52TL	86	83CA	96	B589A	589		
22CA	59	43BT	43	53TP	100	83CQ	96	B599	646		
22CB	59	43FA	104	53FB	106	83CP	96	614	6H3		
22CP	59	45BV	45	53FA	105	83CB	96	625	6B1		

## RECORD PLAYER UNITS

Make or Model	Used on Models	Page Number
CR25	Remote Changer	592-593-594
CR26	Wireless Record Player	582-592-593-594
WEBSTER	629-C33CA-539-668	583
ALLIANCE	629-C33CA-539-668	583
ALLIANCE	22AS-35AK-52TP-53TP	584
488	438	585-586
GENERAL INSTRUMENT	82CP-82CQ-02CP-72CP	587-588-589
RECORDER ARMS	GI and Seeburg	590-591-592
SEEBURG (1940)	30BC	592-593-594
SEEBURG (1941)	29BA, 29AT, 29AZ, 34BH, 31BF, 48CB, 48BF, CB82R, 72CP, 82CQ, 82CP, 02CP	594-595-596-597
SEEBURG (1941-1942)	82CP, 82CQ, 02CP, 03CP, 23CP, 23CQ, 83CQ, 83CP, 03CQ, 03CR, 22CA, 22CB, 22CP	598-599-600-601-602-603-604
NEW PRODUCTS	52TQ	605-606-607
CAPEHART	639M	608-609-610-611
RADIO PRODUCTS	82CP, 82CQ, 02CP, 83CQ, 83CP, 03CP, 03CQ, 03CR, 22CA, 22CB, 22CP	612-613-614-615

## MODEL 2-C-1

### Specifications

Model 2-C-1 is a two tube tuned radio frequency receiver designed for operation from AC or DC 110 Volt electric circuit.

### Tubes And Voltage Limits

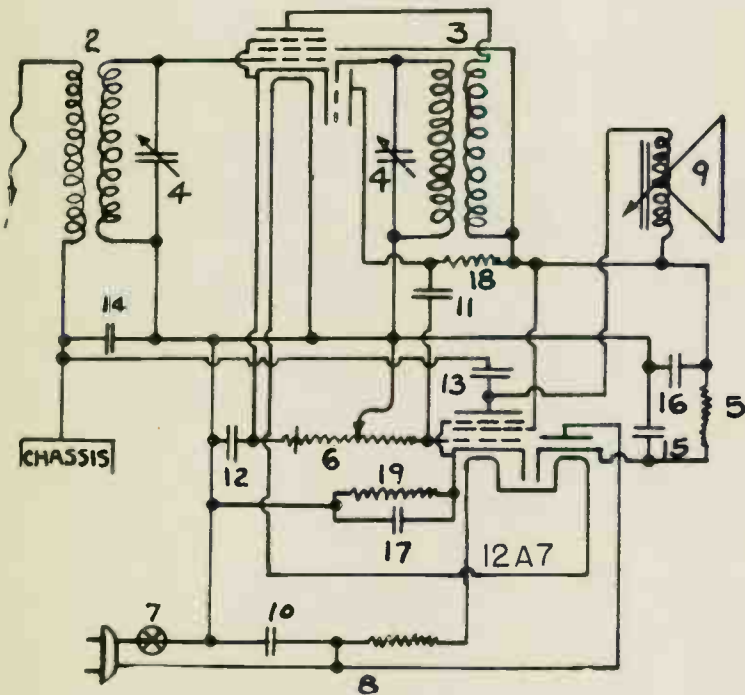
The following are the tubes and voltages meas-

ured from tube contact to negative line with 250,000 ohm 250 Volt voltmeter with receiver in operating condition but with no signal to the antenna, and with a line voltage of 117.5 Volts 60 cy. AC-DC Voltages approximately 90% of values shown.

Tube	Position And Use	Plate	Scr. Grid	Control Grid	Cathode	PL	GL	KL	Filament
6-F-7	R. F. and Regen. Det.	125	125	0	5-30	30	0	—	6.5
12-A-7	A. F. and Rect.	115	125	0	10	117.5	—	135	12.5

VOLTAGE LIMITS ARE PLUS OR MINUS 10% OF VALUES GIVEN

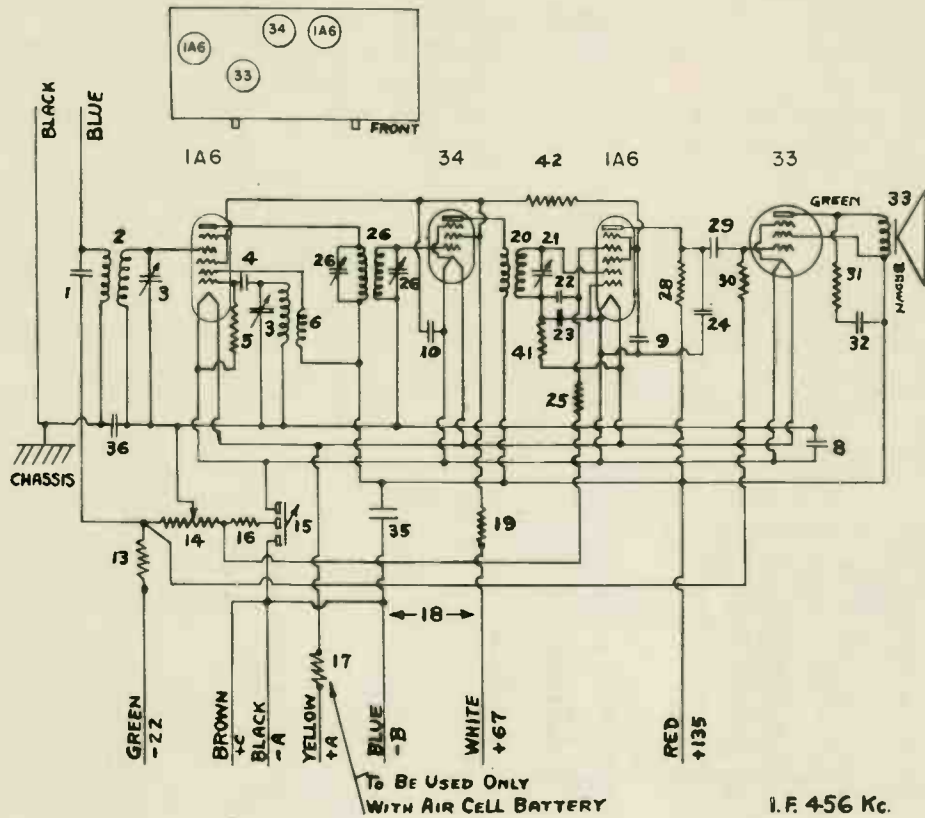
6F7



Qty.	Part No.	Description	Item
1	G33-32000	Antenna Trans. ....	2
1	G21-32001	R. F. Trans. ....	3
1	G8-33001	Variable Condenser .....	4
1	W34698B	Volume Control & Switch.....	6-7
1	G7-34400	Tube Connector Assem.....	8
1	G8-34400	Tube Connector Assem.....	9
1	B34702B	Resistance Cable and Plug (325 Ohms) .....	8
1	23M-B	Speaker Unit .....	9
1	W34710	Speaker Bracket .....	
<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	W34711	.02 Mfd. 110 V. ....	10
1	W34713	.006 Mfd. 160 V. ....	11
<b>RESISTORS</b>			
2	W22514	750 Ohm Flex. ....	5-19
1	21454	1 Megohm .....	18
1	4AC	Cabinet (Ship Design) .....	
1	4AE	Cabinet (Artists Pictures) ..	
1	G1-34822	4AC Cabinet Front .....	
1	G2-34822	4AE Cabinet Front .....	
1	B34719	Cabinet Back .....	
1	L-34885	Speaker Pin Assem. ....	
2	W2244B	Knobs .....	



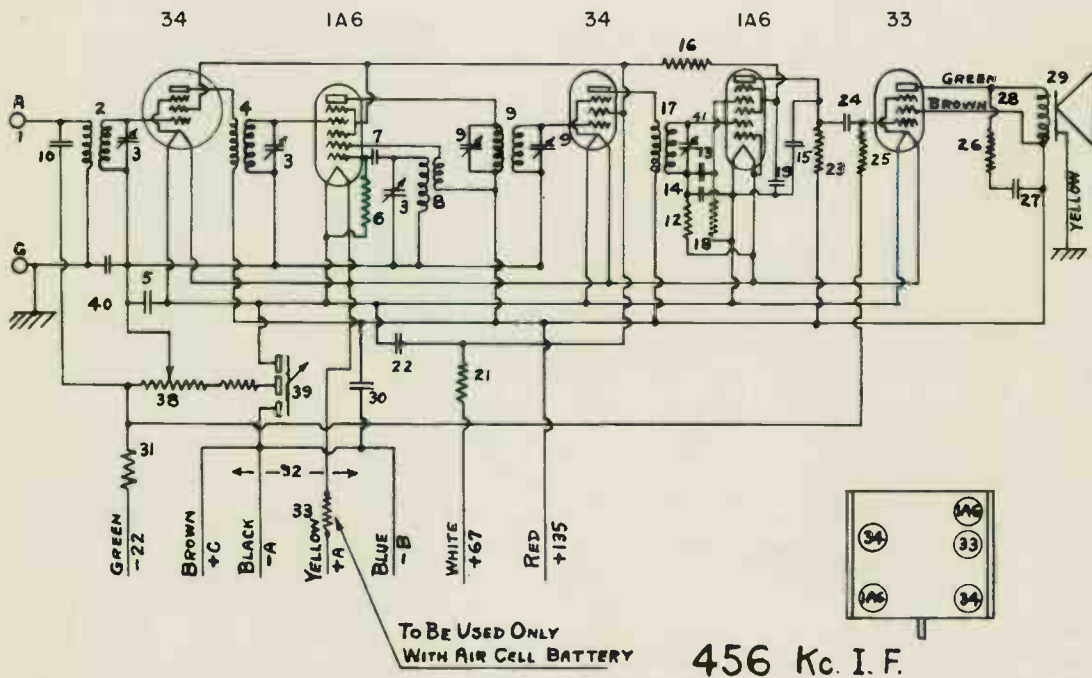
# Wiring Diagram For Model 4B1



Figures in first column correspond to figures in diagram

1	W	-28621	0.02 Mfd. 200 Volt	22	W	-28621	0.02 Mfd. 200 Volt
2	G27	-32000	Antenna Coil	23	W	-25572	0.0005 Mfd. 400 Volt
3	G6	-33001	Variable Cond.	24	W	-26577	0.0005 Mfd. 400 Volt
4	W	-5382	0.00025 Mfd.	25	G9	-32004	3 Meg.
5		21875	100,000 Ohms	26			1st I. F. Trans.
6	G9	-32002	Oscillator Coil	27			
7				28		21455	300,000 Ohms
8	W	-28622	0.1 Mfd. 200 Volt	29	W	-28621	0.02 Mfd. 200 Volt
9			0.1 Mfd. 200 Volt	30		21454	1 Meg.
10	W	-30321-A	1.0 Mfd. 160 Volt	31		24814	7,000 Ohms
11				32	W	-28619	0.006 Mfd. 200 Volt
12				33		21M	Speaker
13		27121	5,000 Ohms	34			
14	W	-33922-A	{ Volume Control	35	W	-29910-A	0.25 Mfd. 200 Volt
15			{ 3 P. S. T. Switch	36	W	-28621	0.02 Mfd. 200 Volt
16	W	-23013	2,000 Ohms	37			
17	G5	-23300	0.6 Ohm	38			
18	G2	-29237	Cable & Marker Assem.	39			
19	W	-21452	1,100 Ohms	40			
20	G13	-32004	2nd I. F. Trans.	41		23785	500,000 Ohms
21	G5	-33005	I. F. Trimmer Cond.	42		24990	25,000 Ohms

## Wiring Diagram For Model 5B3

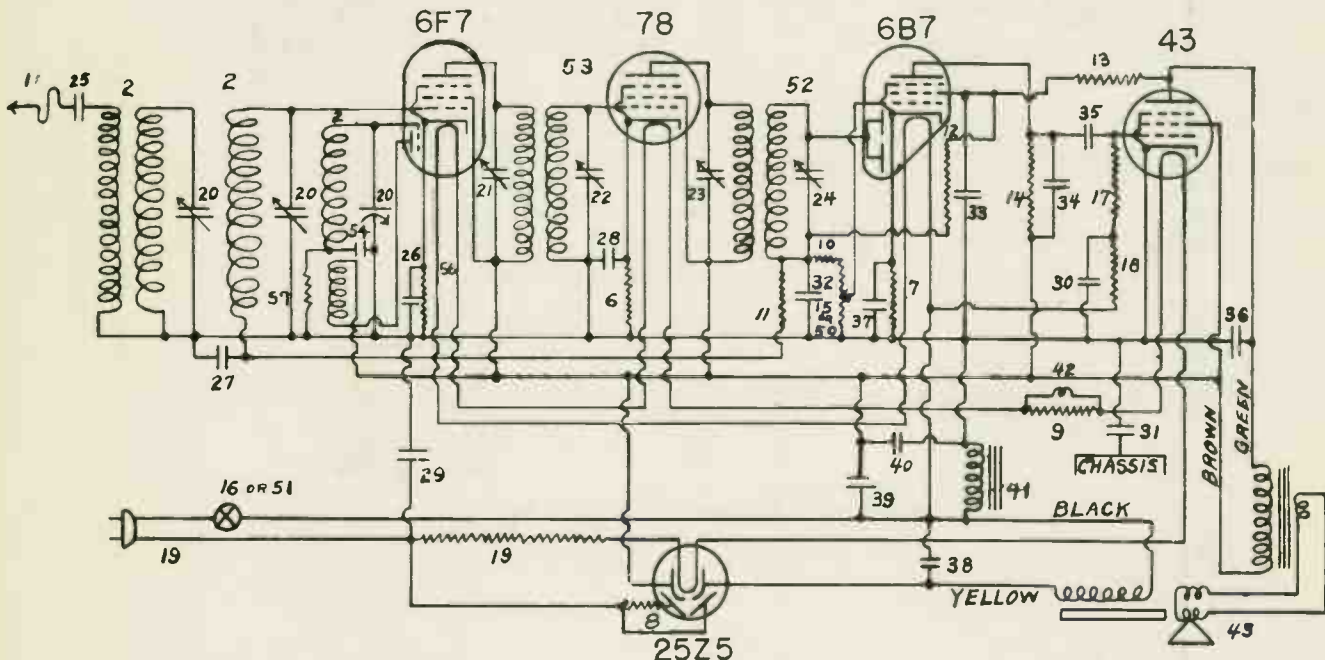


Figures in first column correspond to figures in diagram

1	G10 —26719	Ant. Gnd. Term.	22	W —30321-A	1.0 Mfd. 160 Volt
2	G10 —32000	Antenna Coil	23	23785	500,000 Ohms
3	G4 —33002	Tuning Condenser	24	W —28621	0.02 Mfd. 200 Volt
4	G17 —32001	R. F. Transformer	25	21454	1 Megohm
5	W —24049-B	0.1 Mfd. 200 Volt	26	24814	7,000 Ohms
6	21875	100,000 Ohms	27	W —28619	.006 Mfd.
7	G1 —34004	.025 Mfd. (Mica)	28	W —27933	Speaker Cable
8	G9 —32002	Oscillator Coil	29	30418	336-3B Speaker
9	G9 —32004	1st I. F. Trans.	30	W —29910-A	0.25 Mfd. 200 Volt
10	W —28621	.02 Mfd. 200 Volt.	31	27121	5,000 Ohms
11			32	G2 —29237	Battery Cable
12	23785	500,000 Ohms	33	G2 —23300	Air Cell Resistor .53 Ohms
13	W —28621	.02 Mfd. 200 Volt	34		
14	W —26152-A	.00015 Mfd. 400 Volt	35		
15			.0001 Mfd. 400 Volt	36	
16	21237-A	60,000 Ohms	37		
17	G13 —32004	2nd I. F. Trans.	38	W —32649	Volume Cont. 10,000 Ohms Switch 3. P. S. T.
18	21454	1 Megohm	39	W —24049-B	
19	W —24049-B	0.1 Mfd. 200 Volt	41	G8 —33005	I. F. Tuning Cond.
20					
21	W —21452	1,100 Ohms			

# CHASSIS 5C2

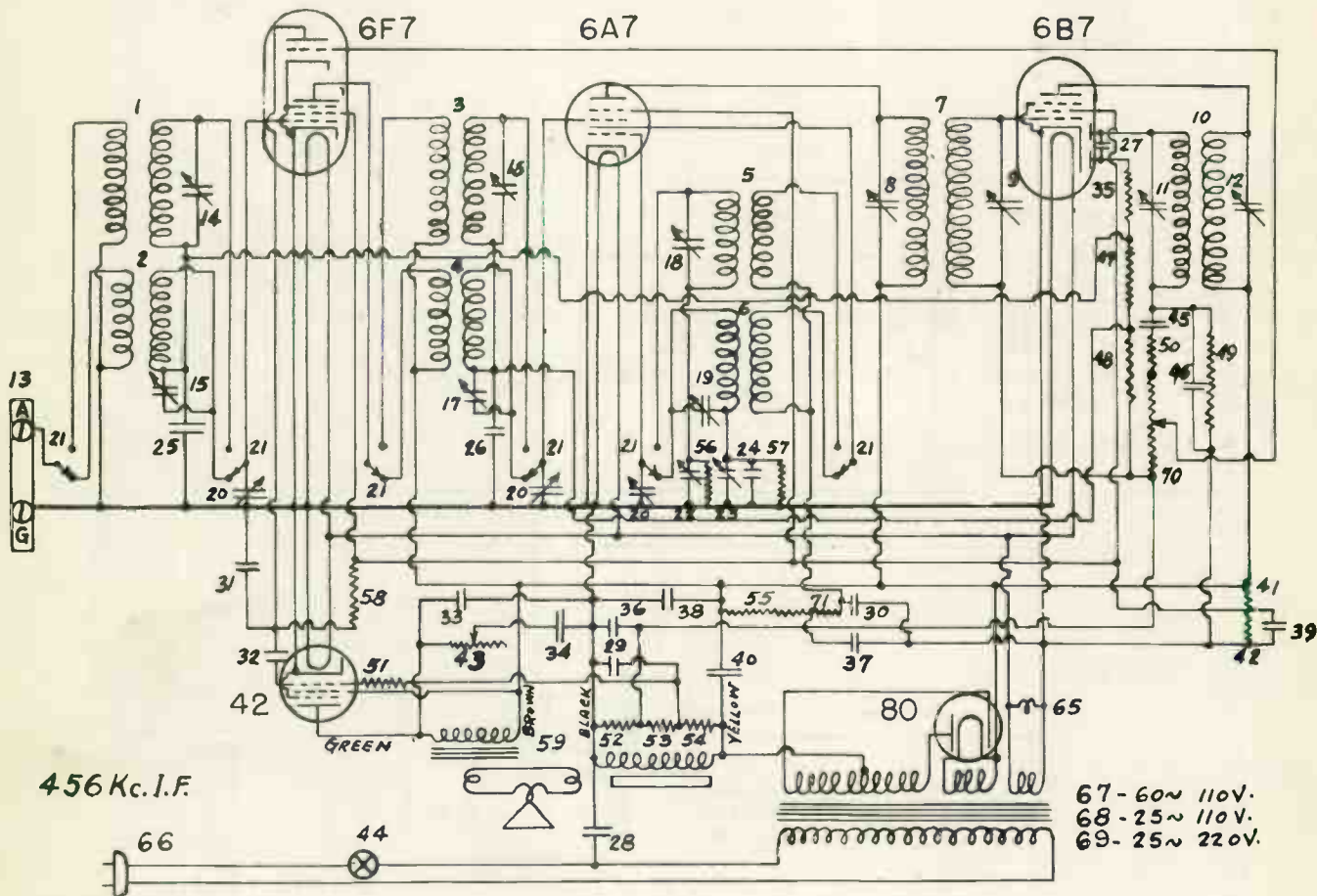
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup	Ep-osc
6F7	Osc-Mod.	6.5	100	0	5	100	—	100
78	I. F.	6.5	100	0	3	100	3	—
6B7	Diode-AF	6.5	15	0	1	15	—	—
43	Output	27	96	-20	0	100	—	—
25Z5	Rectifier	27	—	—	100	—	—	—



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	W30323	0.01 Mfd. 200 V.	36	1	G1-32000	Antenna Coil	2
1	W28621	0.02 Mfd. 200 V.	63	1	G2-27817	1st I. F. Trans. Coil	53
1	W28623	0.02-0.02 Mfd. 200 V.-200 V.	64-65	1	G1-32003	Diode Feeding Trans.	52
1	W29271A	0.02-0.02 Mfd. 400 V.-400 V.	66-67	2	W25200A	Coil Socket	
1	W29010A	0.25 Mfd. 200 V.	68	2	W25024A	Coil Shield	
<b>RESISTORS</b>				2	W21541B	Retainer Ring	
1	W28589	350 Ohms	6	2	W26891	Insulating Washer	
1	W27503	1400 Ohms	7	1	G5-33002	Variable Tuning Condenser	
1	W24537	60 Ohms	8			Gang	62
1	W30539	26.7 Ohms	9	1	W31812	Dial Pointer	
1	21237A	60000 Ohms	10	1	G2-27817	Dial Light Bracket Assm.	
1	21454	1 Megohm	11	1	G3-33006	1st I. F. Prim. & Sec. Trimmer Cond.	58-59
1	26578	5 Megohm	12	1	G4-33006	2nd I. F. Prim. & Sec. Trimmer Cond.	60-61
2	23785	500000 Ohms	13-17	1	W32242	Vol. Control & Line Switch	50-51
1	23403	150000 Ohms	14	or	W31204	Vol. Control & Line Switch	16-15
1	21455	300000 Ohms	18				
1	W22514	750 Ohms	56	2	W32300	Tube Shield Base	
1	24900	25000 Ohms	57	2	W31212	Tube Shield (Half)	
<b>CABINET AND SPEAKER</b>				2	W31213	Tube Shield (Slotted Half)	
	4D	Cabinet Assembly		2	W31210	Tube Shield Ring	
1	W33130	Dial Plate		1	B30957B	Resistor Cable & Plug (120 Ohms)	19
1	W33140	Vol. Control Plate		1	W31765	Antenna	1
1	W28723	Bull's Eye		1	G2-28850	Filter Choke	41
1	W29023	Bezel		<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	W33164	Grille Cloth		1	W31092	10.-8.-25.-16. Mfd. 25 V.-125 V.-125 V.-100 V.	37-38
1	B33167A	Baffle		1	W30325	0.003 Mfd. 200 V.	39-40
1	W33108	Back Cover		1	W25516	0.25-0.25 Mfd. 200 V.-200 V.	25
1	W33143	Knob		1	W27668	0.0001 Mfd.	30-31
1	W33144	Knob		1	W30322A	0.00017-0.006 Mfd. 200 V.-200 V.	32
1	G5-31692	Speaker & Plate Assm.					34-35
1	G1-29529	Cone & Voice Coil					
1	G6-29535	Transformer					
1	W31214	Field Coil					
4	W28742	Speaker Mounting Screws (Chrome)					

# CHASSIS 5H1

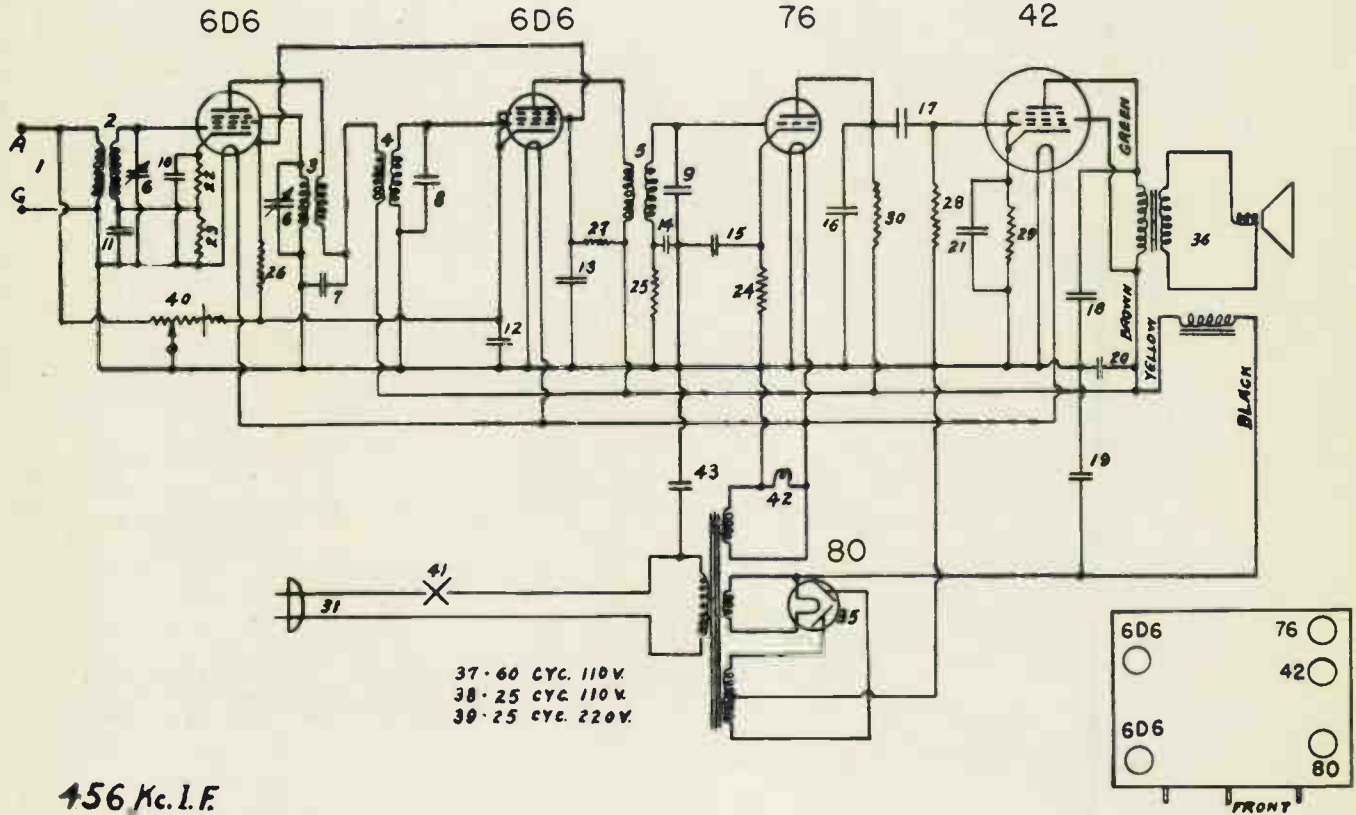
Type	Where Used	Ef	Ep	Eg	Ek	Esq	Esup	Epl	Egl
6F7	R.F.-A.F.	6.5	250	-3.5	0	125	—	35	-3.5
6A7	Osc.-Mod.	6.5	250	-3.5	0	125	—	190	-15.0
6B7	I.F.-Diode	6.5	250	-3.5	0	125	—	—	—
42	Output	6.5	230	-18	0	250	—	—	—
80	Rectifier	5.1	—	—	—	—	—	—	—



Qty.	Prt. No.	Description	Item	Qty.	Prt. No.	Description	Item
1	G3-32000	Antenna Coil (Low Freq.)	1	1	G6-30745	Power Trans. 60 cy. 110 V.	67
1	G1-32002	Antenna Coil (High Freq.)	73	1	G7-30745	Power Trans. 25 cy. 110 V.	68
1	G2-32001	R. F. Coil (L. F.)	3	1	G-830745	Power Trans. 25 cy. 220 V.	69
1	G1-32001	R. F. Coil (H. F.)	4	<b>FILTER &amp; BY-PASS CONDENSERS</b> 8-8-8 Mfd. 450 V.-450 V.-250 V. .... 37-38 12. Mfd. 475 V. .... 39 1. Mfd. 160 V. .... 40 0.0014 Mfd. 300 V. .... 24 0.05 Mfd. 200 V. .... 25 0.02 Mfd. 200 V. .... 26 0.0005 Mfd. 400 V. .... 27 0.01 Mfd. 400 V. .... 28 0.01 Mfd. 400 V. .... 30 0.001-0.03 Mfd. 400 V.-400 V. .... 31-32 0.008-0.05 Mfd. 400 V.-400 V. .... 33-34 0.25 Mfd. 200 V. .... 36 0.000-0.00017 Mfd. 200 V.-200 V. .... 45-46			
1	G2-32002	Osc. Coil (L. F.)	5				
1	G1-32002	Osc. Coil (H. F.)	6				
1	G9-32004	1st I. P. Trans. and Trimmer Condensers	7-8				
1	G10-32004	2nd I. P. Trans. and Trimmer Condensers	10-11				
1	G10-33009	L. F. & H. F. Ant. Trimmer Condensers	12				
1	G9-33009	L. F. & H. F. R. F. Trimmer Cond.	14-15				
1	G8-33009	L. F. Osc. Trimmer Cond.	16-17				
1	G2-33007	L. F. & H. F. Osc. Series Trimmer Cond.	18				
1	G7-33002	Variable Tuning Condenser Gang	22-23				
1	G20-25050	Dial Assm.	74	1	W20097C	8-8-8 Mfd. 450 V.-450 V.-250 V. .... 37-38	
6	W25200	Coil Shield Socket	9	1	W26104B	12. Mfd. 475 V. .... 39	
3	W30802	Coil Shield	10-11	1	W30321A	1. Mfd. 160 V. .... 40	
2	W25025A	Coil Shield	12	1	W32304	0.0014 Mfd. 300 V. .... 24	
1	W25024A	Coil Shield	14-15	1	W32380	0.05 Mfd. 200 V. .... 25	
3	W26891	Insulating Washer (L. F. and R. F. & Osc. Coils)	16-17	1	W32379	0.02 Mfd. 200 V. .... 26	
3	W21541B	Retaining Ring	18	1	W27540	0.0005 Mfd. 400 V. .... 27	
3	W30020	Retaining Ring	22-23	1	W30805	0.01 Mfd. 400 V. .... 28	
1	G13-27812	Dial Light Bracket Assm.	74	1	W32378	0.01 Mfd. 400 V. .... 30	
1	W25694B	Tone Control & Line Switch	43-44	1	W25537A	0.001-0.03 Mfd. 400 V.-400 V. .... 31-32	
1	W25666B	Level Control (Volume)	70	1	W25517	0.008-0.05 Mfd. 400 V.-400 V. .... 33-34	
1	B32285	6 Pole D. T. Switch	21	1	W24784	0.25 Mfd. 200 V. .... 36	
1	B30375A	Cord & Plug	66	1	W30322	0.000-0.00017 Mfd. 200 V.-200 V. .... 45-46	
1	G16-26719	Ant.-Gnd. Terminal	75	1	26577	3 Megohm	35-48
3	W26010	Tube Shield Base	1-3	2	21454	1 Megohm	47-49
3	W27328A	Tube Shield (6F7, 6A7, 6B7)	2-4-6	1	W31883	8500-25000 Ohm	41-42
				3	23785	500000 Ohm	50-51
				1	21875	100000 Ohm	54
				1	21876	10000 Ohm	53
				1	21237A	60000 Ohm	55
				1	21453	40000 Ohm	56
				1	23403	150000 Ohm	57
				1	24814	7000 Ohm	58
				1	24990	25000 Ohm	71
				1	W31007A	Speaker Cord (4 Wire)	72
				3	W32352	Knob	
				1	W32353	Knob	
				1	W31403	Escutcheon	
				3	S-27	Escutcheon Screws (10 doz.)	

# CHASSIS 5M3

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup
6D6	Osc.-Mod.	6.3	235	29	32	120	0
6D6	I. F.	6.3	235	0	3	120	3
76	Detector	6.3	80	0	10	—	—
42	Output	6.3	225	0	18	235	—
80	Rectifier	4.9	—	—	310	—	—

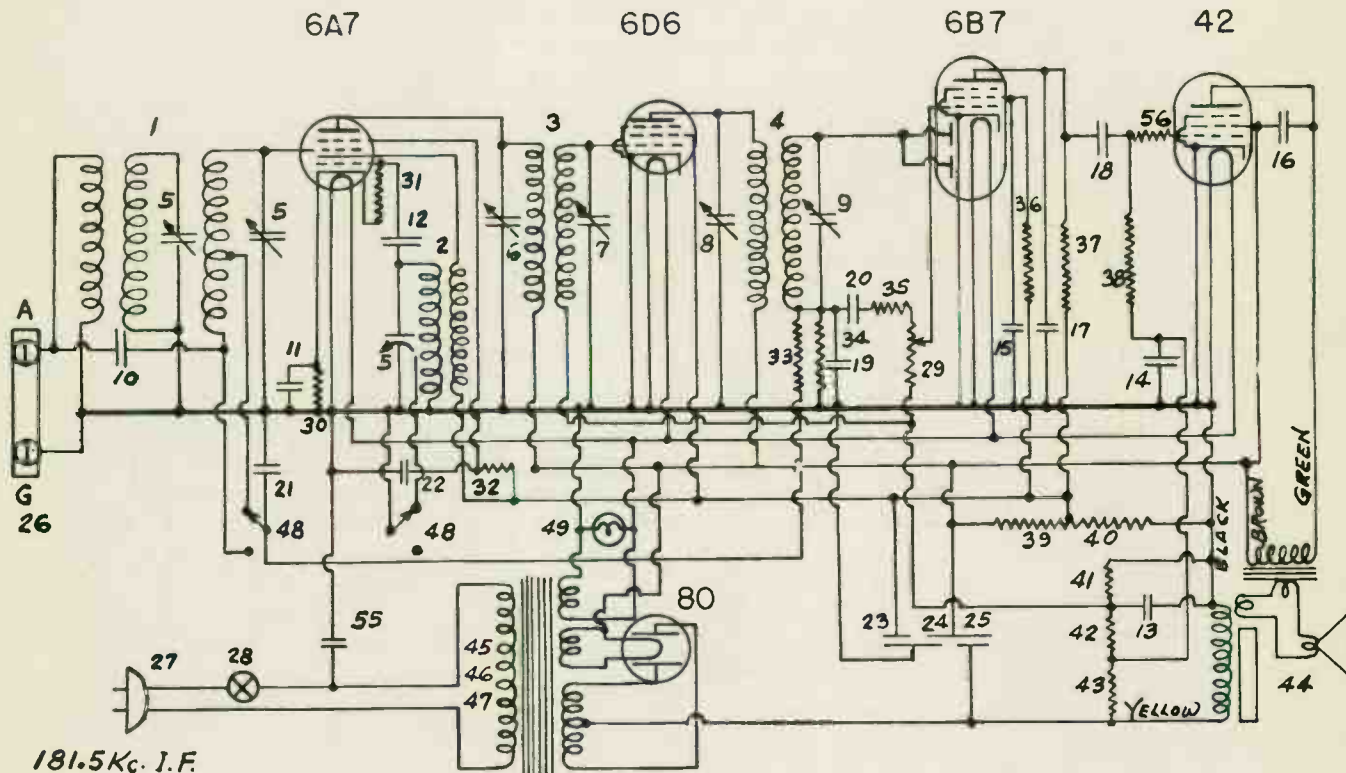


\* Figures in 2nd last column refer to parts shown in wiring diagram of Model 5M3

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G7-32000	Antenna Coil	2				
1	G6-32002	Osc. Coil	3				
1	G3-32004	1st I. F. Trans. Coil	4				
1	G4-32004	2nd I. F. Trans. Coil	5				
4	W23200	Coil Socket		2	W26010	Tube shield Base (6D6)	
2	W25024A	Coil Shield		2	B26000C	Tube Shield	
2	W25023A	Coil Shield		1	B21401C	Cable & Plug	31
4	W26891	Insulating Washer		1	G5-28500	Power Trans. 60 cy. 110 V.	37
4	W21541B	Retaining Ring		1	G6-28500	Power Trans. 25 cy. 110 V.	38
1	G3-33001	Tuning Condenser Gang	44	1	G7-28500	Power Trans. 25 cy. 220 V.	39
1	G19-25030	Dial Assem.		1	LW-20204	Ant.-Gnd. Terminal	1
1	G12-27812	Dial Light Brkt Assem.					
1	G2-25048	1st I. F. Primary Tuning Cond.	7				
1	W27348	1st I. F. Sec. Tuning Cond. Adj. Blade	8	1	W25537A	0.001-0.03 Mfd. 400 V.-400 V.	16-17
1	W25008A	2nd I. F. Sec. Tuning Cond. Adj. Blade	9	1	W23101A	0.01 Mfd. 400 V.	18
2	W31472	First Blade		1	W30805	0.01 Mfd. 400 V.	43
2	W25584	Mica Insulator		1	W28622	0.1-0.1 Mfd. 200 V.-200 V.	45-46
2	W26069B	Adjusting Nut		2	W28023	0.02-0.02 Mfd. 200 V.-200 V.	47-48
2	W25446	Bakelite Washer		1	W29150B	8.-6.-12. Mfd. 450 V.-450 V.-25 V.	49-50
2	W24805	Metal Washer					21
2	W25450B	Insulating Washer					
2	W25007B	Insulating Washer					
2	O-4	Flat Washer					
2	M-20	Rivet (12x7/32) Tubular					
2	R80	4-36x1/4 Rd. Hd. Mach. Screw					
1	W26573B	Vol. Control & Line Switch	40-41				
				1	W25037	275 Ohm	22
				1	31094	4500 Ohm	23
				1	21237A	60000 Ohm	24
				1	21454	1 Megohm	25
				1	W27120	25000-8500 Ohm	26-27
				1	23785	500000 Ohm	28
				1	W23907	750 Ohm	29
				1	21455	300000 Ohm	30
				2	W32352	Knob	

# CHASSIS 5V1

Type	Where Used	Ef	Ep	Eg	Ek	Esup	Eg-osc	Ep-osc
6A7	Osc-Mod.	6.5	240	0	3	0	-15	125
6D6	I. F.	6.5	240	-3.5	0	0	—	—
6B7	Diode-AF	6.5	30	-3.5	0	—	—	—
42	Output	6.5	230	-18	0	—	—	—
80	Rectifier	5.1	—	—	240	—	—	—



\* Figures in 2nd last column refer to parts shown in wiring diagram of Model 5V1

Qty.	Part No.	Description	Item
1	G18-32000	Preselector Coil	1
1	G16-32002	Osc. Coil	70
1	G2-32003	1st I. F. Trans. Coil	3
1	G1-32003	2nd I. F. Trans. Coil	4
1	G4-33003	1st I. F. Primary Trimmer Cond.	65
1	W-27548	1st I. F. Sec. Trimmer Cond. Adj. Blade	7
1	W-31472	1st I. F. Sec. Trimmer Cond. Fixed Blade	7
1	W25584	Mica Insulator	
1	W20069B	Adjusting Nut	
1	W25440	Bakelite Washer	
1	W24805	Metal Washer	
1	W25450B	Insulating Washer	
1	W25007B	Insulating Washer	
1	O-4	Flat Washer	
1	M-20	Tubular Rivet .120x7/32	
1	R-80	4-30x3/4 Rd. Hd. Mach. Screw	
2	G3-33005	2nd I. F. Prim. & Sec. Trimmer Cond.	66-67
2	G9-33002	Variable Tuning Condenser Gang	57
1	G7-32086	Dial Drive Assembly	
1	W32441A	Level Control & Line Switch	28-29
1	B21491C	Cord & Plug	27
1	W32442A	D. P. D. T. Switch	48
1	LW20264	Ant.-Gnd. Terminal	26
1	G6-30745	Power Transformer 60 cy. 110 V.	45

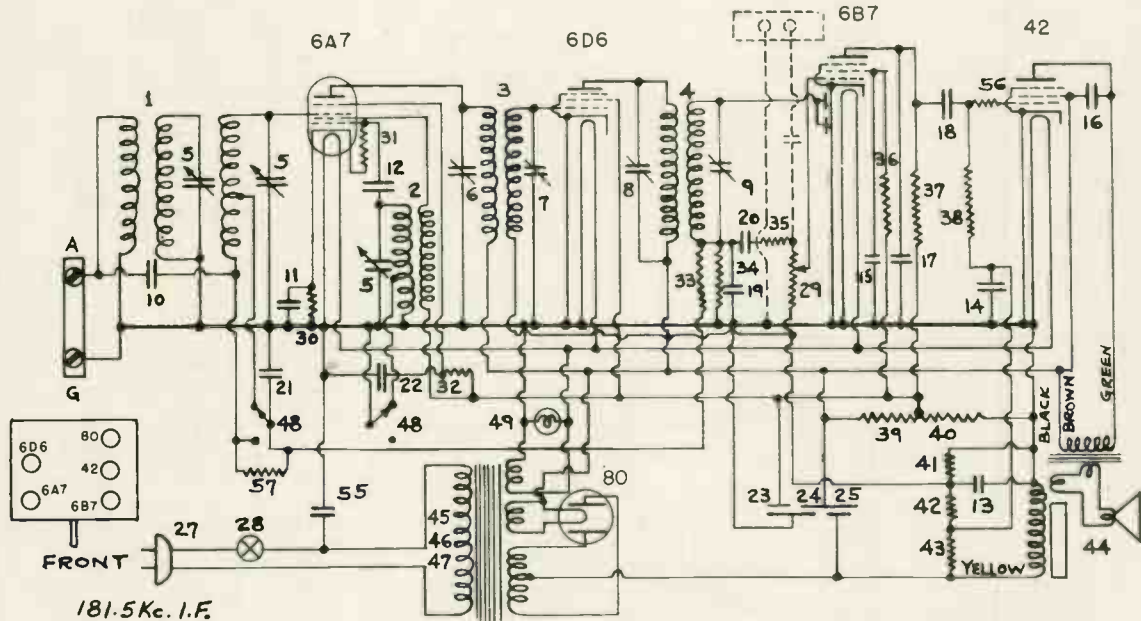
Qty.	Part No.	Description	Item
	G7-30745	Power Transformer 25 cy. 110 V.	46
	G8-30745	Power Transformer 25 cy. 220 V.	47
<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	B30650C	8-.8-.8 Mfd. 230 V. 450 V. 450 V.	23-24
2	W30321A	1. Mfd. 160 V.	25
1	W27668	0.0001 Mfd.	14-08
1	W26571	0.0005 Mfd. 400 V.	10
1	W30323	0.01 Mfd. 200 V.	12
1	W25537A	0.001-0.03 Mfd. 400 V.-400 V.	16
1	W30322A	0.00017-0.006 Mfd. 200 V. 200 V.	17-18
1	W30305	0.01 Mfd. 400 V.	19-20
2	W28621	0.02 Mfd. 200 V.	55
1	W29271A	0.02-0.02 Mfd. 400 V. 400 V.	60-61
<b>RESISTORS</b>			
1	W25037	275 Ohms	30
1	21237A	60000 Ohms	31
1	21876	10000 Ohms	32
1	26577	3 Megohm	33
4	23735	500000 Ohms	34-36
2	21435	300000 Ohms	38-43
2	21875	100000 Ohms	35-56
1	W31833	8500-25000 Ohms	37-42
1	24990	25000 Ohms	39-40
1	W23013	2000 Ohms	41
3	W32352	Knobs	69

MODEL 5V2

TUBE VOLTAGES—MODEL 5V2

Type	Where Used	Ef	Ep	Eg	Esg	Ek	Eaup	Eg-osc	Ep-osc
6A7	Osc-Mod.	6.5	240	0	90	3	0	-15	125
6D6	I. F.	6.5	240	-3.5	125	0	0	—	—
6B7	Diode-AF	6.5	30	-3.5	40	0	—	—	—
42	Output	6.5	230	-18	240	0	—	—	—
80	Rectifier	5.1	—	—	—	240	—	—	—

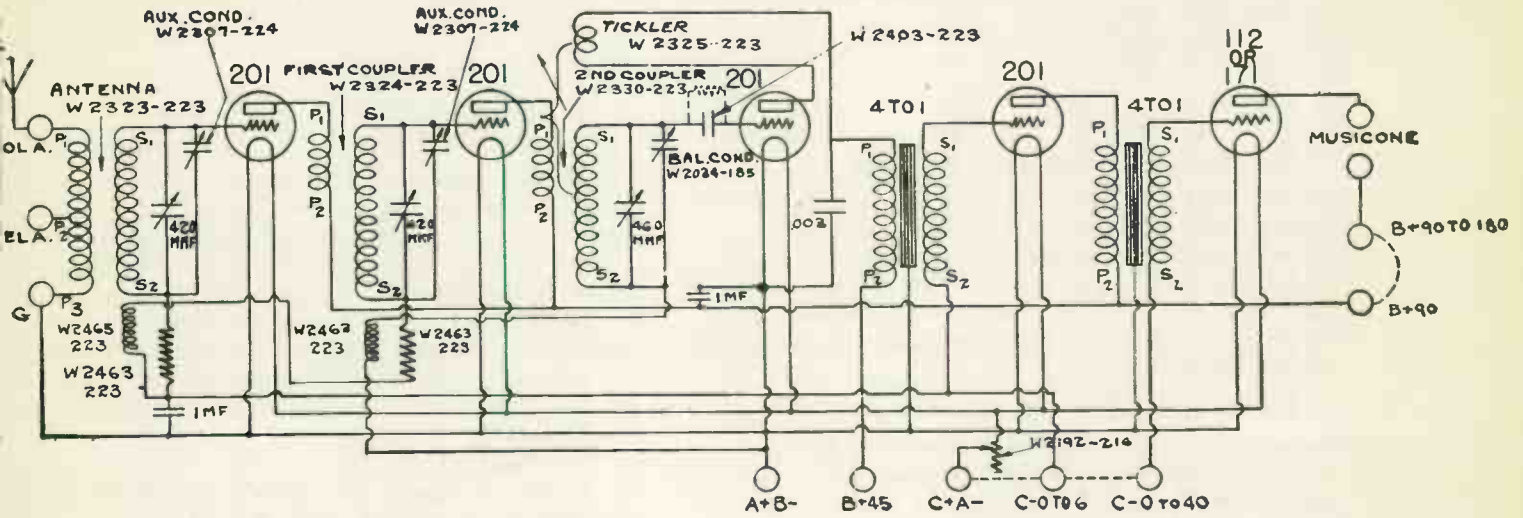
ALL VOLTAGES ARE PLUS OR MINUS 10%. ALL DC VOLTAGES ARE MEASURED TO CHASSIS AT 117.5 LINE WITH 1000 OHMS PER VOLT 250-VOLT VOLTMETER. POWER DEMAND IS 50 WATTS AT 110 VOLTS 60 CYCLES. ALIGNMENT AND SERVICING PROCEDURE SAME AS ON MODEL 5V1.



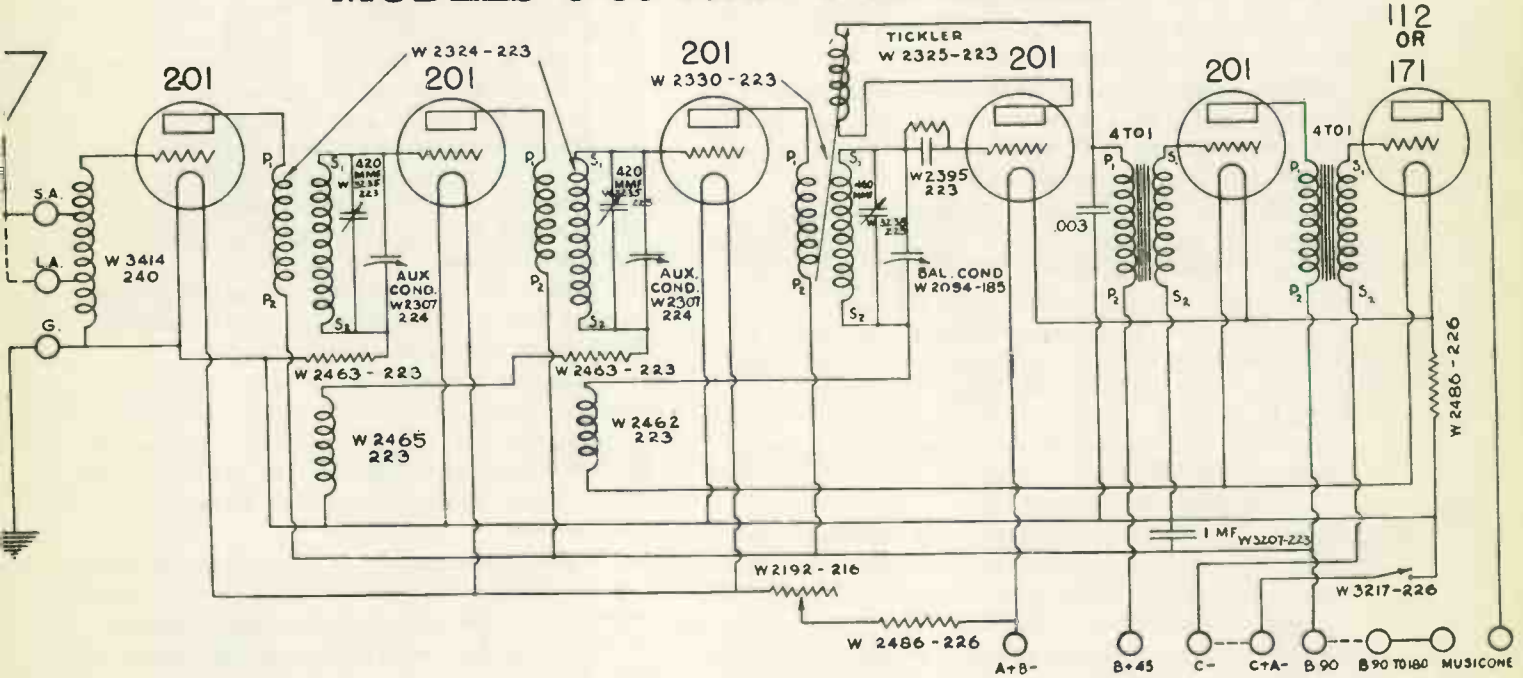
Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G24—32000	Preselector Coil	26	G10—26719	Ant.-Gnd. Terminal
2	G15—32002	Oscillator Coil	27	I3—33906A	A. C. Cord and Plug
	W—25025B	Coil Shield 1 <sup>st</sup>	28	W—33556	A. C. Switch
	W—25200	Coil Socket	29	W—25937	Level Control
	W—26891	Insulating Washer	30	W—21876	275 Ohm Resistor
	W—21451C	Retaining Ring	31	W—21237A	60,000 Ohm Resistor
3	G2—32003	1st. I. F. Transformer	32	W—21876	10,000 Ohm Resistor
	W—25024B	Coil Shield	33	W—26577	3 Megohm Resistor
	W—25200	Coil Socket	34	W—23785	500,000 Ohm Resistor
	W—26891	Insulating Washer	35	W—21455	300,000 Ohm Resistor
	W—21451C	Retaining Ring	36	W—23785	500,000 Ohm Resistor
4	G1—32003	2nd. I. F. Transformer	37	W—21875	100,000 Ohm Resistor
	W—25024B	Coil Shield	38	W—23785	500,000 Ohm Resistor
	W—25200	Coil Socket	39	W—31883	8,500 Ohm Resistor
	W—26891	Insulating Washer	40	W—24990	25,000 Ohm Resistor
	W—21451C	Retaining Ring	41	W—21875	100,000 Ohm Resistor
5	G21—32002	Tuning Condenser Gang	42	W—21875	100,000 Ohm Resistor
	G21—25050	Dial Assembly	43	W—23785	500,000 Ohm Resistor
	G8—32075	Drive Wheel Assembly	44	W—418C	Speaker
6	G4—33005	1st. I. F. Primary Trimmer Condenser	45	W—31007A	Speaker Cable
7	W—25008A	1st. I. F. Secondary Trimmer Condenser Adj. Blade only	46	G6—30745	Power Transformer, 110 Volt, 60 Cy.
8	G3—33005	2nd. I. F. Primary Trimmer Cond.	47	G7—30745	Power Transformer, 110 Volt, 25 Cy.
9	G3—33005	2nd. I. F. Secondary Trimmer Cond.	48	G8—30745	Power Transformer, 220 Volt, 25 Cy.
10	W—27668	0.0001 Mfd. Condenser	49	W—33557	D. P. D. T. Switch
11	W—28621	0.02 Mfd. 200 Volt Condenser		G14—27812	Dial Light Bracket Assembly
12	W—26571	0.0005 Mfd. 400 Volt Condenser		W—27981A	Tube Shield Base
13	W—30321A	1.0 Mfd. 160 Volt Condenser		W—28632A	Tube Shield
14	W—30321A	1.0 Mfd. 160 Volt Condenser		W—27981A	Tube Shield Base
15	W—28621	0.02 Mfd. 200 Volt Condenser		B—26009D	Tube Shield
16	W—30323	0.01 Mfd. 200 Volt Condenser		W—27981A	Tube Shield Base
17	W—25537A	0.001 Mfd. 400 Volt Condenser		W—28632A	Tube Shield
18	W—25537A	0.03 Mfd. 400 Volt Condenser		W—30805	0.01 Mfd. 400 Volt Condenser
19	W—30322A	0.00017 Mfd. 200 Volt Condenser		W—21455	300,000 Ohm Resistor
20	W—30322A	0.006 Mfd. 200 Volt Condenser		W—23013	2,000 Ohm Resistor
21	W—29271A	0.02 Mfd. 400 Volt Condenser		W—32352	Knob (Black)
22	W—29271A	0.02 Mfd. 400 Volt Condenser		W—31585B	Knob (Brown)
23	B—30059C	8.0 Mfd. 250 Volt (Yellow) Cond.		W—31463	Eucythcon
24	B—30059C	8.0 Mfd. 450 Volt (Red) Condenser			
25	B—30059C	8.0 Mfd. 450 Volt (+Red, —No Code) Condenser			

MODELS 550, 575



MODELS 6-60 AND 6-85 CIRCUIT



**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**



## MODEL 6B1—BATTERY SIX

### TUBE VOLTAGES—MODEL 6B1

Type	Where Used	Ef	Epl	Ep2	Esg	Eg2	Ek
15	R. F. Amp.	1.98	175		80		2.5
6A7	Osc.-Mod.	5.95	175	145	80	6 to 12	4.0
15	I. F. Amp.	1.98	175		80		2.5
30	Det. & A. V. C.	2.0	0				
15	A. F. Amp.	1.98	90		50 V. C. Full		V. C. Full 0
38	Output	5.95	158		175		18

#### PEAKING I.F. STAGES AT 456 KC.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator to 456 kilocycles.
- III. Turn the volume control of the receiver on full. Rotate the station selector until the condenser plates are completely meshed and set the band change switch to Band No. 2. Turn the tone control all the way to the left. Be sure the bottom plate of the chassis is securely fastened in place.
- IV. (a) Peak both tuning condensers located on top of the 2nd I.F. transformer shown in Fig. 2.

NOTE: Be sure to use the lowest test oscillator output that will give a reasonable scale deflection on the output meter. 20-30 volts output should be sufficient for satisfactory alignment.

- (b) Peak both tuning condensers located on top of the 1st I.F. transformer

#### PEAKING R.F. CIRCUITS

- I. Connecting Test Oscillator To The Receiver:  
It is necessary to connect a DUMMY ANTENNA in series with the test oscillator and the antenna terminal of the receiver. On Bands No. 1 and No. 3 this consists of a .0002 mfd. mica condenser. On Band No. 2 it consists of a carbon resistor of approximately 400 ohms.
- II. To Peak Band No. 1:

NOTE: Be sure to use the lowest test oscillator output that will give a reasonable scale deflection on the output meter. 20-30 volts output should be sufficient for satisfactory alignment.

- (a) Set the band change switch to Band No. 1.
- (b) Set the test oscillator to 1400 kilocycles. Rotate the station selector until the dial pointer points to 140 on the dial. Then adjust the oscillator parallel trimmer condenser, Fig. 3, for Band No. 1 for maximum reading on the output meter.
- (c) With the same dial setting peak the Ant. and R.F. parallel trimmer condensers for Band No. 1.
- (d) Set the test oscillator to 600 kilocycles.
- (e) Tune in the 600 kilocycle signal with the station selector, in the region of 60 on the dial, for maximum reading on the output meter.
- (f) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3,  $\frac{1}{8}$  turn and re-tune the station selector to the 600 kilocycle signal for maximum reading on the output meter.

- (g) Repeat operation (f) as many times as necessary to obtain the highest reading on the output meter. However, if the meter reads lower after operation (f) open the oscillator series trimmer condenser  $\frac{1}{8}$  turn and re-tune the station selector to the 600 kilocycle signal, noting the reading on the output meter as above, and repeat as many times as necessary to obtain the highest meter reading. Do not re-set the parallel trimmer condensers at this frequency.

#### III. To Peak Band No. 2:

- (a) Be sure to change the DUMMY ANTENNA as described in (I) under Peaking R.F. Circuits.
- (b) Close the oscillator parallel trimmer condenser for Band No. 2 and then open it 2 turns.
- (c) Close the R.F. parallel trimmer condenser for Band No. 2 and then open it  $\frac{1}{8}$  turn.
- (d) Close the Ant. parallel trimmer condenser for Band No. 2 and then open it  $\frac{1}{4}$  turn.
- (e) Set the test oscillator to 15 megacycles.
- (f) Rotate the station selector until the dial pointer points to 15 on the dial (Band No. 2).
- (g) Peak the oscillator parallel trimmer condenser for Band No. 2 on the first signal heard when closing this condenser.

- (h) Reduce the output of the test oscillator to the previous output and retune the station selector to the 15 megacycle signal at 15 on the dial.

- (i) Close the R.F. parallel trimmer condenser for Band No. 2.

- (j) Open the R.F. parallel trimmer condenser for Band No. 2 not more than  $\frac{1}{8}$  turn and re-tune the station selector to the 15 megacycle signal for maximum output.

- (k) Repeat operation (j) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.

- (l) Close the Ant. parallel trimmer condenser for Band No. 2.

- (m) Open the Ant. parallel trimmer condenser for Band No. 2 not more than  $\frac{1}{8}$  turn and re-tune the station selector to the 15 megacycle signal for maximum output.

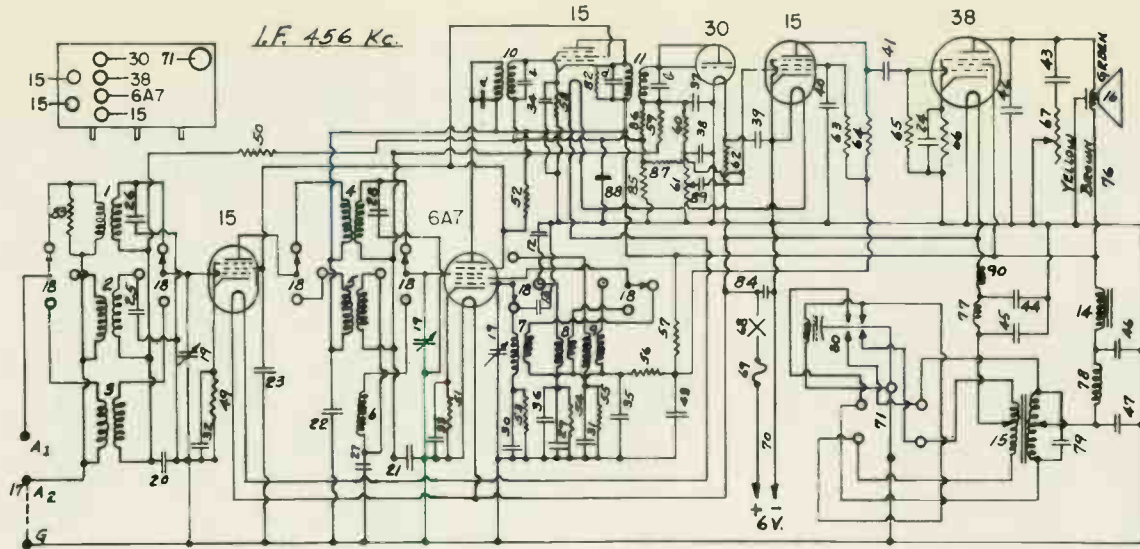
- (n) Repeat operation (m) as many times as necessary to obtain the highest reading on the output meter on the first peak from the closed position.

- (o) Set the test oscillator to 6 megacycles.

- (p) Tune in the 6 megacycle signal with the station selector in the region of 6 on the dial (Band No. 2) for maximum reading on the output meter.

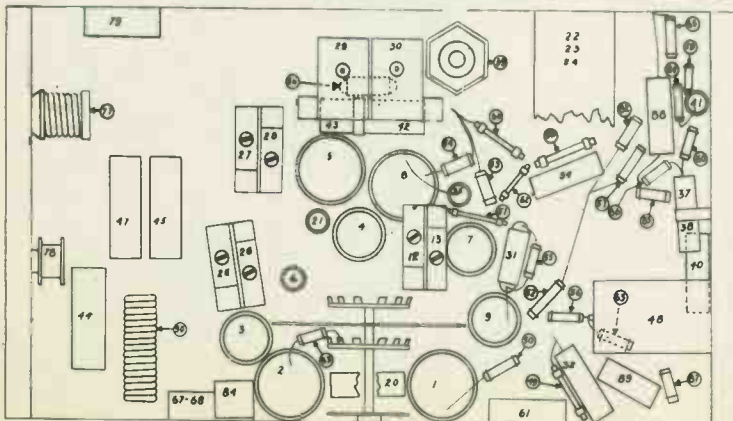
- (q) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3,  $\frac{1}{8}$  turn and re-tune the station selector to the 6 megacycle signal for maximum reading on the output meter.

MODEL 6B1



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G20-32300	Low Freq. Ant. Coil	44	W-32299	0.5 Mfd. 160 Volt Condenser
	G5-32307	Coil Shield Assem.	45	W-32299	0.5 Mfd. 160 Volt Condenser
	W-30796A	Retaining Ring	46	W-34896	8 Mfd. 300 Volt Condenser
2	G28-32200	High Freq. Ant. Coil	47	W-32001	0.25 Mfd. 300 Volt Condenser
	G4-31267	Coil Shield Assem.	48	W-34899	8 Mfd. 250 Volt Condenser
	W-30026A	Retaining Ring	49	W-31127	450 Ohm Flex. Resistor
3	G31-32000	Police Band Ant. Coil	50	W-23785	500,000 Ohm Resistor
	G3-31967	Coil Shield Assem.	51	W-23589	350 Ohm Flex. Resistor
	W-26891	Insulating Washer	52	W-23616	15,000 Ohm Resistor
4	W-21541C	Retaining Ring	53	W-24237A	60,000 Ohm Resistor
	G2-32001	L. F. R. F. Coil	54	W-21453	40,000 Ohm Resistor
	W-25024B	Coil Shield	55	W-32390	30,000 Ohm Resistor
	W-23200	Coil Socket	56	W-31094	4,500 Ohm Resistor
	W-26891	Insulating Washer	57	W-31084	4,500 Ohm Resistor
	W-21541C	Retaining Ring	58	W-29585	600 Ohm Flex. Resistor
5	G18-32001	H. F. R. F. Coil	59	W-29577	3 Megohm Resistor
	W-25300	Coil Socket	60	W-4,455	300,000 Ohm Resistor
	W-30796A	Retaining Ring	61	W-32062	Level Control
	G19-32001	Pol. Band R. F. Sec. Coil (on No. 18 Switch)	62	W-24537	60 Ohm Flex. Resistor
7	G2-32002	L. F. Osc. Coil	63	W-21454	1 Megohm Resistor
	G6-31267	Coil Shield Assem.	64	W-21454	1 Megohm Resistor
	W-26891	Insulating Washer	65	W-21454	1 Megohm Resistor
	W-21541C	Retaining Ring	66	W-21452	1,100 Ohm Flex. Resistor
8	G1-32002	H. F. Osc. Coil	67	W-33063	Tone Control
	W-25300	Coil Socket	68	W-7983A	S. P. S. T. Limb Switch
	W-30026A	Retaining Ring	69	W-33339	3 Amp. Fuse
9	G24-32002	Pol. Band Osc. Coil		W-32310A	Fuse Panel Assem.
	G6-31267	Coil Shield Assem.		W-4072	Insulator
	W-26891	Insulating Washer	70	B-34902	Thumb Screw
	W-21541C	Retaining Ring		W-33314	Battery Cable
10	G34-32304	1st I. F. Trans. Assem.	71	W-33313B	Synchrone Socket
	G35-32304	2nd I. F. Trans. Assem.		W-33345	Rubber Cushion
11	G14-33309	L. F. Osc. Trimmer		See No.	
12	G12-29599	L. F. Choke		W-33312	Rubber Sleeve
13	G3-31648	Power Transformer		W-33349A	Synchrone Cover
14	W-33592A	Transformer Spring		W-27814	Tube Shield Base
16	G24-25719	Ant. Grid Terminal		W-29632A	Tube Shield
17	B-34443B	8 P. 3 T. Switch		W-27814	Tube Shield Base
18	W-32182C	Shield (metal)		W-29632A	Tube Shield
19	C-33079B	Tuning Condenser Gang	76	W-35 11	Speaker Cable, 3 wire
	G25-32086	Dial Assembly		W-28967	Synchrone "A" Choke
	W-34857A	Dial Hand only		W-24734	Synchrone R. F. "B" Choke
	W-34858B	Dial Pointer only		W-22162	0.008 Mfd. 1,000 Volt Condenser
20	W-34983	Dial Cap Nut		W-33317C	Synchrone Cover
21	W-32379	0.02 Mfd. 200 Volt Condenser		L-33345	Synchrone (6 S44)
22	W-32379	0.02 Mfd. 200 Volt Condenser	81	See No.	
22	W-34886	12. Mfd. 250 Volt Condenser	82	W-23785	500,000 Ohm Resistor
22	W-34886	8. Mfd. 250 Volt Condenser	83	W-31094	4,500 Ohm Resistor
22	W-34886	8. Mfd. 25 Volt Condenser	84	G4-34605	0.002 Mfd. Condenser
25	G1-33006	H. F. Ant. Trimmer Condenser	85	W-29577	3 Megohm Resistor
26	G9-33009	H. F. R. F. Trimmer Condenser	86	W-29578	5 Megohm Resistor
28	G9-33009	L. F. R. F. Trimmer Condenser	87	W-29577	3 Megohm Resistor
29	G7-33006	H. F. Osc. Series Trimmer Condenser	88	W-28921	0.02 Mfd. 200 Volt Condenser
30	G7-33006	L. F. Osc. Series Trimmer Condenser	89	W-28921	0.02 Mfd. 200 Volt Condenser
31	G6-34900	1500 Mmf. Condenser	90	C2-32977	H. F. Choke
32	W-28921	0.02 Mfd. 200 Volt Condenser		W-33347A	Bottom
33	W-28921	0.02 Mfd. 200 Volt Condenser		W-35081	Band Change Plate
34	W-28921	0.02 Mfd. 200 Volt Condenser		W-3158511	Knob-Plain
35	W-22376	0.01 Mfd. 400 Volt Condenser		W-33995A	Knob-Verner
36	G11-3400D	1400 Mmf. Condenser		W-7830	Knob-Tuning
37	W-26162A	0.00015 Mfd. 400 Volt Condenser		W-7830	Knob-Set Screw
38	W-34897	100 Mmf. 2 Volt Condenser		W-34878B	Knob-Band Change
40	W-28921	0.02 Mfd. 200 Volt Condenser		W-33708	Eucalypt and Lens
41	W-28921	0.02 Mfd. 200 Volt Condenser		W-34307	Lens only
42	W-28921	0.02 Mfd. 200 Volt Condenser			
43	W-31082	0.004 Mfd. 400 Volt Condenser			

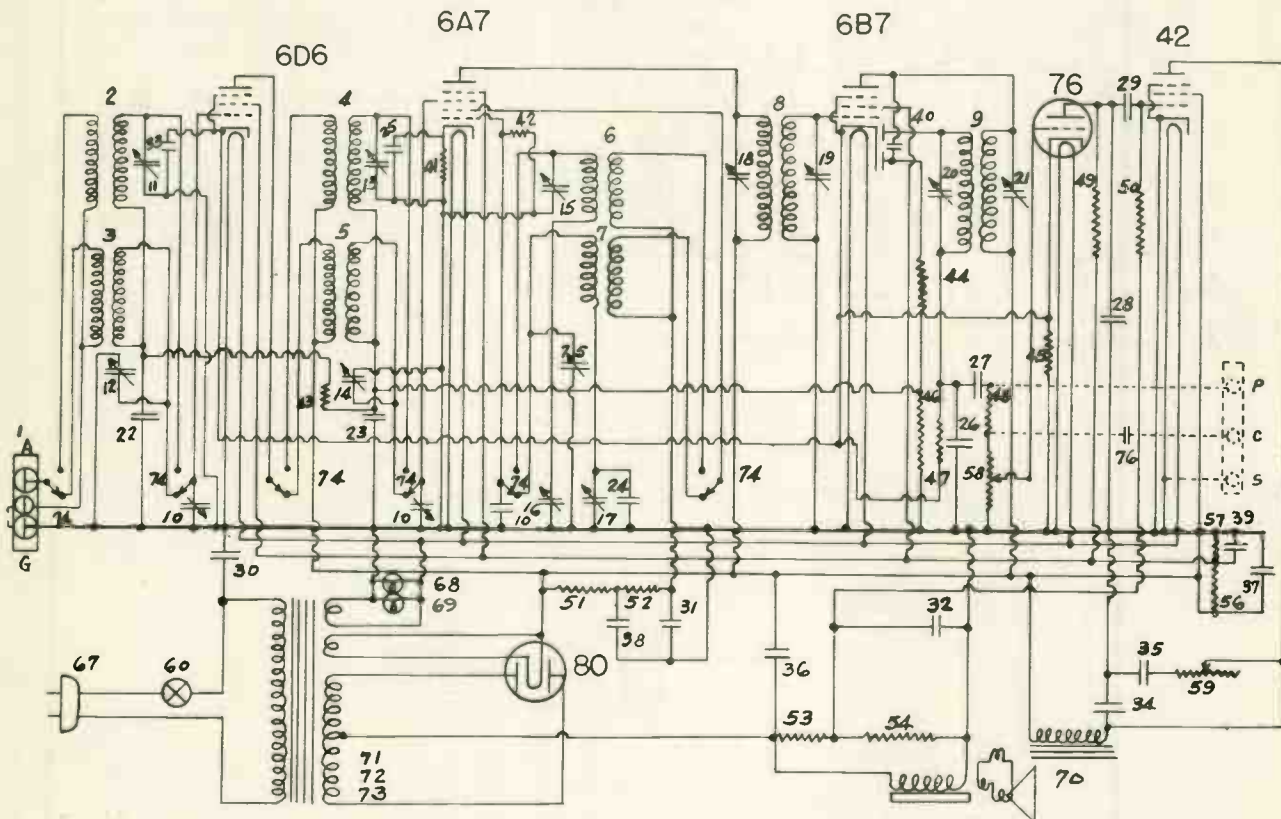


- Ant. Parallel Trimmer Condenser, Band No. 1—Item No. 26.
- Ant. Parallel Trimmer Condenser, Band No. 2—Item No. 25.
- R.F. Parallel Trimmer Condenser, Band No. 1—Item No. 28.
- R.F. Parallel Trimmer Condenser, Band No. 2—Item No. 27.
- Osc. Parallel Trimmer Condenser, Band No. 1—Item No. 13.
- Osc. Parallel Trimmer Condenser, Band No. 2—Item No. 12.
- Osc. Series Trimmer Condenser, Band No. 1—Item No. 30.
- Osc. Series Trimmer Condenser, Band No. 2—Item No. 29.

FIG. 3 -

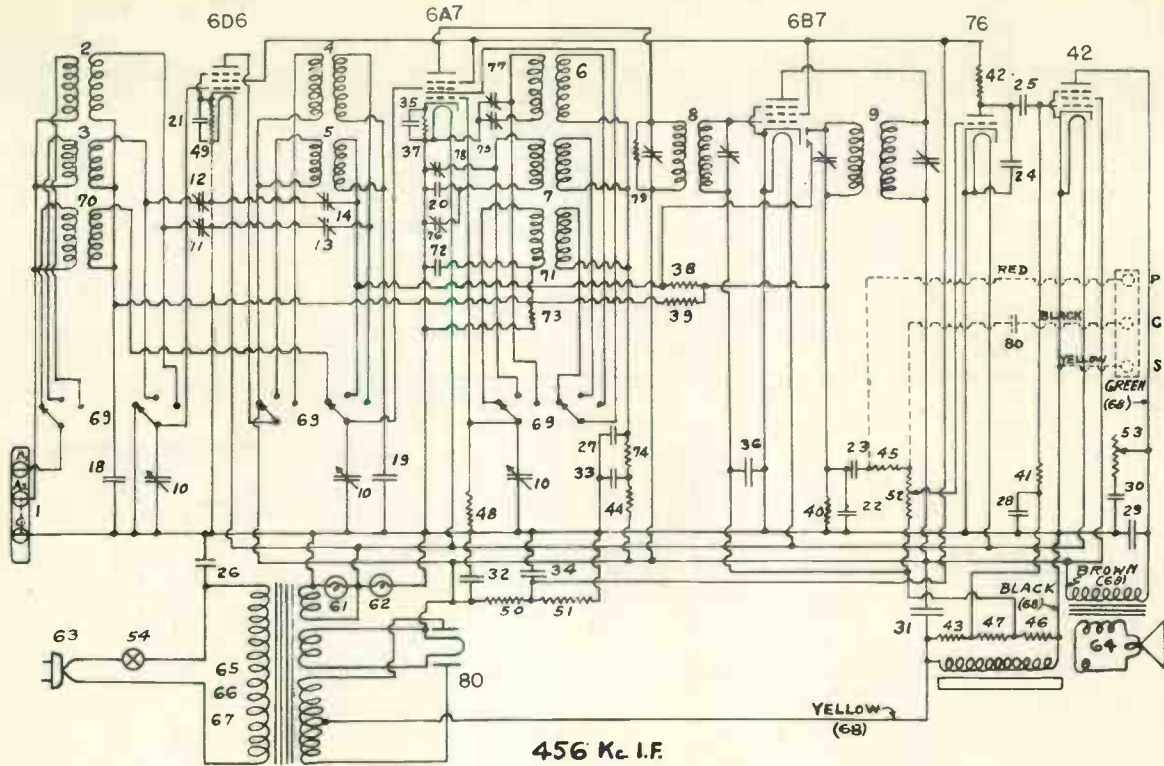
# CHASSIS 6H2

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup	Epl	Egl
6D6	R.F.	6.5	250	0	-3.0	125	—	—	—
6A7	Osc.-Mod.	6.5	250	0	-4.0	125	—	150	-15.0
6B7	I.F.-Diode	6.5	250	0	-3.0	125	—	—	—
76	A.F.	6.5	35	0	-3.0	—	—	—	—
42	Output	6.5	230	-18	0	250	—	—	—
80	Rectifier	5.1							



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	B30375A	Cable & Plug	67	1	G3-32400	Antenna Coil (Low Freq.)	2
1	W28552	Level Control (Volume) (1 Megohm)	58	1	G1-32402	Antenna Coil (High Freq.)	3
2	G4-27134	Dial Light Brkt Assm.		1	G2-32401	R. F. Trans. Coil (L. F.)	4
1	W25504B	Tone Control (80000 Ohm) & Line Switch	59-60	1	G1-32401	R. F. Trans. Coil (H. F.)	5
1	G16-28719	Ant.-Gnd. Terminal	1	1	G2-32402	Oscillator Coil (L. F.)	6
				1	G1-32402	Osc. Coil (H. F.)	7
				1	G9-32404	1st I. F. Trans. (With Trimmers)	8-18
1	W20097C	<b>FILTER &amp; BY-PASS CONDENSERS</b> 8-.8-.8 Mfd. 450 V.-450 V.-250 V.	37-38	1	G10-32004	2nd I. F. Trans. (With Trimmers)	9-20
1	W26194B	12 Mfd. 475 V.	39	3	W25200	Coil Shield Socket	21
1	W30321	1 Mfd. 160 V.	36	6	W30302	Coil Shield	
3	W32379	0.02 Mfd. 200 V.	32	2	W25025A	Coil Shield	
1	W32304	0.0014 Mfd.	22-23	1	W25025A	Coil Shield	
1	W30322A	0.00017-0.006 Mfd. 200 V.-200 V.	25	3	W26891	Insulating Washer L. F. Ant.-R. F. and Osc.	2-4-6
1	W25537A	0.001-0.03 Mfd. 400 V.-400 V.	24	2	W21541B	Retaining Ring	2-4-6
1	W30805	0.01 Mfd. 400 V.	28-27	3	W30026	Retaining Ring	3-5-7
1	W32378	0.01 Mfd. 400 V.	28-20	1	G1-33008	L. F. & H. F. Antenna Trimmer Cond.	11-12
1	W24784	0.25 Mfd. 200 V.	30	1	G1-33008	L. F. & H. F. R. F. Trimmer Cond.	13-14
1	W25517	0.008-0.05 Mfd. 400 V.-400 V.	31	1	G15-33000	L. F. & H. F. Osc. Trimmer Condenser	15-75
1	W27540	0.0005 Mfd. 400 V.	33	1	G2-33007	L. F. & H. F. Osc. Series Trimmer Cond.	16-17
			34-35	1	G10-33002	Variable Tuning Condenser	
			40			Gang	10
1	W28580	<b>RESISTORS</b> 350 Ohms (Flexible)	41	1	G5-32086	Dial Drive Assm.	
1	21453	40000 Ohms	42	1	W32208A	Dial Hand	
4	23785	500000 Ohms	43-48	1	W32203	Dial Hand Nut	
2	26577	3 Megohms	50-53	2			
1	W27504	100 Ohms (Flexible)	44-46				
1	21454	1 Megohm	45	3	W26010	Tube Shield Base	
1	23403	150000 Ohms	46	2	W27328A	Tube Shield (6A7, 6B7)	
1	21876	10000 Ohms	47	1	B26009C	Tube Shield (6D6)	
1	24814	7000 Ohms	48	1	G6-30745	Power Transformer 60 cy. 110 V.	71
1	33474	120000 Ohms	49	1	G7-30745	Power Transformer 25 cy. 110 V.	72
1	W31883	8500-25000 Ohms	51	1	G8-30745	Power Transformer 25 cy. 220 V.	73
3	W32352	Knob	52	1	B32285	Band Change Switch	74
1	W32353	Knob	54				
1	W31007A	Speaker Cord (4 Lead)	56-57				
1	W32219A	Dial Glass					
1	W32220A	Dial Glass Retainer					
1	B32190C	Escutcheon					
1	W33106A	Escutcheon Gasket					
4	D28	Escutcheon Screws (.10 doz)					

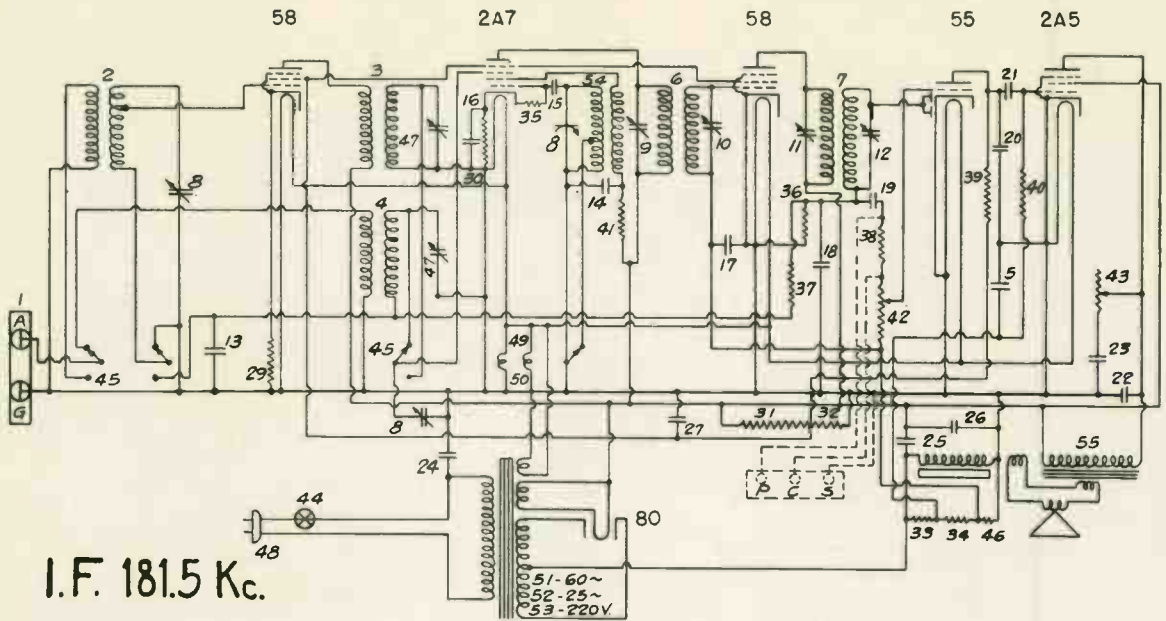
# Model 6H3



Figures in first column correspond to figures in diagram

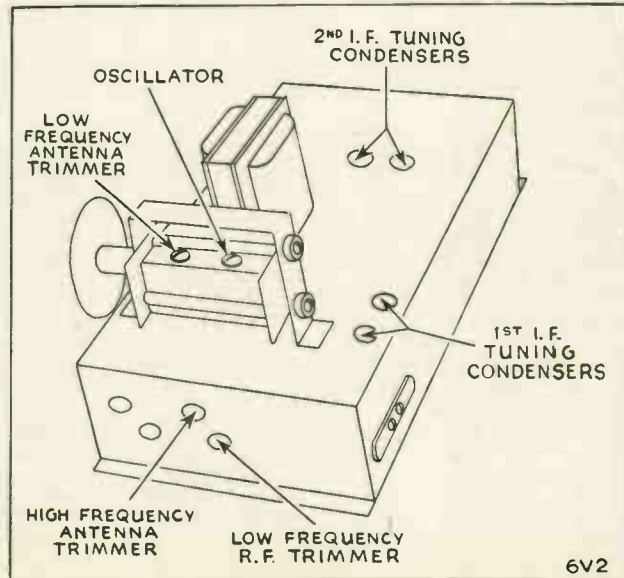
1	G16	—26719	Ant. Gnd. Term.	43	23785	500,000 Ohms
2	G3	—32000	L. F. Ant. Coil	44	21876	10,000 Ohms
3	G1	—32002	H. F. Ant. Coil	45	23785	500,000 Ohms
4	G2	—32001	L. F. R. F. Coil	46	22831	15,000 Ohms
5	G1	—32001	H. F. R. F. Coil	47	21875	100,000 Ohms
6	G2	—32002	L. F. Osc. Coil	48	21453	40,000 Ohms
7	G1	—32002	H. F. Osc. Coil	49	W —21964	165 Ohms
8	G18	—32004	1st I. F. Trans.	50	W —31883	8,500 Ohms
9	G19	—32004	Diode Trans.	51	W —28552	25,000 Ohms
19	G19	—33002	Variable Cond.	52	W —25594-B	Level Control
11	G1	—33008	{ L. F. Ant. Trimmer	53		{ Tone Control
12	G1	—33008	{ H. F. Ant. Trimmer	54		{ S. P. S. T. Line Switch
13	G1	—33008	{ L. F. R. F. Trimmer	55		
14	G1	—33008	{ H. F. R. F. Trimmer	56		
15				57		
16				58		
17				59		
18	W	—32379	0.02 Mfd. 200 Volt	60		
19	W	—32379	0.02 Mfd. 200 Volt	61	W —4099-A	6 V. Dial Light
20	W	—32304	1400 Mmfd. H. F.	62	W —4099-A	6 V. Dial Light
21	W	—32379	0.02 Mfd. 200 Volt	63	B —33905	Cable & Plug
22	W	—30322-A	{ .00017 Mfd. 200 Volt	64	318-B	Speaker
23			{ .006 Mfd. 200 Volt	65	G6 —30745	Power Trans. 60 Cy.
24	W	—25537-A	{ .001 Mfd. 400 Volt	66	G7 —30745	Power Trans. 25 Cy.
25			{ .03 Mfd. 400 Volt			110 Volt
26	W	—30805	0.01 Mfd. 400 Volt	67	G8 —30745	Power Trans. 25 Cy.
27	W	—32378	0.01 Mfd. 400 Volt			220 Volt
28	W	—30321-A	1.0 Mfd. 160 Volt	68	W —31007-A	Speaker Cord
29	W	—25517-A	{ .008 Mfd. 400 Volt	69	B —34427-A	Band Change Switch
30			{ 0.05 Mfd. 400 Volt	70	G31 —32000	3rd Ant. Coil
31	W	—26194-B	12 Mfd. 475 Volt	71	G24 —32002	3rd Osc. Coil
32			{ 8 Mfd. 450 Volt (Red)	72	G7 —34000	1450 Mmfd.
33	W	—29097-D	{ 8 Mfd. 450 Volt (Green)	73	W —24990	25,000 Ohms
34			{ 8 Mfd. 250 V. (No Code)	74	22831	15,000 Ohms
35	W	—32379	0.02 Mfd. 200 Volt	75	G2 —33007	{ L. F. Osc. Series Cord
36	W	—29910-A	0.25 Mfd. 200 Volt	76		{ H. F. Osc. Series Cord
37	W	—28589	350 Ohms	77	G9 —33009	{ L. F. Osc. Trimmer
38		26577	3-Megohm	78		{ H. F. Osc. Trimmer
39		26577	3-Megohm	79	23785	500,000 Ohms
40		21454	1-Megohm	80	W —23191-A	.01 Mfd. 400 V. (For. Only)
41		23785	500,000 Ohms			
42		23403	150,000 Ohms			

MODEL 6V2



I.F. 181.5 Kc.

Item No.	Description	Item No.	Description
1	G1-26719 Ant.-Gnd. Terminal	30	W-25937 275 Ohms
2	G30-24995 Antenna Coil (L.F.)	31	W-31883 { 3500 Ohms 25,000 Ohms
3	G10-25968 R.F. Coil (L.F.)	32	23785 500,000 Ohms
4	G31-24995 Antenna Coil (H.F.)	33	21875 100,000 Ohms
5	W-30321 1.0 Mfd. 160 V.	34	21875 100,000 Ohms
6	G4-30795 1st I.F. Transformer	35	21237-A 80,000 Ohms
7	G6-25444 Diode Feedin' Trans.	36	23785 500,000 Ohms
8	B-31877 Variable Condenser	37	26577 3 Meg.
9	G14-25948 1st I.F. Pri. Trimmer	38	23785 500,000 Ohms
10	1st I.F. Sec. Trimmer	39	23403 150,000 Ohms
11	G3-25948 2nd I. F. Pri. Trimmer	40	23785 500,000 Ohms
12	2nd I.F. Sec. Trimmer	41	21878 10,000 Ohms
13	W-30324 0.02 Mfd. 400 V.	42	W-30610-D Level Control
14	W-26571 0.0005 Mfd. 400 V.	43	W-30836 { Tone Control S. P. S. T. Switch
15	W-27203 0.02 Mfd. 200 V.	44	B-31878 4 P. D. T. Switch
16	W-24784 0.05 Mfd. 200 V.	45	22199-A 25,000 Ohms
17	W-30322A 0.00017 Mfd. 200 V.	46	G7-29699 R.F. Trimmer Cond.
18	W-30322A 0.008 Mfd. 200 V.	47	B-30375-A Cord & Plug
19	W-22537A 0.001 Mfd. 400 V.	48	W-22221 2.5 V. Dial Light
20	W-31052 0.004 Mfd. 400 V.	49	W-22221 2.5 V. Dial Light
21	W-30805 0.01 Mfd. 400 V.	50	G4-30745 60 Cy. Power Trans.
22	B-30059-B { 8 Mfd. 450 V. 8 Mfd. 250 V.	51	G2-30745 25 Cy. Power Trans.
23	W-25937 275 Ohms	52	G3-30745 220 V. Power Trans.
24		53	G33-24996 Oscillator Coil
25		54	354-4 Speaker
26		55	



# Model 7

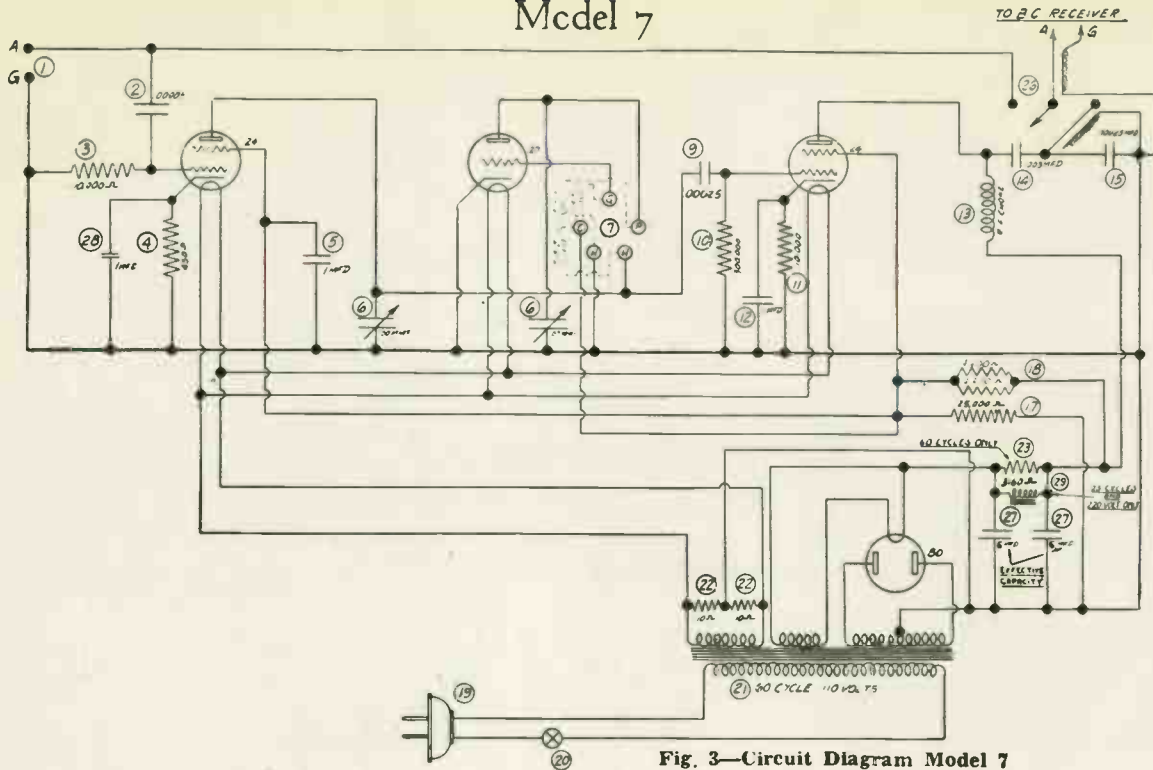


Fig. 3—Circuit Diagram Model 7

This is a chassis for attaching to any broadcast receiver in order to adapt the latter to the reception of short-wave signals. It is of the superheterodyne type, the incoming signal being converted to a frequency within the regular broadcast range by the use of an oscillator and detector (see Service Bulletin No. A-1 for an explanation of the superheterodyne receiver). After conversion to the appropriate frequency,

the signal is delivered to the aerial and ground terminals of the broadcast receiver.

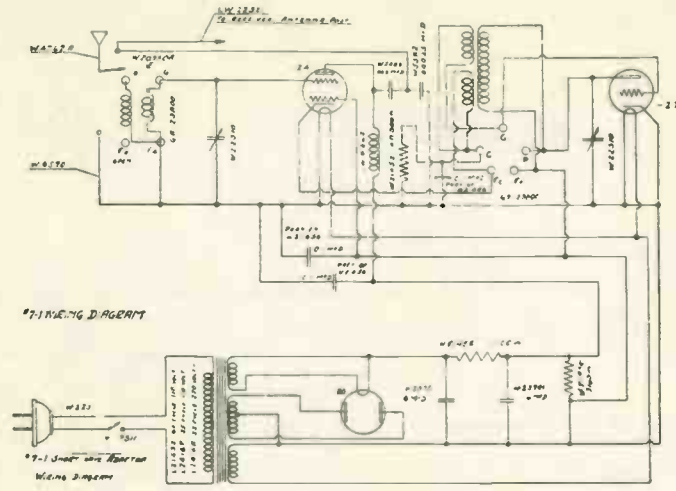
The chassis incorporates a -24 type, untuned buffer amplifier, a -27 tuned oscillator, a -24 tuned detector, and a -80 rectifier. Various frequency ranges are obtainable by the use of suitable oscillator coils, as explained in the instructions accompanying the chassis.

## Voltage Limits, Model 7

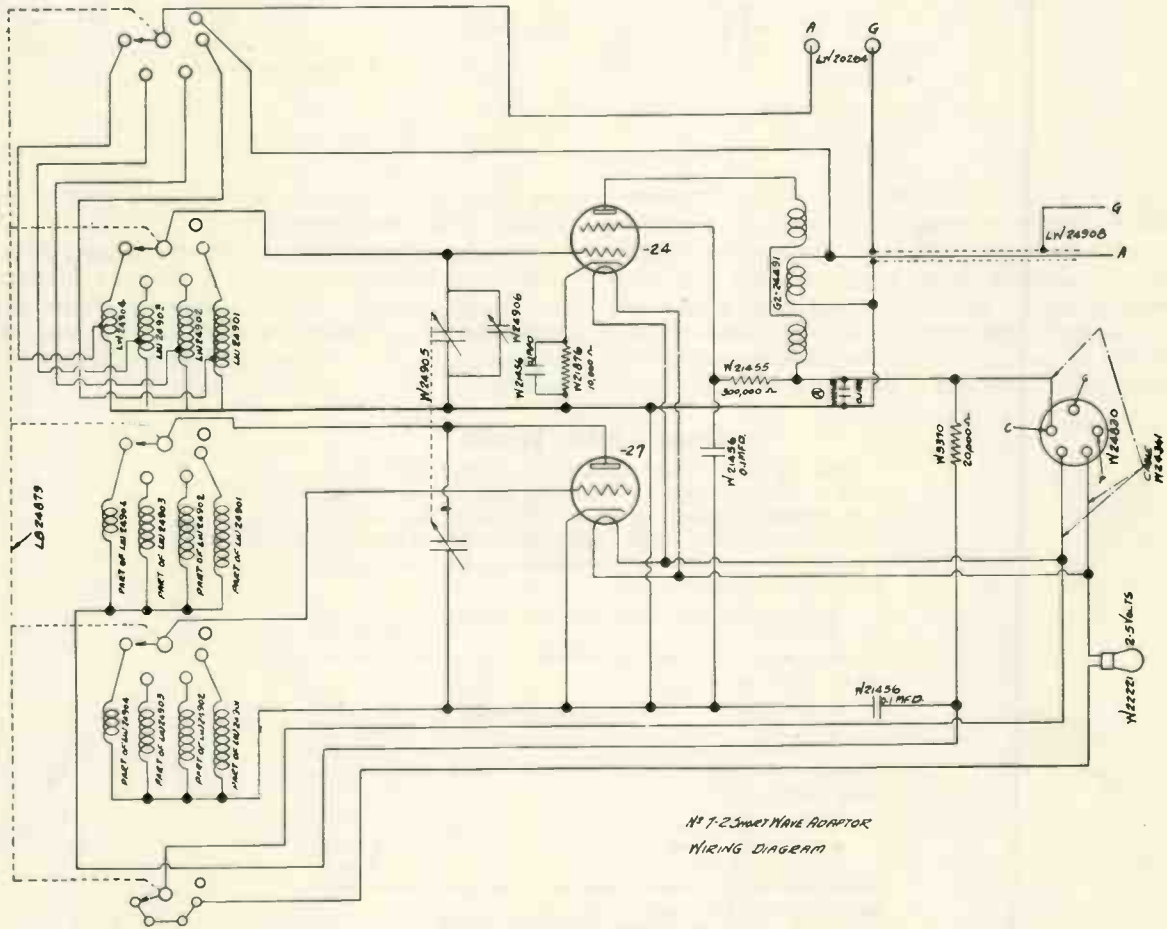
The following tube voltages are the approximate values which should be obtained with tubes in place and receiver connected to a 117½ volt line, using a voltmeter of about 1000 ohms resistance per volt.

<b>Filament Voltages</b>	
Buffer, Oscillator, and Detector Tubes	2.2 to 2.6
Rectifier tube .....	4.3 to 4.9
<b>Plate Voltages</b>	
Buffer Tube .....	160 to 190
Oscillator tube .....	155 to 185
Detector Tube .....	140 to 160
<b>Grid Voltages</b>	
Buffer Tube .....	2 to 4
Oscillator Tube .....	9 to 13
Detector tube .....	6 to 10
<b>Screen Grid Voltages</b>	
Buffer and Detector tubes .....	55 to 75

# Models 7-1 and 7-2



Circuit Diagram, Model 7-1

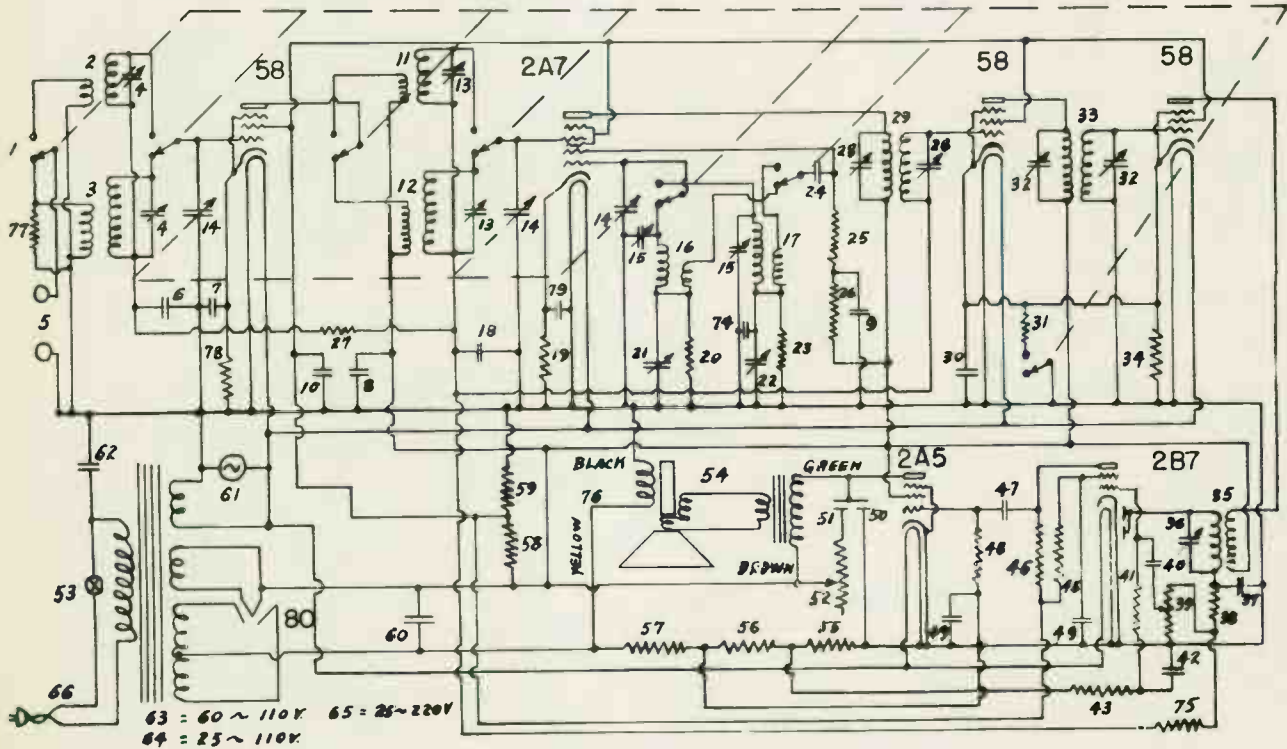


Circuit Diagram, Model 7-2

# CHASSIS 7H2

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Ep-osc.
58	RF	2.5	225	0	3	100	
2A7	Osc. Mod.	2.5	225	0	3	100	150
58	1st IF	2.5	225	0	4.5	100	
58	2nd IF	2.5	225	0	4.5	100	
2B7	Diode AF	2.5	50	0.5	0	22	
2A5	Output	2.5	215	2.0	0	225	
80	Rectifier	4.9	—	—	225	—	

Voltage Across Speaker Field, — 120.

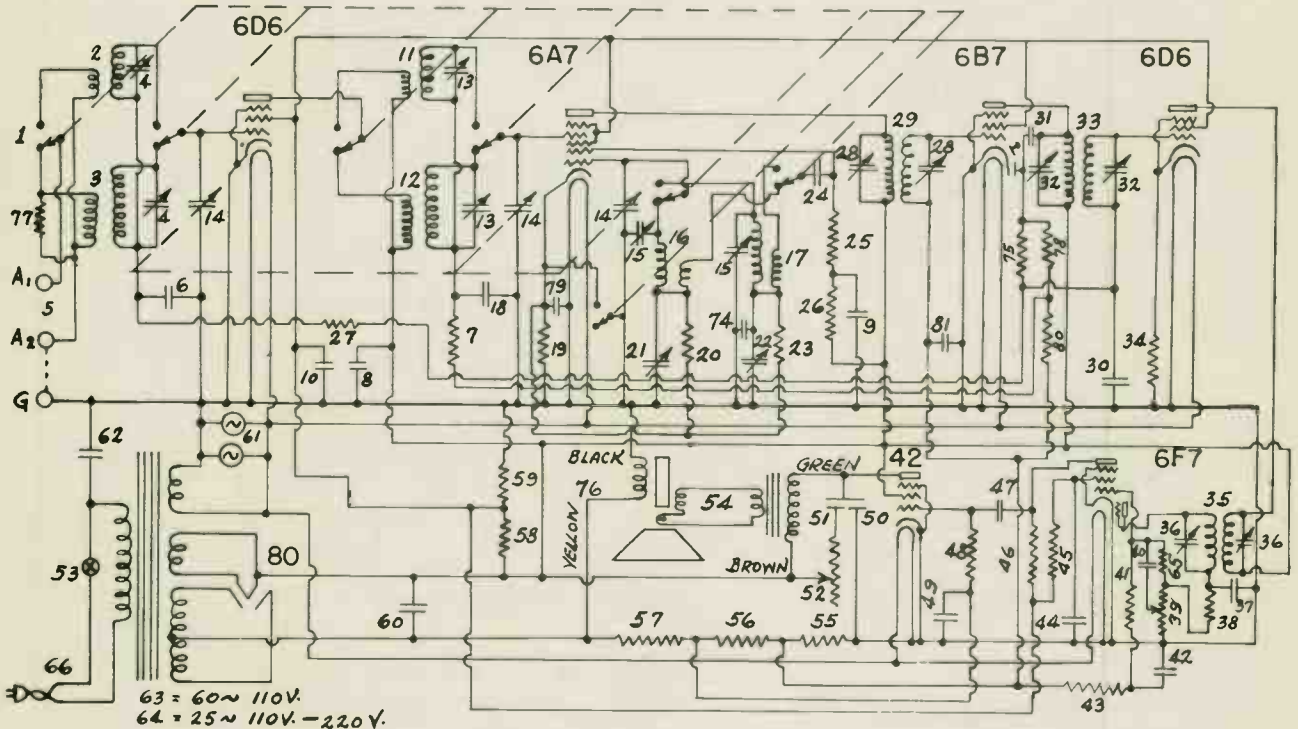


Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G1-32002	Antenna Coil (H. F.)	81	3	B28009	Tube Shield (58 Tube)	
1	G3-32000	Antenna Coil (L. F.)	3	2	W28632	Tube Shield (2A7-2B7)	
1	G1-32001	R. F. Coll. (H. F.)	11	1	B21491A	Cord & Plug	66
1	G2-32001	R. F. Coll. (L. F.)	12	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	G2-32002	Osc. Coll. (L. F.)	16	1	W26194B	12. Mfd. 475 V. Condenser	60
1	G1-32002	Osc. Coll. (H. F.)	17	1	W29097C	8-8-8. Mfd. 450 V.-450 V.- 250 V. Condenser	8-9 10
1	G1-32004	1st I. F. Trans.	29	1	W32380	0.05 Mfd. 200 V. Condenser	18
1	G1-32004	2nd I. F. Trans.	33	1	W25435	0.003 Mfd. 400 V.	24
1	G2-32004	3rd I. F. Trans. (Diode)	35	1	W24049	0.1 Mfd. 200 V.	30-42 44
1	W31386	Coil Shield Bracket		1	W27932	0.0001 Mfd. 200 V.	37
6	W23200	Coil Socket		1	W27216	0.05 Mfd. 200 V.	47
3	W30802	Coil Shield		1	W30321	1.0 Mfd. 160 V.	49
2	W25025A	Coil Shield		1	W31052	0.004-0.05 Mfd. 400 V.-400 V.	50-51
1	W25024A	Coil Shield		1	W30805	0.01 Mfd. 400 V.	62
3	G1-24064	Coil Shield		1	W32304	0.0014 Mfd.	74
				2	W28821	0.02 Mfd. 200 V.	83-85
6	W26691	Insulating Washer	29-33	1	W28619	0.004 Mfd. 200 V.	84
3	W21541B	Retaining Ring	35	1	W32379	0.02 Mfd. 200 V.	6
3	W30026	Retaining Ring		<b>RESISTORS</b>			
1	G1-33008	Ant. Tuning Condenser	86	2	W25937	275 Ohm	19-78
1	G1-33008	R. F. Tuning Condenser	87	1	W21237A	60000 Ohm	20
1	G2-33009	Osc. Tuning Condenser	80	1	W21453	40000 Ohm	23
1	G7-33006	I. F. Condenser	88-89	1	W21876	10000 Ohm	25-26
2	G6-33006	1st & 2nd I. F. Condensers	90-91	2	W21455	300000 Ohm	27
1	G2-33006	3rd I. F. Condenser	92	2	W22614	750 Ohm	31-34
1	G13-33002	Variable Tuning Condenser Gang	82	2	W23403	150000 Ohm	38-56
1	G1-32086	Dial Drive Assm.		3	W21454	1 Megohm	41-43 57
2	G4-27134	Dial Light Bracket Assm.	61	2	W23785	500000 Ohm	45-48
2	W32128A	Light Diffuser		1	W21875	100000 Ohm	46
2	W32244	Light Diffuser Retainer		1	W22831	15000 Ohm	55
1	B32147A	7 Pole D. T. Switch	1	1	W31361	7000-11000 Ohms	58-59
1	W32062	Level (Volume) Control (1 Meg.)	39	1	W26577	3 Megohm	77
1	W32063	Tone Control & Switch	52-53	1	W31094	4500 Ohm	75
1	G16-26719	Ant.-Gnd. Terminal	93	1	W31007A	Speaker Cord (4 Lead)	76
1	G5-30745	Power Trans. 60 cy. 110 V.	63	3	W32352	Knob	
1	G36-25069	Power Trans. 25 cy. 110- 220 V.	64-65	1	G1-32067	Crank Assm.	
				1	W32127A	Dial Glass	
				1	W32126A	Dial Glass Retainer	
				1	B32125B	Escutcheon	
				1	W23880A	Thumb Screw	
				1	B32172	Tube & Cond. Shield	
				1	C32149	Bottom	
5	W21981	Tube Shield Base					



# CHASSIS 7H3

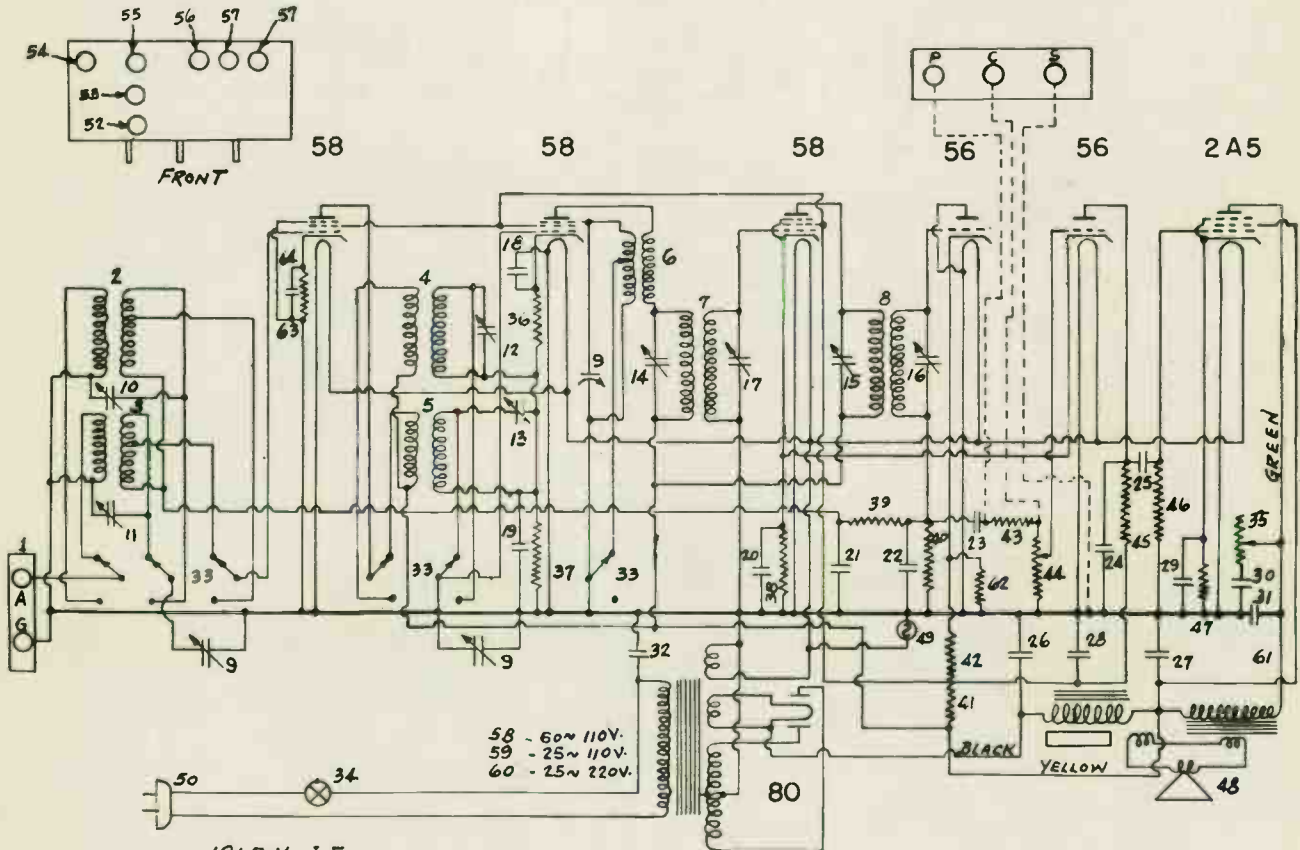
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Ep-Osc
6D6	R.F.	6.5	225	—	0	100	—
6A7	Osc.-Mod.	6.5	225	—	(10LF) (0HF)	100	150
6B7	1st I.F. & A.V.C. Diode	6.5	225	0.3	0	100	—
6D6	2nd I.F.	6.5	225	—	2.0	100	—
6F7	Diode & I.F.	6.5	30	.5	0	22	—
42	Output	6.5	215	2.0	0	225	—
80	Rectifier	4.9	—	—	225	—	—



Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G1-32002	Antenna Coil (H. F.)	2	1	W32003	Tone Control & Line Switch	52-53
1	G3-32000	Antenna Coil (L. F.)	3	1	B21491A	Cord & Plug	66
1	G1-32001	R. F. Coil (H. F.)	11	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	G2-32001	R. F. Coil (L. F.)	12	1	W29097C	8-.8-.8 Mfd. 450 V.-450 V.-250 V.	8-9
1	G2-32002	Osc. Coil (L. F.)	16	1	W26194B	12 Mfd. 475 V.	10
1	G1-32002	Osc. Coil (H. F.)	17	1	W30321	1 Mfd. 160 V.	60
1	G1-32004	1st I. F. Trans.	29	1	W32379	0.02 Mfd. 200 V.	49
1	G1-32004	2nd I. F. Trans.	33	1	W32380	0.05 Mfd. 200 V.	6
1	G8-32004	3rd I. F. Trans. (Diode) & Trimmer Condensers	35-38	1	W25435	0.003 Mfd. 400 V.	18
1	W31386	Coil Shield Bracket	20-33	1	W27216	0.05 Mfd. 200 V.	24
6	W25200	Coil Sockets	1	1	W31937	0.0001 Mfd.	30-47
3	W30802	Coil Shield	1	1	W27932	0.0001 Mfd. 200 V.	31
2	W25025A	Coil Shield	1	1	W28619	0.006 Mfd. 200 V.	37
1	W25024A	Coil Shield	1	1	W24049	0.1 Mfd. 200 V.	40
2	G1-24084	Coil Shield	20-33	2	W31052	0.004-0.05 Mfd. 400 V.-400 V.	42-44
5	W26891	Insulating Washer	3-12-16	1	W30805	0.01 Mfd. 400 V.	50-51
3	W21541B	Retaining Ring	11-2-17	1	W32304	0.0014 Mfd.	62
3	W30026	Retaining Ring	4	1	<b>RESISTORS</b>		
1	G1-33008	Ant. Trimmer Condenser	13	3	26577	3 Megohm	7-41-75
1	G1-33008	R. F. Trimmer Condenser	13	1	W27503	1400 Ohm	19
1	G14-33009	Osc. Trimmer Condenser	15	1	21237A	60000 Ohm	20
1	G12-33006	L. F. & H. F. Osc. Trimmer Cond. (Series)	21-22	1	21453	40000 Ohm	23
1	G6-33006	1st I. F. Trimmer Cond.	28	1	21870	10000 Ohm	25-26
1	G6-33006	2nd I. F. Trimmer Cond.	32	1	21455	300000 Ohm	27
1	G18-33002	Variable Tuning Condenser Gang	14	1	W25937	275 Ohm	34
1	G1-32086	Dial Drive Assm.	61	1	23403	150000 Ohm	38
2	G4-27134	Dial Light Brkt Assm.	61	3	21454	1 Megohm	43-57
2	W32128A	Light Diffuser	1	2	23785	500000 Ohm	78
2	W32244	Light Diffuser Retainer	1	1	21875	100000 Ohms	45-48
5	W27981	Tube Shield Base	1	1	33390	30000 Ohms	46
3	W28632	Tube Shield (6A7-6B7-6F7)	1	1	23403	150000 Ohms	55
2	B20000	Tube Shield (6D6 Tube)	1	1	W31361	7000-11000 Ohms	56
2	G9-30745	Power Transformer 80 cy. 110 V.	63	1	28578	5 Megohm	58-59
1	G39-25869	Power Transformer 25 cy. 110-220 V.	64	1	31094	4500 Ohms	65
1	B32147A	7 P. D. T. Switch	1	1	W31007A	Speaker Cord	77
1	G16-28719	Ant.-Gnd. Terminal	5	1	W32127A	Dial Glass	78
1	W32062	Level Control (Volume) 1 Megohm	39	1	W32126A	Dial Glass Retainer	46
				1	B32125B	Escutcheon	48
				3	W32352	Knob	55
				1	G1-32067	Crank Assm.	56
				1	B32172	Tube & Cond. Shield	58-59
				1	W23880A	Thumb Screw	65
				1	C32149	Bottom	77

# CHASSIS 7V2

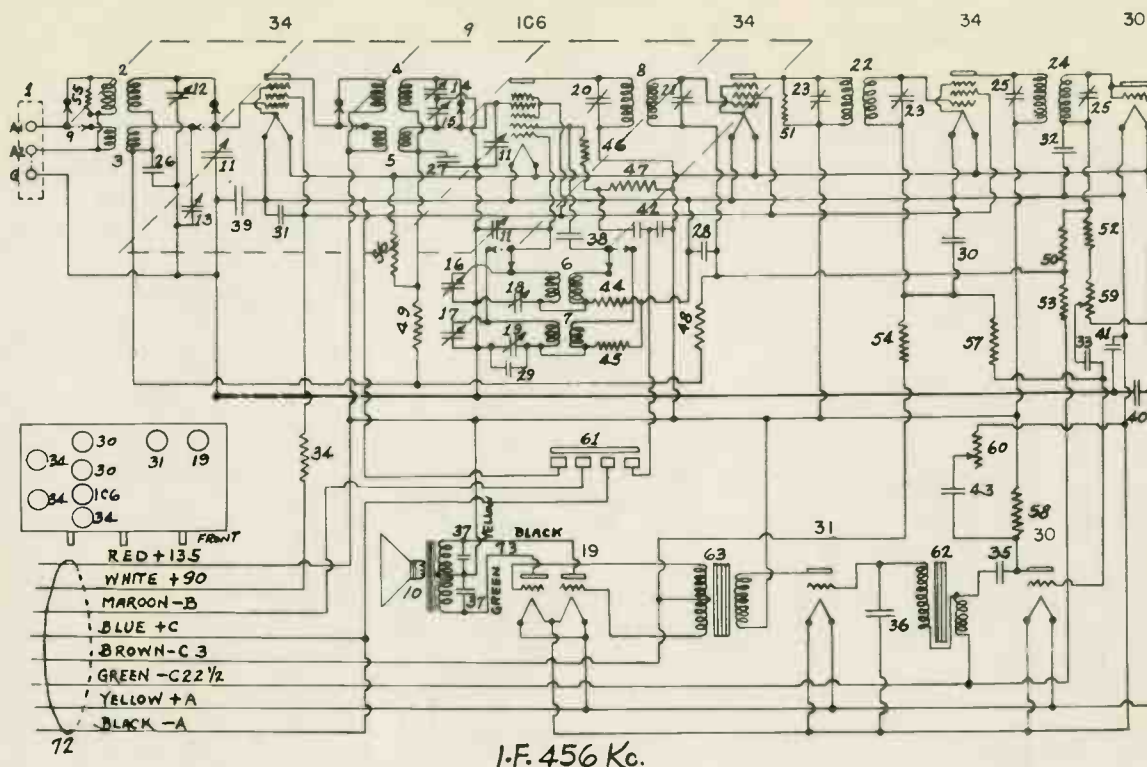
Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup
58	R.F.	2.5	260	0	0	125	0
58	Osc-Mod	2.5	260	31	31	125	0
58	I.F.	2.5	260	0	4	125	4
56	Diode	2.5	0	0	0	—	—
56	A.F.	2.5	50	0	4	—	—
2A5	Output	2.5	250	0	15	260	—
80	Rectifier	4.8	400AC	—	370	—	—



181.5 Kc. I.F.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G15-32000	Ant. Transformer Coll L. F. (Short Wave)	1	1	G18-23559	Power Transformer 110 Volt 25 cy.	59
1	G16-32000	Ant. Transformer Coll H. F. (Broadcast)	2	1	G19-23559	Power Transformer 220 Volt 25 cy.	60
1	G9-32001	R. F. Transformer Coll L. F.	3	1	B-21491C	A. C. Cord & Plug	50
1	G8-32001	R. F. Transformer Coll H. F.	4	1	LW-20284	Ant.-Gnd. Terminal	1
1	G11-32002	Osc. Transformer Coll	5	<b>FILTER &amp; BY-PASS CONDENSERS</b>			
1	G5-32003	1st I. F. Transformer Coll	6	1	W29150B	12.-6.-8. Mfd. 25 V.-450 V.-450 V. Cond.	27-28
1	G1-32003	2nd I. F. Transformer Coll	7	1	W26104B	12. Mfd. 475 Volt Cond.	29
7	W25200	Coll Socket	8	1	W24049B	0.1 Mfd. 200 Volt Cond.	20
6	W25024A	Coll Shield (Large)	9	1	W23142	0.02 Mfd. 400 Volt Cond.	21
2	W25025A	Coll Shield (Small)	10-11	1	W23537A	0.001-0.03 Mfd. 400 V.-400 V. Cond.	24-25
7	W26891	Insulating Washer	12-13	1	W23517A	0.05 0.008 Mfd. 400 V.-400 V. Cond.	30-31
7	W21541B	Retaining Ring	14-15	1	W30805	0.01 Mfd. 400 Volt Cond.	32
1	G1-29099	L. F. & H. F. Ant. Trimmer Cond.	16	1	W29286B	0.00017-0.03 Mfd. 400 V.-400 V. Cond.	60-67
1	G1-29099	L. F. & H. F. R. F. Trimmer Cond.	17	1	W28621	0.02 Mfd. 200 Volt Cond.	68
1	G1-33007	1st & 2nd I. F. Primary and 2nd I. F. Secondary Trimmer Cond.	10	1	W28623	0.02-0.02 Mfd. 200 V.-200 V. Cond.	69-70
1	W25008A	1st I. F. Sec. Trimmer Cond. Adj. Blade	17	<b>RESISTORS</b>			
1	W32201B	Dial Support Brkt.	65	3	W25037	275 Ohm	30-38
1	G0-32084	Dial Drive Assm.	44	1	31094	4500 Ohm	68
1	W32208A	Dial Hand	34-35	1	26577	3 Megohm	37
1	G14-33002	Variable Tuning Condenser Gang	49	1	21454	1 Megohm	30
1	W25060B	Level Control (Volume)	33	1	W28471	8500-25000 Ohm	40
1	W25594B	Tone Control & Line Switch	33	2	23785	500000 Ohm	41-42
2	G4-27134	Light Bracket Assm.	49	1	23403	150000 Ohm	43-46
1	R30509D	6 Pole D. T. Switch	33	1	W25521	450 Ohm	45
3	W26010	Tube Shield Base (58 Tube)	58	1	W30127	450 Ohm	47
3	B26000C	Tube Shield	58	1	W31009A	Speaker Cable	62
1	G17-23559	Power Transformer 110 Volt 60 cy.	19	1	W32353	Knob (Large)	61
				3	W32352	Knob (Small)	61
				1	R21335	Tube & Condenser Shield	

# Wiring Diagram For Model 8B3

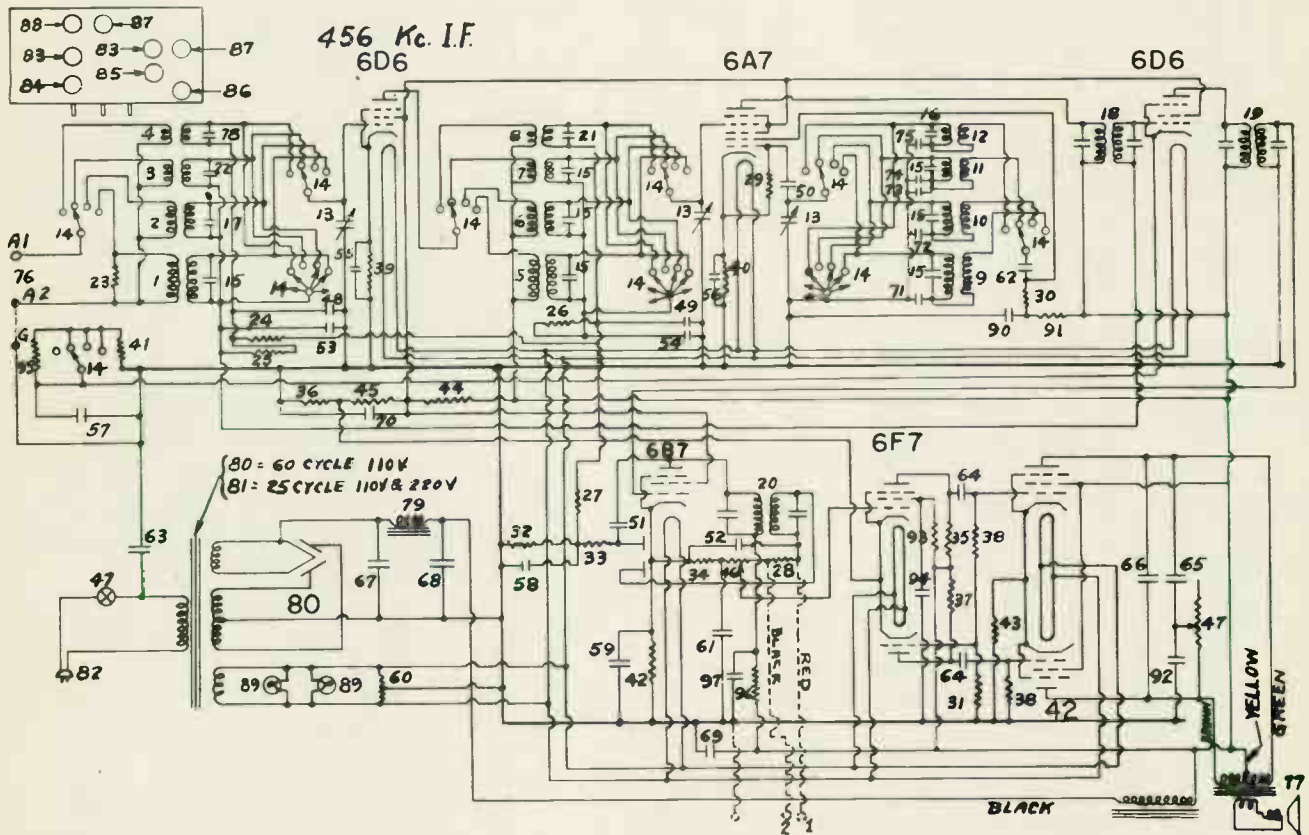


Figures in first column correspond to figures in diagram on page 18

Part Number	Description	Part Number	Description		
1	G16-28719	Ant.-Gnd. Term. ....	44	21875	100,000 Ohms .....
2	G3-32000	L. F. Ant. Trans. ....	45	21875	100,000 Ohms .....
3	G28-32000	H. F. Ant. Trans. ....	46	21876	10,000 Ohms .....
4	G2-32001	L. F. R. F. Trans. ....	47	27121	5,000 Ohms .....
5	G18-32001	H. F. R. F. Trans. ....	48	21455	300,000 Ohms .....
6	G2-32002	L. F. Osc. Trans. ....	49	21455	300,000 Ohms .....
7	G21-32002	H. F. Osc. Trans. ....	50	26577	3 Meg. ....
8	G1-32004	1st I. F. Trans. ....	51	21455	300,000 Ohms .....
9	B-34094	Band Change Switch ..	52	23403	150,000 Ohms .....
10	-42PM	Speaker .....	53	33490	10 Meg. ....
11	G25-33002	Variable Cond. ....	54	21455	300,000 Ohms .....
12	G1-33008	{L. F. Ant. Trim. Cond.	55	31094	4,500 Ohms .....
13		{H. F. Ant. Trim. Cond.	56	26578	5 Meg. ....
14	G9-33009	{L. F. R. F. Trim. Cond.	57	21454	1 Meg. ....
15		{H. F. R. F. Trim. Cond.	48	22196	20,000 Ohms .....
16	G18-33009	{L. F. Osc. Trim. Cond.	59	W-34095	Level Control .....
17		{H. F. Osc. Trim. Cond.	60	W-33993-A	{Tone Control .....
18	G20-33006	{L. F. Osc. Series T. C.	61		{On-Off Switch .....
19		{H. F. Osc. Series T. C.	62	G1-34189	1st Audio Trans. ....
20	G6-33006	{1st I. F. Pri. T. C. ....	63	G2-34189	2nd Audio Trans. ....
21		{1st I. F. Sec. T. C. ....			
22	G21-32004	{2nd I. F. Trans. ....			
23		{Trimmer Cond. ....			
24	G22-32004	{3rd I. F. Trans. ....			
25		{Trimmer Cond. ....			
26	W-32379	.02 Mfd. 200 Volt .....			
27	W-32379	.02 Mfd. 200 Volt .....			
28	W-27216	.05 Mfd. 200 Volt .....			
29	G3-34000	2200 Mmfd. ....	72	G3-29237	Cable & Marker Assm.
30	W-27216	.05 Mfd. 200 Volt .....	73	W-31009-A	Speaker Cable .....
31	W-28869	2.0 Mfd. 200 Volt .....		27307	Spkr. Cone & V. C. As.
32	W-27932	.0001 Mfd. 200 Volt .....		29200	Spkr. Transformer .....
33	W-27216	.05 Mfd. 200 Volt .....	G17	32086	Dial Assem. ....
34	24814	7000 Ohms .....	W	32208	Dial Hand .....
35	W-29910-A	.25 Mfd. 200 Volt .....		B-76	Dial Hand Screw .....
36	G1-34004	.00025 Mica .....	W	33528	Escutcheon & Window
37	W-31158	Dual .006 Mfd. 400 V.	W	33984	Escutcheon Gasket .....
38	W-25435	.003 Mfd. 400 Volt .....		D-28	Escutcheon Screws .....
39	W-24049-B	.1 Mfd. 200 Volt .....	W	33994	Tuning Knob .....
40	W-29910-A	.25 Mfd. 200 Volt .....	W	33995	Vernier Knob .....
41	W-30321-A	1.0 Mfd. 160 Volt .....	W	31585	V. C. & T. C. Knob .....
42	W-33990	Dual 8 Mfd. Elect. ....	W	33991	Band Change Knob .....
43	W-27216	.05 Mfd. 200 Volt .....	G6	23300	"A" Batt. Resistor .....

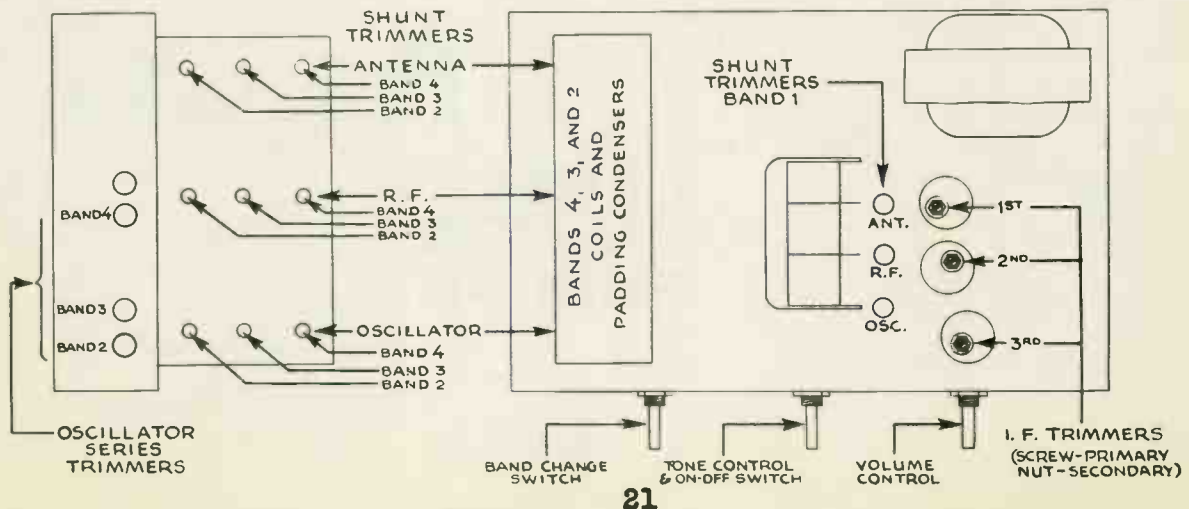
# CHASSIS 8H1

Type	Where Used	E <sub>f</sub>	E <sub>p</sub>	E <sub>g</sub>	E <sub>k</sub>	E <sub>sg</sub>	E <sub>px</sub>	E <sub>qx</sub>
6D6	R.F.	6.3	250	0	3	100	—	—
6A7	Osc.-Mod.	6.3	250	0	3	100	220	0 to -10
6D6	1st I. F.	6.3	250	0	7-21	100	—	—
6B7	2nd I. F. and Diode	6.3	250	0	3	100	—	—
6F7	A.F. and Phase Inv.	6.3	140	0	4	35	70	0
42	Output	6.3	240	0	16	250	—	—
80	Rectifier	5.0	—	—	350	—	—	—



END VIEW

TOP VIEW



# M O D E L 8 H 1

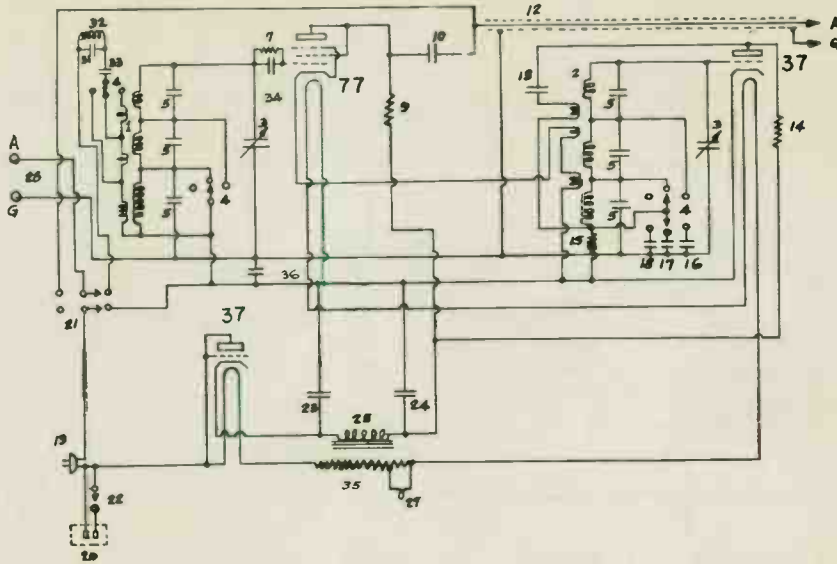
**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

\*Figures in 2nd last column refer to parts shown in wiring diagram of Model 8H1

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G3-32000	Antenna Coil (Broadcast) ..	1				
1	G4-32000	Ant. Coll (1500-4000 Kc.) ....	2				
1	G5-32000	Ant. Coll (4000-10000 Kc.) ..	3				
1	G6-32000	Ant. Coll (10000-24000 Kc.) ..	4				
1	G2-32001	Inter. Coll (Broadcast) .....	5				
1	G8-32001	Inter. Coll (1500-4000 Kc.) ..	6	1	W26194B	12. Mfd. 475 Volt .....	67
1	G3-32001	Inter. Coll (4000-10000 Kc.) ..	7	1	W29097C	8.-8.-8. Mfd. 450-450-250	68-69
1	G4-32001	Inter. Coll 10000-24000 Kc.) ..	8			Volts .....	70
1	G2-32002	Osc. Coil (Broadcast) .....	9	1	W32258	8. Mfd. 300 Volts .....	90
1	G3-32002	Osc. Coil (1500-4000 Kc.) .....	10	1	W30321	1. Mfd. 160 Volts .....	61
1	G4-32002	Osc. Coil (4000-10000 Kc.) ..	11	2	W32278	0.001 Mfd. ....	48-49
1	G5-32002	Osc. Coil (10000-24000 Kc.) ..	12	1	W30741	0.00025 Mfd. ....	50
6	W26891	Insulating Washer .....	1-2-5-6	1	W32226	0.0005 Mfd. ....	51
			0-10	1	W31937	0.0001 Mfd .....	52
6	W21541C	Retaining Ring .....	1-2-5-6	2	W32379	0.02 Mfd. 200 Volt .....	53-54
			0-10	5	W28621	0.02 Mfd. 200 Volt .....	55-56
6	W30026A	Retaining Ring .....	3-4-7-8				57-58
			11-12	1	W23635	0.006 Mfd. ....	59
3	W25200	Coil Socket .....		2	W23101A	0.01 Mfd. 400 Volt .....	62
3	W30802	Coil Shield .....		1	W23615	0.05 Mfd. 400 Volt .....	63-67
1	G1-32261	Coil Shield Shelf .....	1 to 12	1	W31052	0.05-0.004 Mfd. 400-400 Volt	64
			Coils	1	W32279	0.00085 Mfd. ....	65-66
1	C-32720A	Coil Shelf Cover .....	1 to 12	1	W32332A	0.000791 Mfd. ....	74
			Coils	1	W30270	0.001 Mfd. ....	75
1	G12-32004	1st Tuned I. F. Trans. ....	18	1	W23142	0.02 Mfd. 400 Volt .....	92
1	G5-32004	2nd Tuned I. F. Trans. ....	19				94
1	G6-32004	3rd Tuned I. F. Trans. ....	20				
	G7-33009	Parallel Padding Condenser	15	1	31094	4500 Ohms .....	23
	G5-33009	Parallel Padding Condenser	17	4	21455	300000 Ohms .....	24-25
	G17-33009	Parallel Padding Condenser	100				26-27
	G2-33008	Parallel Padding Condenser	99	3	23785	500000 Ohms .....	28-38
	G11-33009	Parallel Padding Condenser	21				33
	G6-33009	Parallel Padding Condenser	16	1	21875	100000 Ohms .....	29
	G2-33006	Padding Condenser .....	72-73	2	24814	7000 Ohms .....	30-31
	G14-33006	Padding Condenser .....	98	2	21237A	60000 Ohms .....	31-35
	B32190B	Band Change Switch .....	14	2	26577	3 Megohms .....	32-33
1	G18-32002	Tuning Condenser Gang .....	13	1	21576	10000 Ohms .....	34
1	G15-32086	Dial Drive Assem. ....		2	W30127	450 Ohms (Flexible) .....	36-42
1	W32188B	Dial Hand .....		1	23408	150000 Ohms .....	37
1	B76	4/36x 1/4 Blnd. Hd. Mach. Sc.		2	W25037	275 Ohms (Flex.) .....	30-40
2	G4-27134	Light Bracket Assem. ....	89	2	W22514	750 Ohms (Flex.) .....	41-96
2	W32128A	Light Diffuser .....		1	W22873	220 Ohms .....	43
2	W32244	Diffuser Retainer .....		1	W32301	15000-15000 Ohms .....	44-45
1	W33378	Level Control (Volume) .....	46	1	W32337	10-10 Ohms .....	60
1	W32043	Tone Control & Line Switch	47	1	22831	15000 Ohms .....	95
1	G16-26719	Ant. Gnd. Terminal .....	76				
1	B21491C	A. C. Cord & Plug .....	82				
1	W33072	Socket Cushion .....	84				
2	W33071	Washer .....	81	1	G1-32067	Crank Assem. ....	
1	W33073	Tube Shield Base .....	84	2	W32352	Knob (Black, for V. Con-	
2	W28632A	Tube Shield .....	84-85	1	W32643	trol & T. Control) .....	
2	B26000D	Tube Shield .....	83	1	W32643	Knob (Black, for Band	
3	W27081A	Tube Shield Base .....	83-85	2	W31585B	Change Switch) .....	
2	W32744	Socket Insulator .....	86-87	1	W33954	Knob (Brown, for V. Con-	
1	G37-25669	Power Trans. 60 Cy. 110 V		1	W33994	trol & T. Control) .....	
				1	W33995	Knob (Brown, for Band	
				1	B33708	Change Switch) .....	
				1	W33965	Knob (Brown, for Tuning	
				1	B32125B	Shaft) .....	
				1	W32127A	Knob (Brown, for Vernier	
				1	W32126A	Tuning) .....	
				1		Esc. & Window Assem. ....	
				1		Escutcheon Gasket .....	
				1		Escutcheon .....	
				1		Dial Glass .....	
				1		Glass Retainer .....	

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

# Model 10



## PARTS LIST

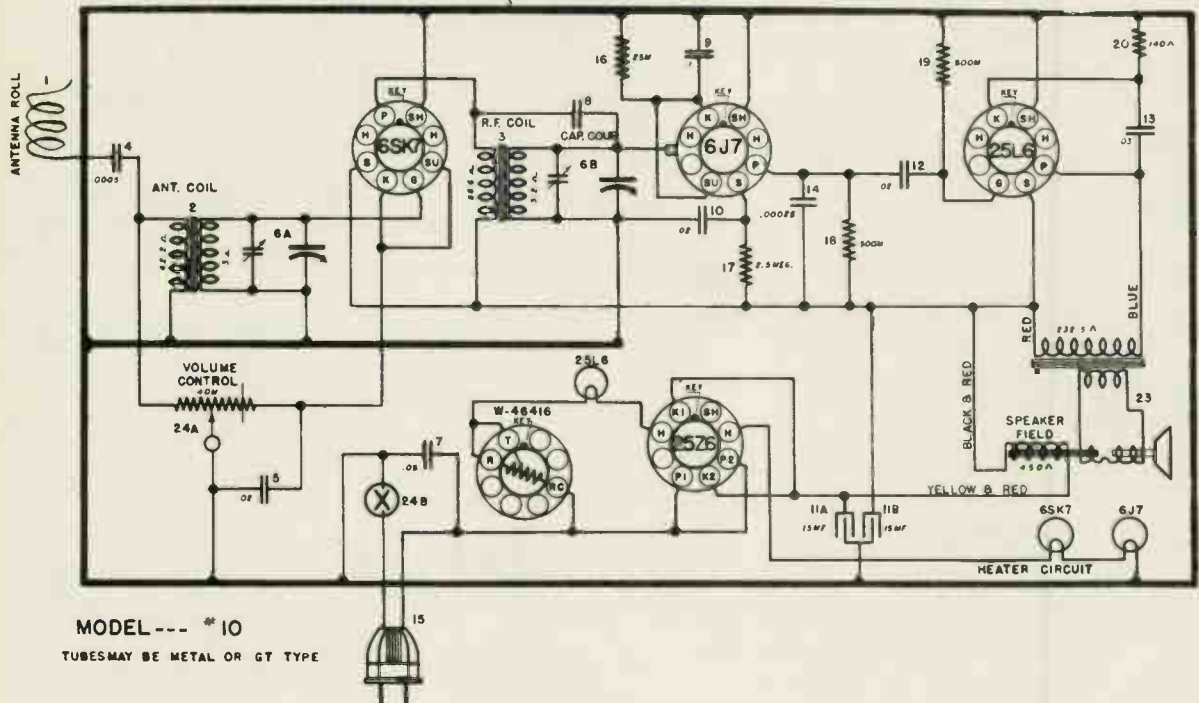
Item No.	Part No.	Description
1	G2-30173	Ant. Coil
2	G1-30173	Osc. Coil
3	B-30079	Var. Cond.
4	B-31092	Switch
5	G2-29699	Trimmer Cond.
7	26577	3 Meg. Resis.
9	21875	100,000 ohm Resis.
10-13	W-28619	.006 Cond's. (200 v.)
12	LW-30113	Shielded Lead
14	21876	10,000 ohm Resis.
15	21237-A	60,000 ohm Resis.
16-17	G1-28884	Padding Cond's.
18	W-30180	.0012 Cond. (200 v.)
19	W-27885-A	Cord & Plug
20	G1-30078	a.c.Receptacle
21-22	W-30081	Switches
23-24	W-27676	4-4 mfd. Cond's.
25	G6-28168	Filter Choke
27	W-4099-A	6v.Dial Lamp
31	G6-29699	Trimmer Cond.
32	G3-24234	R.F. Choke
33	W-28619	.006 Cond. (200 v.)
34	W-7847-A	.0001 Cond. (200 v.)
35	W-28864-B	285 ohm Resis.
36	W-30488	.02 Cond. (400 v.)

CHASSIS MODEL 10

SOCKET VOLTAGES TAKEN @ 117.5 VOLT LINE (A. C.)

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6SK7	R. F. Amplifier	GND.	H	3.0	GRID	3.0	—	H	91
6J7	Detector	GND.	H	20	8	2.0	—	H	2.0
25L6	Output	GND.	H	82	91	GRID	N.C.	H	5.8
25Z6	Rectifier	H	A.C.	120	A.C.	—	—	H	120
W-46416	Ballast Resistor—165 Ohms (Cold) Between No. 3 and No. 7 Pins with No. 7 and No. 8 Pins Tied Together.								

Power Consumption @ 117.5 Volts Line—Approximately 43 Watts.  
 D. C. Drop Across Speaker Field—29 Volts.  
 Maximum Power Output Approximately 2.0 Watts.



MODEL --- \* 10

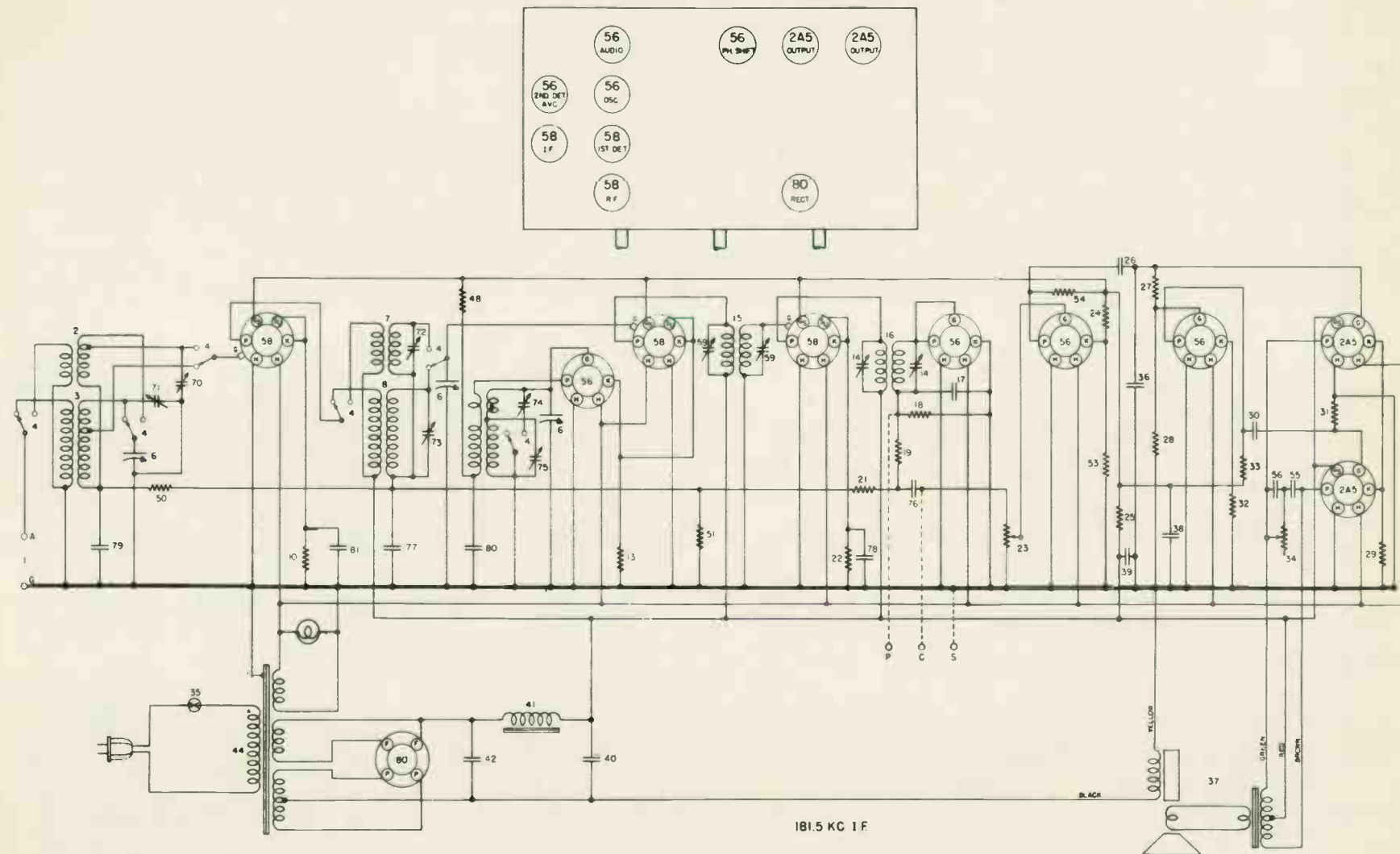
TUBES MAY BE METAL OR GT TYPE

PARTS LIST — MODEL 10

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G182-34403	Antenna Roll (20 Feet)	G17	43564	Pulley and Hub Assy. (On Gang.)
2	G229-32000	Antenna Coil		23877	No. 8-32 x 1/8" Set Screw—Pulley Mtg.
3	G111-32001	R-F. Coil		49666	Drive Shaft
4	G3	Coil Insulator		49665	Bearing—Drive Shaft—Riveted to Chassis
5	45780	Condenser, .0005 Mf. Mica		28012	Lock Spring—Drive Shaft
6	G78-32001	Condenser—Variable Tuning—Gang	G18	41582	Drive Cord (27")
7	45782	Condenser, .05 Mf. 120 V. (A. C.)		44989	Spring—Drive Cord Tension
8	G4	Condenser—Twisted Wire Coupling	G26	41582	Guide Cord—Pointer (8")
9	50105	Condenser, .1 Mf. 160 V.		46848	Spring—Guide Cord Tension
10	45780	Condenser, .02 Mf. 160 V.		47582	Pointer—Dial Hand (FS-77)
11	49664	Condenser—Dual Electrolytic A—15 Mf. 140 V. B—15 Mf. 120 V.		38422	Shield—Gang Condenser
12	45780	Condenser, .02 Mf. 160 V.		47623	Bracket—Gang Condenser Mtg.
13	50065	Condenser, .03 Mf. 160 V.		49674	Socket—4 Prong—No Marking
14	None			49693	Insulator—Socket Mtg.
15	45784	Power Cord and Plug		46416	Ballast Tube (K55B)
16	47577	Lock Plate—Power Cord	AA		Cabinet—Brown (Model 5310AA)
17	40643	Resistor, 25,000 Ohms 1/4 W.		47598	Back—Cabinet
18	49690	Resistor, 2.5 Megohms 1/4 W.		48758	Trimount Studs—Back Mtg. (2) (FS-18)
19	36322	Resistor, 500,000 Ohms 1/4 W.	B	130	Screw—Back Mtg. (FS-18)
20	36322	Resistor, 500,000 Ohms 1/4 W.		47572	Shipping Carton (Single)
21	None			48078	Shipping Carton (4 Unit)
22	G1	Speaker		47603	Knob—Volume Control and Tuning
23	49675	Power Switch and Volume Control (40,000 Ohms)		41742	Spring—Knob Inert
24	48320	Glass Dial Face		49683	Instruction Booklet
	47833	Speed Nut—Dial Glass Mtg.			
	46921	Dial Back Face (Metal Bracket)			
	MG6-49670				

The general replacement volume control line handled by Crosley distributors is complete, of excellent quality and properly priced. The factory will be happy to furnish information regarding this material.

25



MODEL 10P3



PARTS LIST - MODEL 10 P 3

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description
1	LW-20264	Ant. Gnd. Terminal
2	G16-32000	Ant. Trans. (H.F.)
3	G15-32000	Ant. Trans. (L.F.)
4	B-30569-D	6 P.D.T. Switch
6	G17-33002	Variable Cond.
7	G8-32001	R.F. Trans. (H.F.)
8	G9-32001	R.F. Trans. (L.F.)
9	G12-32002	Osc. Trans.
10	W-25937	275 ohms.
13	W-21965	375 ohms
14	G4-33006	I.F. Tuning Cond.
15	G5-32003	1st I.F. Trans. 181.5 kc.
16	G1-32003	2nd I.F. Trans. 181.5 kc.
17	W-27932	0.0001 mfd. 200 v.
18	21454	1 Meg.
19	21455	300,000 ohms
21	26577	3 Meg.
22	W-28589	350 ohms
23	W-25666-B	Level Control
24-25	W-31361	11,000 & 7,000 ohms
26	W-23615	0.05 mfd. 400 v.
27	21455	300,000 ohms
28	21453	40,000 ohms
29	W-22873	220 ohms
30	W-23615	0.05 mfd. 400 v.
31	21455	300,000 ohms
32	31093	2,700 ohms
33	21237-A	60,000 ohms
34-35	W-25594-B	Tone Control & Switch
36	W-26571	0.005 mfd. 200 v.
37	48C	Speaker Assy.
38-39-40	B-30059-C	8-8-8 mfd.
41	G1-24628	Filter Choke
42	W-26194-B	12 mfd. 475 v.
44	G33-25669	Power Trans. 60 cycle
48	4921C	10,000 ohms
50	21455	300,000 ohms
51	26578	5 Meg.
52	W-31342	Speaker Cable
53	W-25937	275 ohms Flex.
54	23403	150,000 ohms
55-56	W-31052	0.05-0.004 mfd.
59	G3-33006	I.F. Tuning Cond.
70-71	G1-33009	Trimmer Cond.
72-73	G1-33009	Trimmer Cond.
74-75	G1-33009	Trimmer Cond.
76	W-28619	0.006 mfd., 200 v.
77-78	W-28622	0.1 mfd. 200 v.
79-80-81	W-28621	0.02 mfd. 200 v.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 7, located in top of 2nd I-F assy., (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 6, located on top of 1st I-F assy., (Fig. 2) for maximum output.

**Aligning the R-F Amplifier.**

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal

is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

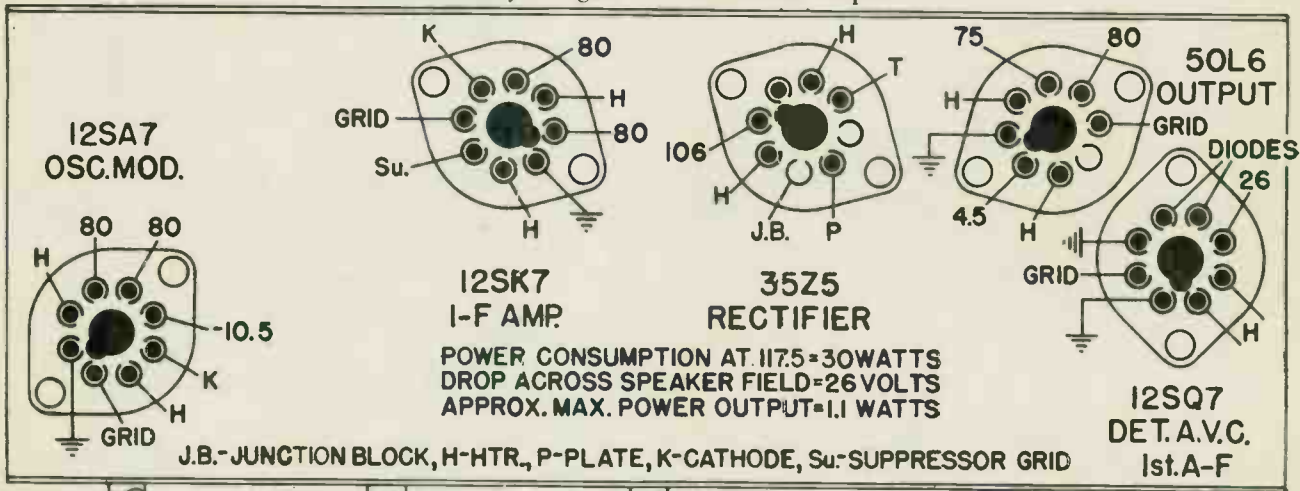
NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the loop mounting bracket (Fig. 2) and consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 45).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER.

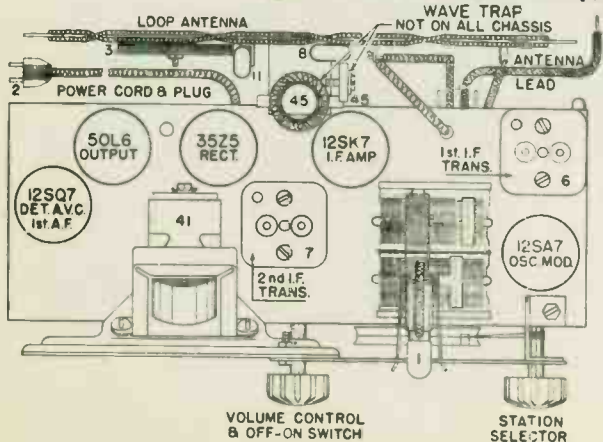


Fig. 2—Top View Model 11 Chassis

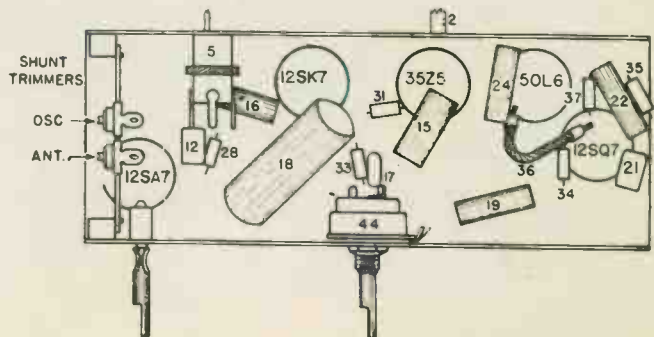
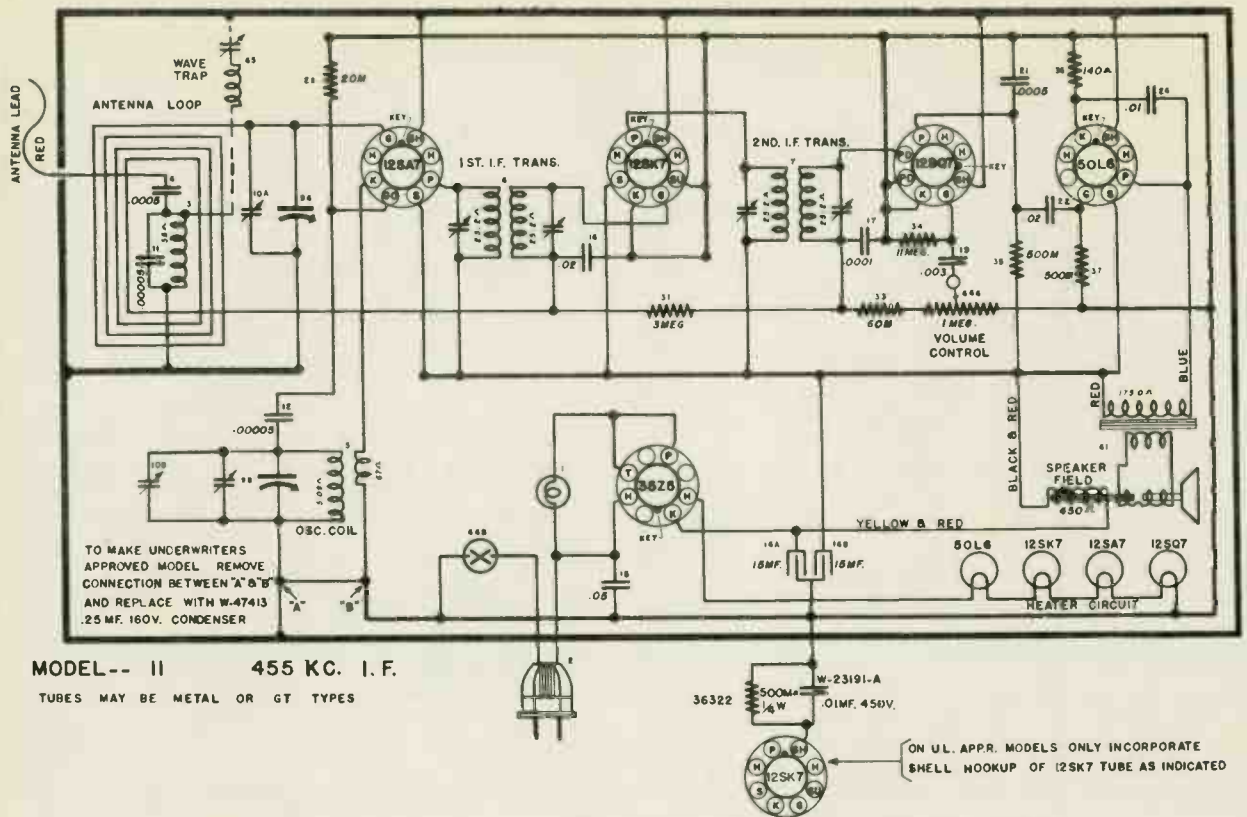


Fig. 3—Bottom View Model 11 Chassis

MODELS 11, J11



Figures in first column refer to parts in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	45	G193—32004	Wave Trap (455 Kc.)
2	G1 —49637	Socket—Dial Light		—49766	Metal Dial Face
3	G1 —32008	Power Cord and Plug		—49727	Bracket—Dial Face Mtg. (FS-8)
	—49739	Loop Antenna		—49780	Dial Pointer
	—20989	Bracket—Loop Mtg. (FS-58)		—49665	Bearing—Drive Shaft—Riveted to Chassis
	—23880	Fibre Washer—Loop Mtg.		—49741	Drive Shaft
4	None	Thumb Screw—Loop Mtg. (FS-58)		—28032	Spring—Drive Shaft Retaining
5	None			G11 —41582	Drive Cord
6	G229—32002	Oscillator Coil		—15752	Spring—Drive Cord Tension
7	G240—32004	Socket—Dial Light		—49770	Trimount Studs—Dial Mtg. (2) (FS-58)
8	G241—32004	1st I-F. Transformer		—48742	Screws—Dial Mtg. (2) (FS-58)
9	G5 —34002	2nd I-F. Transformer		—49832	Dial Lens—AB and AH Cabinet
10	—49737	Condenser—.0005 Mf. Mica		—130078	Lens and Escutcheon—AC Cabinet
11	—49723	Condenser—2 Section Variable Tuning		—49770	Trimount Studs—Dial Lens Mtg.—AB and AC Cabinet (FS-58)
12	G5 —34002	Condenser—.00005 Mf. Mica		AH —130098	Cabinet—Ivory (Bakelite)
13	G5 —34002	Condenser—.00005 Mf. Mica		AB —130098	Back—AH Cabinet
14	None			AB —130097	Cabinet—Mottled Brown (Bakelite)
15	—43782	Condenser, .05 Mf. 120 V. (A. C.)		AC —130173	Back—AB Cabinet
16	—43780	Condenser, .02 Mf. 160 V.		—48758	Cabinet—Wood
17	G2 —34002	Condenser, .0001 Mf. Mica		—48758	Back—AC Cabinet
18	—49664	Condenser—Dual Electrolytic		—48758	Trimount Stud—AB Back Mtg. (4)
		A—15 Mf. 140 V.		—48758	Trimount Stud—AH Back Mtg. (4) (FS-58)
		B—15 Mf. 120 V.		S —80	Screw—AC Back Mtg. (10) (FS-18)
19	—45810	Condenser, .006 Mf. 160 V.		—49971	Shipping Carton—AB and AH Cabinet
20	None			—130021	Shipping Carton—AC Cabinet
21	G3 —34002	Condenser, .0005 Mf. Mica		—130307	Felt Pad—Chassis Screw Cover
22	—45780	Condenser, .02 Mf. 160 V.		—48684	Flat Washer—Chassis Mtg. (AC Cabinet) (FS-58)
23	None			—45020	Flat Washer—Chassis Mtg. (AB and AH Cabinet)
24	—23191	Condenser, .01 Mf. 400 V.		—48900	Screw—Chassis Mtg. (FS-58)
25	None			—130255	Knob—AH Cabinet (2) (Black)
26	None			—46953	Knob—AB and AC Cabinet (2) (Brown)
27	None			—41742	Spring (Knob Insert)
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—49878	Hole Plug (2 Req.) J-11 (FS-58)
29	None			—130126	Hole Cover (1 Req.) J-11
30	None			—130127	Switch Hole Cover—J-11
31	—36688	Resistor, 3 Megohms 1/4 W.		—130130	Bottom Cover (Insulator) J-11
32	None			MG17—130115	Bottom Cover Assy.—J-11
33	—35928	Resistor, 60,000 Ohms 1/4 W.		—47413	Condenser, .25 Mf. 160 V.—Model J-11
34	—48683	Resistor, 11 Megohms 1/4 W.		—23191	Condenser, .01 Mf. 400 V.—Model J-11
35	—36322	Resistor, 500,000 Ohms 1/4 W.		—36322	Resistor, 500,000 Ohms—Model J-11
36	—47512	Resistor, 140 Ohms 1/4 W.			
37	—36322	Resistor, 500,000 Ohms 1/4 W.			
38	None				
39	None				
40	None				
41	G1 —49698	Speaker and Transformer—Model 11			
42	G3 —49698	Speaker and Transformer—Model J-11			
43	None				
44	—49774	Volume Control and Switch (1 Meg.)			

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

**Aligning the R-F Amplifier.**

(a) Pre-align the trimmer on the "OSC" section of

the gang condenser 1/2 turn from the closed position. Check pointer travel, must start on index line with gang closed.

(b) Using a .0001 mf. (100 mmf.) condenser as dummy antenna, connected to antenna lead (Blue or Red), open gang condenser all the way (minimum position), volume control to maximum. Depress manual push button.

(c) Set signal generator to 1650 kc.

(d) Adjust "OSC" shunt trimmer for maximum output, rear trimmer on right end of chassis.

(e) Set signal generator to 1400 kc.

(f) Tune in 1400 kc. generator signal with manual tuning knob.

(g) Adjust "ANT" shunt trimmer for maximum output (front trimmer on right end of chassis).

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

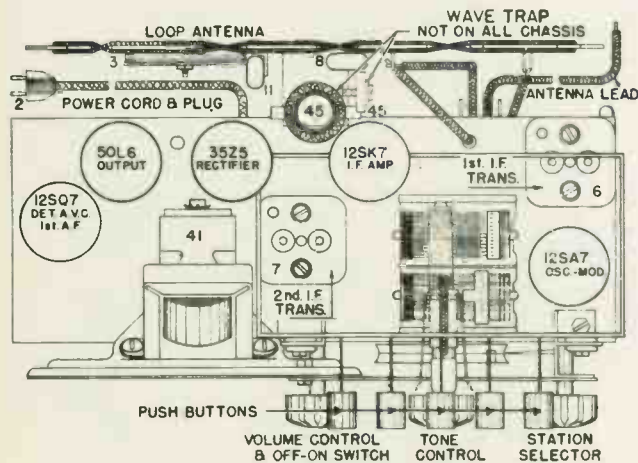


Fig. 2—Top View Model 12, J-12

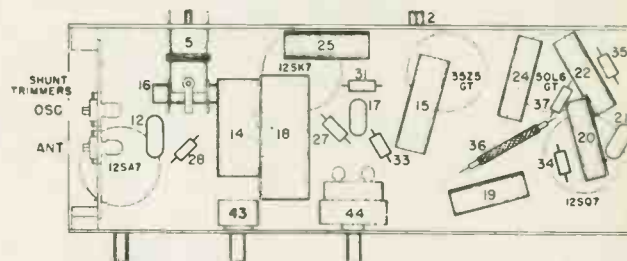
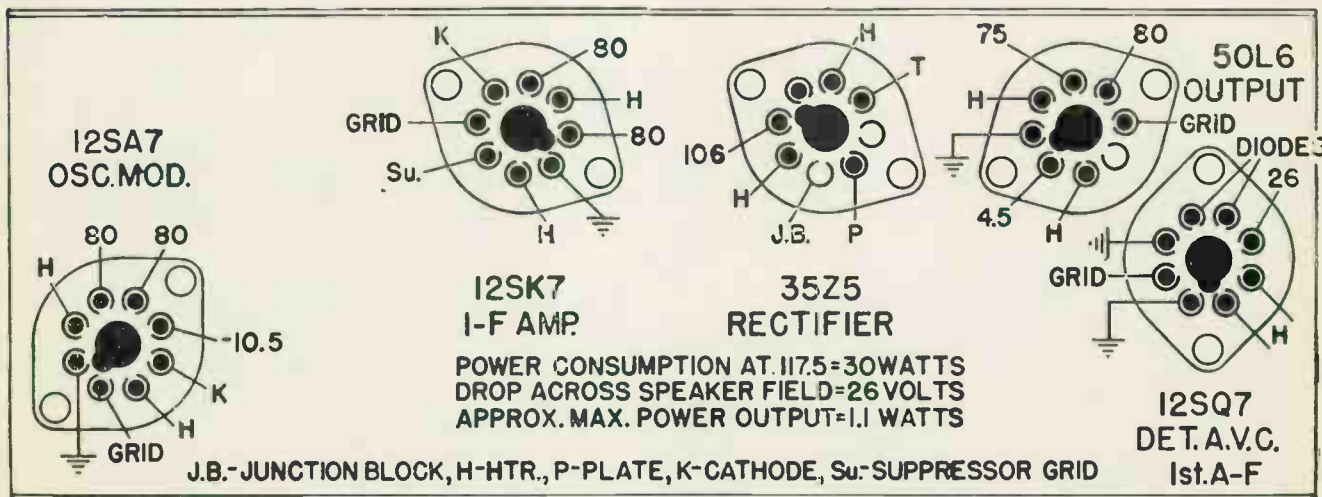
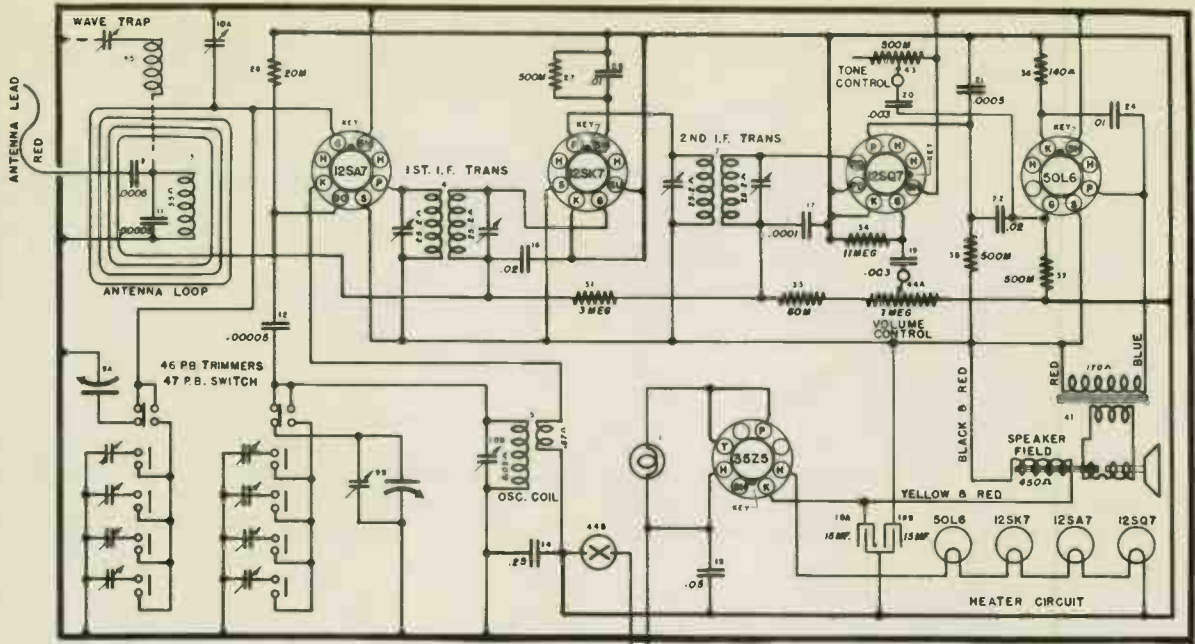


Fig. 3—Bottom View Model 12, J-12



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER.



MODEL -- 12, J12 455 KC. I.F.  
TUBES MAY BE METAL OR GT TYPES

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt		—49732A	Push Button "Osc." Padder (800-1,400 Kc.)
	G1 —49637	Socket Assy.—Dial Light		—49732A	Push Button "Ant." Padder (1,000-1,650 Kc.)
2	—49775	Power Cord and Plug		—49732A	Push Button "Osc." Padder (1,000-1,650 Kc.)
	—45738	Insulating Lock Plate—Power Cord		—49769	Push Button Padder Mtg. Strap
3	G1 —49798	Loop Antenna		—49771A	Push Button Bracket—Switch Mtg. (FS-8)
	—49793	Bracket—Loop Mtg.		—49731	Push Button Rear Support Bracket (FS-8)
	—49489	Filter Washer—Loop Mtg.		—49728	Push Button—L. H. Support Bracket (Front) (FS-8)
	—23880	Thumb Screw—Loop Mtg. (FS-58)		—49727A	Push Button—R. H. Support Bracket (Front) (FS-8)
4	None			—49899	Rubber Grommet—P. B. Mtg. (3 Req.)
5	G229—32002	Oscillator Coil		—46160	Headed Bushing—P. B. Mtg. (3 Req.)
6	G210—32004	1st I-F. Assy.		—20801	Shakeproof Washer—P. B. Mtg. (2 Req.)
7	G241—32004	2nd I-F. Assy.		—6197	No. 8—32 x 1/4" Screw—Rear Mtg. to P. B. Assy. (FS-58)
8	G3 —34002	Condenser, .0005 Mf. Mica		—49766	Dial Face
9	—103132	Condenser—Variable Tuning Gang		—49780	Pointer—Dial Hand
10	MG3—49708	Condenser—Dual Shunt Padder Assy		—49770	Trimount Stud—Dial Face Mtg. (FS-58)
11	G5 —34002	Condenser, .00005 Mf. Mica		—49742	No. 6—32 x 1/4" Screw—Dial Face Mtg. (FS-58)
12	G5 —34002	Condenser, .00005 Mf. Mica		—49665	Bearing—Drive Shaft (Riveted to Chassis)
13	None			—49741	Drive Shaft
14	—47113	Condenser, 25 Mf. 160 V.		—28032	Spring—Drive Shaft Retaining
15	—45782	Condenser, .05 Mf. 120 V.		G11—41582	Drive Cord
16	—45780	Condenser, .02 Mf. 160 V.		—51752	Spring—Drive Cord Tension
17	G2 —34002	Condenser, .0001 Mf. Mica		AD	Cabinet—Wood Table
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 130 V.		S —8	Cabinet Back—AD Cabinet Wood Screws—Back Mtg. (10 Req.) (FS-18)
19	—50084	Condenser, .003 Mf. 160 V.		—130307	Felt Pad (Mtg. Screw Cover)
20	—50084	Condenser, .003 Mf. 160 V.		—130301	Shipping Carton
21	G3 —34002	Condenser, .0005 Mf. Mica		—46953	Knob—Tuning and Volume Control
22	—45780	Condenser, .02 Mf. 160 V.		—41742	Spring—Knob Insert
23	None			—49940	Push Button only (5 Req.)
24	—23191	Condenser, .01 Mf. 400 V.		—49870	Station Call Letter Tab Set
25	—23191	Condenser, .01 Mf. 400 V.		—130017	Light Deflector Felt
26	None			—39917	Escutcheon—Call Letter Tab
27	—36322	Resistor, 500,000 Ohms 1/2 W.		—130078	Escutcheon and Dial Lens Complete
28	—36760	Resistor, 20,000 Ohms 1/2 W.		—48900	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Req.)
29	None			—45020	Flat Washer—Chassis Mtg. (3 Req.)
30	None			—48947A	Instruct. Book
31	—36688	Resistor, 3 Megohms 1/4 W.		MG31—49799	Instructions, Call Tabs, Etc., Envelope Assy.
32	None			—49878	Hole Plug (1 Req.) J-12 only (FS-58)
33	—35928	Resistor, 60,000 Ohms 1/4 W.		—130126	Hole Cover (1 Req.) J-12 only
34	—48693	Resistor, 11 Megohms 1/2 W.		—130127	Switch Hole Cover (1 Req.) J-12 only
35	—36322	Resistor, 500,000 Ohms 1/2 W.		—130210	1/4" Hole Plug (2 Req.) J-12 only (FS-58)
36	—47512	Resistor, 140 Ohms 1/2 W.		MG17—130115	Bottom Assy.—J-12 only
37	—36322	Resistor, 500,000 Ohms 1/2 W.		—130130	Insulator—Bottom Cover
38	None			—49770	Trimount Stud—Bottom Cover (7 Req.) (FS-58)
39	None				
40	None				
41	G1 —49698	Speaker			
	G3 —49698	Speaker—J Model only			
42	None				
43	—49779	Tone Control (1/2 Meg.)			
44	—49774	Volume Control (1 Meg.) and Switch			
45	G193—34002	Wave Trap			
	—45979	Wave Trap Trimmer Condenser			
46	MG6—49709	Push Button Condenser Assy. only			
	—49764	Push Button Switch Assy. only			
47	MG6—49709	Push Button Condenser & Switch Assy.			
	—49735A	Push Button "Ant." Padder (540-1,000 Kc.)			
	—49734A	Push Button "Osc." Padder (540-1,000 Kc.)			
	—49734A	Push Button "Ant." Padder (600-1,150 Kc.)			
	—49733	Push Button "Osc." Padder (600-1,150 Kc.)			
	—49733	Push Button "Ant." Padder (800-1,400 Kc.)			

**1.—Aligning I-F To 455 Kc.**

- (a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.
- (b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum. On models 14 and J-14 turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 3) for maximum output.
- (e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 3) for maximum output.
- (f) Repeat (d) and (e) for more accurate adjustments.

**2.—Aligning R-F Amplifier.**

- The short wave band 6-15 mc. must be aligned before the Broadcast Band 540-1600 kc.
- (a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

- (b) Set signal generator to 15.0 megacycles.
- (c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.
- (d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).
- (e) Repeat (c) and (d) for more accurate adjustments.
- (f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.
- (g) Set the signal generator to 1650 kilocycles.
- (h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.
- (i) Set signal generator to 1400 kilocycles.
- (j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0001 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 on the dial, and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM

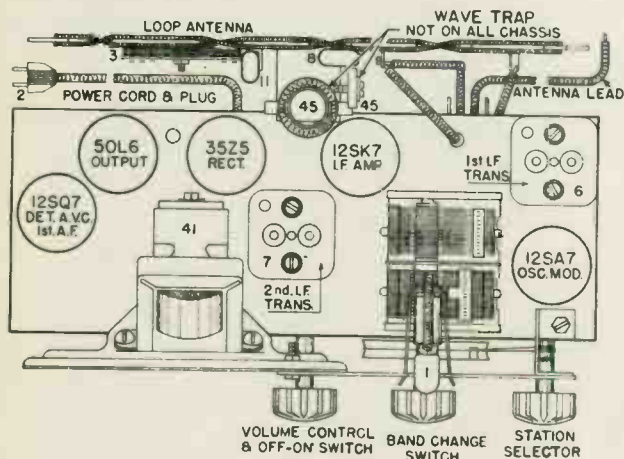


Fig. 3—Top View Model 13

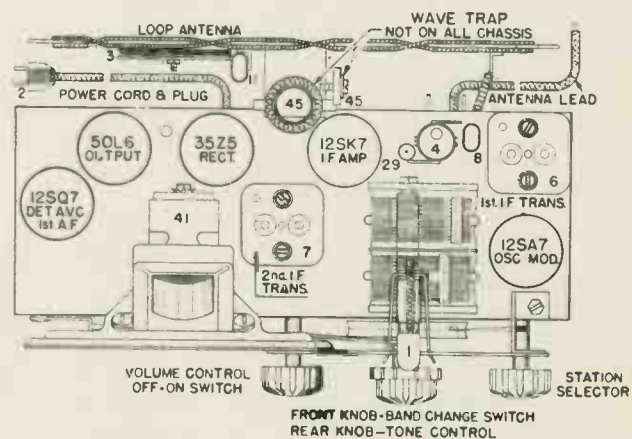
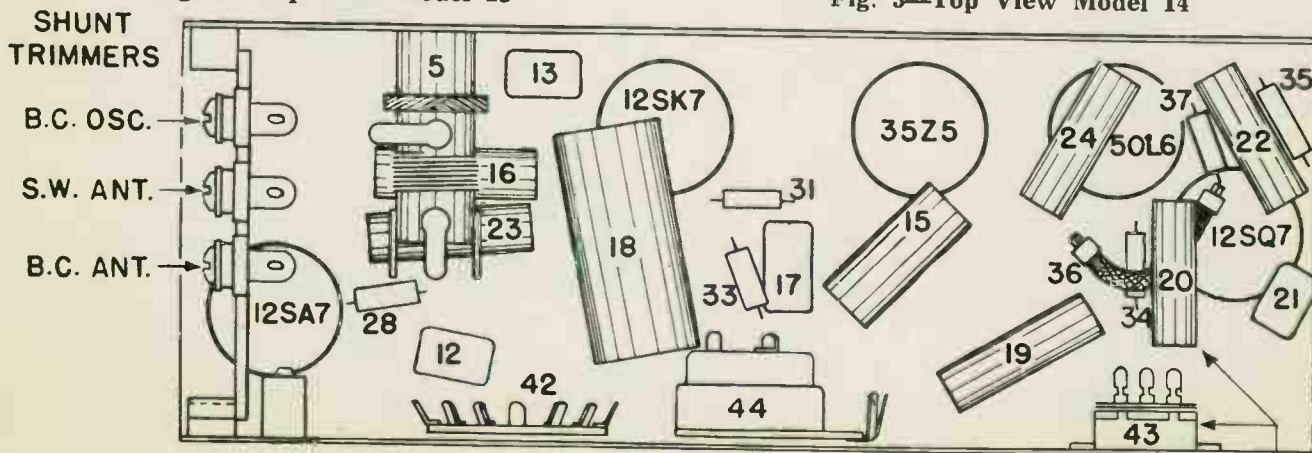
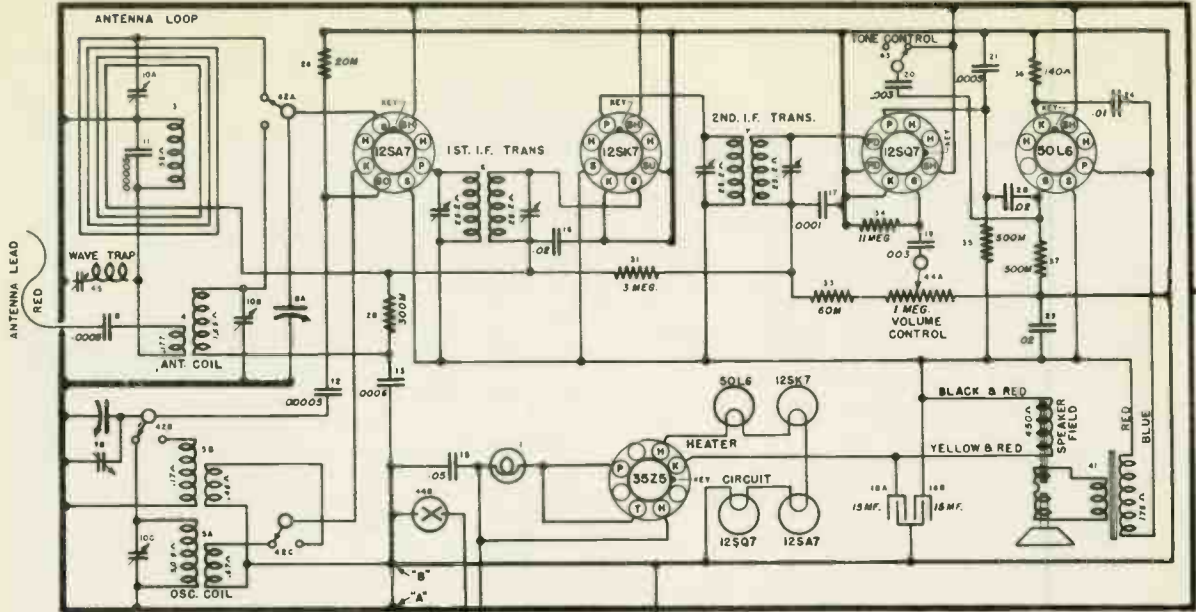


Fig. 3—Top View Model 14



MODELS 13, 14, J13, J14

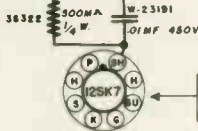


MODEL -- 13 - 8 14, J13 & J14

TUBES MAY BE METAL OR QT TYPES

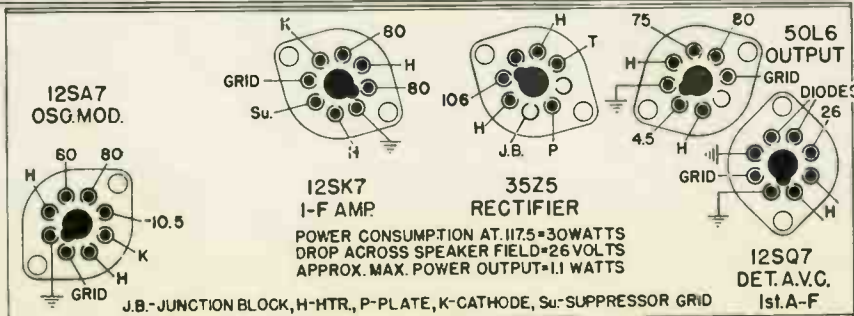
455 KC. I.F.

TO MAKE UNDERWRITERS APPROVED MODELS REMOVE CONNECTION BETWEEN "A" & "B" AND REPLACE WITH .25MF. 160V. CONDENSER W-47413



ON ALL U.L. APPR. MODELS ONLY INCORPORATE SHELL HOOKUP ON 12SK7 TUBE AS INDICATED

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt		MG8—19711	Toggle Arm—On B.S. Shaft (14 and J-14)
2	—49636	Socket Assy.—Dial Light		—19829	Spring—Toggle Arm Retaining
3	—49775	Power Cord and P ug		—18200	Trimount Stud—Link Guide (14 and J-14) (FS-58)
4	G1—32008	Loop Antenna		—19770	Trimount Stud—Link and Arm Connector (14 and J-14) (FS-58)
5	G221—32000	Antenna Coil—6-15 Mc.		—19774	Volume Control (1 Meg.) and Line Sw.
	G230—32002	Dual Oscillator Coil		—17113	Wave Trap
		A—550 to 1.600 Kc. Coil	44	G193—32001	Condenser—.25 Mf. 160 V.—Models J-13 and J-14
		B—6.0 to 15.0 Mc. Coil	45	—23191	Condenser—.01 Mf. 400 V.—Models J-13 and J-14
6	G240—32004	1st I-F. Assy.—455 Kc.		—36322	Resistor, 500,000 Ohms—Models J-13 and J-14
7	G241—32004	2nd I-F. Assy.—455 Kc.		—49767	Dial Face
8	G3—34032	Condenser, .0005 Mf. Mica		—49727	Bracket—Dial Face Mtg. (R. H.)
9	—49737	Condenser—Variable Tuning Gang.		—49741	Drive Shaft (With Pulley)
10	—49722	Condenser—3 Section Shunt Trimmer		—49665	Bearing—Drive Shaft (Riveted to Chassis)
11	G5—34002	Condenser, .00005 Mf. Mica		—28032	Spring—Shaft Retaining
12	G5—34002	Condenser, .00005 Mf. Mica		G11—41582	Drive Cord
13	G21—34002	Condenser, .00060 Mf. Mica		—51572	Spring—Drive Cord Tension
14	None			—49780	Pointer—Dial Hand
15	—45782	Condenser, .05 Mf. 120 V.		—19832	Celluloid Dial Lens (Model 13 and J-13)
16	—45780	Condenser, .02 Mf. 160 V.		AE	Cabinet—Brown Bakelite—Models 13, J-13
17	G2—34002	Condenser, .0001 Mf. Mica		—130097	Back—AE Cabinet
18	—49664	Condenser—Dual Electrolytic		—48758	Trimount Stud—AE Back Mtg. (1) (FS-18)
		A—15 Mf. 140 V.		—49971	Shipping Carton—AE Cabinet
		B—15 Mf. 120 V.		—46953	Knobs—Tuning and Volume Control
19	—50084	Condenser, .0003 Mf. 160 V.		MG17—130115	Bottom Cover Assy.—Models J-13, J-14
20	—50084	Condenser, .003 Mf. 160 V.—Model 14, J-14		—130127	Switch Hole Cover—Models J-13, J-14
21	G3—34002	Condenser, .0005 Mf. Mica		—130130	Bottom Cover (Insulator) Models J-13, J-14
22	—45780	Condenser, .02 Mf. 160 V.		—49878	Inle Plug—Models J-13, J-14 (FS-58)
23	—45780	Condenser, .02 Mf. 160 V.		AG	Cabinet—Wood—Models 14, J-14
24	—21191	Condenser, .01 Mf. 400 V.		—130175	Back—AG Cabinet
25	None			S—80	Screw—AG Back Mtg. (10) (FS-18)
26	None			—130025	Shipping Carton—AG Cabinet
27	None			—46953	Knob—Tuning—Band Switch—Volume Control
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—41742	Spring—46953 Knob Insert
29	—35601	Resistor, 300,000 Ohms 1/4 W.		—49872	Knob—(Tail) Tone Control
30	None			—130078	Escutcheon and Lens—AG Cabinet
31	—36688	Resistor, 3 Megohms 1/4 W.		—49770	Trimount Stud—Bottom Cover Mtg. (7)
32	None			—49948A	Instruction Booklet—Models 13, J-13
33	—35928	Resistor, 60,000 Ohms 1/4 W.		—49949A	Instruction Booklet—Models 14, J-14
34	—48653	Resistor, 11 Megohms 1/4 W.		—49284	Short Wave Station Chart
35	—36322	Resistor, 500,000 Ohms 1/4 W.			
36	—47512	Resistor, 140 Ohms 3/4 W.			
37	—36322	Resistor, 500,000 Ohms 1/4 W.			
38	None				
39	None				
40	None				
41	G1—49689	Speaker (13 and 14)			
42	G3—49689	Speaker (J-13 and J-14)			
43	—49808	Band Change Switch			
	—46159	Tone Switch—Model 14, J-14 only			
	—49729	Toggle Link—Model 14, J-14 only			



**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

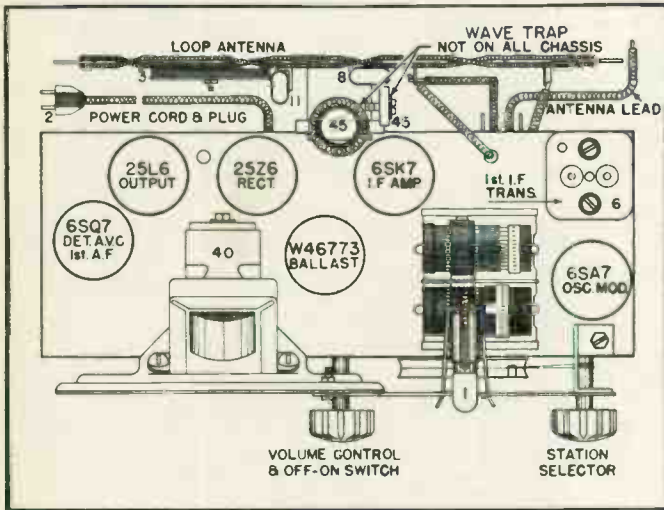
(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located through front chassis flange below the speaker (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 6, located on top of 1st I-F assy., (Fig. 2) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**



**Aligning The R-F Amplifier.**

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

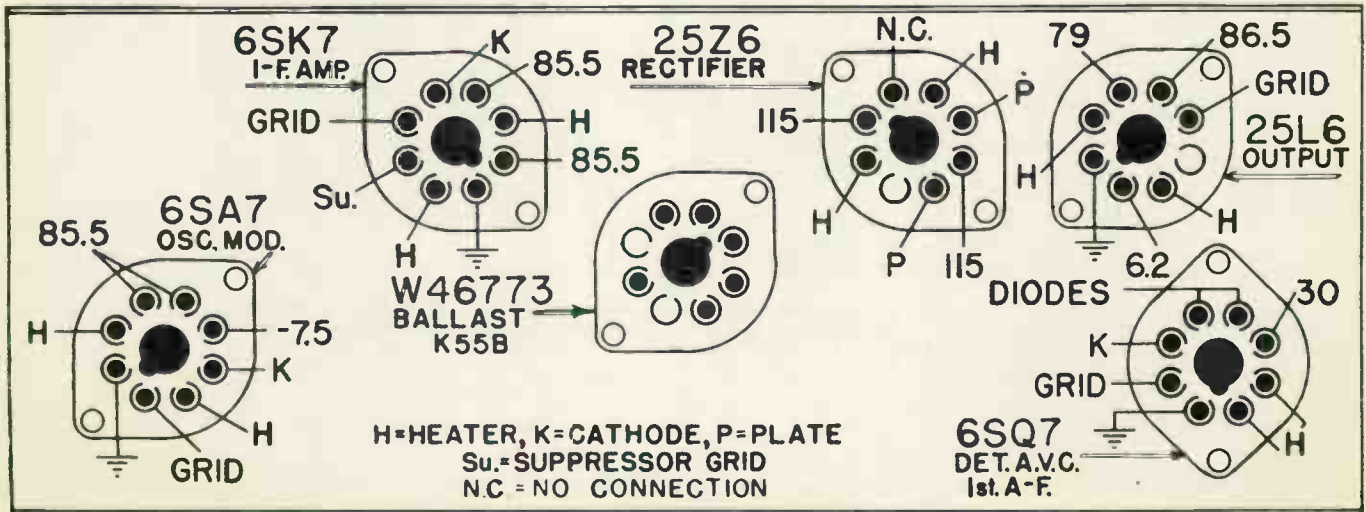
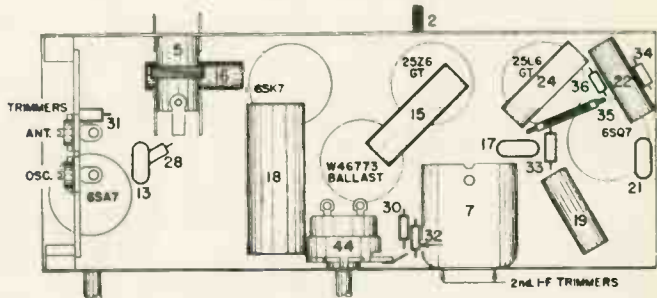
NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**WAVE TRAP**

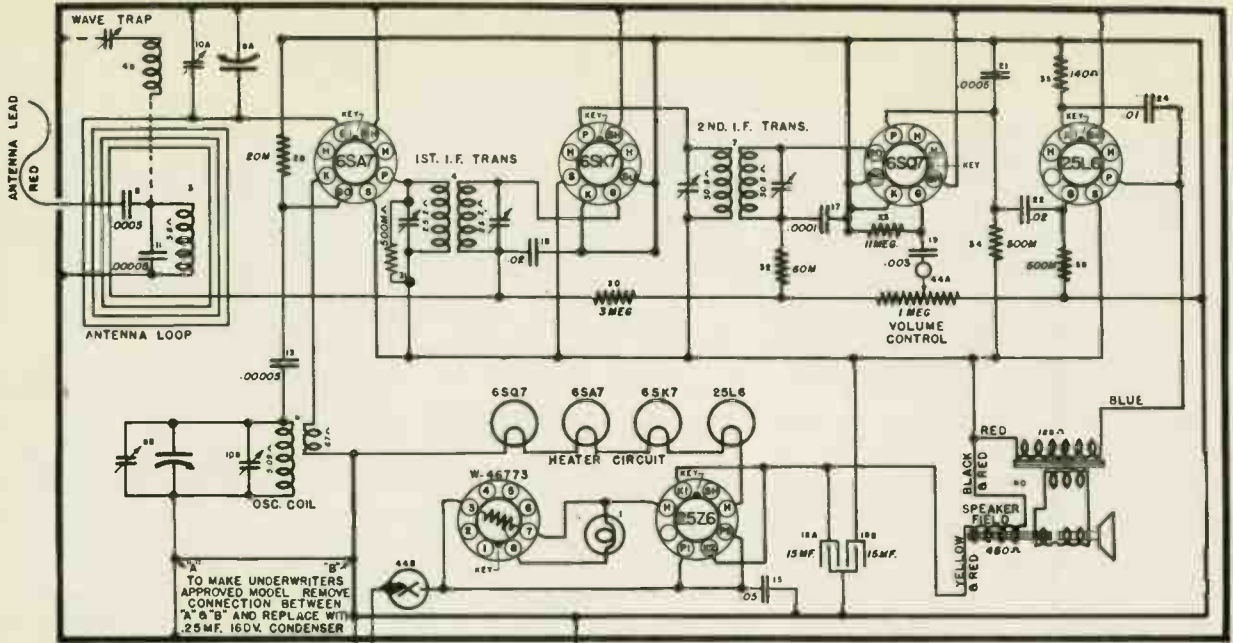
Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the loop mounting bracket (Fig. 2) and consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 45).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.





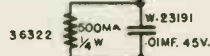
MODELS 15, J15



MODEL -- 15, J15

TUBES MAY BE METAL OR GT TYPES

455 K.C. I.F.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	43	None	Volume Control and Line Switch
2	G1—49637	Socket Assy.—Dial Light	44	—49774	Wave Trap
3	—49775	Power Cord and Plug	45	G193—32004	Variable Condenser—Wave Trap
	G1—32008	Loop Antenna		—45979	Dial Face
	—49738	Bracket—Loop Mtg.		—49766	Dial Face Mtg.
	—20989	Fibre Washer—Loop Mtg.		—49727	Bracket—R. H. Dial Face Mtg.
	—43611	No. 8—32 x 1/4" Screw—Loop Mtg. (FS-58)		—49742	No. 6—32 x 1/4" Screw—L. H. Dial Face Mtg.
4	None	Oscillator Coil		—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)
5	G229—32002	Oscillator Coil		—49780	Pointer—Dial Hand
6	G240—32004	1st I.F. Transformer Assy.		—49665	Bearing—Drive Shaft—Riveted to Chassis
7	G242—32004	2nd I.F. Transformer Assy.		—28032	Spring—Drive Shaft Retaining
8	G3—34002	Condenser, .0005 Mf. Mica		—49741	Drive Shaft
9	—49737	Condenser—2 Section Var. Tun. Gang		G11—41582	Drive Cord
10	MG3—49708	Condenser—Dual Shunt Trimmer Assy.		—51752	Spring—Drive Cord Tension
11	G5—34002	Condenser, .00005 Mf. Mica		—45580	Rubber Grommet—Cond. Gang Mtg.
12	None	Condenser, .05 Mf. 120 V. A. C.		—45620	Headed Bushing—Cond. Gang Mtg. No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)
13	G5—34002	Condenser, .00005 Mf. Mica		—130166	No. 8—32 x 1/4" Screw—Cond. Gang Mtg.
14	None	Condenser, .02 Mf. 160 V.		A1	Cabinet—(Ivory Plaston)
15	—45782	Condenser, .001 Mf. 140 V.		—130098	Back—For A1 Cabinet
16	—45780	Condenser, .001 Mf. 140 V.		—48758	Trimount Stud—Back Mtg. (FS-58)
17	G2—34002	Condenser, .001 Mf. 140 V.		—49971	Shipping Carton
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.		—130255	Knob—Volume and Tuning
19	—50084	Condenser, .003 Mf. 160 V.		—41742	Spring—Knob Insert
20	None	Condenser, .0005 Mf. Mica		—49832	Lens—Dial Window (Celluloid)
21	G3—34002	Condenser, .0005 Mf. Mica		—49770	Trimount Stud—Lens Mtg. (7 Req.)
22	—45780	Condenser, .02 Mf. 160 V.		—45020	Flat Washer (Chassis Mtg.) (FS-58)
23	None	Condenser, .01 Mf. 400 V.		—130490	No. 8—32 x 1/4" Screw (Chassis Mtg.) (FS-58)
24	—23191	Resistor, 15 Megohms 1/4 W.*		—130307	Felt Pad—Mtg. Screw Cover
25	None	Resistor, 20,000 Ohms 1/4 W.		MG17—130115	Bottom Cover Assy. (Chassis)—Model J-15
26	—50671	Resistor, 15 Megohms 1/4 W.*		—130130	Bottom Cover only—Model J-15
27	None	Resistor, 3 Megohms 1/4 W.		—47413	Condenser, .25 Mf. 160 V.—Model J-15
28	—36760	Resistor, 500,000 Ohms 1/4 W.		—23191	Condenser, .01 Mf. 400 V.—Model J-15
29	None	Resistor, 60,000 Ohms 1/4 W.		—36322	Resistor, 500,000 Ohms 1/4 W.—Model J-15
30	—36688	Resistor, 11 Megohms 1/4 W.		—49878	Hole Plug—Model J-15 (FS-58)
31	—36322	Resistor, 500,000 Ohms 1/4 W.		—130210	1/4" Hole Plug—Model J-15 (FS-58)
32	—35928	Resistor, 140 Ohms 3/4 W.		—130127	Switch Hole Insulator—Model J-15
33	—48683	Resistor, 500,000 Ohms 1/4 W.			
34	—36322	Resistor, 500,000 Ohms 1/4 W.			
35	—47512	Resistor, 140 Ohms 3/4 W.			
36	—36322	Resistor, 500,000 Ohms 1/4 W.			
37	None	Speaker and Output Trans.—Model J-15			
38	None	Spkr. and Output Trans.—Model J-15			
39	None				
40	G1—49698	Speaker and Output Trans.—Model J-15			
41	G3—49698	Spkr. and Output Trans.—Model J-15			
42	None				
43	None				
44	None				
45	None				

\* Item 26, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the grid return of the 1st I-F assembly to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers (Fig. 3) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning The R-F Amplifier.**

(a) Pre-align the trimmer on the "OSC" section of the gang condenser  $\frac{1}{2}$  turn from the closed position. Check pointer travel, must start on index line with gang closed.

(b) Using a .0001 mf. (100 mmf.) condenser as dummy antenna, connected to antenna lead (Blue or Red), open gang condenser all the way (minimum position) volume control to maximum. Depress manual push button.

(c) Set signal generator to 1650 kilocycles.

(d) Adjust "OSC" shunt trimmer for maximum output, rear trimmer on right end of chassis.

(e) Set signal generator to 1400 kilocycles.

(f) Tune-in 1400 kc. generator signal with manual tuning knob.

(g) Adjust "ANT" shunt trimmer for maximum output (front trimmer on right end of chassis).

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the gang condensed open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

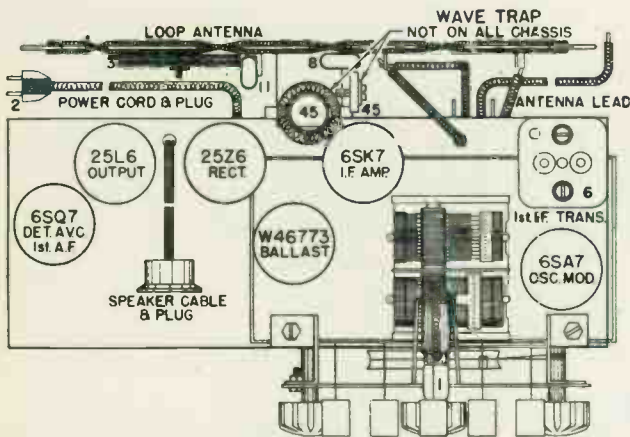


Fig. 2—Top View Model 16, J-16

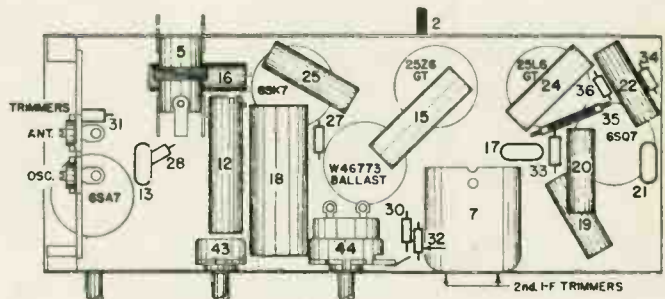
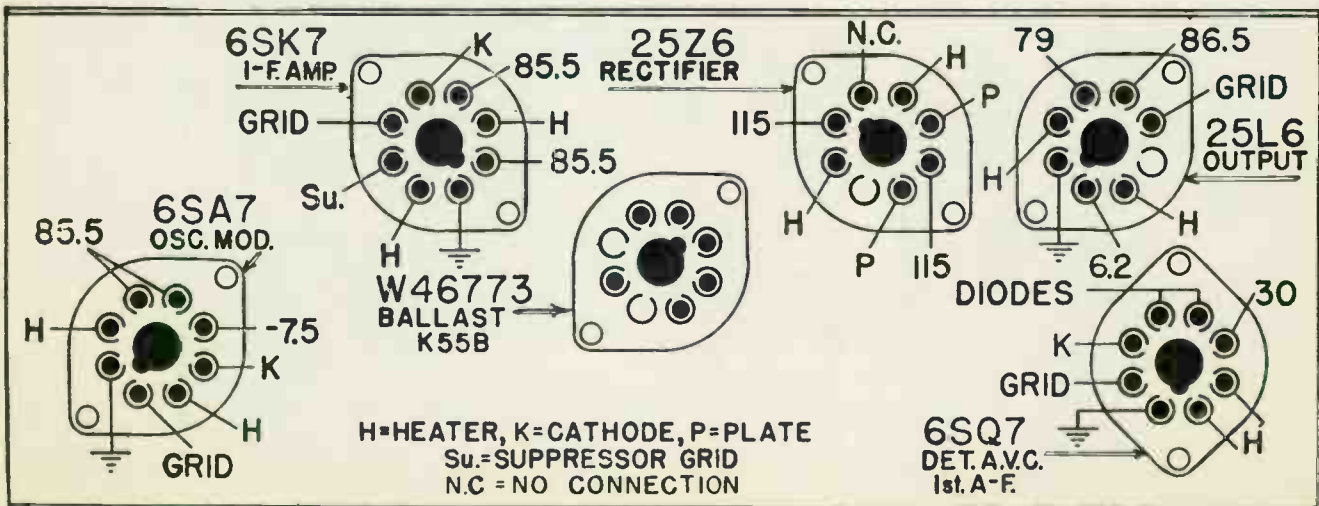
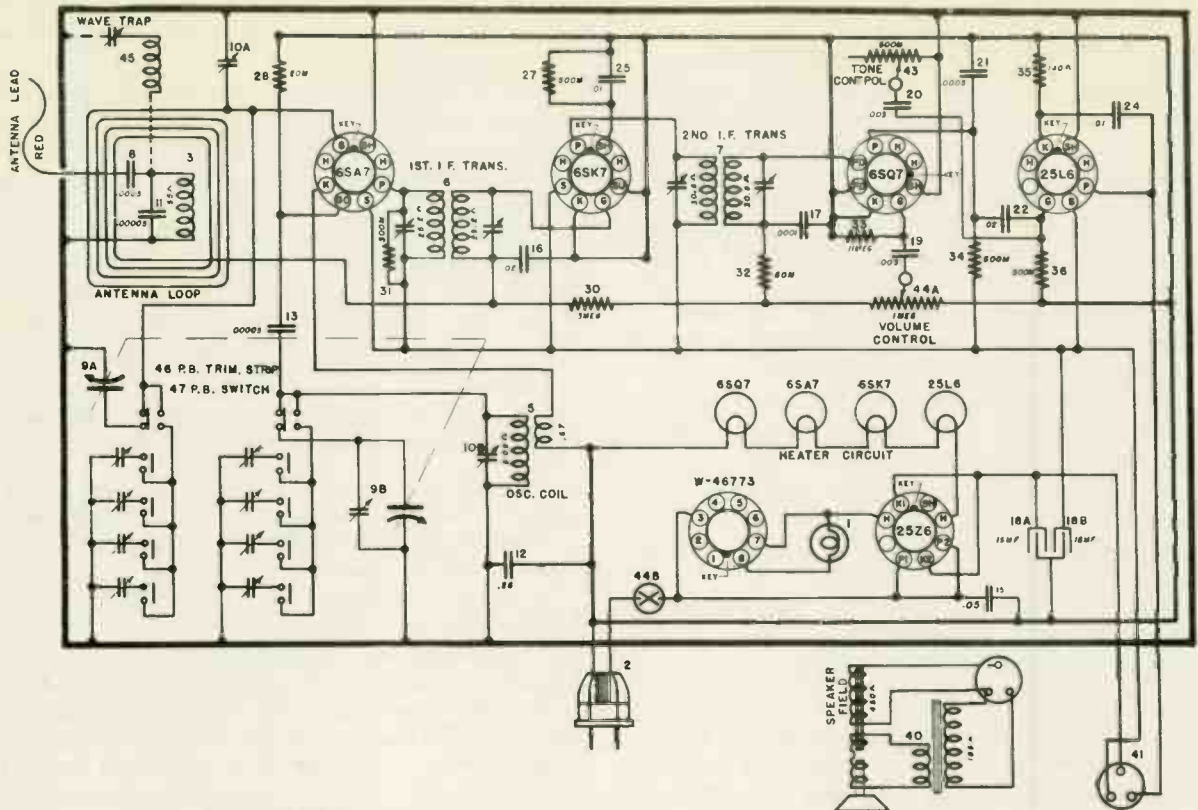


Fig. 3—Bottom View Model 16, J-16



CHASSIS NO. 16 AND J-16



Figures in first column refer to parts in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt		—49732	P. B. "Osc." Padder Condenser (800-1,400 Kc.)
2	G3	—49637 Socket Assy.—Dial Light		—49732	P. B. "Ant." Padder Condenser (1,000-1,650 Kc.)
3	G1	—32008 Loop Antenna (Complete)		—49732	P. B. "Osc." Padder Condenser (1,000-1,650 Kc.)
		—49739 Bracket—Loop Antenna Mtg. (FS-58)		—49769	Bracket—For Mounting Padders
		—20889 Fibre Washer—Loop Mtg.		—49764	Bracket—Switch only (No Buttons)
		—43611 No. 8—32 x 1/4" Screw—Loop Mtg. (FS-58)		—49731	Bracket—P. B. Unit Rear Mtg. (FS-8)
4	None	Oscillator Coil		—19771	Bracket—P. B. Unit Front Mtg. (FS-8)
5	G229—32002	Condenser—.02 Mf. 160 V.		—49727	Bracket—Dial and P. B. R. Front Mtg. (FS-8)
6	G240—32004	1st I-F. Transformer		—49899	Rubber Grommet—P. B. Unit Mtg.
7	G242—32004	2nd I-F. Transformer		46460	Headed Busking—P. B. Unit Mtg.
8	G3	—34002 Condenser—.0005 Mf. Mica		49766A	Dial Face
9	MG3—130132	Condenser—2 Section Var. Tun. Gang		—49770	Trimount Stud—Dial Face Mtg. (2 Req.) (FS-58)
10	MG3—49708	Condenser—Dual Shunt Padder Assy.		49780	Pointer—Dial Hand
11	G5	—34002 Condenser—.00005 Mf. Mica		49665	Bearing—Drive Shaft (Riveted to Chassis)
12	—47413	Condenser—.25 Mf. 160 V.		—49741	Drive Shaft
13	G5	—34002 Condenser—.00005 Mf. Mica		—28032	Spring—Drive Shaft Retaining
14	None	Condenser—.05 Mf. 120 V. (A. C.)	G11	—1582	Drive Cord
15	—45782	Condenser—.02 Mf. 160 V.		51752	Spring—Drive Cord Tension
16	—45780	Condenser—.0001 Mf. Mica		45580	Rubber Grommet—Gang Mtg. (3 Req.)
17	G2	—34002 Condenser—Dual Electrolytic		45620	Headed Bushing—Gang Mtg. (3 Req.)
18	—49664	Section A—15 Mf. 140 V.	O	8	Flat Washer—Gang Mtg. (3 Req.) (FS-58)
		Section B—15 Mf. 120 V.		—130166	No. 8—32 x 1/4" Screw—Gang Mtg. (3 Req.) (FS-58)
19	—50084	Condenser—.003 Mf. 160 V.		49674	8 Prong Tube Socket
20	—50084	Condenser—.003 Mf. 160 V.		49693	Tube Socket Insulator
21	G3	—34002 Condenser—.0005 Mf. Mica		45738	Lock Plate—Power Cord
22	—45780	Condenser—.02 Mf. 160 V.	AL	—130177	Cabinet—Wood
23	None	Condenser—.01 Mf. 400 V.		S	—80 Back—For AL Cabinet
24	—23191	Condenser—.01 Mf. 400 V.		—130034	Shipping Carton
25	—23191	Condenser—.01 Mf. 400 V.		46953	Knob—Volume—Tone—Tuning
26	50671	Resistor. 15 Megohm 1/4 W.		41742	Spring—Knob Insert
27	—36322	Resistor. 500,000 Ohms 1/4 W.		49940	Push Button (5 Req.)
28	—36760	Resistor. 20,000 Ohms 1/4 W.		—130078	Escutcheon and Lens—Dial Window
29	None	Resistor. 3 Megohms 1/4 W.		49917	Escutcheon—Call Letter Tab
30	—36322	Resistor. 500,000 Ohms 1/4 W.		—130117	Light Diffuser—Felt
31	—35928	Resistor. 60,000 Ohms 1/4 W.		49970	Station Call Letter Tab Sheets
32	—48693	Resistor. 11 Megohms 1/4 W.		49951	Instruction Booklet
33	—36322	Resistor. 500,000 Ohms 1/4 W.		MG31—49803	Envelope Assy.—Instructions and Call Letters
34	—47512	Resistor. 140 Ohms 3/4 W.		—130190	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Req.) (FS-58)
35	—36322	Resistor. 500,000 Ohms 1/4 W.		45020	Flat Washer—Chassis Mtg. (3 Req.) (FS-58)
37	None	Spea. or and Output Transformer		—130307	Felt Pad—Mtg. Screw Cover
38	None	Cable and Plug—Speaker		MG17—130115	Bottom Cover Assy.—Model J-16 only
39	None	Tone Control (1/2 Meg.) and Switch		—49770	Trimount Studs—Bottom Cover Mtg. (7 Req.)
40	G2	—49792		—130130	Bottom Cover (Insulator)
41	—49797			—130126	Hole Plug—Model J-16 (FS-58)
42	None	Wave Trap		—130210	1/2" Hole Plug—Model J-16 (FS-58)
43	—49779			—130127	Switch Hole Cover—Model J-16
44	—49774			—49792	Speaker and Plug—Model J-16
45	G193—32004	Trimmer Cond.—Part of Wave Trap.		—130376	Cabinet Protector Cloth
46	MC9—49709	Push Button—"Padder" Assy. only			
	—49735A	P. B. "Ant." Padder Condenser (540-1,000 Kc.)			
	—49734A	P. B. "Osc." Padder Condenser (540-1,000 Kc.)			
	—49731A	P. B. "Ant." Padder Condenser (600-1,150 Kc.)			
	—49733	P. B. "Osc." Padder Condenser (600-1,150 Kc.)			
	—49733	P. B. "Ant." Padder Condenser (800-1,400 Kc.)			

\* Item 28, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the grid return of the 1st I-F assembly to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**1.—Aligning I-F To 455 Kc.**

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum, turn tone control switch to right (treble). Turn band switch to the B. C. (left) position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two 2nd I-F trimmer condensers located through front chassis flange, below speaker (Fig. 3) for maximum output.

(e) Adjust the two trimmer condensers on top of the first I-F assembly (Fig. 2) for maximum output.

**2.—Aligning R-F Amplifier.**

The short wave band 6-15 mc. MUST be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

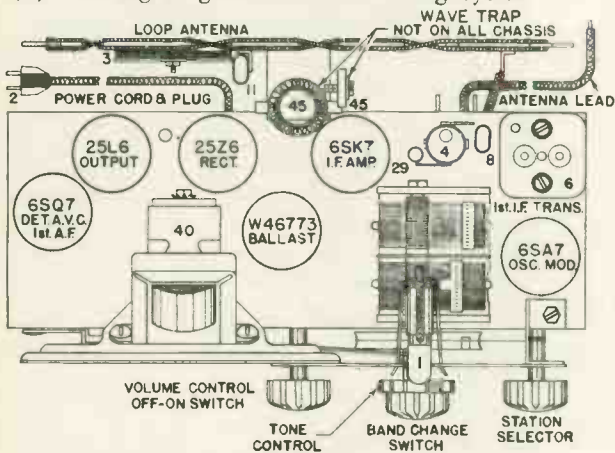


Fig. 2—Top View Model 18, J-18

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 3, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune-in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 3, for maximum output.

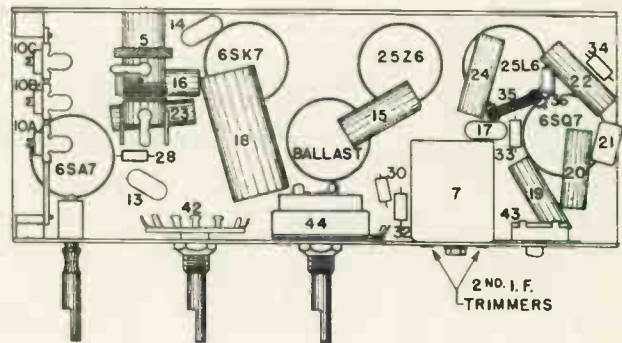
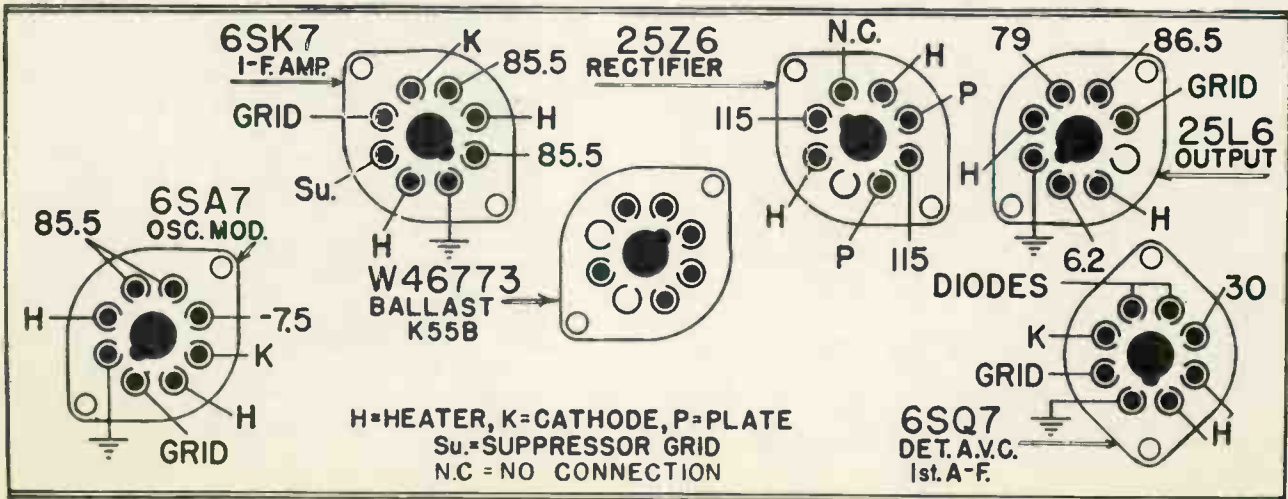
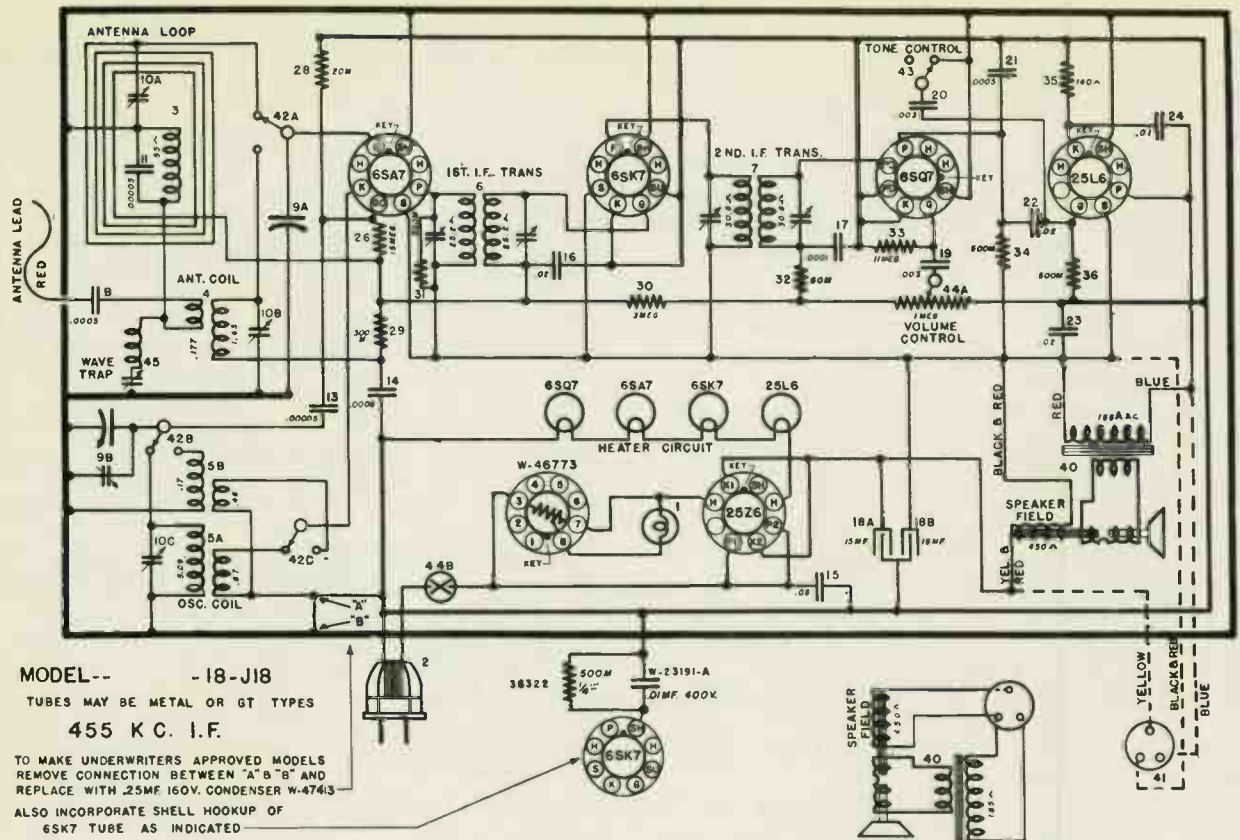


Fig. 3—Bottom View Models 18, J-18





MODEL-- -18-J18  
 TUBES MAY BE METAL OR GT TYPES  
 455 Kc. I.F.

TO MAKE UNDERWRITERS APPROVED MODELS  
 REMOVE CONNECTION BETWEEN "A" "B" "B'" AND  
 REPLACE WITH .25MF 160V. CONDENSER W-4743  
 ALSO INCORPORATE SHELL HOOKUP OF  
 6SK7 TUBE AS INDICATED

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light, 6.3 Volt	42	—19808	Band Change Switch
2	G3 —49637	Socket Assy.—Dial Light	43	—46159	Switch—Tone Control
3	—49775	Power Cord and Plug	G2—130264	Toggle Arm—On B. C. S. Shaft	
	—23008	Loop Antenna	—19829	Spring—Toggle Arm Retaining	
	—49739	Bracket—Loop Antenna Mtg. (FS-58)	—49729	Toggle Link	
	—15808	No. 8 x 1/4" Screws—Loop Brkt Mtg. (FS-58)	—48200	Trimount Stud—Toggle Link Guide (FS-58)	
	—20989	Fibre Washer—Loop Mtg.	—49770	Trimount Stud—Arm and Link Connector (FS-58)	
	—43611	No. 8—32 x 1/4" Screw—Loop Mtg. (FS-58)	44	—19774	Volume Control (1 Meg.) and Switch
4	G221—32000	Antenna Coil—6-15 Mc.	45	G193—32001	Wave Trap
5	G230—32002	Dual Oscillator Coil	—45979	Condenser—Wave Trap Trimmer	
		Coil A—B. C.—550-1,600 Kc.	—49767	Dial Face	
6	G240—32004	Coil B—S. W.—6.0-15.0 Mc.	—49727	Bracket—R. H. Dial Mtg.	
7	G242—32004	1st I.F. Transformer—455 Kc.	—49770	Trimount Stud—Dial Mtg. (FS-58)	
8	G3 —34002	2nd I.F. Transformer—455 Kc.	—49780	Pointer—Dial Hand	
9	—49737	Condenser, .0005 Mf. Mica	—49665	Bearing—Drive Shaft—Riveted to Chassis	
10	MG4—49710	Condenser—2 Section Var. Tun. Gang	—49741	Drive Shaft	
		Condenser—3 Section Shunt Padder Assy.	—28032	Spring—Hair Pin—Drive Shaft Retaining	
11	G5 —34002	Condenser, .00005 Mf. Mica	G11	—41582	Drive Cord
12	None		—51752	Spring—Drive Cord Tension	
13	G5 —34002	Condenser, .00005 Mf. Mica	—45580	Rubber Grommet—Tun. Cond. Mtg.	
14	G21 —34002	Condenser, .05 Mf. 120 V. A. C.	—5620	Headed Bushing—Tun. Cond. Mtg.	
15	—45782	Condenser, .02 Mf. 160 V.	O	—8	Flat Washer—Tun. Cond. Mtg. (FS-58)
16	—45780	Condenser, .02 Mf. 160 V.	—130166	No. 8—32 x 1/4" Screw—Tun. Cond. Mtg. (FS-58)	
17	G2 —34002	Condenser—Dual Electrolytic	—49679	Bracket—Speaker Mtg.—Riveted to Chassis	
18	—48664	Section A—15 Mf. 140 V.	AN	Cabinet	
		Section B—15 Mf. 120 V.	—130038	Shipping Carton	
19	—50084	Condenser, .003 Mf. 160 V.	—139178	Back—AN Cabinet	
20	—50084	Condenser, .003 Mf. 160 V.	—80	No. 4 x 3/8" Screw—Back Mtg. (FS-18)	
21	G3 —34002	Condenser, .0005 Mf. Mica	—130078	Escutcheon and Lens—Dial Window	
22	—45780	Condenser, .05 Mf. 160 V.	—46953	Knob—Volume and Tuning and Band Change	
23	—45780	Condenser, .05 Mf. 160 V.	—41742	Spring—Knob Insert	
24	—23191	Condenser, .01 Mf. 400 V.	—49872	Knob—(Lever Type) Tone Control	
25	None		MG17—130115	Bottom Assy.—Model J-18	
26	—50671	Resistor, 15 Megohm 1/4 W.*	—130130	Bottom Cover (Insulator)—J-18	
27	None		—49770	Trimount Stud—Bottom Mtg.—J-18 (FS-58)	
28	—36760	Resistor, 20,000 Ohms 1/4 W.	—130126	Hole Plug—Model J-18	
29	—35601	Resistor, 300,000 Ohms 1/4 W.	—47413	Condenser, .25 Mf. 160 V.—Model J-18	
30	—36588	Resistor, 3 Megohms 1/4 W.	—23191	Condenser, .01 Mf. 400 V.—Model J-18	
31	—36322	Resistor, 500,000 Ohms 1/4 W.	—36322	Resistor, 500,000 Ohms 1/4 W.—Model J-18	
32	—33928	Resistor, 60,000 Ohms 1/4 W.	—49953	Instruction Booklet	
33	—48693	Resistor, 11 Megohms 1/4 W.	—49284	Short Wave Instructions	
34	—36322	Resistor, 500,000 Ohms 1/4 W.	—130376	Cabinet Portector Cloth	
35	—47512	Resistor, 140 Ohms 1/4 W.	—130490	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Required)	
36	—36322	Resistor, 500,000 Ohms 1/4 W.	—45020	Flat Washer—Chassis Mtg. (3 Req.)	
37	None				
38	None				
39	None				
40	G1 —49698	Speaker—Model 18			
41	G3 —49698	Speaker—Model J-18			

\* Item 26, a 15 megohm resistor added. Connected from the junction of item 30, (a 3 megohm resistor) and the 1st I-F transformer assembly grid return to the No. 5 pin of the 6SA7. Incorporated to reduce the possibility of oscillation due to certain characteristics of the 6SA7 tube.

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna lead (Blue). Connect the ground lead from the signal generator to the ground lead (Black) of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the Broadcast Band. (Left). Push switch on loop ant. to B. C. position.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Circuits.**

(1) Connect the signal generator output through a 400 ohm carbon resistor to the antenna lead (Blue) of the receiver and the generator return to the ground lead (Black).

(a) Set signal generator to 15.4 megacycles.

(b) Open tuning condenser all the way (rotor completely out of mesh) turn band switch to the right, (short wave) and volume on full. On models 21 and 23 turn tone control to treble position.

(c) Adjust the S. W. "OSC" trimmer, located on gang condenser, for maximum output.

(d) Set signal generator to 15.0 megacycles.

(e) Tune-in signal generator frequency with the station selector knob (approximately 15 on the dial) and while slowly rocking the station selector knob adjust the S. W. "ANT." trimmer condenser, center trimmer on right end of chassis, for maximum output.

(f) Repeat (a) to (e) for more accurate adjustments.

(2) Change the 400 ohm dummy antenna to a .0002

mf. (200 mmf.) condenser. Turn band switch to B. C. position (left), open gang condenser all the way, etc.

(a) Set signal generator to 1650 kilocycles.

(b) Adjust the B. C. "OSC" trimmer for maximum output (front trimmer, right end of chassis).

(c) Set signal generator to 1400 kilocycles.

(d) Tune-in 1400 kc. signal with tuning condenser, (should be approximately 14 on the dial), then adjust the B. C. "ANT" trimmer (rear trimmer, right end of chassis) for maximum output.

(e) Repeat (a) to (d) for more accurate adjustments.

(3.) Using same dummy antenna (.0001 mf.) align the Special Police Band antenna trimmer (there is no oscillator adjustment for this band).

(a) Set signal generator to 2.5 kilocycles.

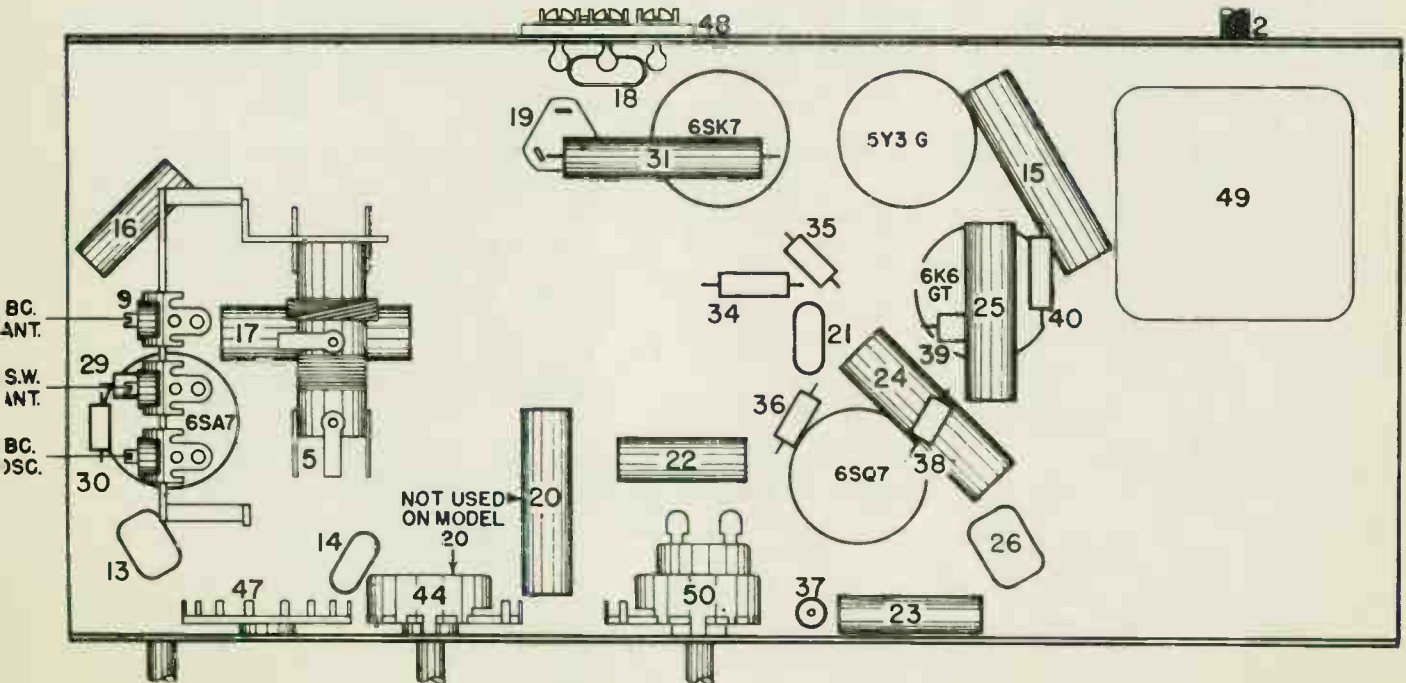
(b) Push switch on loop antenna to Pol. position and then tune-in the generator signal with gang, approx. 2.5 on the dial.

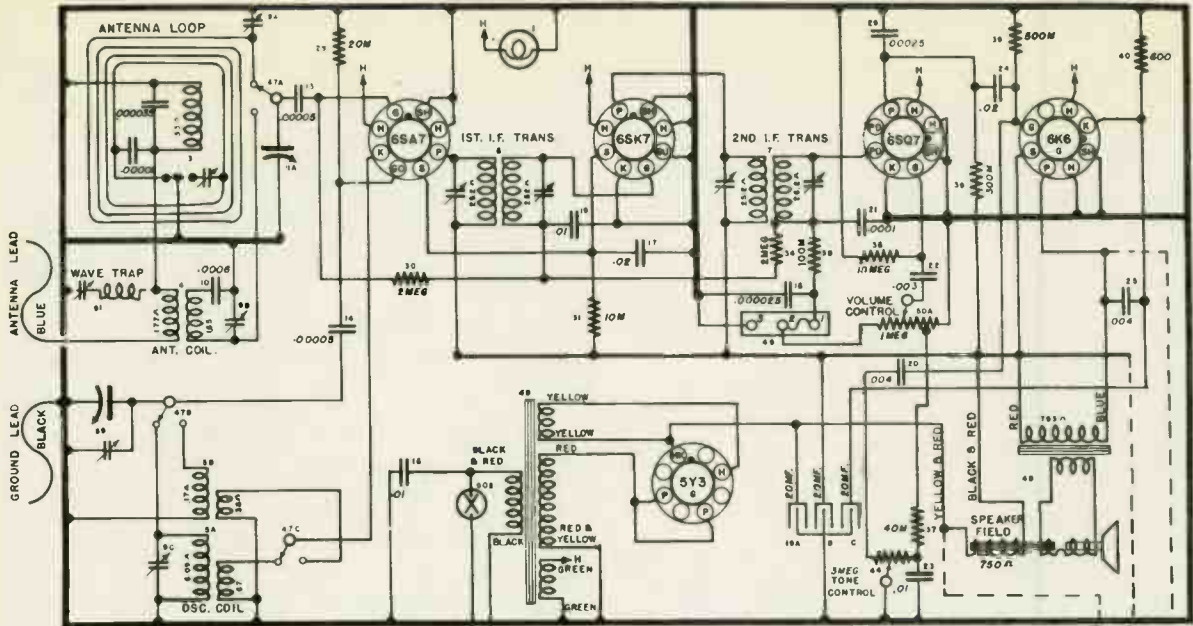
(c) Adjust trimmer on loop antenna for maximum output.

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0002 mfd. condenser into the antenna lead of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 in the dial, and the volume control full on, adjust the wave trap trimmer condenser for MINIMUM output.





- 1 —43567 Dial Light
- G9 —49637 Socket Assy.—Dial Light—Model 20
- G10 —49637 Socket Assy.—Dial Light—Model 21 and 23
- 2 —45769 Power Cord and Plug
- 3 G4 —32008 Loop Antenna Assy.
- 49810 Bracket—Loop Mtg.
- 130084 Thumb Screw—Loop Mtg.
- 37953 Flat Washer—Loop Mtg.
- 49732 Trimmer Condenser—Ant. Padder
- 46159 B. C.—Pol. Switch—On Loop
- 4 G221—32000 S. W. Antenna Coil
- 5 G231—32002 Dual Oscillator Coil
- A—B. C. Oscillator
- B—S. W. Oscillator
- 6 G240—32004 1st I-F. Assy.—455 Kc.
- 7 G249—32004 2nd I-F. Assy.—455 Kc.
- 8 —49879 2 Section Gang Cond.—Model 20 only
- 130266 Gang Condenser and Push Button Assy.—Models 21 and 23 only
- 9 —49722 3 Section Shunt Trimmer Assy.
- A—B. C. Antenna Trimmer
- B—S. W. Antenna Trimmer
- C—B. C. Oscillator Trimmer
- 10 G21 —31002 Condenser, .0006 Mf. Mica
- 11 None
- 12 None
- 13 G5 —34002 Condenser, .0005 Mf. Mica
- 14 G5 —31002 Condenser, .0005 Mf. Mica
- 15 —30805 Condenser, .01 Mf. 400 V.
- 16 —48667 Condenser, .01 Mf. 160 V.
- 17 —30488 Condenser, .02 Mf. 400 V.
- 18 G6 —34002 Condenser, .00025 Mf. Mica
- 19 —49794 Condenser—3 Section Electrolytic
- Section A—20 Mf.—250 V.
- Section B—20 Mf.—250 V.
- Section C—20 Mf.—25 V.
- 20 —28904 Condenser, .004 Mf. 200 V.
- Used on Models 21 and 23 only
- 21 G2 —34002 Condenser, .0001 Mf. Mica
- 22 —50084 Condenser, .003 Mf. 160 V.
- 23 —48667 Condenser, .01 Mf. 160 V.
- 24 —30488 Condenser, .02 Mf. 400 V.
- 25 —35139 Condenser, .004 Mf. 400 V.
- 26 G1 —34002 Condenser, .00025 Mf. Mica
- 27 None
- 28 None
- 29 —36760 Resistor, 20,000 Ohms 1/2 W.
- 30 —35927 Resistor, 2 Megohms 1/2 W.
- 31 —47100 Resistor, 10,600 Ohms 2W.
- 32 None
- 33 None
- 34 —35927 Resistor, 2 Megohms 1/2 W.
- 35 —35600 Resistor, 100,000 Ohms 1/2 W.
- 36 —50956 Resistor, 10 Megohms 1/2 W.
- 37 —36761 Resistor, 40,000 Ohms 1/2 W.
- 38 —35601 Resistor, 300,000 Ohms 1/2 W.
- 39 —36322 Resistor, 500,000 Ohms 1/2 W.
- 40 —38918 Resistor, 600 Ohms 1/2 W.
- 41 None
- 42 None
- 43 None
- 44 —130263 3 Meg. Tone Control—Models 21 and 23 only
- 45 G3 —49729 Speaker (6 Inch) Models 20 and 21

MODEL ---20-21-23  
455 KC. I.F.



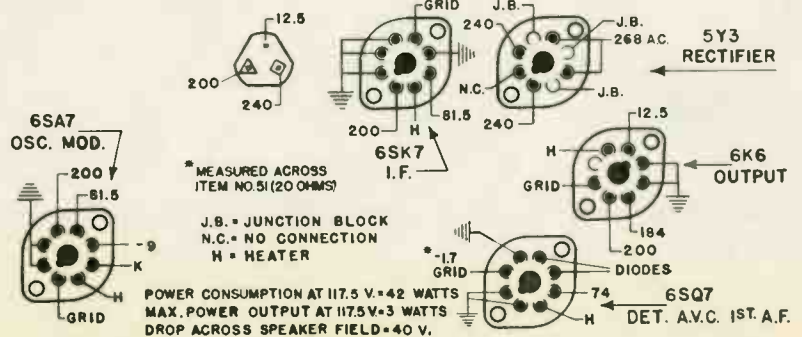
- 45580 Grommet—Gang and Speaker Mtg.
- 45620 Headed Bushing—Gang Mtg.—Model 20
- G2 —130145 Speake—8 Inch—Model 23
- 45580 Rubber Grommet—Spkr. Mtg.
- 49796 Headed Bushing—Spkr. Mtg.
- 2309 Flat Washer—Spkr. Mtg. (FS-58)
- 49927 Spkr. Cable and Plug—Model 23 only
- 48409 Band Change Sw.—Model 20 only
- 49849 Band Change Sw.—Models 21 and 23
- 26719 Phono Terminal Board
- 49881 Jumper Strip—Phono Terminals
- 49838 Power Trans.—117.5 Volt—60 Cycle
- 49817 Brace—Power Trans. Mtg.
- 130044 1 Mez. Vol. Cont. & Sw.—Model 20
- 130262 1 Mez. Vol. Cont. & Sw.—Mod. 21 & 23
- G193 —32004 Wave Trap—455 Kc.

MISCELLANEOUS PARTS

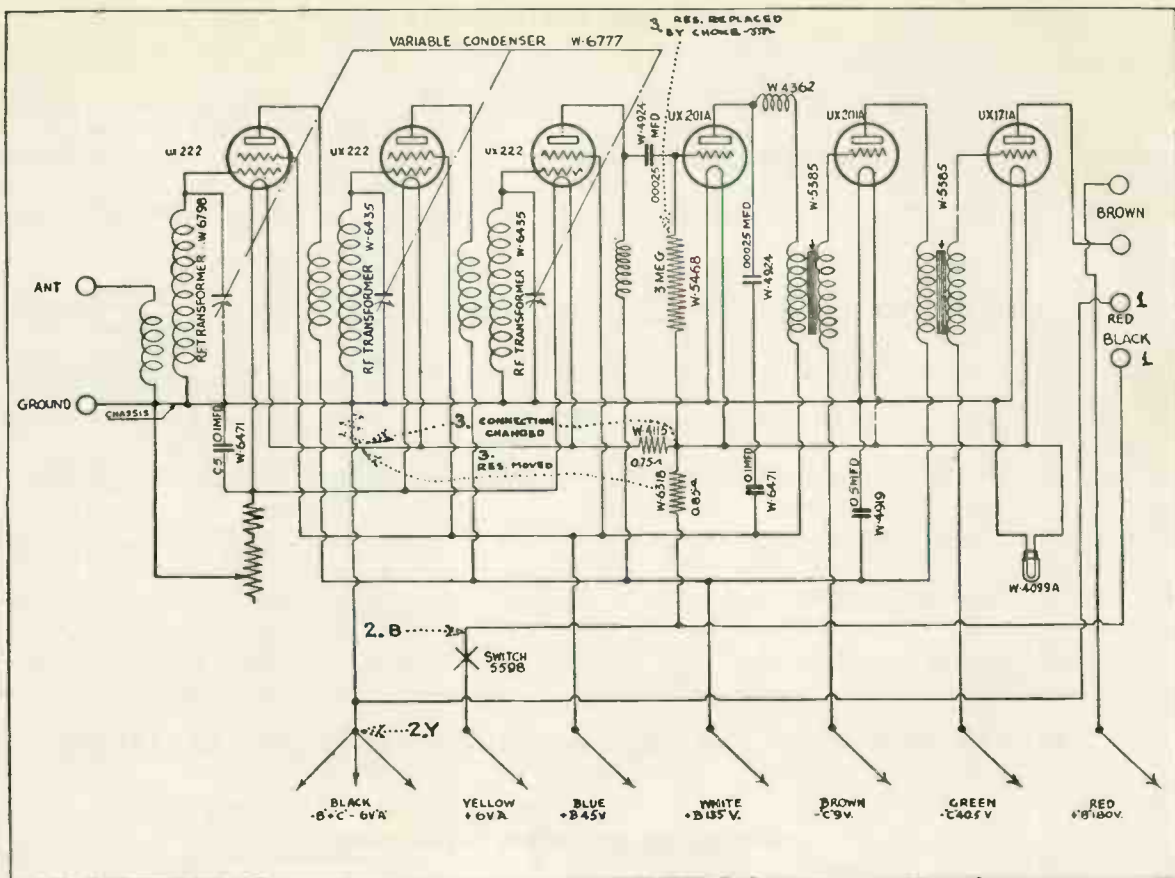
- MODELS 21 AND 23 ONLY
- MG12 —49822 Dial Face Assy.
- GW —130280 Pointer, Pulley and Shaft Assy.
- 51709 "C" Washer—Pointer Shaft Retaining
- 130277 Pointer—Dial Hand
- 130393 Trimout Studs—Dial Face Mtg. (FS-58)
- G11 —41582 Drive Cord—Pointer Shaft (15" Long)
- G41 —41582 Drive Cord—Conl. Ganr 18 1/4" Long)
- 130275 Manual Drive Shaft
- 130274 Pulley—Manual Drive Shaft
- 4523 No. 8—32 x 1/2" Headless Set Screw—Drive Shaft Pulley
- G26 —43564 Pulley & Hub Assy.—On Gang (Large)
- MG10 —49822 Bracket Assy.—Tuning Unit Mtg.
- 49762 Wood Pulley—Dr. Cord Idler (1 Req.)
- 46087 Spring—Drive Cord Tension
- 130180 Wood Pulley—Pointer Cord Idler (2 Req.)
- 130481 Pin—Idler Pulley Shaft
- 130479 Spring—Pointer Drive Cord Takeup
- 130472 Ball Bearing—Rocker Bar & Gang Rotor
- 130473 Screw—Rocker Bar & Gang Rotor Bearing
- AR Cabinet—Model 23

MISCELLANEOUS PARTS

- MODEL 20 ONLY
- 49878 Hole Plug (3 Req.) (FS-58)
- 49880 Dial Face (Self Supporting)
- 49846 Pointer—Dial Hand
- 49665 Bearing—Dr. Shaft—Staked to Chassis
- 49847 Drive Shaft
- 28032 Spring—Drive Shaft Retaining
- G39 —41582 Drive Cord (23" Long)
- 50607 Spring—Drive Cord Tension
- AP Cabinet
- 130483 Screw—P. B. Station Setting
- 130476 Push Button (5 Req.)
- 130175 Rod—Push Button Mtg.



POWER CONSUMPTION AT 117.5 V. = 42 WATTS  
MAX. POWER OUTPUT AT 117.5V. = 3 WATTS  
DROP ACROSS SPEAKER FIELD = 40 V.



Qty.	Part No.	Description	Qty.	Part No.	Description
<b>CHASSIS ASSEMBLY</b>					
1	D-6437-C	Chassis .....	2	W-3547	Spacer .....
5	W-5538	Socket .....	1	W-4502	Shakeproof Lug .....
1	W-5544	Socket .....	1	W-0818	Terminal Board Assembly (Speaker) .....
1	M-19	.120x3-16 Tubular Rivet .....	1	B-4107-B	Cable .....
2	W-6435	R. F. Transformer Assembly .....	1	W-4081	Grommet (3-8") .....
1	W-6798	R. F. Transformer Assembly .....	1	W-4751-A	Cable Clamp .....
1	W-6684-B	Tube Terminal Assembly .....	1	W-6318	Fixed Resistance (Long) .....
3	W-6436	Shield Assembly .....	2	W-3547	Spacer .....
3	B-6473	Shield Cover .....	1	W-4924	Grid Condenser (.00025MFD.) .....
3	W-6474	Shield Cover Nut .....	1	W-4502	Shakeproof Lug .....
1	W-5371	Terminal Board Assembly (A. and G.) .....	1	W-4302	Plate Choke .....
1	W-6254	Volume Control Rheostat .....	1	W-635-C	Spacer .....
1	W-6777	Complete 3 Gang Variable Condenser .....	1	W-5713	Terminal Strip .....
5	W-4081	Grommet (3-8") .....	2	W-5051	Spacer .....
	B-4879	Frame Cover .....	1	W-5408	Resistance (3 megohms) .....
	W-4894	6-32 Acorn Nut .....	1	W-5382	Bypass Cond. (.00025 M. F.) .....
	W-4891	Dial Spider .....	1	C-5888-B	Bottom .....
	W-3544	Set Screw .....	6	W-5718-A	Bottom Double Nut .....
	W-5353	Dial Gear with W-5354-B Indicator .....	6	6810	Eyelet .....
	W-5354-B	Indicator Only .....	1	D-6361	Cabinet Shell with four B-6366 Corners Assembled .....
	W-4899	Pinion .....	4	W-6376	Felt Foot .....
	W-4907	Pinion Washer .....	1	6374-A	Cabinet Cover .....
	W-2326	6-32x5-16 Set Screw .....	1	W-6328	Escutcheon .....
	W-4892	Pinion Stirrup .....	2	W-6379	Escutcheon Mtg. Screw .....
	W-4883-C	Dial Light Assembly (without lamp) .....	1	W-6390	Main Tuning Knob .....
	W-4893	Rheostat Bracket .....	2	W-6389	Knob .....
1	5598	Switch .....			
2	W-4534-B	Switch Nut .....	<b>MODEL 22</b>		
2	W-5385	Audio Transformer .....	1	D-6513-A	C24 B Wood Cabinet .....
2	W-5654	Grommet (3-4") .....	4	W-6134-A	Square Head Bolt .....
			4	W-6849	Washer .....
			4	W-6260-A	Square Nut .....
2	W-6471	Condenser (.1 M. F. 2 Paper) .....	1	W-6333	Main Tuning Knob .....
2	W-4562	Shakeproof Lug .....	1	W-5836	Pinion Shaft .....
1	W-6802	R. F. Choke Assembly .....	2	W-6332	Knob .....
1	W-4476	Spacer .....	2	W-5837	Shaft Extension .....
1	W-4019	Condenser (.5 M. F. 3 paper) .....	2	W-2326	Set Screw .....
1	W-4562	Shakeproof Lug .....	1	W-6328	Escutcheon .....
1	W-4115	Fixed Resistance (Short) .....	1	W-5815	Model 227 Type E Dynacone Speaker .....



# MODEL 22AS

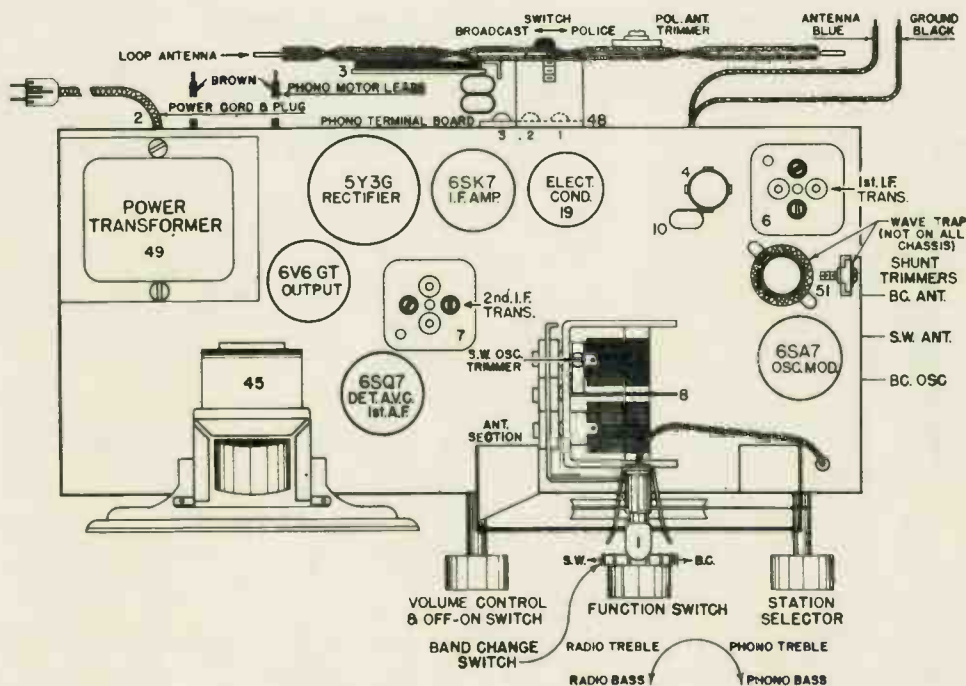
## ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections.....Plate to Screen of 6V6GT  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol.	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

Adjust wave trap for minimum output with 455 kc. input.



TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod.	0	0	225	74	0	0	6.3 A.C.	0
6SK7—I. F. Amp.	0	0	0	0	0	74	6.3 A.C.	225
6SQ7—Det. A.V.C.—1st A.F.	0	0	0	0	0	100	6.3 A.C.	0
6V6GT—Output	0	0	209	225	0	0	6.3 A.C.	10.5
5Y3G—Rectifier	0	5.0 A.C.	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

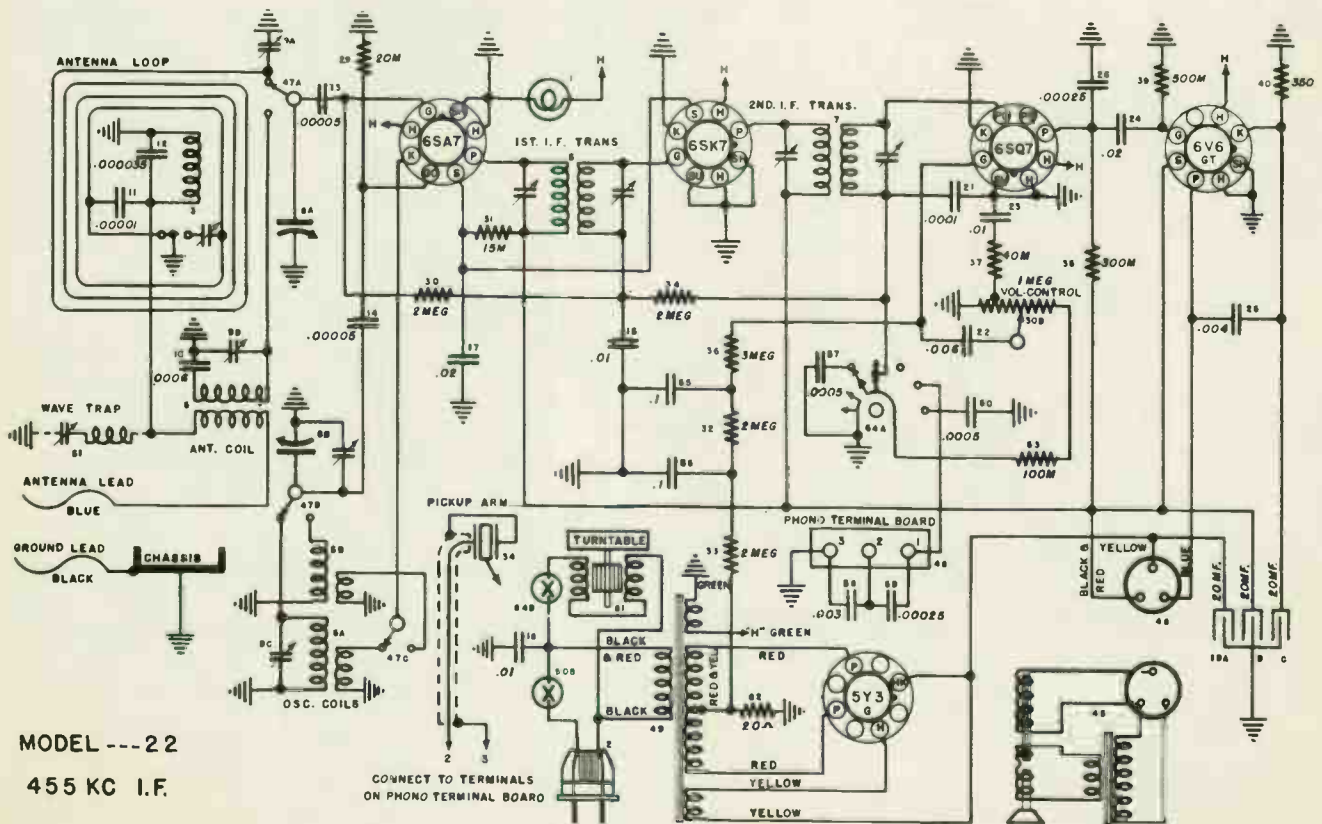
DROP ACROSS SPEAKER FIELD..... 58 Volts  
 MAXIMUM POWER OUTPUT @ 130 V. LINE..... 6.5 Watts  
 MAXIMUM POWER CONSUMPTION @ 130 V. LINE..... \*60 Watts

\*Phono Motor 40 Watts additional.

**PARTS LIST — MODEL 22**

Item	Part No.	DESCRIPTION	Item	Part No.	DESCRIPTION	Item	Part No.	DESCRIPTION
1	43567	Dial Light	29	36760	Resist. 20,000 Ohm 1/4 W.	59	G1-34002	Cond. 250 MMF.—Mica
	G9-49637	Socket Assy.—Dial Light	30	35927	Resistor 2 Megohm 1/4 W.	60	G3-34002	Cond. 500 MMF.—Mica
2	45769	Power Cord and Plug	31	130593	Resistor 15,000 Ohm 2W.	61	130582	Phono Motor—110V. 60 Cy.
3	G4-32008	Loop Antenna Assy.	32	35927	Resistor 2 Megohm 1/4 W.		130862	Phono Motor—110V. 60 Cy.
	49810	Bracket—Loop Mtg.	33	35927	Resistor 2 Megohm 1/4 W.	62	49702	Resistor 20 Ohm 1/2 W.
	130084	ThumbScrew—Loop Mtg.	34	35927	Resistor 2 Megohm 1/4 W.	63	35600	Resist. 100,000 Ohm 1/4 W.
	37953	Flat Washer—Loop Mtg.	35	None		64	130752	T. C.—Phono Radio Sw.
	49732	Trimmer Condenser—Ant. Padder	36	36688	Resistor 3 Megohm 1/4 W.		130755	Insulator—T. C. Sw.
	46159	B. C.—Pol. Switch—On Loop	37	36761	Resist. 40,000 Ohm 1/4 W.		G2-130264	Toggle & Bearing Assy.
4	G221-32000	S. W. Antenna Coil	38	35601	Resist. 300,000 Ohm 1/4 W.		G1-130264	Toggle & Hub. Assy.
5	G231-32002	Dual Oscillator Coil	39	36322	Resist. 500,000 Ohm 1/4 W.		23877	Set Screw—Hub Fasten.
		A—B. C. Oscillator	40	38916	Resistor. 350 Ohm 1/2 W.		49836	Link—Toggle Connecting
		B—S. W. Oscillator	41	None			49770	Trimount Stud—Link Retaining
		C—S. W. Oscillator	42	None			130588	Bracket—Dial Mounting (L. H.)
6	G240-32004	1st I-F. Assy.—455 Kc.	43	None			130567	Bracket—Dial Mounting (R. H.)
7	G249-32004	2nd I-F. Assy.—455 Kc.	44	None			G39-41582	Drive Cord (23")
8	130587	2 Section Gang Cond.—	45	G5-130145	Speaker—8-inch		50607	Spring—Drive Cord Ten.
				45580	Rubber Grommet—Spkr. Mtg.		49665	Bearing—Drive Shaft
9	49722	3 Sec. Shunt Trim Assy.		49796	Headed Bushing—Spkr. Mtg.		130586	Drive Shaft
		A—B. C. Antenna Trim.		2309	Flat Washer—Spkr. Mtg. (FS-58)		28032	Spring—Shaft Retainer
		B—S. W. Antenna Trim.		49927	Spkr. Cable and Plug—		49846	Pointer—Dial Hand
		C—B. C. Oscillator Trimmer					130071	Escutcheon and Lens Cabinet
10	G21-34002	Cond. .0006 MF.—Mica		49849	Band Change Switch		130296	Ship. Carton (AS Cabt.)
11	G8-34002	Cond. .0001 MF.—Mica	47	49849	Phono Terminal Board		130313	Knob—V. C. and Tuning
12	G13-34002	Cond. .00035 MF.—Mica	48	G50-26719	Power Trans.—110 Volt—60 Cycle		130540	Knob—Function Switch
13	G5-34002	Cond. .0005 MF.—Mica	49	130592	Brace—Pow. Trans. Mtg.		130339	Knob—Lever Type (Bd. Sw.)
14	G5-34002	Cond. .0005 MF.—Mica		50	1 Meg. Vol. Cont. & Sw.		130376	Cloth. Protector & Pol. Screw—Chassis Mtg. (4)
15	30805	Cond. .01 MF.—400V.		130262	Wave Trap—455 Kc.		15020	Washer—Chass. Mtg. (4)
16	48667	Cond. .01 MF.—160V.		49674	Tube Socket—8 Prong.		130760	Plate—Phono Motor Mtg. No. 10—32x3" Screw—Plate Mtg. (4)
17	30488	Cond. .02 MF.—400V.	51	G193-32004	Lock Plate—Power Cord Brkt.—Trim. Front Mtg.		130625	No. 10—32 Wing Nut—Plate Mtg. (4)
18	None			45738	Bracket—Coil and Trimmer Rear Mtg.		38085	No. 10—32 Wing Nut—Plate Mtg. (4)
19	130577	Cond. 3 Sec. Electrolytic Sec. A—20 MF.—350V. Sec. B—20 MF.—350V. Sec. C—20 MF.—25V.		49818	R. H. Chassis End Cover (Trim. Holes) (FS-8)		47324	Screw—Needle Clamp
20	28904	Cond. .004 MF.—200V.		49819	L. H. Chassis End Cover (FS-8)		47333	Bracket—Tone Arm Rest
21	G2-34002	Cond. .0001 MF.—Mica		49815			47335	Ring—Rest Lock
22	34713	Cond. .006 MF.—160V.	52	None			47328	Nut—Tone Arm Mtg.
23	23191	Cond. .01 MF.—400V.	53	None			47327	S. P. Washer—Tone Arm Mtg.
24	30488	Cond. .02 MF.—400V.	54	130776	Tone Arm Assy.		47791	Needle Cup
25	35139	Cond. .004 MF.—400V.	55	50105	Cond. .1 MF.—160V.		47790	Lid—Needle Cup
26	G1-34002	Cond. .00025 MF.—Mica	56	50105	Cond. .1 MF.—160V.		46364	Needle—Chrome Tipped
27	None		57	G3-34002	Cond. 500 MMF.—Mica			
28	None		58	50084	Cond. .003 MF.—160V.			

**WIRING DIAGRAM**

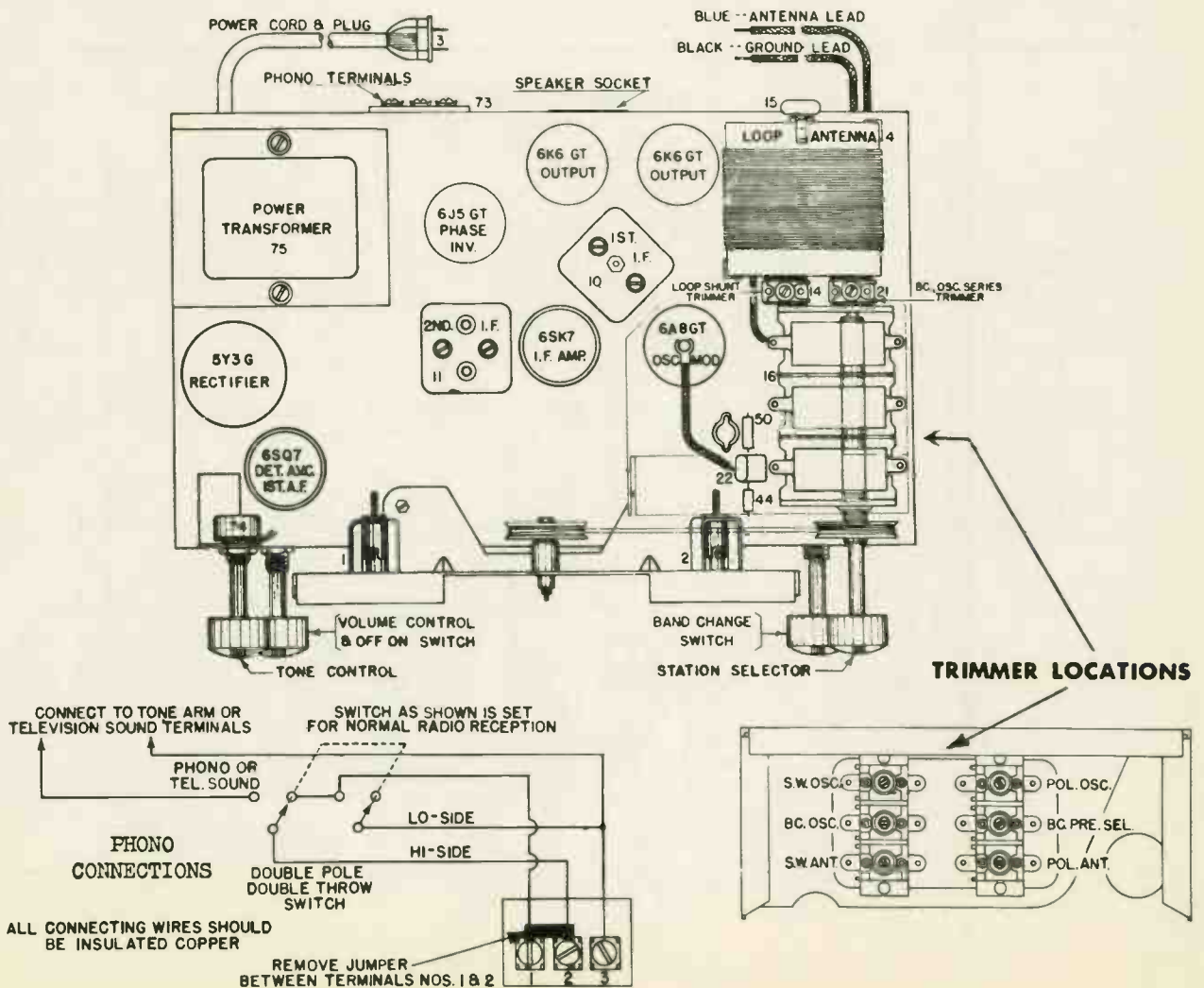


MODEL --- 22

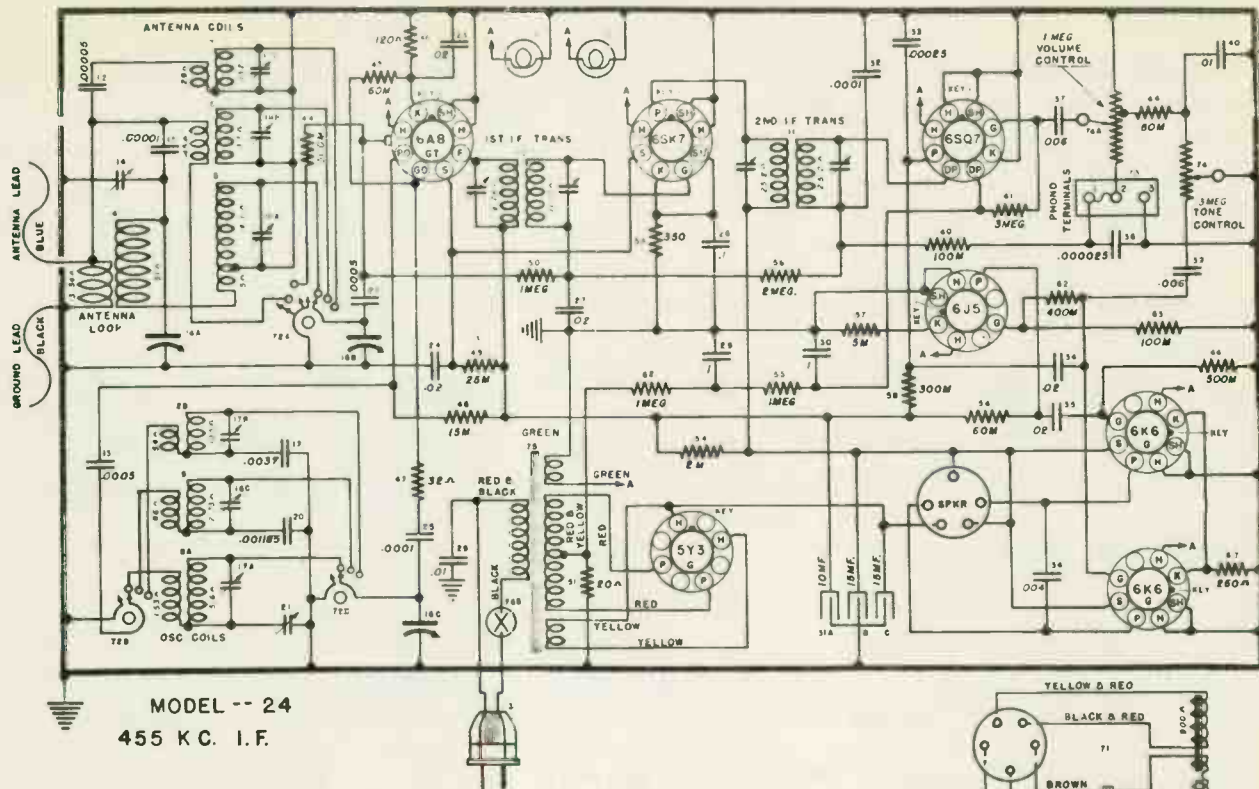
455 KC I.F.

# MODEL 24 CHASSIS ALIGNMENT PROCEDURE CHART

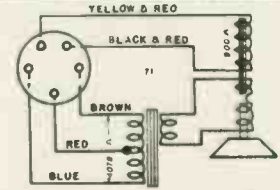
Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.



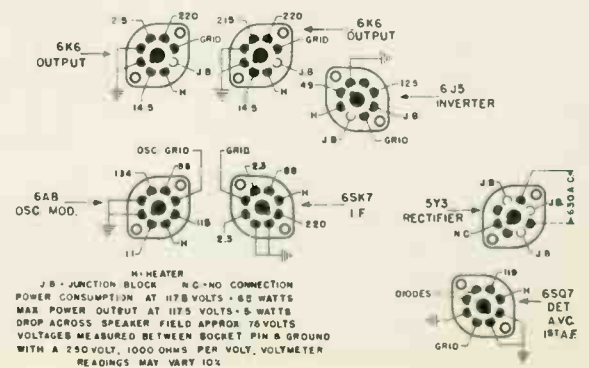
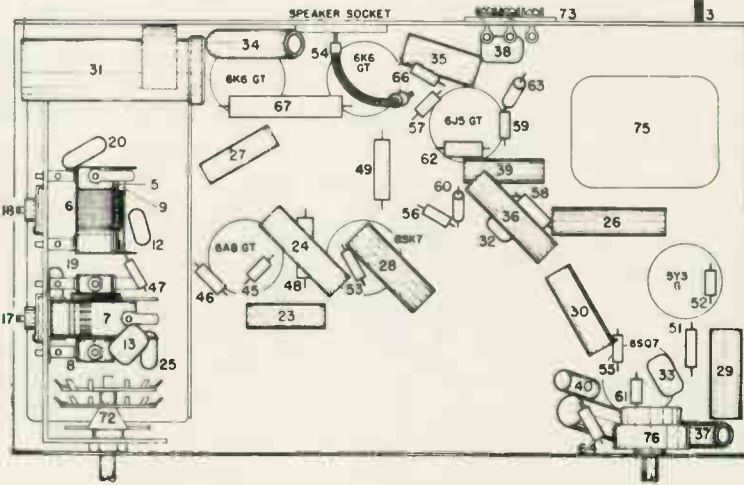
# MODEL 24 CHASSIS



MODEL -- 24  
455 K.C. I.F.



Item No.	Part No.	Description
2-1	43587	Dial Light
3	45769	Pr. Cord & Plug
4	130131	Loop Ant.
5	G112-32001	B. C. Preslector Coil
6	G223-32000	Pol. Ant. Coil
7	G223-32000	S. W. Ant. Coil
8	G233-32002	S. W. B. C. Osc. Coil
9	G233-32002	Pol. Osc. Coil
10	G246-32004	1st I. F. Trans.
11	G240-32004	2nd I. F. Trans.
12	G5-34002	.00005 Mf. Mica
12-13	G3-34002	.0005 Mf. Mica
14	130107	Loop Trimmer
15	G8-34002	.00001 Mf. Mica
16	49929	Tuning Cond. Assem.
18-17	35951	3 Section Trimmer
19	G17-34005	.0037 Mf. Mica
20	G14-34005	.001185 Mf. Mica
21	130108	Osc. Series Padder
36-35-27-24-23	30488	.02 Mf. 400 V.
32-25	G2-34002	.0001 Mf. Mica
40-26	30805	.01 Mf. 400 V.
30-29-28	50105	.1 Mf. 160 V.
31	49773	Filter Cond.
		15-15 @ 450 10 @ 250
33	G1-34002	.00025 Mf. Mica
34	35139	.004 Mf. 400 V.
39-37	34713	.006 Mf. 160 V.
38	G6-34002	.000025 Mf. Mica
66-44	36322	1/2 Mex. 1/2 W.
59-45	35928	60,000 ohm 1/2 W.
46	130311	120 ohm 1/2 W.
47	45981	32 ohm 1/2 W.
48	47819	15,000 ohm 1 W.
49	130318	25,000 ohm 1 W.
50	35602	1 Mex. 1/2 W.
58-52-51	49702	20 ohm 1/2 W.
53	38916	350 ohm 1/2 W.
54	23013	2300 ohm 1 1/2 W.
56	35027	2 Meg. 1/2 W.
57	49945	5 Meg. 1/2 W.
58	35601	300,000 ohm 1/2 W.
63-60	35600	100,000 ohm 1/2 W.
61	36888	3 Meg. 1/2 W.
62	36321	400,000 ohm 1/2 W.
64	40757	50,000 ohm 1/2 W.
67	49703	250 ohm 2 W.
71	G1-130145	Speaker
72	49041	Band Switch
73	G56-28719	Phono Terminal
74	130207	Tone Control
75	49789	Pr. Trans.
76	47783	Vol. Cont. & Sw. (1 Meg.)
	130125	Pointer (Dial Hand)
	130260	Dial Face
	130261	Escutcheon
	130153	Knob (Tuning)
	130154	Knob (Vol. Control)
	130155	Knob (Tone Control)
	130156	Knob (Banc. Sw.)



# MODEL 25 CHASSIS

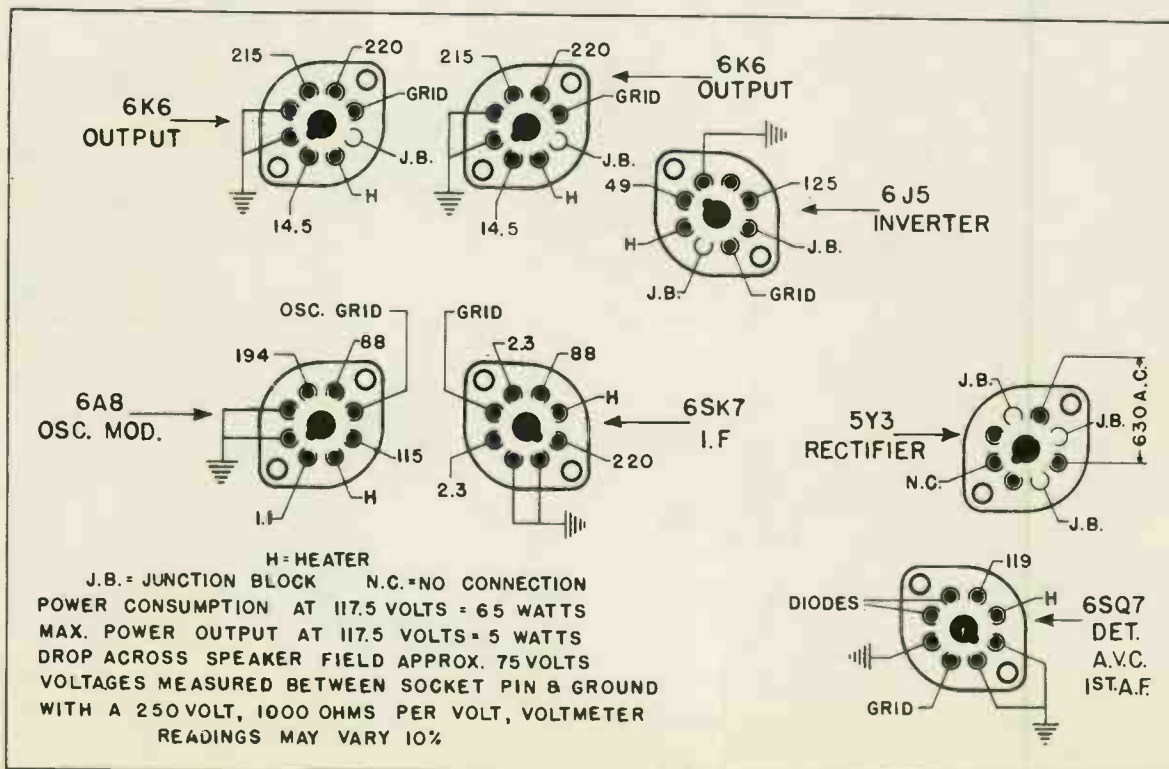
## ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections ..... Plate to Plate of 6K6's  
 Generator Ground Connection..... To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

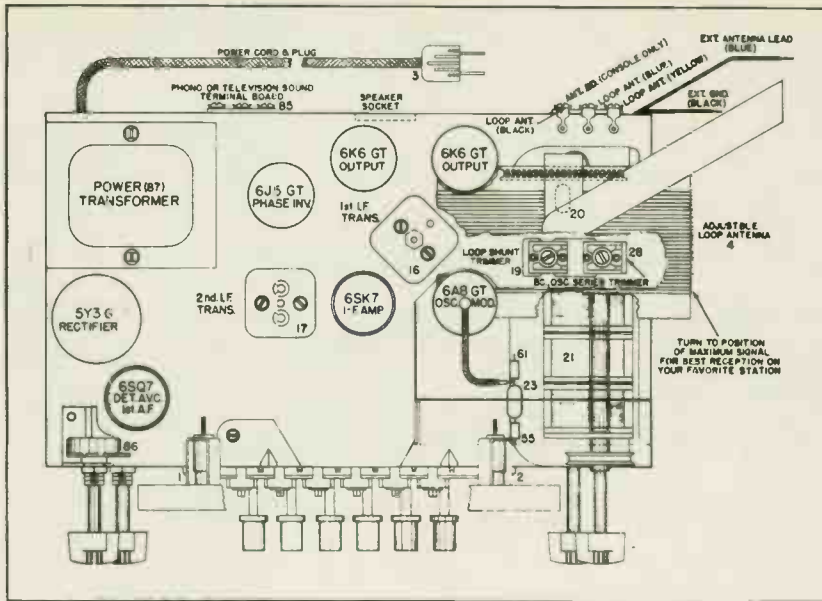
Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. Pre. Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

### SOCKET VOLTAGE CHART

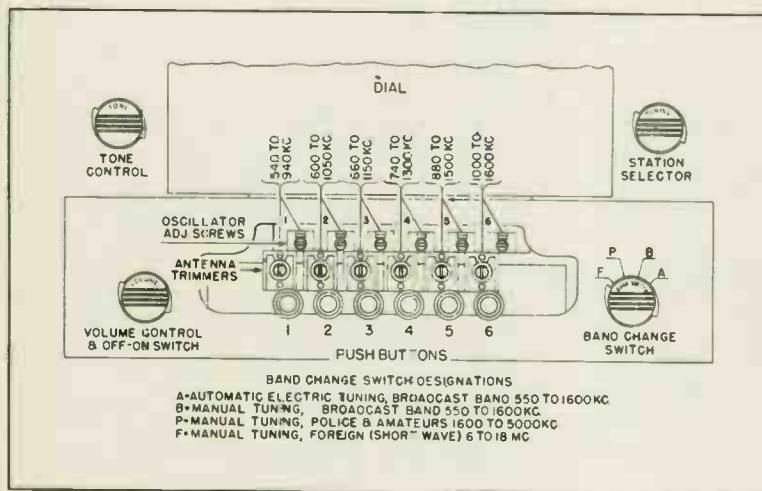
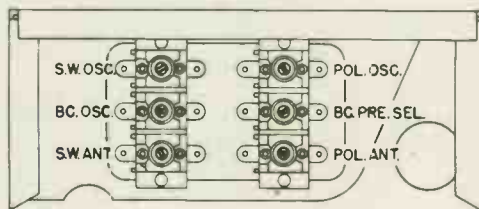


MODEL 25AW

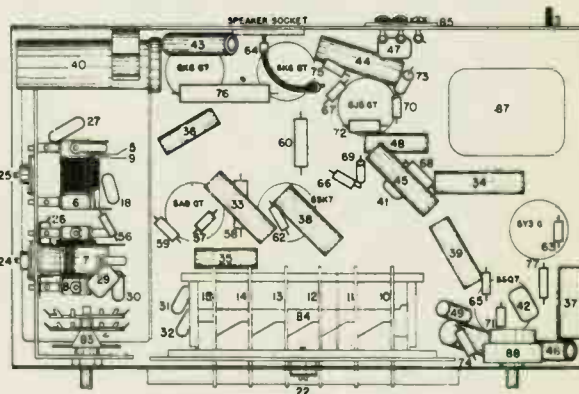
DIAGRAM OF CONNECTIONS



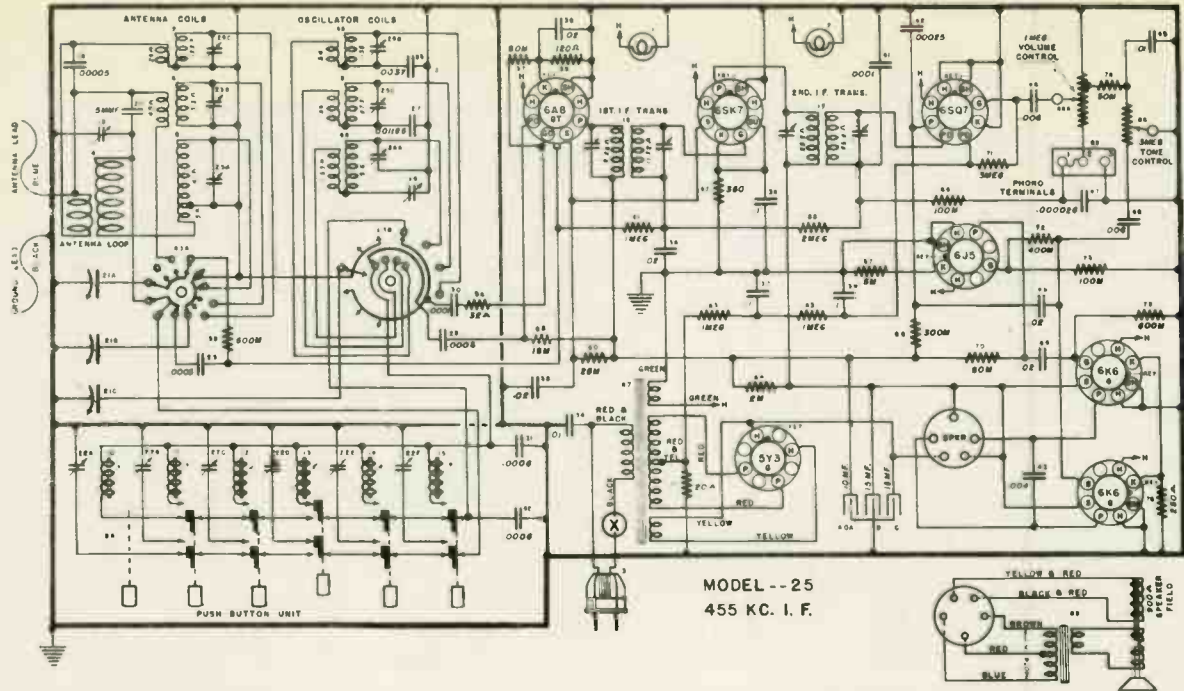
TRIMMER LOCATIONS



BOTTOM VIEW OF CHASSIS



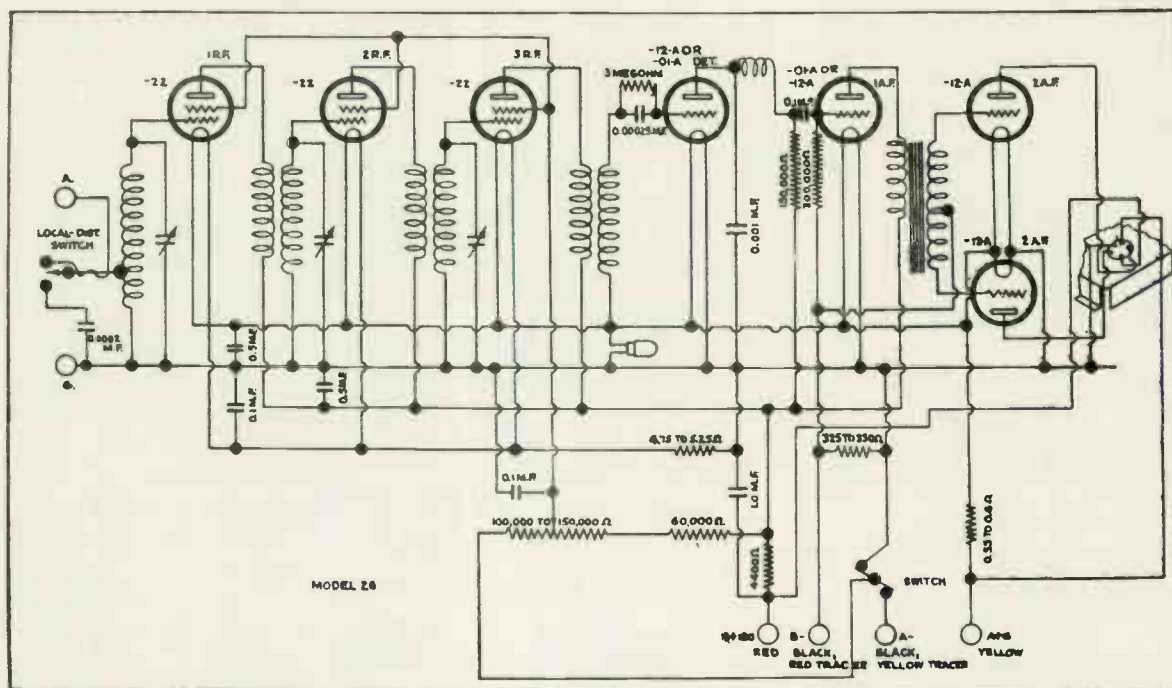
MODEL 25



MODEL -- 25  
455 KC. I. F.

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1-2	43567	Dial Light - 6-3V	46	W-34713	Cond. 006 MF - 160V	MG3-49912		Push Button Assembly (Complete)
3	G7-49637	Socket Assy. - Dial Light	47	G6-34902	Cond. 00025 MF - Mica	W-45580-A		Rubber Grommet - Push Button Assy. Mtg.
4	45769	Power Cord & Plug	48	W-45510-B	Cond. 150 MF - 100V		9706	Headed Bushing - Push Button Assy. Mtg.
	GC-130234	Loop Antenna Assy. (AY Cabt.)	49	W-130171	Cond. 01 MF - 160V		130165	No. 8-32x 1/2" Screw - Push Butt. Assy. Mtg. Cabinet Table
	GB-130203-A	Loop Antenna Assy (W & AX Cabt.)	50	NONE			130161	AW Cabinet - Small Console
5	G112-32001	Preselector Coil - 550-1600 Kc.	51	NONE			130163	AX Cabinet - Large Console
6	G222-32000	Ant. Coil - 1.8-5.0 Mc.	52	NONE			130164	AY Cabinet - Ship. AY Cabt. Footstool & Dial Face Assy.
7	G223-32000	Ant. Coil - 6.0-18.0 Mc.	53	35328	Resistor 300 Ohm 1/2 W		130250	Dial Face only - Es-attachment only
8	G232-32002	Dual Oscillator Coil - Sec. A - B.C. - 550-1600 Kc.	54	NONE			130259	No. 2 - 3/16" Screw - Dial Plate Es-attachment Mtg. (8 req'd.)
		Sec. B - S.W. - 6.0-18.0 Mc.	55	35322	Resistor 300 Ohm 1/2 W		130147	Es-attachment - Push Butt. No. 2 - 3/16" Screw - P. Butt. (8 req'd.)
9	G233-32002	Osc. Coil - Pol. - 1.6-5.0 Mc.	56	45981	Resistor 30 Ohm 1/2 W		130148	Push Button Knob - Tuning (AW & AX Cabt.)
10	G234-32002	Push Button - Osc. Coil - 540-940 Kc.	57	35328	Resistor 30 Ohm 1/2 W		130152	Knob - Tone Control (AW & AX Cabt.)
11	G235-32002	Push Button - Osc. Coil - 600-1050 Kc.	58	47819	Resistor 15,000 Ohm 1/2 W		130157	Knob - Band Change Sw. (AW & AX Cabt.)
12	G236-32002	Push Button - Osc. Coil - 860-1150 Kc.	59	130318	Resistor 120 Ohm 1/2 W		W-130197	Antenna Loop Bracket - AY Cabt. (2 req'd.)
13	G237-32002	Push Button - Osc. Coil - 740-1280 Kc.	60	35328	Resistor 30 Ohm 1/2 W		C130203	Antenna Loop Bracket - AW & AX Cabt.
14	G238-32002	Push Button - Osc. Coil - 880-1550 Kc.	61	35602	Resistor 1 Megohm 1/2 W		7801 (FS-58)	No. 8 - 3/16" Round Head - Wind Screw - Loop Brkt. Mtg. - AY Cabt.
15	G239-32002	Push Button - Osc. Coil - 1000-1600 Kc.	62	35602	Resistor 1 Megohm 1/2 W		20481 (FS-58)	No. 6 - 3/16" Rd. Hd. Wd. Scr. - Loop Brkt. Mtg. AW & AX Cabt.
16	G246-32004	1st I-F Transformer Assy. - 455 Kc.	63	35602	Resistor 1 Megohm 1/2 W		45056	Rubber Grommet - Chassis Mtg. (4 req'd.)
17	G240-32004	2nd I-F Transformer Assy. - 455 Kc.	64	W-23013	Resistor 2,000 Ohm 1/2 W		W-45020	Flat Washer - AW Cabt.
18	G5-34002	Cond. 00005 MF - Mica	65	35502	Resistor 1 Megohm 1/2 W		W-45579	Flat Washer - AX & AY Cabt.
19	130107	Cond. Loop - Shunt Trim.	66	45945	Resistor 5,000 Ohm 1/2 W		130179	No. 8 - 32x 1/4" Screw - Chassis Mtg.
20	G8-50640	Cond. 5 MMF - Twisted Wire	67	35601	Resistor 100,000 Ohm 1/2 W		W-49219	Speaker - Mtg. Bracket (1 req'd.)
21	49929	Cond. 3 Sect. Var. Tuning Gang	68	35601	Resistor 100,000 Ohm 1/2 W		32814 (FS-58)	No. 8 - 32x 1/4" Screw - Spkr Mtg. Brkt. No. 8 Shakeproof Washer - Spkr Mtg. Brkt.
22	130553	Push Button Trim. Assy.	69	35601	Resistor 100,000 Ohm 1/2 W		N-5062 (FS-58)	No. 8 - 32 Hex. Nut - Spkr Mtg. Brkt.
22A	49933	Cond. - P. B. Trimmer - 540-940 Kc.	70	35928	Resistor 30 Ohm 1/2 W		W-49853	Rubber Grommet - Headed Bushing - Speaker Mtg.
22B	49934	Cond. - P. B. Trimmer - 600-1050 Kc.	71	36588	Resistor 30 Ohm 1/2 W		N-8	No. 8 - 32 Hex. Nut - Speaker Mtg.
22C	49935	Cond. - P. B. Trimmer - 860-1150 Kc.	72	36321	Resistor 400,000 Ohm 1/2 W		W-130347	R. H. Bracket - Chassis Rear Support
22D	49936	Cond. - P. B. Trimmer - 740-1280 Kc.	73	35980	Resistor 100,000 Ohm 1/2 W		W-130348	L. H. Bracket - Chassis Rear Support
22E	49937	Cond. - P. B. Trimmer - 880-1550 Kc.	74	40757	Resistor 50,000 Ohm 1/2 W		W-49984-D	Chassis End Plate - R.H.
22F	49938	Cond. - P. B. Trimmer - 1000-1600 Kc.	75	36322	Resistor 25,000 Ohm 1/2 W		W-49985-E	Chassis End Plate - L.H.
23	G3-34002	Cond. 0005 MF - Mica	76	49702	Resistor 250 Ohm 2 W		28750	Escutcheon Pin - Band Sw. Indicator
24	W-35951-A	Cond. - 3 Sect. Shunt Trimmer Assy.	77	NONE			130376	Cloth - Cabinet Protector - AW Cabt.
25	W-35951-A	Cond. - 3 Sect. Shunt Trimmer Assy.	78	NONE			130444	Cloth - Cabinet Protector - AW Cabt.
26	G17-34005	Cond. 0007 MF - Mica	79	NONE			130066	Instruction Booklet
27	G14-34005	Cond. 00185 MF - Mica	80	NONE			49284	Short Wave Log Chart
28	130108	Cond. - B.C. Osc. Series Padder	81	NONE				
29	G3-34002	Cond. 0005 MF - Mica	82	G1-130146	Speaker - AY Cabt.			
30	G2-34002	Cond. 0001 MF - Mica	83	49943	Speaker - AW & AX Cabt.			
31	G21-34002	Cond. 0008 MF - Mica	84	B-130016	Band Change Switch Section 'A' - Antenna Push Button Switch			
32	G21-34002	Cond. 0006 MF - Mica	85	G36-26719	Phono Terminal Board			
33	W-30488	Cond. .02 MF - 400V.	86	130207	Tone Control (3 Meg.) Assy.			
34	W-30805	Cond. .01 MF - 400V.	87	49789	Power Transformer			
35	W-45780-B	Cond. .02 MF - 160V.	88	47783-A	Volume Control (1 Meg.) & Switch			
36	W-45780-B	Cond. .02 MF - 160V.	MG2-49912		Band Sw. Cnls & Trim. Assy. Complete			
37	W-50105	Cond. 1 MF - 160V.	MG9-49911		Dial Back Plate (Shadow Box)			
38	W-50105	Cond. 1 MF - 160V.	130125		Pointer (Dial Hand)			
39	W-50105	Cond. 1 MF - 160V.	GW-130138		Shaft & Pulley Assy. - Pointer			
40	W-49773-B	Cond. - 3 sec. electrolytic Sec. A - 10 MF - 200V. Sec. B - 15 MF - 450V. Sec. C - 15 MF - 450V.	218		Internal Shakeproof Washer - Pointer Mtg. No. 8 - 32" Screw - Pointer Mtg.			
41	G2-34002	Cond. 0001 MF - Mica	130092		Bearing - Pointer Shaft - Riveted to Plate			
42	G1-34002	Cond. 004 MF - 400V.	W-49829-A		Retaining Spring - Pointer Shaft			
43	W-35138	Cond. .04 MF - 400V.	G40-41582		Drive Cord (25 1/4" long) Mfg. (FS-58)			
44	W-30488	Cond. .02 MF - 400V.	W-130195		Spring - Drive Cord Ten. Condenser & Tube Shield			
45	W-30488	Cond. .02 MF - 400V.	B-130012-B (FS-17)		Thumb Screw - Shield Mfg.			
			W-23850-B (FS-58)		Clamp - Electrolytic Cond. Mfg.			
			W-49674		Socket - 8 Prong Octal			
			G103-28807		Socket - 5 Prong "Spkr"			
			G247-34403		V. C. to Phono Term.			
			W-45580-A		Rubber Grommet - Tuning Unit Mtg. Head Bushing			
			49796		Unit Mtg. - Tuning Unit Mtg.			
			130165		8-32x 1/2" Screw - Tuning Junction Block Assy. - (3 Lug & Brkt.)			
			G36-35954					

# Model 26



Qty.	Part No.	Description
1	D-20110-A	Chassis .....
7	W-7871	Socket .....
7	W-7872	Socket Guide .....
1	W-7873	Socket (5 prong speaker) .....
1	W-7874	Socket Guide .....
2	W-20111	R. F. Transformer .....
1	W-20112	R. F. Transformer (antenna) .....
3	W-7272	Screen Grid Connectors.....
3	W-6436	R. F. Shield .....
3	W-6473	R. F. Shield Cover .....
3	W-6474	R. F. Shield Cover Nut .....
1	W-20148	Toggle Switch (local-dist.) .....
1	W-20114	Volume Control .....
1	W-20204	Terminal Board (A & G) .....
1	W-20115	Variable Condenser Gang (complete) .....
	W-4883	Dial Light Bracket .....
	W-5352	Dial & Spider .....
	W-5354	Dial Indicator .....
	W-4890	Pinion .....
	W-4907	Pinion Spring .....
	W-20123	Pinion Stirrup .....
	B-21057	Gang Cover .....
	W-6474	Gang Cover Nuts .....
1	W-20130	Power Switch .....
1	W-20125	Detector Shield Base .....
1	W-20124	Detector Shield .....
1	W-20380	Push Pull A. F. Trans.....
<b>PARTS UNDER CHASSIS</b>		
1	W-20260	Fixed Resistance (4.75 to 5.25) .....
1	W-20103	.0002 Mfd. Fixed Condenser .....

Qty.	Part No.	Description
1	W-4968	.5 Mfd. Fixed Condenser (2 paper) .....
1	W-6014	R. F. Choke .....
1	W-7753	.1 - .5 - .1 Mfd. Fixed Cond. .....
1	W-4013	1. Mfd. Fixed Condenser .....
1	W-20820	Mounting Strip .....
1	W-4924	.00025 Mfd. Fixed Condenser .....
1	W-5408	3 Meg. (Grid Leak) Resistor .....
1	W-4923	60000 Ohm Resistor (Blue, Orange Spot) .....
1	W-6754	.001 Mfd. Fixed Condenser.....
1	W-20820	Mounting Strip .....
1	W-7159	4400 Ohm Resistor (Yellow, Red Spot) .....
1	W-5735	150000 Ohm Resistor (Brown, Green, Yellow Spot) .....
1	W-4362	Plate Choke .....
1	W-6471	1 Mfd. Fixed Condenser (2 paper) .....
1	W-5713	Mounting Strip .....
1	W-0704	300000 Ohm Resistor, (Brown, Blk., Yellow Spot) .....
1	W-20090	.55 to .8 Ohm Resistor .....
1	W-20100	350 Ohm Resistor .....
1	B-20118	Cable (4 wire) .....
1	W-4751	Cable Clamp .....
5	W-4681	Grommets (3-3/4") .....
1	W-5655	Grommets (1") .....
1	C-5888	Bottom .....
6	W-5718	Bottom Double Nut .....
1	W-6161	Knob (large) .....
2	W-6162	Knob (small) .....
1	W-6328	Escutcheon .....
1	B-7030	Front Panel (Wood Cabinet Chassis) .....



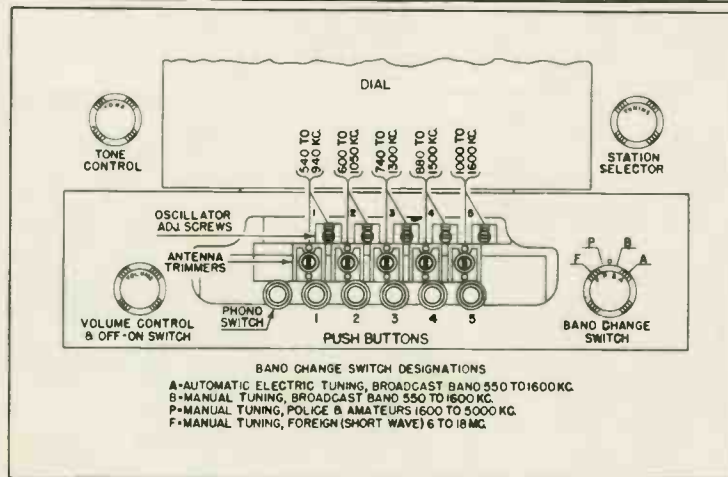
# MODEL 26 CHASSIS

## ALIGNMENT PROCEDURE

Preliminary	
Output Meter Connections.....	Plate to Plate of 6F6's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Tone Control.....	Treble or Speech

## ALIGNMENT PROCEDURE CHART

Align-ment Sequence	Signal Generator			Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
	Dummy Antenna	Frequency Setting	Input Connection to Receiver				
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimners	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimners	Adjust for maximum output while rocking gang thru signal.



TUBE FUNCTION	1	2	3	4	5	6	7	8
6K7GT—R. F. Amp.....	0	0	187	75	0	J.B.	*6.3	2
6A8GT—Osc.-Mod. ....	0	0	187	75	0	130	*6.3	1
6SK7—I. F. Amp.....	0	0	2.3	0	2.3	78	*6.3	228
6SQ7—Det. A.V.C.-A. F.....	0	0	0	0	0	110	*6.3	0
6J5GT—Phase Invert. ....	0	0	120	0	0	J.B.	*6.3	5.5
6F6G—Output .....	0	0	220	230	0	J.B.	*6.3	14.5
6F6G—Output .....	0	0	220	230	0	J.B.	*6.3	14.5
5Y3G—Rectifier .....	NC	329.0	J.B.	*358.0	J.B.	*358	J.B.	329.0

\*Measure with A. C. Voltmeter.

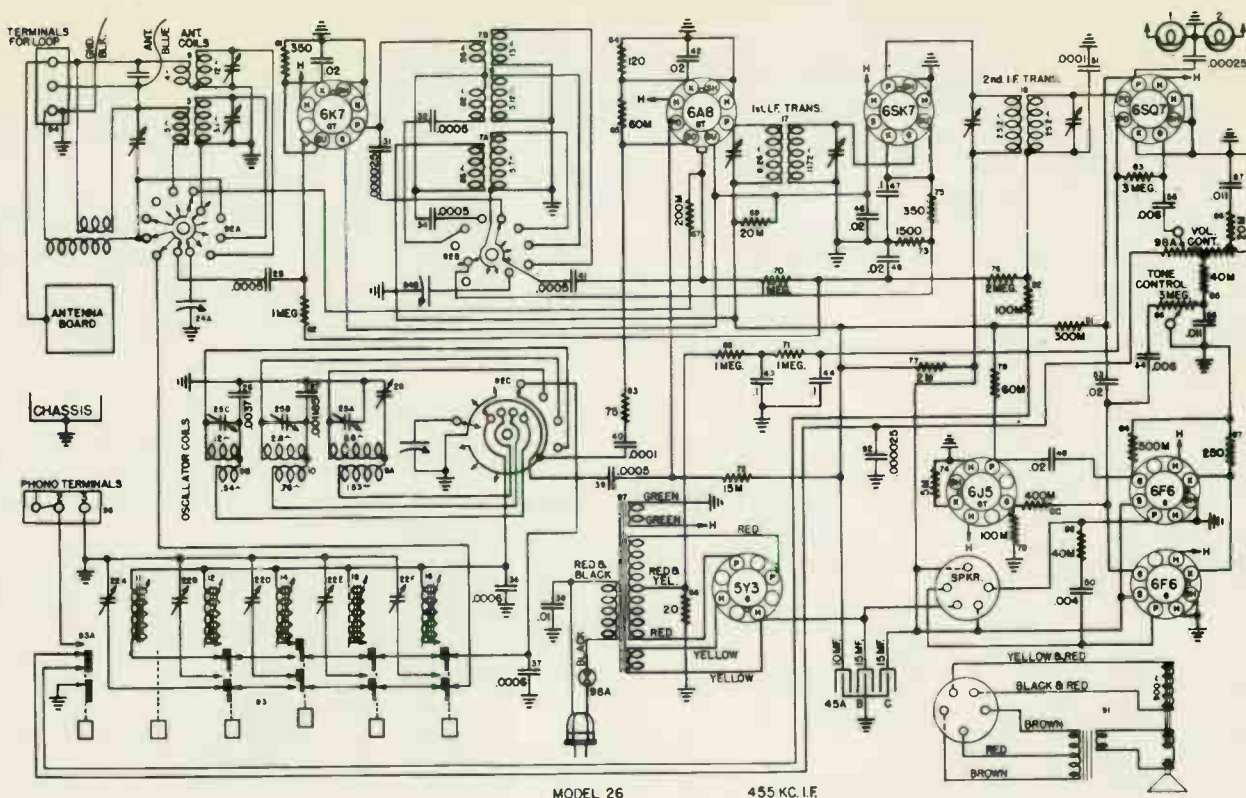
Max. POWER OUTPUT @ 117.5 V. LINE..... 8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE..... 85 Watts  
 DROP ACROSS SPEAKER FIELD..... 95.0 Volts

J.B.—JUNCTION BLOCK.

Voltages may vary 10% of values given.

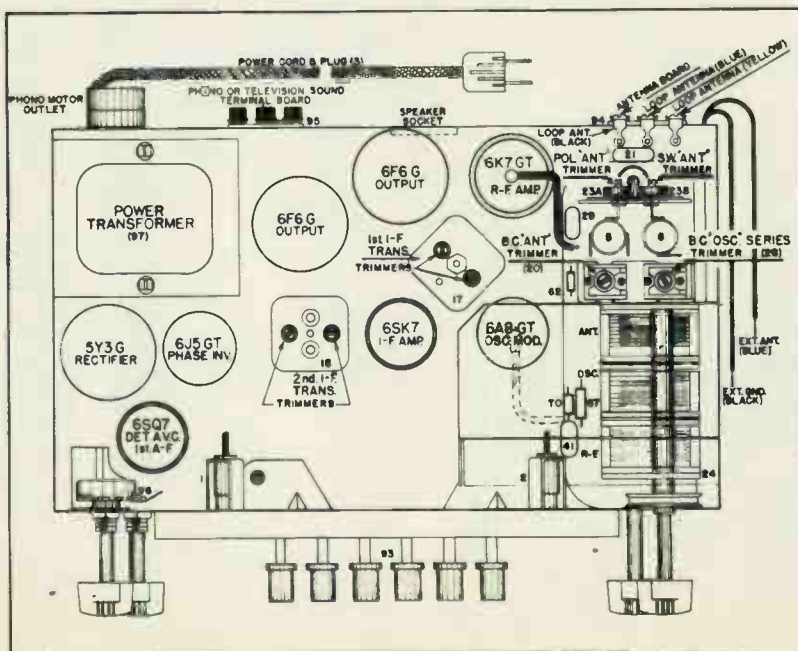
N.C.—NO CONNECTION.

## MODEL 26 WIRING DIAGRAM



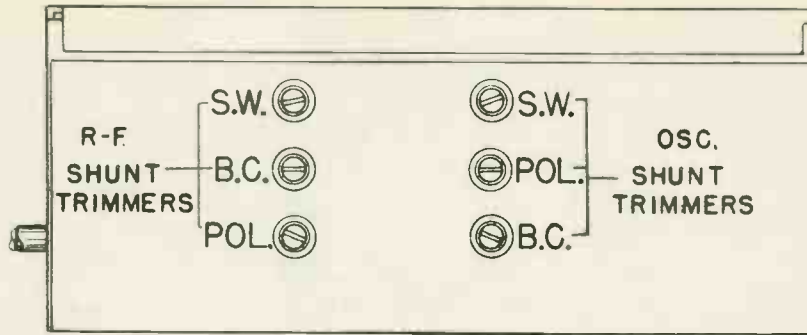
*The Crosley Corporation was one of the very earliest radio parts manufacturers. As early as 1920, parts were distributed on a nation-wide basis. We are still anxious to serve you with radio service parts through the Crosley distributor in your area.*

## DIAGRAM OF CONNECTIONS



# MODEL 26

## TRIMMER LOCATIONS



### PARTS LIST — MODEL 26

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	57	—48993	Cond. .011 Mf. 160 V. Paper
2	—43567	Bulb, Dial Light	58	G1 —34002	Cond. 250 Mmf. Mica
3	G7 —49637	Socket Assy.—Dial Light	59		
4	—45769—H	Cable & Plug Power	60		
5	G2 —130234	Coil, Antenna Loop	61	—38916	Res. 350 Ohm 1/2 W. Ins.
6	G225 —32000	Coil, Pol. Ant.	62	—35602	Res. 1 Meg. 1/4 W. Ins.
7A	G224 —32000	Coil, H.F. Ant.	63	—47699	Res. 75 Ohm 1/2 W. Ins.
7B	G114 —32001	Coil, B.C. R.F.	64	—130311	Res. 120 Ohm 1/2 W. Ins.
8	G115 —32001	Coil, H.F. R.F.	65	—35928	Res. 60,000 Ohm 1/4 W. Ins.
9A	G241 —32002	Coil, Pol. R.F.	66	—49702	Res. 20 Ohm 1/2 W. Ins.
9B		Coil, S.W. Osc.	67	—35930	Res. 200,000 M Ohm 1/4 W. Ins.
10	G242 —32002	Coil, Pol. Osc.	68	—35602	Res. 1 Meg. 1/4 W. Ins.
11	G234 —32002	Coil, P.B. Osc. 540-940 Kc.	69	—37377	Res. 20,000 1 Ohm Ins.
12	G235 —32002	Coil, P.B. Osc. 600-1050 Kc.	70	—35602	Res. 1 Meg. 1/4 W. Ins.
13			71	—35602	Res. 1 Meg. 1/4 W. Ins.
14	G237 —32002	Coil, P.B. Osc. 740-1300 Kc.	72	—47819	Res. 15,000 Ohm 1 W. Ins.
15	G238 —32002	Coil, P.B. Osc. 880-1550 Kc.	73	—130488	Res. 1500 Ohm 1/4 W. Ins.
16	G239 —32002	Coil, P.B. Osc. 1000-1600 Kc.	74	—49945	Res. 5000 Ohm 1/4 W. Ins.
17	G246 —32004	1st I-F Trans.	75	—38916	Res. 350 Ohm 1/2 W. Ins.
18	G240 —32004	2nd I-F Trans.	76	—35927	Res. 2 Meg. 1/4 W. Ins.
19			77	—23013	Res. 2000 Ohm 1 1/4 W. Flex.
20	—49859	Iron Core	78	—35928	Res. 60,000 Ohm 1/4 W. Ins.
	—49932	Cond. Trimmer	79	—35600	Res. 100,000 Ohm 1/4 W. Ins.
	—45580	Rubber Grommet—P.B. Mtg. Unit	80	—36821	Res. 400,000 Ohm 1/4 W. Ins.
21	G5 —34002	Cond. 50 Mmf. Mica	81	—35601	Res. 300,000 Ohm 1/4 W. Ins.
22			82	—35600	Res. 100,000 Ohm 1/4 W. Ins.
	—49769	Headed Bushing—P.B. Unit Mtg.	83	—36688	Res. 3 Meg. 1/4 W. Ins.
22A	—49933	Cond. P.B. Trim. 540-940 Kc.	84	—36322	Res. 500,000 Ohm 1/4 W. Ins.
22B	—49934	Cond. P.B. Trim. 600-1050 Kc.	85	—36761	Res. 40,000 Ohm 1/4 W. Ins.
22C			86	—36760	Res. 20,000 Ohm 1/4 W. Ins.
22D	—49936	Cond. P.B. Trim. 740-1300 Kc.	87	—49703	Res. 250 Ohm 2 W. Ins.
22E	—49987	Cond. P.B. Trim. 880-1550 Kc.	88	—36761	Res. 40,000 Ohm 1/4 W. Ins.
22F	—49938	Cond. P.B. Trim. 1000-1600 Kc.	89		
23A	—37886—A	Cond. Pol. Ant. Trim.	90		
23B		Cond. Sw. Ant. Trim.		—49653	Grommet—Spkr. Mtg. (4)
24A	—49929	Var. Cond. Ant. Sect.	91	G1 —130328	Brkt.—Spkr. Mtg. (4)
24B		Var. Cond. R.F. Sect.		—47219	Speaker (12 inch)
24C		Var. Cond. Osc. Sect.		—47219	Headed Bushing—Spkr. Mtg. (4)
25A	—35951—A	Cond. B.C. Osc. Trim.	92A	—130487	Switch, Band Change (Ant. Sect.)
25B		Cond. Pol. Osc. Trim.	92B		Switch, Band Change (B.F. Sect.)
25C		Cond. H.F. Osc. Trim.	92C		Switch, Band Change (Osc. Sect.)
26	G17 —34005	Cond. 3700 Mmf. Mica	93	—130016	Switch, Push Button
27	G14 —34005	Cond. 1185 Mmf. Mica	93A		Switch, Push Button Phono
28	—130108	Cond. B.C. Osc. Series Trim.	94	G58 —26719	Terminal Board (Loop)
29	G3 —34002	Cond. 500 Mmf. Mica	95	G56 —26719	Terminal Board (Phono)
30	—45780—B	Cond. .02 Mf. 160 V. Paper	96	—130741—A	Tone Control (3 Meg.)
31	G6 —34002	Cond. 25 Mmf. Mica		—49966	Brkt.—T.C. Mtg. (4)
32	G3 —34002	Cond. 500 Mmf. Mica	97	—130191	Transformer (Power)
33			98A	—130192	Vol. Con. (1 Meg.)
34	G8 —34002	Cond. 500 Mmf. Mica	98B	—130160—A	Switch (Power)
35A	—35951—A	Cond. B.C. R.F. Trim.		—49176	Push Button (6)
35B		Cond. Pol. R.F. Trim.		—130158	Clamp—Elect. Cond. Mtg.
35C		Cond. H.F. R.F. Trim.		—130221	Screws—Dial & Escutcheon Mtg. (6)
36	G21 —34002	Cond. 600 Mmf. Mica	MG84—130111	—130111	Dial Back Plate
37	G21 —34002	Cond. 600 Mmf. Mica	G40 —41582	—41582	Drive Cord
38	—30805	Cond. .01 Mf. 400 V. B.C.		—130138	Pointer Shaft Assy.
39	G3 —32002	Cond. 500 Mmf. Mica		—49829	Spring—Pointer Shaft Retaining
40	G2 —34002	Cond. 100 Mmf. Mica		—130351	Dial Pointer
41	G3 —34002	Cond. 500 Mmf. Mica		—130012	Shield—Cond. Gang
42	—45780—B	Cond. .02 Mf. 160 V. Paper		—23880	Thumb Screw—Shield Mtg.
43	—50105	Cond. .1 Mf. 160 V. Paper	—130218—D	—130218—D	BB Cabinet
44	—50105	Cond. .1 Mf. 160 V. Paper		—130219	Carton
45A	—130246	Cond. 10 Mf. 250 V. Elect.		—130444	Protector Cloth
45B		Cond. 15 Mf. 450 V. Elect.		—130221	Dial Face & Escutcheon (6)
45C		Cond. 15 Mf. 450 V. Elect.		—130147	P.B. Escutcheon
46	—30488	Cond. .02 Mf. 400 V. Paper		—130324	Screws—P.B. Escutcheon
47	—50105	Cond. .1 Mf. 160 V. Paper		—130383	Cab. Back
48	—45780—B	Cond. .02 Mf. 160 V. Paper		—48797	Antenna Board
49	—30488	Cond. .02 Mf. 400 V. Paper		—45579	Flat Washers—Chassis Mtg.
50	—35139	Cond. .004 Mf. 400 V. Paper	—130179	—130179	Screw—Chassis Mtg.
51	G2 —34002	Cond. 100 Mmf. Mica	—45056	—45056	Rubber Grommet—Chassis Support
52	G6 —34002	Cond. 25 Mmf. Mica		—130197	Knob (4)
53	—30488	Cond. .02 Mf. 400 V. Paper		—130992	Chassis End Plate (L. 4)
54	—45810—B	Cond. .006 Mf. 160 V. Paper		—130991	Chassis End Plate (R. 4)
55	—34713	Cond. .006 Mf. 160 V. Paper	—130186—B	—130186—B	Call Letters
56	—48993	Cond. .011 Mf. 160 V. Paper	—130187—A	—130187—A	Celluloid Covers

# SERVICE INFORMATION MODEL 27 CHASSIS

## WIRING DIAGRAM

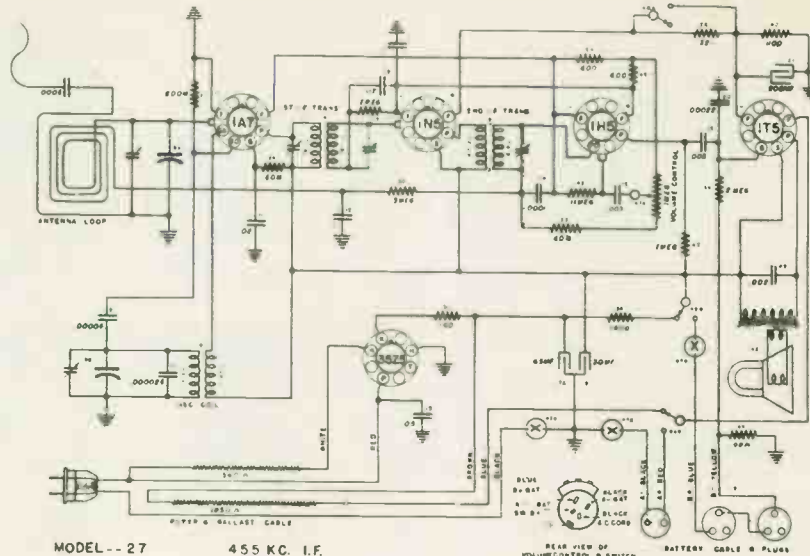
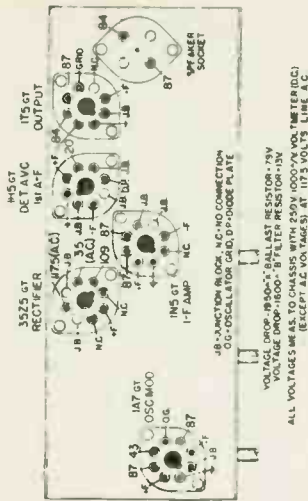


Fig. 2

### PARTS LIST

Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION
1	130340	Power Cord & Plug (dual resistance in cord)	18	50084	Cond. .003 MF.—160V. Tub.	42		
2	130050	A & B Bat. Cable complete	19	50084	Cond. .003 MF.—160V. Tub.	43		
3	G1-130368	Loop Antenna Assy.— Model 27 BD	20	G1-34002	Cond. 250 MMF.—Mica	44		
			21	130404	Cond. .200 MF.—8½ V. Elec.	45	G1-130446	Speaker
			22	130462	Cond. .002 MF.—160V. Tub.	46	130075	Switch—AC-DC Battery Volume Control & Bat. v Electric Power Sw.
			24			47	49974	Crosley A & B Bat. Pack
4	G240-32002	Oscillator Coil	25				CR-658	Tube Shield
5	G244-32004	1st 1-F. Trans. Assy.	26	37631	Resistor 32 Ohm ½ W.		46447	Dial Face
6	G248-32004	2nd 1-F. Trans. Assy.	27	33930	Resistor 200000 Ohm ¼ W.		130400	Pointer—Dial Hand
7	G5-34002	Cond. .50 MMF.—Mica	28	35928	Resistor 60000 Ohm ¼ W.		49780	"On" Indicator (semaph.)
			29	35927	Resistor 2 Megohm ¼ W.		130392	Indicator Bracket
8	49737	Cond.—Variable Tuning	30	36688	Resistor 3 Megohm ¼ W.		130349	Spring—Indicator Bracket
9	G6-34002	Cond. 25 MMF.—Mica	31	130073	Resistor 140 Ohm 2W.		50590	Ind. Cam & Hub Assy.
10	45780	Cond. .02 MF.—160V. Tub.	32	35928	Resistor 60000 Ohm ¼ W.		G27-43564	Lens—Dial Window (cel.)
11	45780	Cond. .02 MF.—160V. Tub.	33	48693	Resistor 11 Megohm ¼ W.		49832	BD
12	45780	Cond. .02 MF.—160V. Tub.	34	38918	Resistor 600 Ohm ½ W.		130416	Carrying Case—Standard
13	45780	Cond. .02 MF.—160V. Tub.	35	38918	Resistor 600 Ohm ½ W.		130417	Carrying Case—Deluxe
14	50105	Cond. .1 MF.—120V. Tub.	36	130374	Resistor 1600 Ohm ½ W.			Knob—Volume & Tuning
15	45782	Cond. .05 MF.—120V. Tubular (A.C.)	37	35602	Resistor 1 Megohm ¼ W.			Knob—Battery/AC-DC
16	G2-34002	Cond. 100 MMF.—Mica	38	35927	Resistor 2 Megohm ¼ W.			
			39	42401	Resistor 99 Ohm ¼ W.			
			40	21452	Resistor 1100 Ohm ¼ W.			
			41					

### ALIGNMENT PROCEDURE

Volume Control on full

Output meter connected to Plate and Screen of 1T5GT

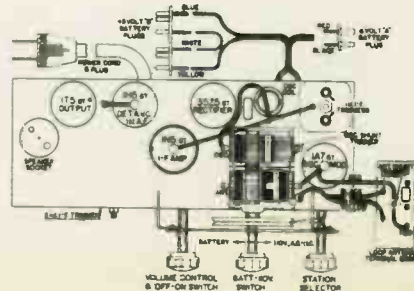
SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Grid 1A7GT	.02 MF	Fully open	2nd 1-F (1) located on front	Adjust for maximum signal.
455 Kc	Grid 1A7GT	.02 MF	Fully open	chassis flange 1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Approx. 140	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	on dial	"ANT" shunt on loop ant. through hole in right side of cabinet	Adjust for maximum output.

Repeat above for more accurate adjustments

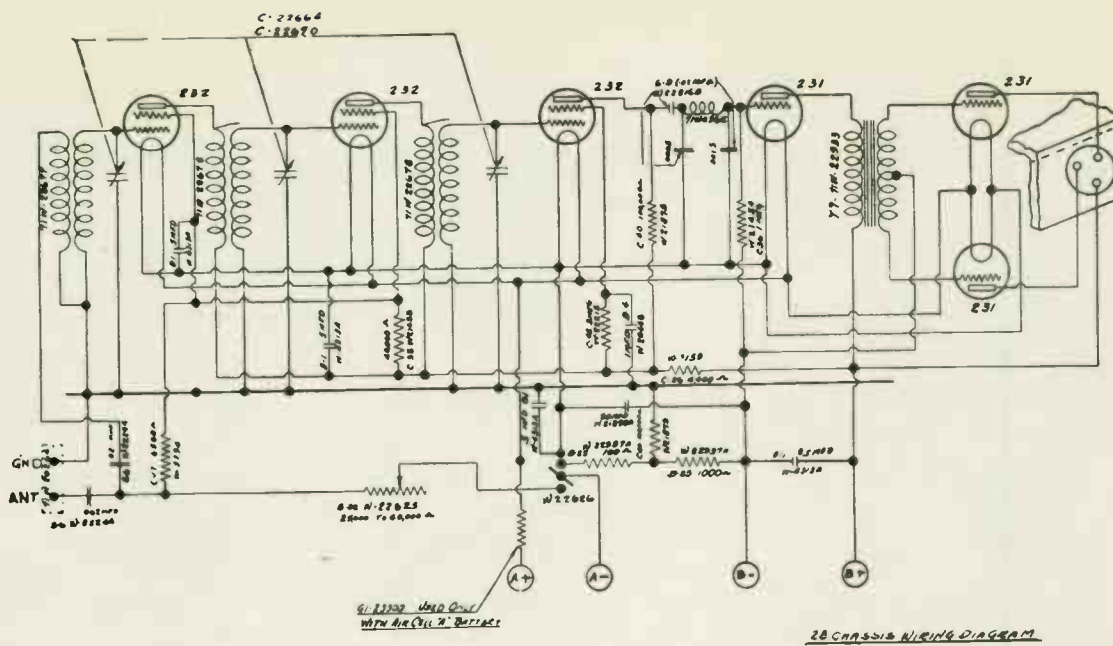
Maximum power output @ 75 V. "B" — approx. 200 M. W.  
Maximum power output @ 90 V. "B" — approx. 340 M. W.  
Maximum power output @ 90 V. "B" — approx. 200 M. W.  
undistorted

A Battery drain @ 6 volts. .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ 90 V., 12 M. A.  
Power consumption @ 117.5 volts line—30 Watts

**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**



# MODELS 27 and 28



## Parts List—Model 27

## —Model 28

Qty.	Part No.	Description	Qty.	Part No.	Description
1	C-24647	Chassis .....	1	D-22689	Chassis .....
3	G-11-28800	Four Prong Socket 232 .....	6	W-7871	Four Prong Socket .....
3	G-15-28800	Four Prong Socket 231 .....	6	W-7874	Four Prong Socket Guide .....
1	G1-24655	Terminal Board (Speaker)..	1	W-20264	Terminal Board (A. & G.)..
1	LW-20264D	Terminal Board (A & G) ....	1	W-21513A	Terminal Board (Speaker)..
1	G1-24393	Junction Block .....	1	W-22682	Idler Bracket Assy. (Upper)
1	LB-24648	R. F. Coil Unit Assy. ....	1	G2-22658	R. F. Coil Unit Assy. ....
2	G1-22678A	Interstage Coil Assy. ....	1	G2-22677B	Antenna Coil .....
1	W-24658	Mounting Plate .....	2	G1-22678	Interstage Coil .....
2	B-7556A	R. F. Coil Shield .....	3	B-7558A	Coil Shield .....
1	G2-22677B	Antenna Coil Assy. ....	1	W-22663	Mounting Plate .....
1	B-7556A	R. F. Coil Shield .....	1	W-4362	Plate Choke .....
1	C-24692	Variable Condenser .....	1	W-22683	Idler Bracket Assy. (Lower)
1	G2-26686	Dial Drive .....	1	W-22679	Dial Strip .....
1	W-24676	Dial Pointer .....	1	W-22681	Idler Bracket Assy. (Tension)
2	G6-23628	Tube Connector Assy. ....	3	W-21973	Tube Connector .....
1	G7-23623	Tube Connector Assy. ....	1	B-22929	Tube Shield .....
1	W-24842	Volume Control .....	1	L-23215	Variable Tuning Condenser Assy.
1	W-24643	Switch .....	1	G2-22633A	A. F. Transformer .....
1	Ga-22633A	A. F. Transformer Assy. ....	1	W-22625	Volume Control .....
1	W-24673	Condenser Clamp .....	1	B-22627A	Battery Cable .....
1	B-22627A	Battery Cable .....	1	W-22460A	Drive Pulley Bracket .....
1	W-4751B	Cable Clamp .....	1	W-22463	Stop Washer .....
1	G1-24284	R. F. Choke .....	1	W-22628A	Stop Washer .....
1	G1-24684	Shield Assembly .....	1	W-22402	Support Bracket .....
1	W-24783	Shield .....	1	W-22644	Pointer .....
2	G2-24684	Shield Assembly .....	1	W-22628	Switch .....
		<b>Condensers</b>			
1	W-20449	(.5 - .1) Mfd. ....	1	W-22827A	Drive Shaft .....
1	W-6428	(.5 - .5) Mfd. ....	1	W-22334	Drive Rope (39" Long) .....
1	W-4313A	(.5) Mfd. ....	1	G1-24393	Junction Block .....
1	W-22244	(.02 - .002) Mfd. ....	4	W-4313A	(.5) Mfd. ....
1	W-22816B	(.0015 - .02 - .0005) Mfd. ....	1	W-20448	(.1) Mfd. ....
1	W-24282	(20) Mfd. (Filter Cond.) ....	1	W-22244	(.02-.002) Mfd. ....
			1	W-22816B	(.0015-.02-.0005) Mfd. ....
			1	W-24282	Filter Condenser .....
		<b>Resistances</b>			<b>RESISTANCES</b>
1	W-21875	100,000-ohm (Brown Body, Black Tip, Yellow Dot.)....	1	W-22957A	Fixed Resistance, 1000 ohm-100 Ohm .....
1	W-21454	1 - Meg. (Brown Body, Black Tip, Green Dot.)....	1	W-21453	40,000 ohms (Yellow body, black tip, orange dot.)....
1	W-5794	6,500-ohm (Blue Body, Green Tip, Red Dot.)....	1	W-21454	1 megohm (Brown body, black tip, green dot.)....
1	W-21453	40,000-ohm (Yellow Body, Black Tip, Orange Dot.)....	3	W-21875	100,000 ohms (Brown body, black tip, yellow dot.)....
1	W-22215	3 - Meg. (Orange Body, Black Tip, Green Dot.)....	1	W-7159	4,400 -ohms (Yellow body, yellow tip, red dot.)....
1	W-7159	4,400 (Yellow Body, Yellow Tip, Red Dot.) .....	1	W-22215	3 megohms (Orange body, black tip, green dot.)....
1	G1-23300	.22-ohm .....	1	W-5794	6,500 ohms (Blue body, green tip, red dot.)....
1	W-24691	(100-1,100) ohm .....	1	W-21964	165 ohms, flexible (Brown body, blue tip, green dot.)
		<b>Shipping List</b>			
3	W-24675	Tube Shield Cap .....	3	G1-23472	Knob .....
3	G1-23472	Knob .....	1	G1-23300	Fixed Resistance "A" Bat. Tube Shield Cover .....
1	L-23834	No. 234 U Speaker .....	1	B-22926	Tube Shield Cover .....
	L-24127	(1N) Cabinet Assy. ....	1	L-23204	Ornament & Shadow Box..
	L-24670	(1RC) Cabinet Assy. ....	1	W-22424	Shadow Box .....
			1	L-23834	234 U Speaker .....
			1	L-23856	1 P Cabinet .....
			1	L-24294	1 RB Cabinet .....

# MODEL 28

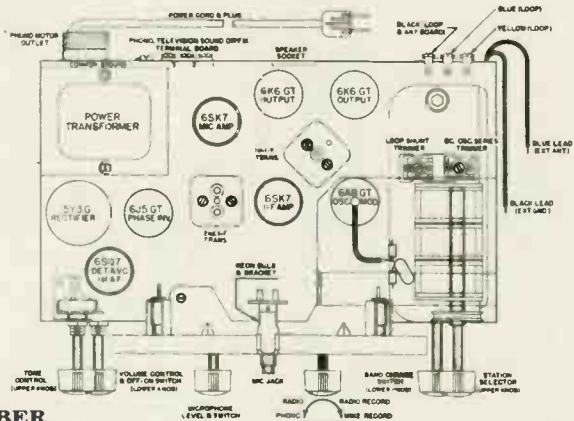
## RADIO RECEIVER ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections.....Plate to Plate of 6K6G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.



TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6SK7—Pre-Amp.	0	0			0	J. B.	*6.3	52
6A8GT—Osc.-Mod.	0	0	198	76.5	0	132	*6.3	1
6SK7—I. F. Amp.	0	0	2.4	0	2.3	76.5	*6.3	226
6SQ7—Det. A. V. C.-A. F.	0	0	0	0	0	98	*6.3	0
6J5GT—Phase Invert.	0	0	118.5	0	0	J. B.	*6.3	6.0
6K6G—Output	0	0		236	0	J. B.	*6.3	15.5
6K6G—Output	0	0	226	236	0	J. B.	*6.3	15.5
5Y3G—Rectifier	NC	310	J. B.	*300	J. B.	*300	J. B.	310

\*Measure with A. C. Voltmeter.

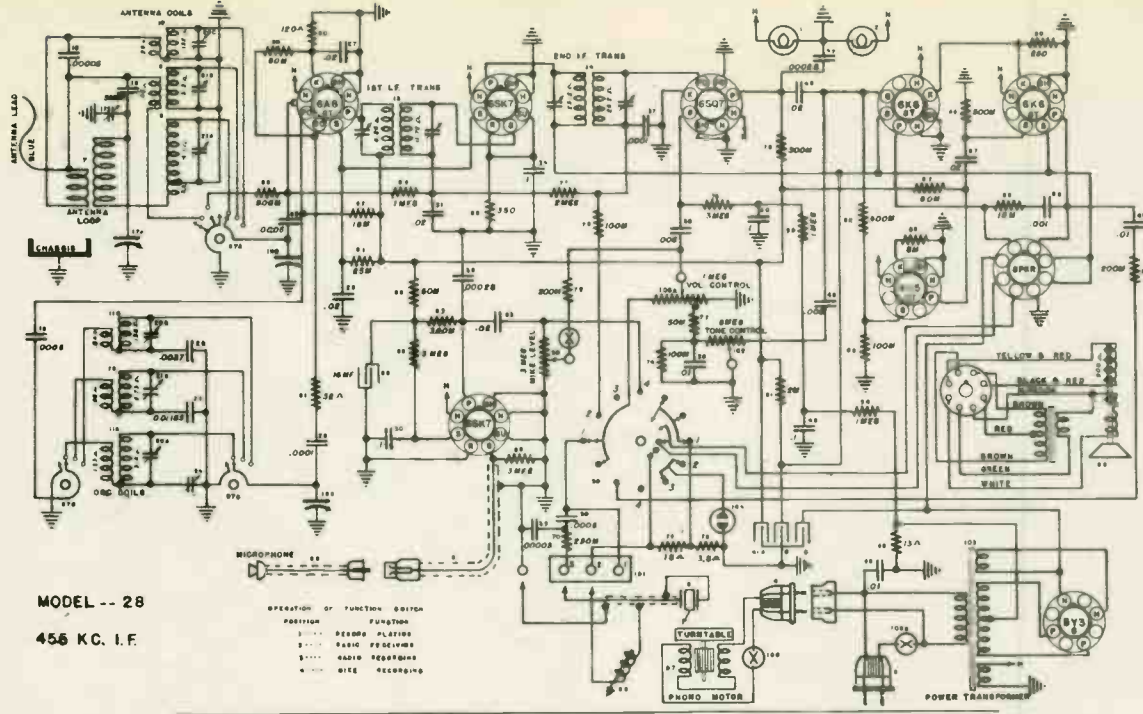
MAX. POWER OUTPUT @ 117.5 V. LINE..... 5.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE..... 66 Watts (Radio Only)  
 TOTAL POWER CONSUMPTION @ 117.5 V. LINE..... 110 Watts (Including Phono Motor)  
 DROP ACROSS SPEAKER FIELD ..... 74 Volts

Voltagcs may vary 10% of values given.

J. B.—JUNCTION BLOCK

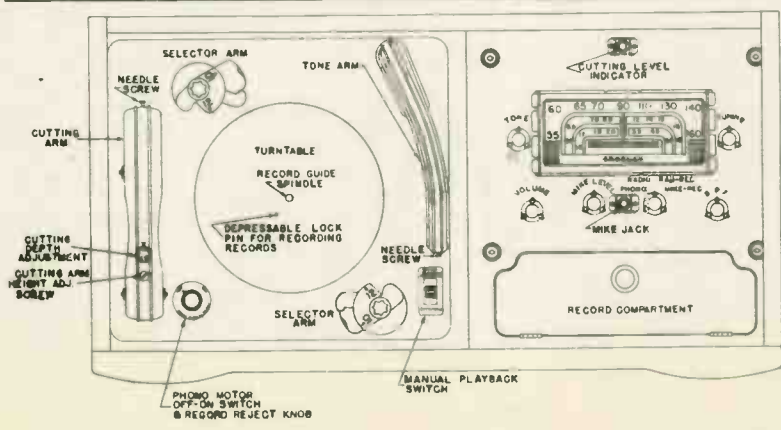
N. C.—NO CONNECTION

MODEL 28



MODEL -- 28  
456 KC. I.F.

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	42567	Dial Lamp	50	NONE		105	47783	Vol. Cont. (3 Meg.) & Sw.
2	42567	Dial Lamp	51	NONE			12894	Dial Face & Escutcheon
3	G7-40827	Dial Light Socket Assy.	52	NONE			129780	Escutcheon Only
4	45769	Power Cord & Plug (Radio)	53	NONE			129780	Dial Face Only
4	130857	Power Cord & Plug (Motor)	54	NONE			MG31-130544	Dial Back Plate Assy.
5	G282-34408	Cable & Socket for Mike	56	130646	Cutting Head (Magnetic)		CW-130138	Pointer Shaft Assy.
6	130812	Crystal Cartridge (Tone Arm)	57	130855	Microphone		130125	Pointer (Dial Hand)
7	G1-130234	Loop Antenna Assy.	58	36322	Phono Motor—110V.—60 Cycle		G40-41582	Drive Cord (25 1/2-in.)
8	G112-32001	Preselector Coil (1.5 C.)	59	35528	Resistor 500,000 Ohm 1/2 W.		130195	Spring-Cord Tension
9	G222-32000	Antenna Coil—1.6-3.0 Mc	60	130311	Resistor 100,000 Ohm 1/2 W.		130012	Gang & Tube Shield
10	G223-32002	Antenna Coil—6.0-18 Mc	61	45981	Resistor 150 Ohm 1/2 W.		23380	Thumb Screw
11	G232-32002	Dual Oscillator Coil—Dual A—500-1600 Kc. B—6-16.0 Mc.	62	47813	Resistor 32 Ohm 1/2 W.		46631	Neon Tube Clamp
12	G233-32002	Oscillator Coil—1.6-5.0 Mc.	63	130318	Resistor 15,000 Ohm 1/2 W.		130613	Lockplate—Wall Tap
13	G246-32004	1st I-F Assy.—455 Kc.	64	35602	Resistor 25,000 Ohm 1/2 W.		130252	Wall Tap—Phono Plug
14	G240-32004	2nd I-F Assy.—455 Kc.	65	40787	Resistor 1 Megohm 1/2 W.		AZ	Cabinet
15	G3-34002	Cond. 500 MMF—Mica	66	26888	Resistor 3 Megohm 1/2 W.		130699	Shipping Carton (AZ Cabt.)
16	G5-34002	Cond. 50 MMF—Mica	67	35801	Resistor 300,000 Ohm 1/2 W.		130624	Escutcheon—Neon Indic. & Mike Jack
17	130107	Trimmer	68	38918	Resistor 350 Ohm 1/2 W.		130158	Neon Tube Screw—Escut. (Neon. Dial Ect.) Mfg.
18	G7-50640	Cond. 3MMF (Twisted)	70	38978	Resistor 250,000 Ohm 1/2 W.		130197	Knob (8 Req.)
19	49929	3 Section Var. Tuning	71	35227	Resistor 2 Megohm 1/2 W.		130423	R. H. Chassis Mfg. Strap
20	35951	3 Section Shunt Trimmer	72	35930	Resistor 200,000 Ohm 1/2 W.		130425	L. H. Chassis Mfg. Strap
21	35951	3 Section Shunt Trimmer	73	35600	Resistor 100,000 Ohm 1/2 W.		45380	Bracket Chassis Mfg.
22	G17-34003	Cond. 3700 MMF—Mica	74	12655	Resistor 100,000 Ohm 1/2 W.		49796	Rubber Grommet Chassis Mfg. (6)
23	G14-34003	Cond. 1185 MMF—Mica	75	130654	Resistor 3 1/2 Ohm 1/2 W.		47728	Headed Bushing Chassis Mfg. (8)
24	130108	Cond. 600KC Series	76	40787	Resistor 50,000 Ohm 1/2 W.		47728	Dec. Washer (FS-88) Chassis Mfg. (6)
25	G3-34002	Cond. 500 MMF—Mica	77	35602	Resistor 1 Megohm 1/2 W.		47781	Ov. Hd. Screw (FS-18) Chassis Mfg. (8)
26	G2-34002	Cond. 100 MMF—Mica	78	38688	Resistor 3 Megohm 1/2 W.		23380	Thumb Screw—Chassis Mfg.
27	45780	Cond. 02 MF—160 V.	79	35801	Resistor 300,000 Ohm 1/2 W.		49885	L. H. Chassis End Plate
28	30468	Cond. 02 MF—400 V.	80	35902	Resistor 2,000 Ohm 1/2 W.		49884	R. H. Chassis End Plate
29	48122	Cond. 16 MF—250 V.	81	23013	Resistor 400,000 Ohm 1/2 W.		130312	Chassis Bottom
30	22688	Cond. 01 MF—400 V.	82	38321	Resistor 100,000 Ohm 1/2 W.		49874	Socket—8 Frong
31	45780	Cond. 02 MF—160 V.	83	35800	Resistor 100,000 Ohm 1/2 W.		27381	Base—Tube Shield
32	G1-34002	Cond. 250 MMF—Mica	84	35602	Resistor 1 Megohm 1/2 W.		130594	Shield Tube Socket
33	30488	Cond. 02 MF—400 V.	85	130641	Resistor 12 Ohm 1/2 W.		130232	Bracket—Loop Mfg. (2)
34	50106	Cond. 1 MF—160 V.	86	NONE		81	49176	Clamp—Elect. Cond. Mfg.
35	G3-34003	Cond. 600 MMF—Mica	87	NONE		92	48797	Antenna Board
36	G3-34003	Cond. 100 MMF—Mica	88	NONE		96	130653	Recorder—Automatic Changer Unit—110V.—60 Cycle
37	G3-34003	Cond. 006 MF—160 V.	89	G2-130146	Speaker & Plug		130684	Recorder—Automatic Changer Unit—220V.—60 Cycle
38	34711	Cond. 01 MF—160 V.	90	49215	Bracket—Spkr Mfg. (4)		130665	Recorder—Automatic Changer Unit—110V.—50 Cycle
39	130171	Cond. 01 MF—160 V.	91	130859	Flat Washer (Eccent)		47330	Play Back Needle (10)
40	50105	Cond. 1 MF—160V.	92	49941	Spkr. Mfg. (4)		MG48-130610	Cutting Stylus (Needle)
41	49774	Cond. 3 Section Electrolytic	93	130602	Band Change Switch		130647	Screw—Cutting Needle Clamp
		Section A—10 MF—250 V.	94	130656	Phono Motor Switch		130648	Screw—Tone Arm Needle Clamp
		Section B—15 MF—450V.	100	130656	Terminal Board (Phono Connect.)		130648	Screw—Tone Arm Needle Clamp
		Section C—15 MF—450V.	101	G50-26719	Phono Motor Switch		130648	Screw—Tone Arm Needle Clamp
		Cond. 1 MF—160V.	102	130741	Terminal Board (Phono Connect.)		130648	Screw—Tone Arm Needle Clamp
		Cond. 006 MF—160V.	103	49986	Phono Motor Switch		130648	Screw—Tone Arm Needle Clamp
		Cond. 01 MF—400V.	104	130740	Terminal Board (Phono Connect.)		130648	Screw—Tone Arm Needle Clamp
		Cond. 02 MF—400V.					130648	Screw—Tone Arm Needle Clamp
		Cond. 01 MF—400V.					130648	Screw—Tone Arm Needle Clamp
		Cond. 01 MF—400V.					130648	Screw—Tone Arm Needle Clamp



# MODEL 29 CHASSIS

## ALIGNMENT PROCEDURE

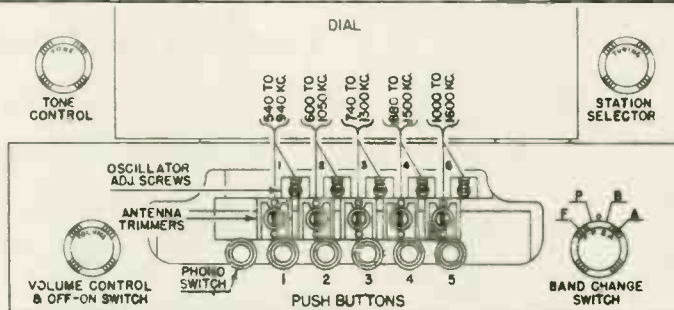
Preliminary

Output Meter Connections	.....	Plate to Plate of 6F6's
Generator Ground Connection	.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output	.....	See Chart Below
Position of Volume Control	.....	Fully On
Position of Tone Control	.....	Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. R-F Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and R-F Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and R-F Trimmers	Adjust for maximum output while rocking gang thru signal.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



BAND CHANGE SWITCH DESIGNATIONS  
 A-AUTOMATIC ELECTRIC TUNING, BROADCAST BAND 550 TO 1600 KC.  
 B-MANUAL TUNING, BROADCAST BAND 550 TO 1600 KC.  
 P-MANUAL TUNING, POLICE & AMATEURS 1600 TO 5000 KC.  
 F-MANUAL TUNING, FOREIGN (SHORT WAVE) 6 TO 18 MC.

SOCKET VOLTAGES MEASURED @ 117  
WITH 1000 OHM PER VC

TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6K7GT—R. F. Amp	0	0	187	75	0	J. B.	*6.3	2
6A8GT—Osc.-Mod.	0	0	187	75	0	130	*6.3	1
6SK7—I. F. Amp	0	0	2.3	0	2.3	78	*6.3	228
6SQ7—Det. A.V.C.-A. F.	0	0	0	0	0	110	*6.3	0
6J5GT—Phase Invert.	0	0	120	0	0	J. B.	*6.3	5.5
6F6G—Output	0	0	220	230	0	J. B.	*6.3	14.5
6F6G—Output	0	0	220	230	0	J. B.	*6.3	14.5
5Y3G—Rectifier	NC	329.0	J. B.	*358.0	J. B.	*358	J. B.	329.0

\*Measure with A. C. Voltmeter.

MAX POWER OUTPUT @ 117.5 V. LINE..... 8.0 W.atts  
 POWER CONSUMPTION @ 117.5 V. LINE..... 85 Watts  
 DROP ACROSS SPEAKER FIELD..... 95.0 Volts

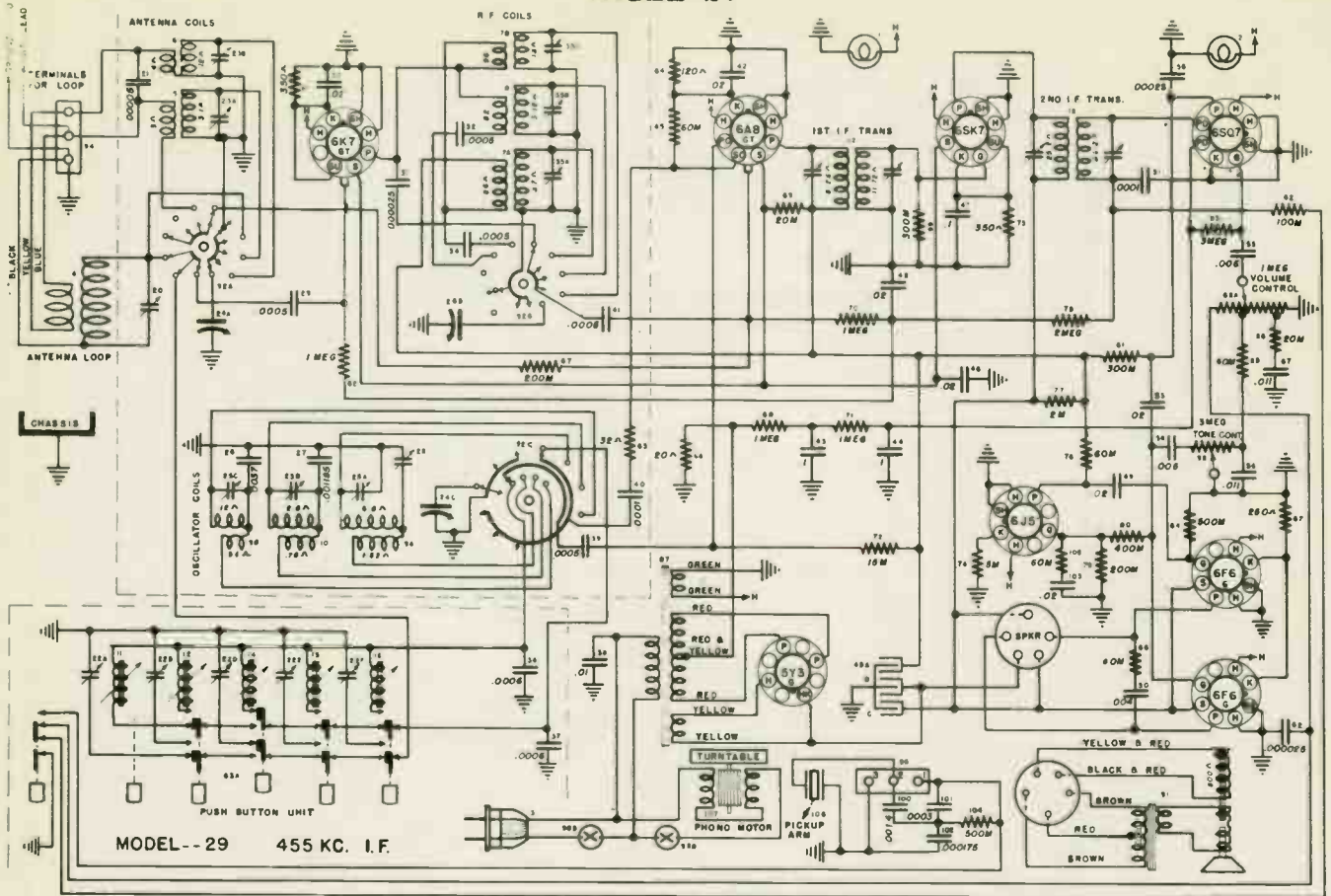
Voltagcs may vary 10% of values given.

J. B.—JUNCTION BLOCK

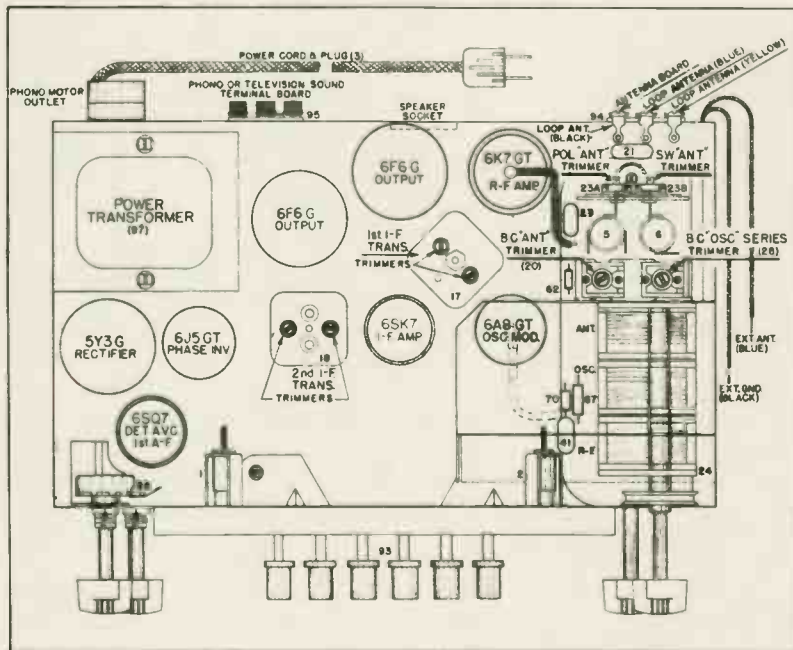
M. C.—NO CONNECTION



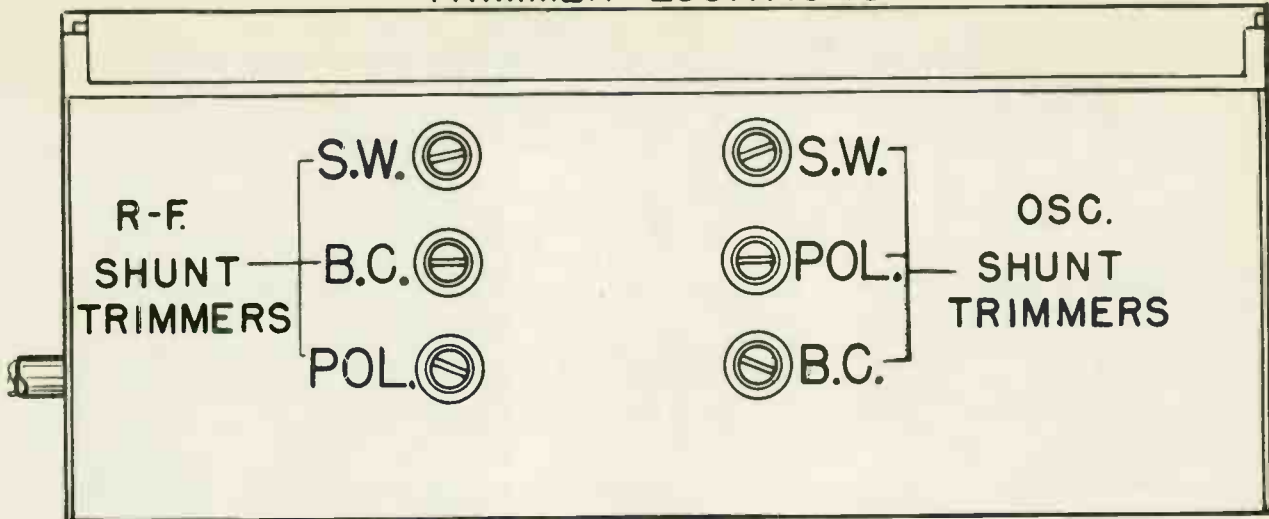
# WIRING DIAGRAM MODEL 29



## DIAGRAM OF CONNECTIONS



## MODEL 29 TRIMMER LOCATIONS



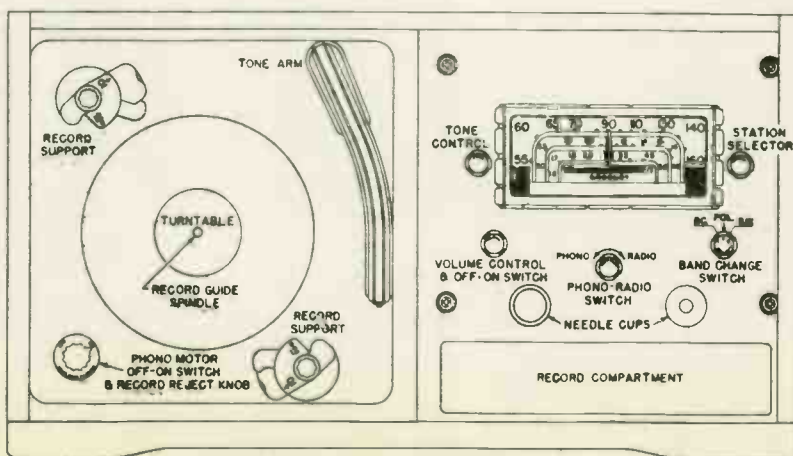
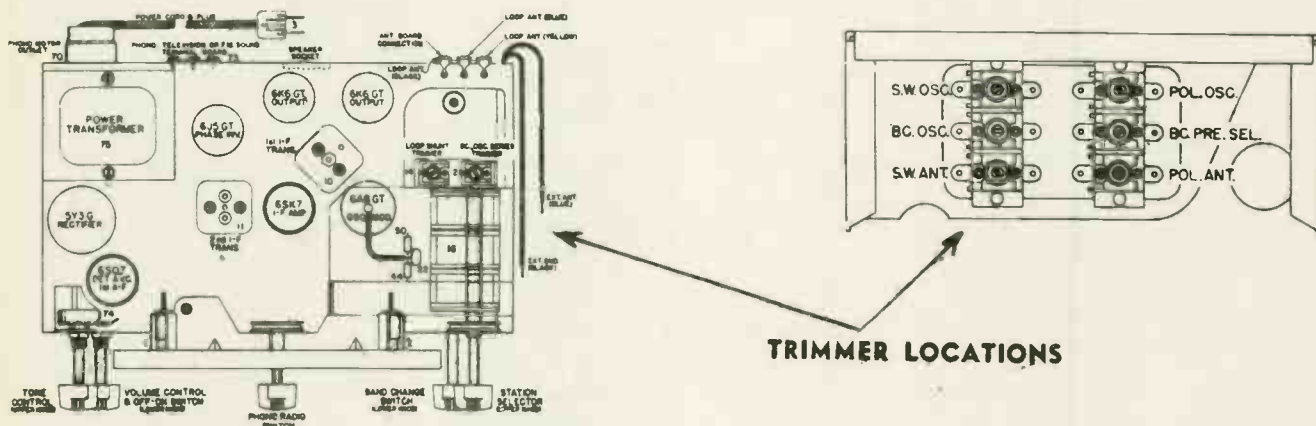
### PARTS LIST — MODEL 29

Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	36	G21-34002	Cond. 600 MMF.—Mica	95	G50-26719	Terminal Board (Phono)
2	43567	Dial Light Bulb	37	G21-34002	Cond. 600 MMF.—Mica	96	49881	Shorting Jumper
3	G7-49637	Socket Assy.—Dial Light	38	30805	Cond. .01 MF.—400V.—Tubular	97	130741	Tone Control (3 Meg.)
4	43769	Power Cord and Plug	39	G3-34002	Cond. 500 MMF.—Mica	98	49986	Tone Control Mtg. Brkt.
5	G225-32000	Loop Antenna Assy.—550-1600 Kc.	40	G2-34002	Cond. 100 MMF.—Mica	99	130191	Power Trans.—117 Volt—60 Cycle
6	G224-32000	Ant. Coil—1.6-5.0 Mc.	41	G3-34002	Cond. 500 MMF.—Mica	100	130192	Vol. Control (1 Meg.) & Switch
7A	G114-32001	Ant. Coil—6.0-18.0 Mc.	42	45780	Cond. .02 MF.—160V.	101	None	
7B	None	R-F Coil—550-1600 Kc.	43	50105	Cond. .1 MF.—160V.	102	41461	Cond. .0014 MF.—200V.
8	G115-32001	R-F Coil—6.0-18.0 Mc.	44	50105	Cond. .1 MF.—160V.	103	G17-34002	Cond. 300 MMF.—Mica
9A	G241-32002	R-F Coil—1.6-5.0 Mc.	45	130246	Cond. .1 MF.—160V.	104	G11-34002	Cond. 175 MMF.—Mica
9B	None	Osc. Coil—550-1600 Kc.			Cond. —3 sec. electrolytic	105	45780	Cond. .02 MF.—160V.
10	G242-32002	Osc. Coil—6.0-18.0 Mc.			Sec. A—10 MF.—250V.	106	36322	Resist. 500,000 Ohm <sup>1</sup> / <sub>2</sub> W.
11	G231-32002	Osc. Coil—1.6-5.0 Mc.			Sec. B—15 MF.—150V.	107	35928	Resistor 60,000 Ohm <sup>1</sup> / <sub>2</sub> W.
12	G235-32002	Osc. Coil—P.B.—540-940 Kc.	46	30488	Cond. .02 MF.—160V.		130818	Crystal Cartridge
13	None	Osc. Coil—P.B.—600-1050 Kc.	47	50105	Cond. .1 MF.—160V.		130819	Phono Motor—110V-60CY Cabinet
14	G237-32002	Osc. Coil—P.B.—740-1300 Kc.	48	45780	Cond. .02 MF.—160V.		130437	Ship. Carton—BA Cabt.
15	G238-32002	Osc. Coil—P.B.—880-1500 Kc.	49	30488	Cond. .02 MF.—160V.		130612	Cabinet (Double Front)
16	G239-32002	Osc. Coil—P.B.—1000-1600 Kc.	50	30270	Cond. .001 MF.—400V.		130460	Ship. Carton—AT Cabt.
	19859	Iron Core Slug—P.B. Osc. (6)	51	G2-34002	Cond. 100 MMF.—Mica			Cabt. Protector & Polishing Cloth
17	G246-32004	1st I-F Assy. 455 Kc.	52	G6-34002	Cond. 25 MMF.—Mica		130637	Dial Face & Escutcheon
18	G240-32004	2nd I-F Assy. 455 Kc.	53	30488	Cond. .02 MF.—160V.		47728	Deco. Washer—Chassis Brkt. Mtg. (FS-18)
19	None	Cond. B.C. Ant. (for loop) Trimmer	54	45810	Cond. .006 MF.—160V.		47761	210—32x <sup>3</sup> / <sub>4</sub> " Phil. Hd. Screw—Chassis Brkt. Mtg. (FS-18)
20	49932	Cond. 50 Mmf.—Mica	55	34713	Con. .011 MF.—160V.		130423	R. H. Brkt. Assy. Chassis Mtg.
21	G5-34002	Cond. 50 Mmf.—Mica	56	48993	Con. .011 MF.—160V.		130426	L. H. Brkt. Assy. Chassis Mtg.
22	None	Cond. —P.B.—Padder—510-940 Kc.	57	48993	Con. .011 MF.—160V.		15580	Rubber Grommet—Chassis Mtg. (6 req.)
22A	49933	Cond. —P.B.—Padder—600-1050 Kc.	58	G1-34002	Cond. 250 MMF.—Mica		49796	Headed Bushing—Chassis Mtg. (6 req.)
22B	49934	Cond. —P.B.—Padder—740-1300 Kc.	59	None			130519	Automatic Record Changer Instructions
22C	None	Cond. —P.B.—Padder—880-1500 Kc.	60	None			130839	Holder—Needle Package
22D	49936	Cond. —P.B.—Padder—1000-1600 Kc.	61	38916	Resistor 350 Ohm <sup>1</sup> / <sub>2</sub> W.		130158	Screw—Holder Mtg. Chassis Bottom
22E	49937	Rubber Grommet—Tuning and P.B. Unit Mtg.	62	35602	Resistor 1 Megohm <sup>1</sup> / <sub>2</sub> W.		35066	Screw—Bottom Mtg. Washer—Bottom Mtg.
22F	49938	Headed Bushing—Tuning and P.B. Unit Mtg.	63	45981	Resistor 32 Ohm <sup>1</sup> / <sub>2</sub> W.		0-8	Washer—Bottom Mtg.
	45580	Headed Bushing—Tuning and P.B. Unit Mtg.	64	130311	Resistor 120 Ohm <sup>1</sup> / <sub>2</sub> W.		47791	Needle Cup (FS88)
23A	37986-A	Cond. —Pol. Ant. Trim.	65	35928	Resistor 60,000 Ohm <sup>1</sup> / <sub>2</sub> W.		47790	Needle Cup Lid (FS88)
23B	None	Cond. —S.W. Ant. Trim.	66	49702	Resistor 20 Ohm <sup>1</sup> / <sub>2</sub> W.		47339	Package of 10 Needles
24	49929	Var. Tuning Gang Cond.	67	35930	Resistor 200 Ohm <sup>1</sup> / <sub>2</sub> W.		130186	Station Call Tab Sheets
25A	None	Cond. —B.C. Osc. Trim.	68	35602	Resistor 1 Megohm <sup>1</sup> / <sub>2</sub> W.		130187	Collu. Cover—Call Tab
25B	35951	Cond. —Pol. Osc. Trim.	69	37377	Resistor 20,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130160	Push Button (6 req.)
25C	None	Cond. —S.W. Osc. Trim.	70	35602	Resistor 1 Megohm <sup>1</sup> / <sub>2</sub> W.		49176	Clamp Elect. Cond. Mtg.
26	G17-34005	Cond. 3700 MMF.—Mica	71	35602	Resistor 1 Megohm <sup>1</sup> / <sub>2</sub> W.		MG9-130242	Dial Back Plate (Shadow Box)
27	G14-34005	Cond. 1185 MMF.—Mica	72	47819	Resistor 15,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130138	Pointer Shaft Assy.
28	130108	Cond. —B.C. Osc. Series Trimmer	73	130488	Resistor 1500 Ohm <sup>1</sup> / <sub>2</sub> W.		49829	Spring—Pointer Shaft Retaining
29	G3-34002	Cond. 500 MMF.—Mica	74	49945	Resistor 5,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130125	Dial Pointer
30	45780	Cond. .02 MF.—160V.—Tubular	75	38916	Resistor 350 Ohm <sup>1</sup> / <sub>2</sub> W.		130012	Shield—Cond. Gang
31	G6-34002	Cond. 25 MMF.—Mica	76	35927	Resistor 2 Megohm <sup>1</sup> / <sub>2</sub> W.		23880	Thumb Screw—Shield Mtg.
32	G3-34002	Cond. 500 MMF.—Mica	77	23013	Resistor 2,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130147	Push Button Escutcheon
33	None	Cond. 500 MMF.—Mica	78	35928	Resistor 60,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130324 (FS-77)	Screws—P.B. Escut. Mtg. (4 req.)
34	G3-34002	Cond. 500 MMF.—Mica	79	35930	Resis. 200,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130158 (FS-77)	Screws—Dial & Escut. Mtg. (6 req.)
35A	None	Cond. R-F Trim.—B.C.	80	36321	Resis. 400,000 Ohm <sup>1</sup> / <sub>2</sub> W.		48797	Antenna Board
35B	35951	Cond. —R-F Trim.—Pol.	81	35601	Resis. 300,000 Ohm <sup>1</sup> / <sub>2</sub> W.		130197	Knob—(4 req.)
35C	None	Cond. —R-F Trim.—S.W.	82	35600	Resis. 100,000 Ohm <sup>1</sup> / <sub>2</sub> W.			
			83	36688	Resistor 3 Megohm <sup>1</sup> / <sub>2</sub> W.			
			84	36322	Resis. 500,000 Ohm <sup>1</sup> / <sub>2</sub> W.			
			85	36761	Resistor 40,000 Ohm <sup>1</sup> / <sub>2</sub> W.			
			86	36760	Resistor 20,000 Ohm <sup>1</sup> / <sub>2</sub> W.			
			87	49703	Resistor 250 Ohm 2W.			
			88	None				
			89	None				
			90	None				
			91	G3-130328	Speaker			
				49219	Bracket—Spkr. Mtg. (4 req.)			
				19853	Rubber Grommet—Spkr. Mtg. (4 req.)			
				47219	Headed Bushing—Spkr. Mtg. (4 req.)			
				130487	Band Selector Switch			
				130128	Push Button Switch only			
				G58-26719	Terminal Board (Loop Connections)			

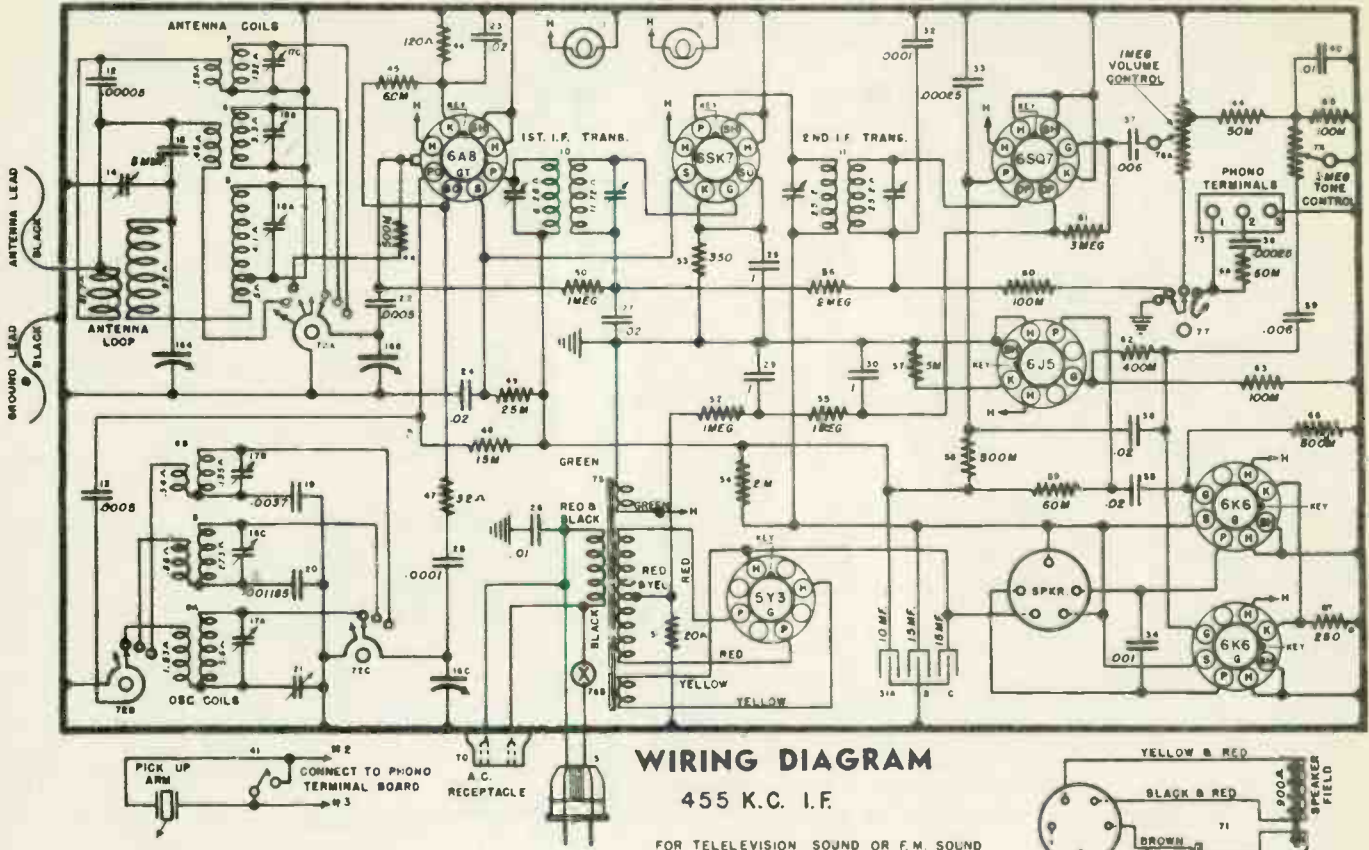
# MODEL J30BC

## ALIGNMENT PROCEDURE CHART

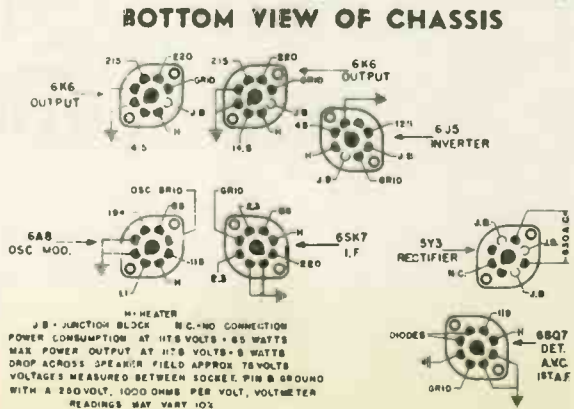
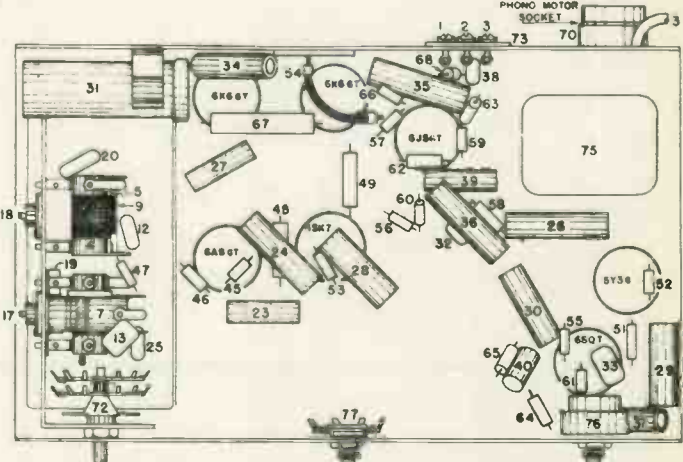
Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.



# MODEL J30BC



Item No.	Part No.	Description
2-1	43567	Dial Light
3	45789	Pr. Cord & Plug
4	MG-23-130243	Loop Ant.
5	G112-32001	B. C. Preselector Coil
6	G222-32000	Pol. Ant. Coil
7	G223-32000	S. W. Ant. Coil
8	G232-32002	S. W.-B. C. Osc. Coil
9	G233-32002	Pol. Osc. Coil
10	G246-32004	1st I. F. Trans.
11	G240-32004	2nd I. F. Trans.
12	G8-14002	.00005 Mf. Mica
22-13	G3-34002	.0005 Mf. Mica
14	130107	Loop Trimmer
15	G8-34002	.00001 Mf. Mica
16	49929	Tuning Cond. Assem.
18-17	15951	3 Section Trimmer
19	G17-34005	.0037 Mf. Mica
20	G14-34005	.001185 Mf. Mica
21	130108	Osc. Series Padder
36-35-27-24-23	40488	.02 Mf. 400 V.
32-25	G2-34002	.0001 Mf. Mica
40-20	30805	.01 Mf. 400 V.
30-29-28	50105	.1 Mf. 160 V.
31	49773	Filter Cond.
		15-15 @ 450 10 @ 250
33	G1-34002	.00025 Mf. Mica
34	30270	.001 Mf. 400 V.
39-37	24713	.006 Mf. 160 V.
38	G1-34002	.00025 Mf. Mica
66-44	36322	1/2 Meg. 1/2 W.
59-45	35928	60,000 ohm 1/2 W.
46	130311	120 ohm 1/2 W.
47	45981	32 ohm 1/2 W.
48	47819	15,000 ohm 1 W.
49	130318	25,000 ohm 1 W.
55-52-50	35602	1 Meg. 1/2 W.
51	49702	20 ohm 1/2 W.
53	38916	380 ohm 1/2 W.
54	23013	2000 ohm 1/2 W.
56	35927	2 Meg. 1/2 W.
57	49945	5 Meg. 1/2 W.
58	35801	300,000 ohm 1/2 W.
65-63-60	33600	100,000 ohm 1/2 W.
61	34688	3 Meg. 1/2 W.
62	31621	400,000 ohm 1/2 W.
68-64	49757	50,000 ohm 1/2 W.
67	49703	250 ohm 2 W.
70	130252	A. C. Outler
71	130146	Speaker
72	49941	Band Switch
73	G56-28719	Phone Terminal
74	130741	Tone Control
75	49789	Pr. Trans.
76	47783	Vol. Cont. & Sw. (1 Meg.)
	130125	Pointer (Dial Hand)
	130260	Dial Face
	130259	Escutcheon
	130153	Knob (Tuning)
	130154	Knob (Vol. Control)
	130155	Knob (Tone Control)
	130253	Knob (Band Sw.)
	130254	Knob (Phono-radio)





# MODELS 31BF

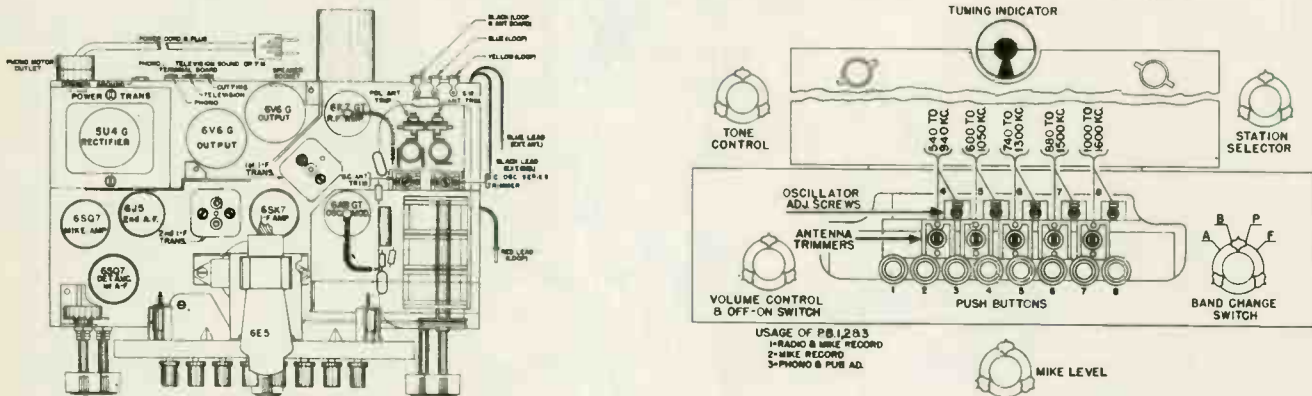
## RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections ..... Plate to Plate of 6V6G's  
 Generator Ground Connection ..... To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output ..... See Chart Below  
 Position of Volume Control ..... Fully On  
 Position of Tone Control ..... Treble or Speech  
 Position of Mike Level Control ..... All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

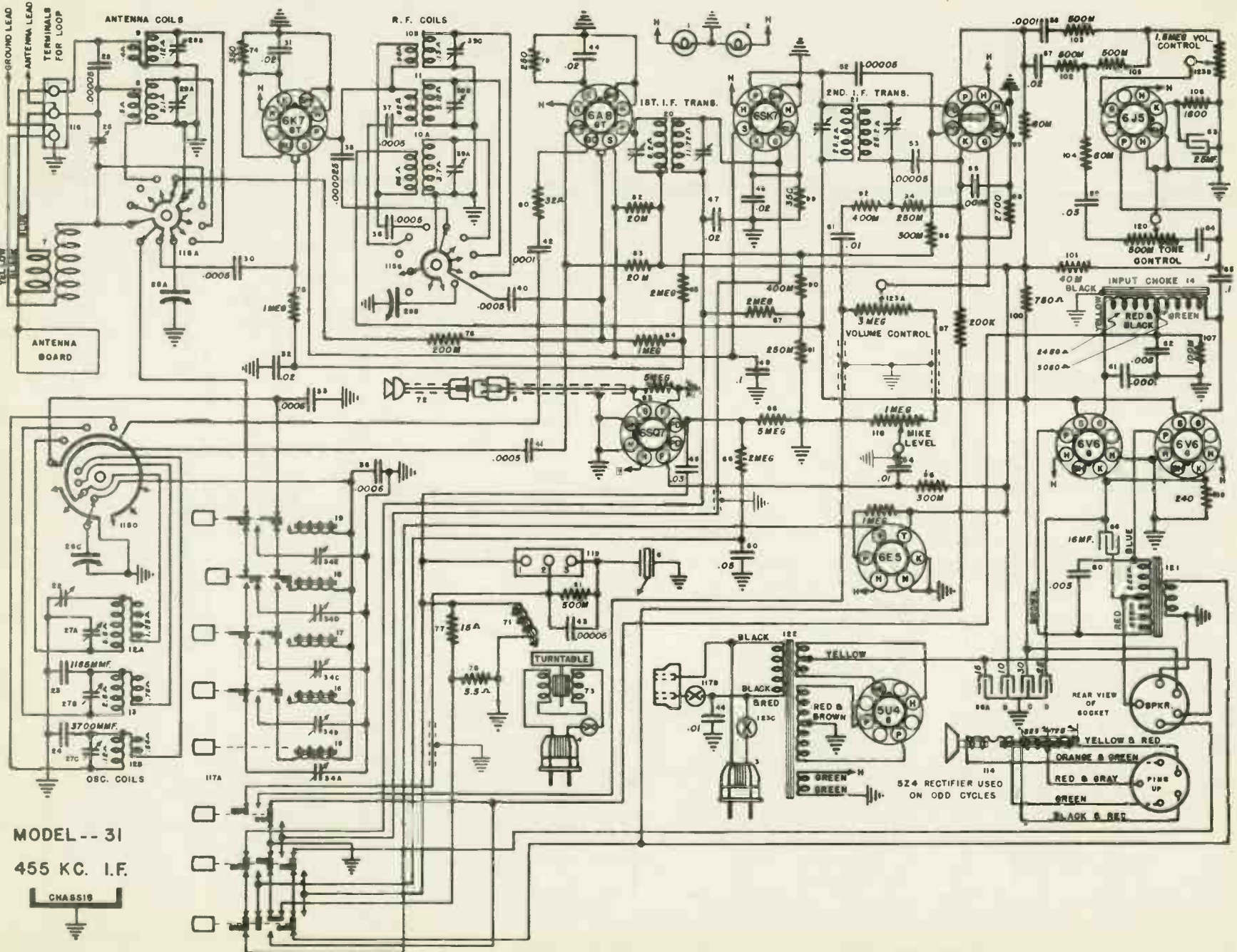
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output. Do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.



TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R. F. Amplifier.....	GND.	GND.	280	110	3.25	J.B.	*6.5	3.25
6A8GT	Osc.-Mod.....	GND.	GND.	260	110	—NEG.	135	*6.5	3.00
6SK7	I-F Amplifier.....	GND.	GND.	GND.	GRID	3.6	110	*6.5	280
6SQ7	Det.-A.V.C.-1st A-F.....	GND.	GND.	1.75	A.V.C. DIODE	AUDIO DIODE	220	*6.5	GND.
6J5	Driver.....	GND.	6.5	145	J.B. 265	GRID	J.B. A.V.C.	GND.	4.85
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6V6G	Output.....	GND.	GND.	300	280	GRID	J.B.	*6.5	18.5
6SQ7	Mic. Amp. & Ind. Rect...	GND.	GND.	GND.	LEVEL DIODE	N.C.	85	*6.5	GND.
6E5	Indicator—(Tun.-Level)								
5U4G	Rectifier.....								

\*Measured with A.C. Voltmeter. N.C.=No Connection. GND.=Ground. J.B.=Junction Block.  
 MAXIMUM POWER OUTPUT @ 117.5 V. Line=20 Watts @ Voice Coll.  
 POWER CONSUMPTION @ 117.5 V. Line = Radio 115 Watts + Phono Motor 35 Watts = 150 Watts, Total.  
 DROP ACROSS SPEAKER FIELD: Red/Black to Red/Gray = 25 Volts.  
 Red/Gray to Red/Yellow = 45 Volts.

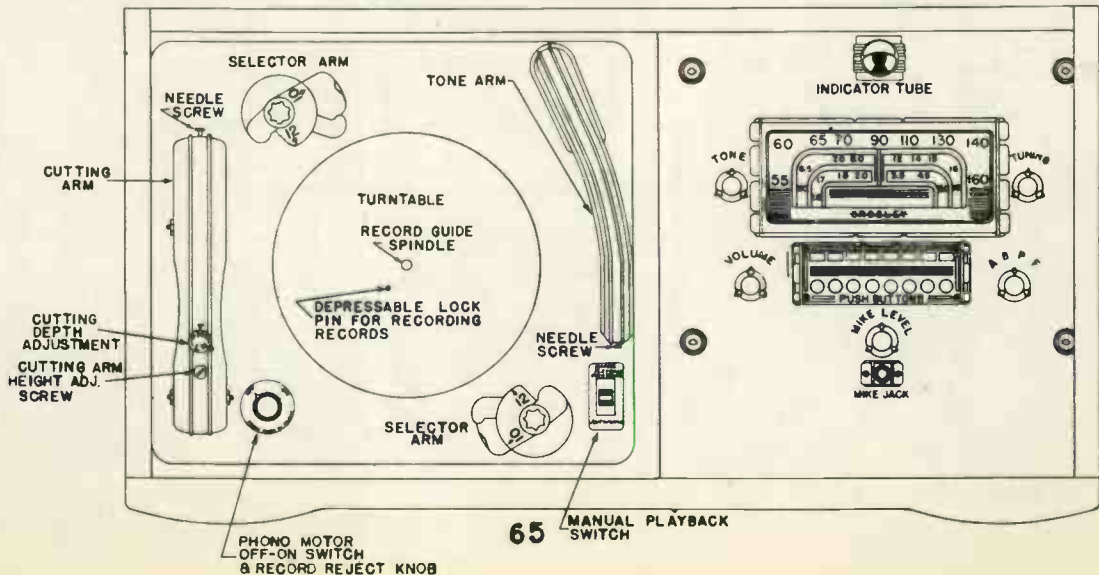
**WIRING DIAGRAM**  
MODEL 31



MODEL -- 31  
455 KC. I.F.  
CHASSIS

# PARTS LIST — MODEL 31

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light			Sect. A—15 MF.—450 V.	130125		Pointer (Dial Hand)
2	43567	Dial Light			Sect. B—10 MF.—300 V.	G40-41582		Drive Cord (25 1/2 in.)
3	G7-49637	D. L. Socket Assy.			Sect. C—30 MF.—450 V.	130195		Spring (Cord Tension)
3	45769	Power Cord & Plug (Radio)	57	45780	Sect. D—25 MF.—25 V.	130012		Gang & Tube Shield
4	130857	Power Cord & Plug (Motor)	58	G2-34002	Cond. .02 MF.—160 V.	23880		Thumb Screw
5	G294-34403	Shielded Lead & Socket (Mike)	59	45817	Cond. .05 MF.—160 V.	130252		Lockplate—Wall Tap
6	130818	Crystal Cart. (Tone Arm)	60	25435	Cond. .003 MF.—400 V.	BF		Cabinet
7	G2-130234	Ant. Loop (550-1600 Kc.)	61	G2-34002	Cond. .100 MMF.—Mica	130759		Shipping Carton
8	G225-32000	Ant. Coil (1.6 to 5.0 Mc.)	62	45810	Cond. .006 MF.—160 V.	130624		Escutcheon—Mike Jack
9	G224-32000	Ant. Coil (6.0 to 12.0 Mc.)	63	130900	Cond. 25 MF.—10 V. Elec.	130158		2x 3/8 Screw
10	G114-32001	Dual R-F Coil	64	24049	Cond. .1 MF.—200 V.	130197		Knob (5)
		Sect. A—550 to 1600 Kc.	65	24049	Cond. .1 MF.—200 V.	130424		R. H. Chassis Mtg. Strap
		Sect. B—6.0 to 18.0 Mc.	66			130427		L. H. Chassis Mtg. Strap
11	G115-32001	R-F Coil (1.6 to 5.0 Mc.)	67			130425		Bracket Chassis Mtg.
12	G241-32002	Dual Osc. Coil	68			45580		Rubber Grommet
		Sect. A—550 to 1600 Kc.	69					Chassis Mtg. (6)
		Sect. B—6.0 to 18.0 Mc.	70			47728		Dec. Washer FS-88
13	G242-32002	Osc. Coil (1.6 to 5.0 Mc.)	71	130854	Cartridge Cutter—Mag.	47761		Chassis Mtg. (6)
14	G1-130432	Input Trans. Choke	72	130764	Microphone Crystal			Ov. Hd. Screw FS-18
15	G234-32002	Osc. Coil P.B. (540-940 Kc.)	73	130870	Motor Phono (60-110 V.)	23880		Chassis Mtg. (6)
16	G235-32002	Osc. Coil P.B. (600-1050 Kc.)	74	38916	Resistor 350 Ohm 1/2 W.	49984		Thumb Screw Chas. Mtg.
17	G237-32002	Osc. Coil P.B. (740-1300 Kc.)	75	35602	Resistor 1 Megohm 1/4 W.	49984		R. H. End Plate
18	G238-32002	Osc. Coil P.B. (880-1550 Kc.)	76	35930	Resist. 200,000 Ohm 1/4 W.	49985		L. H. End Plate
19	G239-32002	Osc. Coil P.B. (1000-1600 Kc.)	77	31264	Resistor 15 Ohm 3 W.	130821		Chassis Bottom
20	G246-32004	1st I-F. Trans. 455 Kc.	78	40378	Resistor 3 1/2 Ohm 1 W.	35066		Hex. Hd. M. Scr. (4)
21	G240-32004	2nd I-F. Trans. 455 Kc.	79	51085	Resistor 27 Ohm 1/2 W.	O-8		Flat Washer FS-58 (4)
22	130108	Cond. Bc. Osc. Series Trimmer	80	45981	Resistor 250 Ohm 1/2 W.	L-8		Lockwasher (4)
23	G14-34005	Cond. 1185 MMF.—Mica	81	36322	Resistor 32 Ohm 1/4 W.	49674		Socket—8 Prong
24	G17-34005	Cond. 3700 MMF.—Mica	82	37377	Resist. 500,000 Ohm 1/4 W.	27981		Base—Tube Shield
25	G5-34002	Cond. 50 MMF.—Mica	83	37377	Resistor 20,000 Ohm 1 W.	130594		Shield—Tube
26	49932	Cond. Trimmer	84	35602	Resistor 20,000 Ohm 1 W.	130232		Brkt.—Loop Mtg. (2)
27	35951	3 Sect. Osc. Shunt Trimmer Assy.	85	35927	Resistor 1 Megohm 1/4 W.	7662		Rd. Hd. Wood Scr. FS-58 (4)
28	49929	3 Sect. Var. Tuning Gang Assem.	86	35927	Resistor 2 Megohm 1/4 W.	50069		Cable Clamp
29	37986	Dual Ant. Shunt Trimmer Assem.	87	35927	Resistor 2 Megohm 1/4 W.	130361		Clamp—Elect. Cond. Mtg.
30	G3-34002	Cond. 500 MMF.—Mica	88	47131	Resistor 5 Megohm 1/4 W.	48797		Antenna Board
31	45780	Cond. .02 MF.—160 V.	89	38916	Resistor 350 Ohm 1/2 W.	MG32-130756		Plate Assy.—Mike Socket
32	45780	Cond. .02 MF.—160 V.	90	36321	Resist. 400,000 Ohm 1/4 W.	MG13-130756		Push Button Assy.
33	G21-34002	Cond. 600 MMF.—Mica	91	38976	Resist. 250,000 Ohm 1/4 W.	130160		Push Buttons (B)
34	49933	A=540-940 Kc.	92	36321	Resist. 400,000 Ohm 1/4 W.	130767		Escutcheon—P. B.
	49934	B=600-1050 Kc.	93	47131	Resistor 5 Megohm 1/4 W.	130324		Ov. Csk. Hd. Wood Scr. (4)
	49936	C=740-1300 Kc.	94	38976	Resist. 250,000 Ohm 1/4 W.	49853		Rubber Grommet
	49937	D=880-1550 Kc.	95	35601	Resist. 300,000 Ohm 1/4 W.			Spk. Mtg. (4)
	49938	E=1000-1600 Kc.	96	35601	Resist. 300,000 Ohm 1/4 W.	47219		Headed Bushing
35	G6-34002	Cond. 25 MMF.—Mica	97	35930	Resist. 200,000 Ohm 1/4 W.			Spk. Mtg. (4)
36	G21-34002	Cond. 600 MMF.—Mica	98	36316	Resist. 27,000 Ohm 1/4 W.	37953		Flat Washer
37	G3-34002	Cond. 500 MMF.—Mica	99	35928	Resist. 60,000 Ohm 1/4 W.			Spk. Mtg. (4)
38	G3-34002	Cond. 500 MMF.—Mica	100	23907	Resistor 750 Ohm 1 1/2 W.	N-8		Hex. Nut FS-58
39	35951	3 Sect. R-F Shunt Trimmer Assy.	101	36761	Resist. 40,000 Ohm 1/4 W.			Spk. Mtg. (4)
40	G3-34002	Cond. 500 MMF.—Mica	102	36322	Resist. 500,000 Ohm 1/4 W.	L-8		Lockwasher
41	G3-34002	Cond. 500 MMF.—Mica	103	36322	Resist. 500,000 Ohm 1/4 W.			Spk. Mtg. (4)
42	G2-34002	Cond. 100 MMF.—Mica	104	35928	Resist. 60,000 Ohm 1/4 W.	49219		Spk. Mtg. Brkt. (4)
43	G5-34002	Cond. 50 MMF.—Mica	105	36322	Resist. 500,000 Ohm 1/4 W.	32814		Hex. Hd. M. Scr. (4)
44	45780	Cond. .02 MF.—160 V.	106	22180	Resistor 1600 Ohm 1 1/4 W.	N-5096		Hex. Nut (4)
45	50065	Cond. .03 MF.—160 V.	107	35600	Resist. 100,000 Ohm 1/4 W.	130359		Flat Washer (4)
46	30805	Cond. .01 MF.—400 V. AC.	108	130353	Resistor 240 Ohm 2 1/2 W.	130824		Cabt. Bottom
47	45780	Cond. .02 MF.—160 V.	109			130850		Carton (Loop Ant)
48	45780	Cond. .02 MF.—160 V.	110			130563		Recordomatic Unit
49	50105	Cond. .1 MF.—200 V.	111			130884		110 V.—60 Cycle
50	45817	Cond. .05 MF.—160 V.	112			130885		Recordomatic Unit
51	30323	Cond. .01 MF.—200 V.	113	130815	Socket Assy., Indic. Tube	130885		110 V.—50 Cycle
52	G5-34002	Cond. 50 MMF.—Mica	114	G4-130328	Speaker	47339		Playback Needles (10)
53	G5-34002	Cond. 50 MMF.—Mica	115	130487	Band Change Sw.	130648		Screw—Tone Arm Needle
54	30323	Cond. .01 MF.—200 V.	116	130794	Mike Level Cont.			Clamp
55	G3-34002	Cond. 500 MMF.—Mica	117	130799	Dual Switch	MG1-130632		Cutting Stylus (Needle)
56	130358	3 Sect. Electrolytic Cond.	118	G58-26719	A—Push Button	130647		Screw—Cutting Stylus
			119	G50-26719	B—Phono Motor			Clamp
			120	130411	Term. Board (Loop Ant.)			Prot. & Pol. Cloth
			121	G86-24628	Terminal Board (Phono)	130460		Needle Package Holder
			122	130798	Tone Cont. (500,000 Ohm)	130839		Rd. Hd. M. Screw (4)
			123	130412	Transformer Output	130981		Recordomatic Unit Mtg.
					Transformer Power—60 Cycle, 110 V.	20199		Special Nut (4)
					Vol. Cont. (3 Meg.) & Sw.	20143		Recordomatic Unit Mtg.
					Dial Face & Escutcheon	20198		Top Spring (4)
					Escutcheon only			Recordomatic Unit Mtg.
					Dial Face only			Bottom Spring (4)
					Dial Back Plate Assem.			Recordomatic Unit Mtg.
					Pointer Shaft Assem.			





# MODEL C33CA

## VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod.	0	0	200	81.5	9	0	6.3	0
6SK7—I. F. Amp.	0	0	0	0	0	81.5	6.3	200
6SQ7—Det. A. V. C.—1st A. F.	0	0	0	0	0	74	6.3	0
6K6GT—Output	0	0	184	200	0	0	6.3	12.5
6SK7—Mike Amp.	0	0	0	0	0	+	6.3	+
5Y3G—Rectifier	0	5.0	0	268 A.C.	0	268 A.C.	0	240

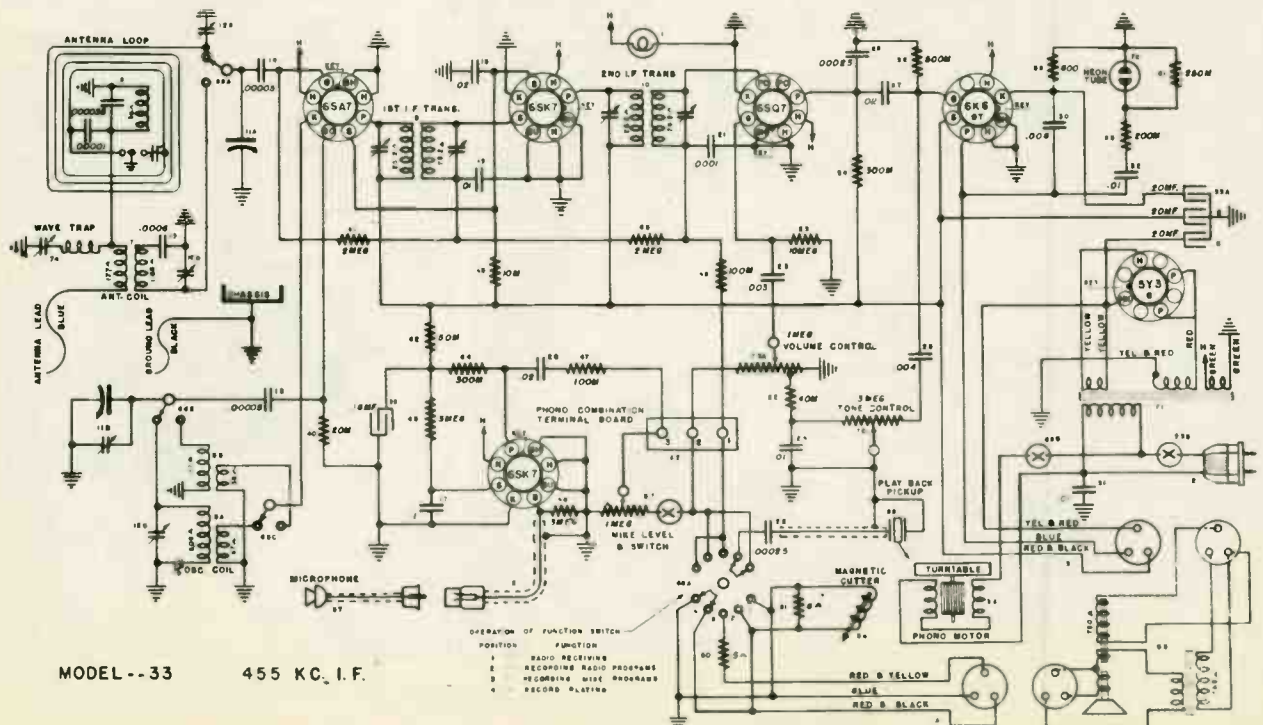
All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

DROP ACROSS SPEAKER FIELD ..... 40 Volts  
 MAXIMUM POWER OUTPUT @ 130 V. LINE (approx.) ..... 3 Watts  
 MAXIMUM POWER CONSUMPTION @ 130 V. LINE ..... 55 Watts

\*Phono Motor 40 Watts additional.

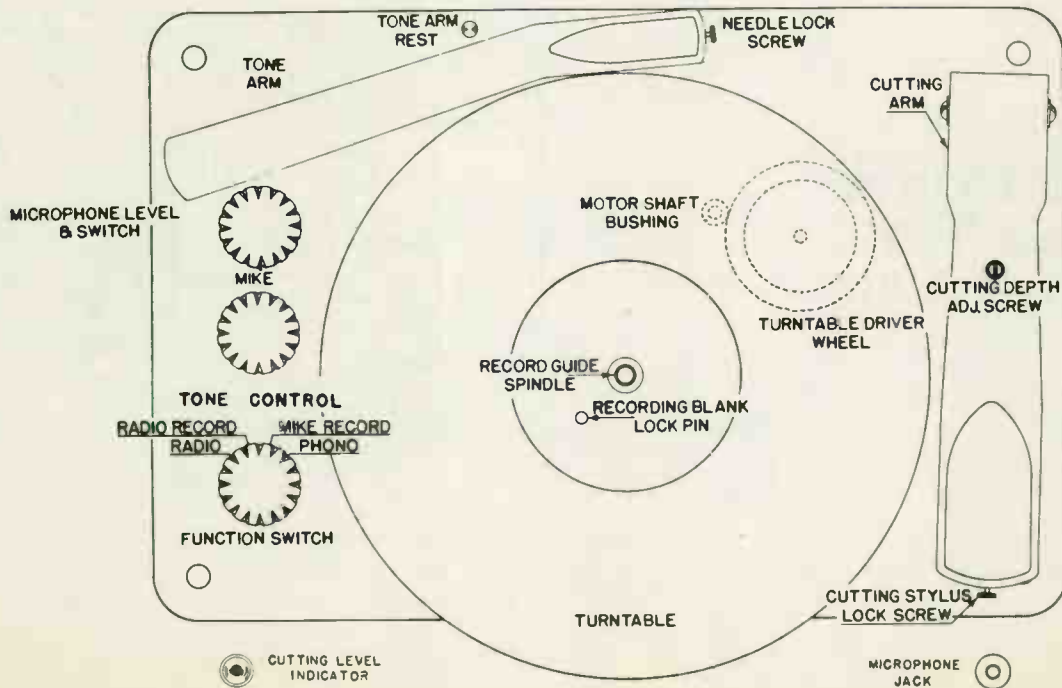
Adjust wave trap for minimum output with 455 kc. input.

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.



## MODEL C33CA — PARTS LIST

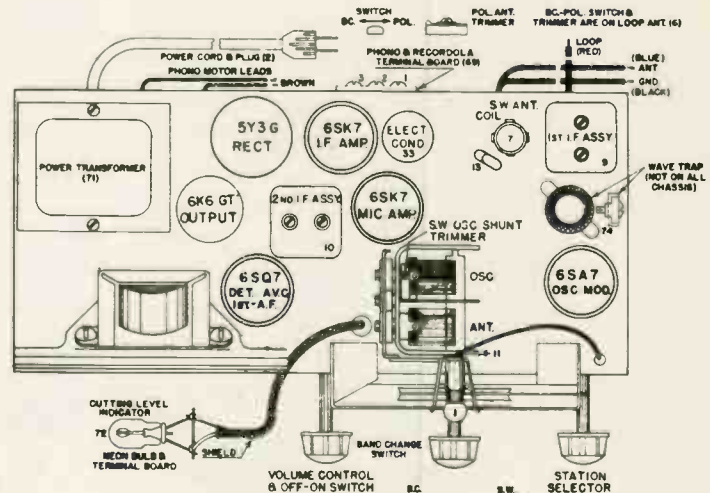
Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	30	35139	Cond. .004 MF.—400V.—Tub.	69	G50-26719	Phono Terminal Board Assy.
	G9-49637	Wire & Socket Assy.—Dial Light	31	30805	Cond. .01 MF.—400V.—Tub.	70	130749	Tone Control (3 Meg.)
2	45769	Power Cord & Plug	32	23191	Cond. .01 MF.—400V.—Tub.	71	49838	Trans. Power
3	49928	Speaker to Output Tube—Cable & Plug	33	48122	Cond. .20 MF.—25V.—Elect.	72	130604	Neon Bulb (Level Indicator)
4	130576	Speaker to Function Sw.—Cable & Plug				73	130262	Volume Control (1 Meg.) & Switch
5	G285-34403	Shielded Mike Lead & Socket (in chassis)				74	G193-32004	455 Kc. Wave Trap
6	G4-32008	Loop Antenna Assy.—1650-550 Kc.—2.3-2.5 Mc.				49880		Dial Face & Bracket—Dial Mtg.
7	G221-32000	Antenna Coil—6-15 Mc.	34	130748	Magnetic—Cutting Head (3 Ohm)	49846		Pointer—Dial Hand
8	G231-32002	Dual Oscillator Coil				49665		Bearing—Drive Shaft
		Sec. A—B.C. Osc.—1650-550 Kc.	35	NONE		49847		Drive Shaft
		Sec. B—S.W. Osc.—6-15 Mc.	36	NONE		28032		Spring—Drive Shaft Retaining
9	G240-32004	1st I-F Assy.—455 Kc.	37	130620	Crystal Mike & Cable	G39-41582		Drive Cord (23" long)
10	G249-32004	2nd I-F Assy.—455 Kc.	38	130820	Phono Motor—110V. 60C.	50607		Spring—Drive Cord Tension
11	130587	2 Section Variable Tuning Cond.	39	131024	Crystal Cartridge (Tone Arm)	27981		Tube Shield Base
12	49722	3 Section Shunt Trimmer Cond.	40	36760	Resis. 20,000 Ohm 1/4 W.	130594		Tube Socket Shield
		A—B.C. Ant. Trimmer	41	35927	Resistor 2 Megohm 1/4 W.	130603		Neon Tube Clip Assy. & Brkt.
		B—S.W. Ant. Trimmer	42	40757	Resis. 50,000 Ohm 1/4 W.	130071		Dial Escutcheons & Lens
		C—B.C. Osc. Trimmer	43	36688	Resistor 3 Megohm 1/4 W.	130624		Neon Bulb Escutcheon
13	G21-34002	Cond. 600 MMF.—Mica	44	35601	Resis. 300,000 Ohm 1/4 W.	130861		Screw—Escutch. Mtg.
14	G5-34002	Cond. 50 MMF.—Mica	45	47100	Res. 10,000 Ohm 2W. Ins.	130817		Screw—Escutch. Mtg.
15	G5-34002	Cond. 50 MMF.—Mica	46	36688	Resistor 3 Megohm 1/4 W.	130313-A		Knob—V.C.—T.C.&Tuning
16	48122	Cond. 16MMF.—250V.—Elect.	47	35600	Resis. 100,000 Ohm 1/4 W.	130339		Knob—Lever Type (Band Sw.)
17	22688	Cond. .1 MF.—400 V.—Tub.	48	35927	Resistor 2 Megohm 1/4 W.	48298		Knob—Mike Level Cont.
18	30488	Cond. .02 MF.—400V.—Tub.	49	35600	Resis. 100,000 Ohm 1/4 W.	130627		Knob—Func. Cont. Sw.
19	48667	Cond. .01 MF.—160V.—Tub.	50	130601	Resistor 1/2 Ohm 1W.	130628		Spring—Recorder Sup. 8
20	36541	Cond. .02 MF.—160V.—Tub.	51	41258	Resistor 8 Ohm 1W.	130625		No. 10—32x3" Screw—Recorder Mtg. (4)
21	G2-34002	Cond. 100 MMF.—Mica	52	36761	Resistor 40,000 Ohm 1/4 W.	38085		No. 10—32 Wing Nut—Recorder Mtg. (4)
22	G1-34002	Cond. 250 MMF.—Mica	53	50956	Res. 10 Megohm 1/4 W. Ins.	47791 (FS-88)		Needle Cup
23	50084	Cond. .003 MF.—600V. Paper	54	35601	Resis. 300,000 Ohm 1/4 W.	47790 (FS-88)		Needle Cup Lid
24	48667	Cond. .01 MF.—160V.—Tub.	55	35927	Resistor 2 Megohm 1/4 W.	47339		Play Back Needles (Pkg. 10)
25	50105	Cond. .10 MF.—160V.—Tub.	56	36322	Resis. 500,000 Ohm 1/4 W.	130634		Needle Screw—Play Back
26	G1-34002	Cond. 250 MMF.—160V.—Mica	57	35927	Resistor 2 Megohm 1/4 W.	130901		Cutting Stylus (Needle)
27	30488	Cond. .02 MF.—400V.—Tub.	58	49702	Resistor 20 Ohm 1/2 W.	130633		Stylus Screw
28	35139	Cond. .004 MF.—400V.—Tub.	59	38918	Resistor 600 Ohm 1/2 W.	49814		R. H. Chassis End Plate
29	50105	Cond. .10 MF.—160V.—Tub.	60	35930	Resis. 200,000 Ohm 1/4 W.	49815		L. H. Chassis End Plate
			61	38976	Resis. 250,000 Ohm 1/4 W.	45020		Flat Washer—Chassis Mtg. (4)
			62	NONE		130490		Screw Washer—Chassis Mtg. (4)
			63	NONE		131543		Cabinet
			64	NONE		130573		Shipping Carton
			65	G7-49742	Speaker—Support Brkt.—Spkr. Mtg.	130376		Cabt. Prot. & Pol. Cloth
			66	130323	Plate—Spkr. Mtg.			
			67	35066	Screw—Spkr. Mtg.			
			68	O-8	Flat Washer—Spkr. Mtg.			
				49001	Screw—Spkr. Mtg.			
				49849	Band Change Switch			
				130579	Mike Level Control & Switch			
				130578	Functional Con. Switch			



# MODEL 33BG

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light Bulb	31	30805	Cond. .01 MF.—400V.—Tub.	70	130749	Tone Control (3 Meg.)
	G9-49637	Wire & Socket Assy.—Dial Light	32	23191	Cond. .01 MF.—400V.—Tub.	71	130592	Power Trans. 110V., 60C.
2	45769	Power Cord & Plug				72	130604	Neon Bulb (Level Indicator)
3	49928	Speaker to Output Tube—Cable & Plug	33	130577	Cond.—3 sec. electrolytic	73	130262	Volume Control (1 Meg.) & Switch
4	130576	Speaker to Function Sw.—Cable & Plug				74	G193-32004	455 Kc. Wave Trap
5	G285-34403	Shielded Mike Lead & Socket (in chassis)	34	130748	Sec. A—20 MF.—25V. Sec. B—20 MF.—350V. Sec. C—20 MF.—350V.		130567	Dial Face
6	G4-32008	Loop Antenna Assy.—1650-550 Kc.—2.3-2.5 Mc.	35	NONE	Magnetic—Cutting Head (3 Ohm)		130588	Bracket—Dial Mtg.
7	G221-32000	Antenna Coil—6-15 Mc.	36	NONE	Crystal Mike & Cable		49846	Pointer—Dial Hand
8	G231-32002	Dual Oscillator Coil	37	130620	Phono Motor—110V., 60C.		49655	Bearing—Drive Shaft
		Sec. A—B.C. Osc.—1650-550 Kc.	38	130820	Crystal Cartridge (Tone Arm)		130586	Drive Shaft
		Sec. B—S.W. Osc.—6-15 Mc.	39	130818	Resis. 20,000 Ohm $\frac{1}{4}$ W.		49829	Spring—Drive Shaft Retaining
9	G240-32004	1st I-F Assy.—455 Kc.	40	36760	Resistor 2 Megohm $\frac{1}{4}$ W.		G39-41582	Drive Cord (23" long)
10	G249-32004	2nd I-F Assy.—455 Kc.	41	35927	Resis. 50,000 Ohm $\frac{1}{4}$ W.		50607	Spring—Drive Cord Tension
11	130587	2 Section Variable Tuning Cond.	42	40757	Resistor 3 Megohm $\frac{1}{4}$ W.		G2-130264	Toggle Arm (with Shaft Bearing)
12	49722	3 Section Shunt Trimmer Cond.	43	36688	Resistor 300,000 Ohm $\frac{1}{4}$ W.		28032	Spring (Tog. Retaining)
		A—B.C. Ant. Trimmer	44	35601	Resistor 15,000 Ohm 2W.		G1-130264	Toggle Arm (with Hub & Set Screws)
		B—S.W. Ant. Trimmer	45	130593	Resistor 3 Megohm $\frac{1}{4}$ W.		49836	Link—Tog. Connecting
		C—B.C. Osc. Trimmer	46	36688	Resis. 100,000 Ohm $\frac{1}{4}$ W.		49770	Trimount Stud—Link Fastener
13	G21-34002	Cond. 600 MMF.—Mica	47	35600	Resistor 2 Megohm $\frac{1}{4}$ W.		27981	Tube Shield Base
14	G5-34002	Cond. 50 MMF.—Mica	48	35927	Resistor 100,000 Ohm $\frac{1}{4}$ W.		130594	Tube Socket Shield
15	G5-34002	Cond. 50 MMF.—Mica	49	35927	Resistor 20 Ohm $\frac{1}{2}$ W.		MG22-130569	Neon Tube Clip Assy.
16	48122	Cond. 16 MF.—250V.—Elect.	50	36761	Resistor 40,000 Ohm $\frac{1}{4}$ W.		130071	Dial Escutcheons & Lens
17	22688	Cond. .1 MF.—400 V.—Tub.	51	41258	Resistor 3 Megohm $\frac{1}{4}$ W.		130624	Neon Bulb Escutcheon
18	30488	Cond. .02 MF.—400V.—Tub.	52	36688	Resis. 300,000 Ohm $\frac{1}{4}$ W.		130158	Screw—Neon Escut. Mtg.
19	48667	Cond. .01 MF.—160V.—Tub.	53	35601	Resistor 2 Megohm $\frac{1}{4}$ W.		130313	Knob—V.C.-T.C.&Tuning
20	36541	Cond. .02 MF.—160V.—Tub.	54	35927	Resis. 500,000 Ohm $\frac{1}{4}$ W.		130339	Knob—Lever Type (Band Sw.)
21	G2-34002	Cond. 100 MMF.—Mica	55	49702	Resistor 20 Ohm $\frac{1}{2}$ W.		48294	Knob—Mike Level Cont.
22	G1-34002	Cond. 250 MMF.—Mica	56	38916	Resistor 350 Ohm $\frac{1}{2}$ W.		130627	Knob—Func. Cont. Sw.
23	34713	Cond. .006 MF.—160V.—Tub.	57	35927	Resis. 200,000 Ohm $\frac{1}{4}$ W.		130628	Spring—Recorder Sup. 8
24	48667	Cond. .01 MF.—160V.—Tub.	58	38976	Resis. 250,000 Ohm $\frac{1}{4}$ W.		130625	No. 10—32x3" Screw—Recorder Mtg. (4)
25	50105	Cond. .10 MF.—160V.—Tub.	59	NONE	Speaker		38085	No. 10—32 Wing Nut—Recorder Mtg. (4)
26	G1-34002	Cond. 250 MMF.—160V.—Mica	60	NONE	Rubber Grommet—Spkr. Mtg. (4)		47791 (FS-88)	Needle Cup
27	30488	Cond. .02 MF.—400V.—Tub.	61	NONE	Headed Bushing—Spkr. Mtg. (4)		47790 (FS-88)	Needle Cup Lid
28	35139	Cond. .004 MF.—400V.—Tub.	62	NONE	Flat Washer—Spkr. Mtg. (4)		47339	Play Back Needles (Pkg. 10)
29	50105	Cond. .10 MF.—160V.—Tub.	63	NONE	No. 6 Nut—Spkr. Mtg. (4)		130634	Needle Screw—Play Back
30	35139	Cond. .004 MF.—400V.—Tub.	64	NONE	Band Change Switch		130632	Cutting Stylus (Needle)
			65	G4-130145	Mike Level Control & Switch		130633	Stylus Screw
				45580	Functional Con. Switch		49814	R. H. Chassis End Plate
				49796	Phono Terminal Board Assy.		49815	L. H. Chassis End Plate
				2309			45020	Flat Washer—Chassis Mtg. (4)
				5062			130490	Screw Washer—Chassis Mtg. (4)
				49849			B. C.	Cabinet
				130579			130573	Shipping Carton
				130578			130376	Cabt. Prot. & Pol. Cloth

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**



# MODEL 34 BH

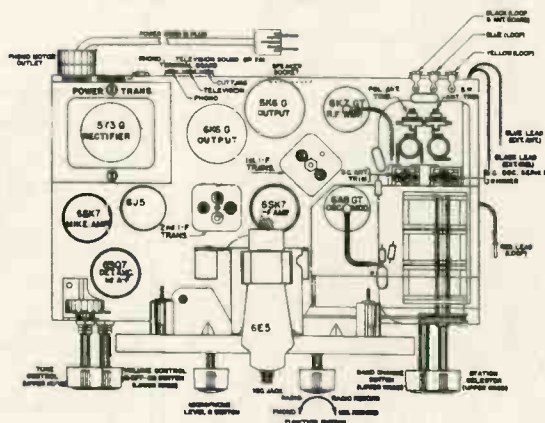
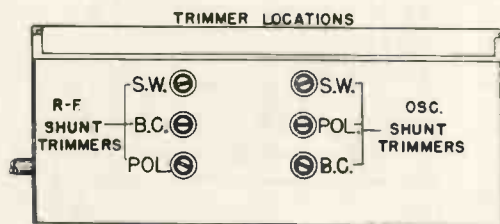
## RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections.....	Plate to Plate of 6K6's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Tone Control.....	Treble or Speech
Position of Function Switch.....	Radio
Position of Mike Level Control.....	All the Way to Left (Off)

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output. Do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.



TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R-F Amp.	.....	.....	195	78.6	.....	2.0	*6.3	2.0
6A8GT	Osc.-Mod.	.....	.....	195	78.6	.....	136	*6.3	1.0
6SK7	I-F Amp.	.....	.....	.....	.....	5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7	Det. A.V.C. 1st A-F	.....	.....	.....	.....	.....	110	*6.3	.....
6J5GT	Phase Invert.	.....	.....	118	195	.....	110	*6.3	4.5
6K6GT	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6K6GT	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6SK7	Mike Amp.	.....	.....	.....	.....	.....	.....	*6.3	POS.
5Y3G	Rectifier	.....	305 D.C.	.....	*325	.....	*325	.....	305 D.C.
6E5	Indicator	.....	.....	.....	225	.....	*6.3	.....	.....

\*Measured with A.C. volt meter

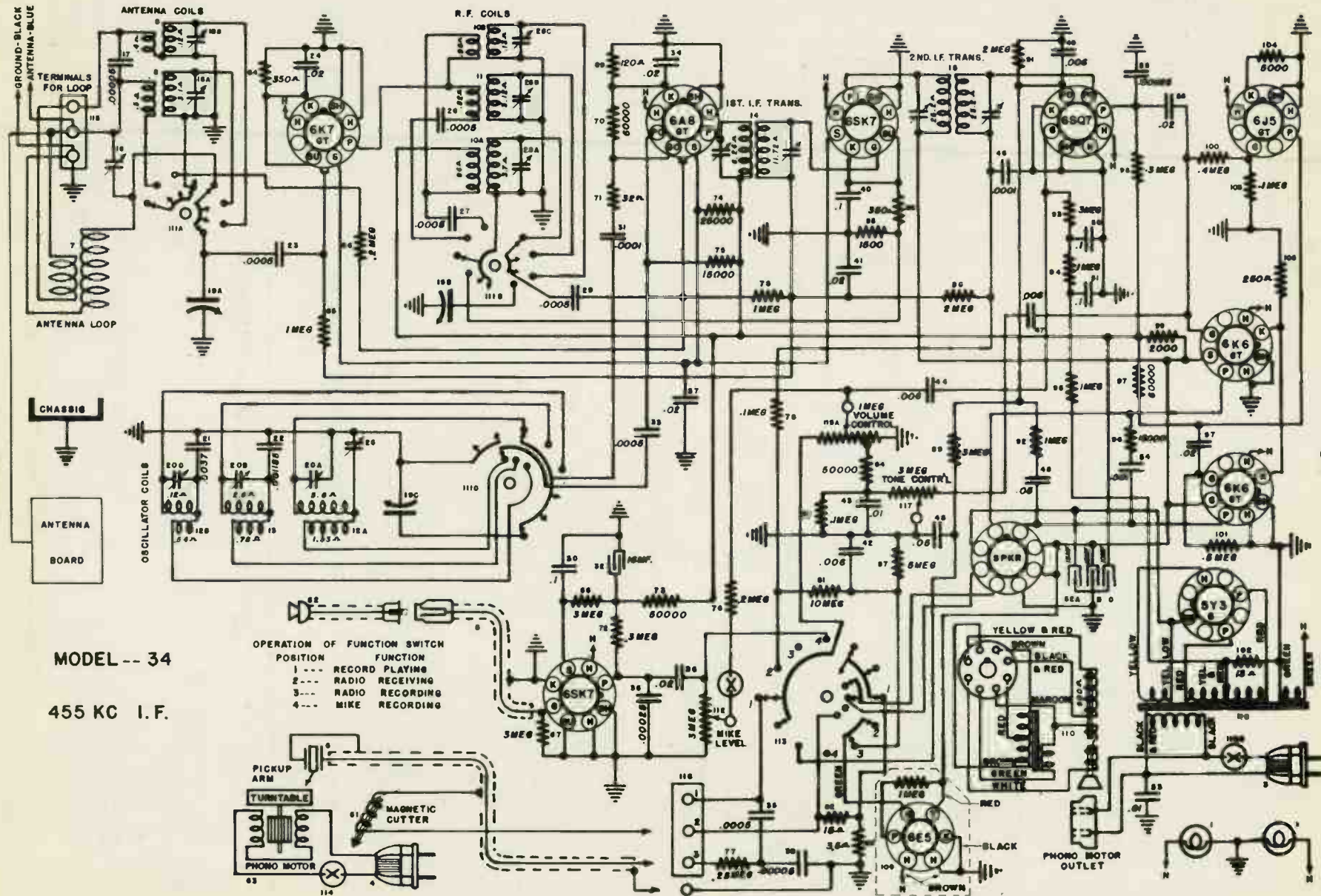
VOLTAGE DROP ACROSS SPEAKER FIELD= 77 VOLTS

MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts

POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS

Voltages may vary 10% of values given.

**WIRING DIAGRAM  
MODEL 34**



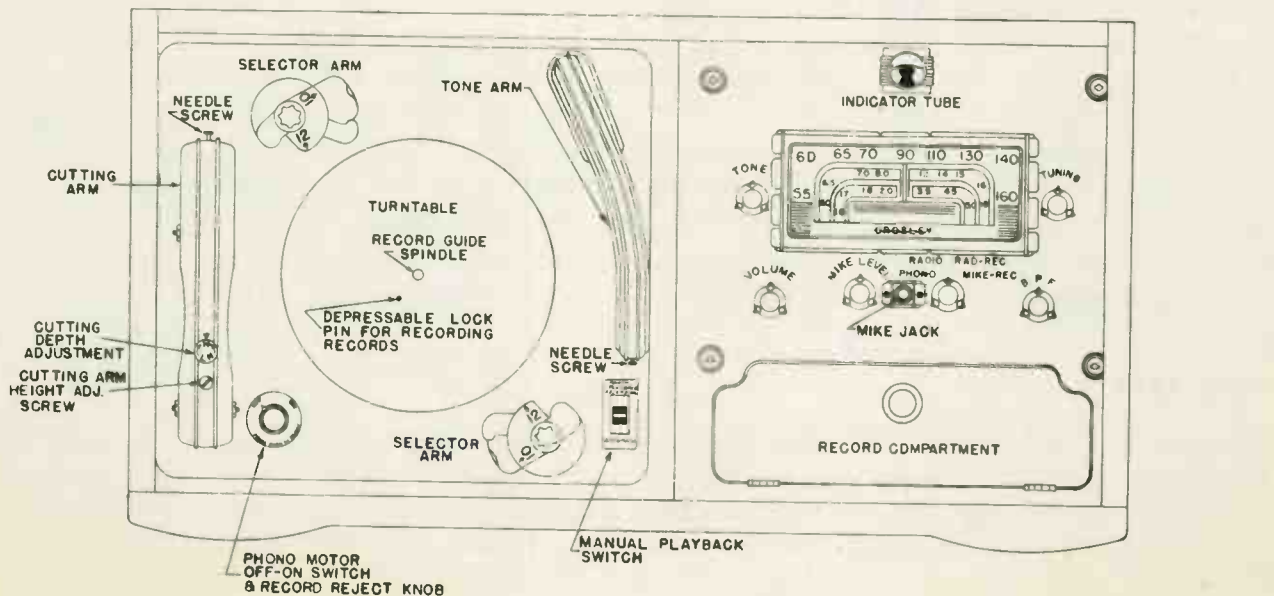
MODEL -- 34  
455 KC I.F.

OPERATION OF FUNCTION SWITCH

POSITION	FUNCTION
1	RECORD PLAYING
2	RADIO RECEIVING
3	RADIO RECORDING
4	MIKE RECORDING

### MODEL 34 — PARTS LIST

Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	43567	Dial Light	54	30270	Cond. .001 MF.—400 V.	115	G58-26719	Terminal Brd. (Loop Connect.)
2	43567	Dial Light	55	G1-34002	Cond. 250 MMF.—Mica	116	G50-26719	Terminal Brd. (Phono Connect.)
3	G7-49637	D. L. Socket Assy.	56	30488	Cond. .02 MF.—400 V.	117	130741	Tone Control (3 Meg.)
3	45769	Power Cord & Plug (Radio)	57	30488	Cond. .02 MF.—400 V.	118	130784	Power Trans.—110 V.-60 cycle
4	130857	Power Cord & Plug (Motor)	58			119	47783	Volume Cont. (1 Meg.)
5	G288-34403	Shielded Lead & Socket (Mike)	61	130854	Cutting Head only		49674	8 Prong Sock., no mrkg.
6	130818	Crystal Cart. (Tone Arm Ant. Loop (550-1600 Kc.)	62	130764	Crystal Mike & Cable		27981	Base—Tube Shield
7	G2-130234	Ant. Loop (550-1600 Kc.)	63	130855	Phono Motor only (110 V.—60 cycle)		130594	Shield—Tube Socket
8	G225-32000	Ant. Coil (1.6 to 5.0 Mc.)	64	35916	Resistor 350 Ohm 1/4 W.		49176	Clamp—Elec. Cond. Mtg.
9	G224-32000	Ant. Coil (6.0 to 18.0 Mc.)	65	35602	Resistor 1 Megohm 1/4 W.		49986	Bracket—T. C. Mtg.
10	G114-32001	Dual R-F Coil	66	35930	Resist. 200,000 Ohm 1/4 W.		130012	Shield—Tube & Gang Cover
			67	35888	Resistor 3 Megohm 1/4 W.		23880	Thumb Screw—Shield Mtg.
			68	35888	Resistor 3 Megohm 1/4 W.			
11	G115-32001	R-F Coil (1.6 to 5.0 Mc.)	69	130311	Resistor 120 Ohm 1/2 W.			
12	G241-32002	Dual Osc. Coil	70	35928	Resist. 60,000 Ohm 1/4 W.		MG34-130611	Bracket—Ind. Tube Mtg.
			71	45981	Resistor 32 Ohm 1/2 W.		130252	Wall Tap—Phono Motor
			72	35601	Resist. 300,000 Ohm 1/4 W.		130813	Lock Plate—Wall Tap
13	G242-32002	Osc. Coil (1.6 to 5.0 Mc.)	73	40757	Resist. 50,000 Ohm 1/4 W.		MG20-130611	Dial Back Plate
14	G246-32004	1st I-F Assy. 455 Kc.	74	130318	Resistor 25,000 Ohm 1 W.		130138	Shaft Assy.—Dial Point.
15	G240-32004	2nd I-F Assy. 455 Kc.	75	47819	Resistor 15,000 Ohm 1 W.		130637	Dial Glass & Escutcheon
16	49932	Cond. Loop Shunt Trim.	76	35930	Resist. 200,000 Ohm 1/4 W.		130640	Dial Glass (face) only
17	G5-34002	Cond. 500 MMF.—Mica	77	38976	Resist. 250,000 Ohm 1/4 W.		130259	Escutcheon only
18	37986	Cond. Dual Ant. Shunt Trimmer	78	35600	Resistor 1 Megohm 1/4 W.		130158	Screws—Escut. Mtg.
			79	35600	Resist. 100,000 Ohm 1/4 W.		49829	Lock Spring (Shaft Ret.)
19	49929	3 Sect. Var. Tuning Gang	80	35600	Resist. 100,000 Ohm 1/4 W.		130125	Pointer
20	35951	3 Sect. Osc. Shunt Trimmer Assy.	81	50956	Resist. 10 Megohm 1/4 W.		130195	Spring—Drive Cord Tsn.
			82	130655	Resistor 15 Ohm 2 W.		G40-41582	Drive Cord (25 1/2 inch) Cabinet
21	G17-34005	Cond. 3700 MMF.—Mica	83	130654	Resistor 3.5 Ohm 1/2 W.		BH	Shipping Carton
22	G14-34005	Cond. 1185 MMF.—Mica	84	40757	Resist. 50,000 Ohm 1/4 W.		130437	Escutcheon—Mike Jack
23	G3-34002	Cond. 500 MMF.—Mica	85	130488	Resistor 1500 Ohm 1/4 W.		130624	Escutcheon—Indi. Tube
24	45780	Cond. .02 MF.—160 V.	86	38916	Resistor 350 Ohm 1/2 W.		130763	R. H. Brkt. Assy.—Chassis Mtg.
25	130108	Cond. 600 Kc. Ser. Trim.	87	47131	Resistor 5 Megohm 1/4 W.		130423	L. H. Brkt. Assy.—Chassis Mtg.
26	G3-34002	Cond. 500 MMF.—Mica	88	36688	Resistor 3 Megohm 1/4 W.		130426	Chassis Mtg.
27	G3-34002	Cond. 500 MMF.—Mica	89	35927	Resistor 2 Megohm 1/4 W.		49985	L. H. End Plate—Chas.
28	35951	3 Sect. R-F Shunt Trimmer Assy.	90	35602	Resistor 1 Megohm 1/4 W.		49984	R. H. End Plate—Chas.
			91	36688	Resistor 3 Megohm 1/4 W.		45580	Rubber Grommet—Chassis Mtg. (6)
29	G3-34002	Cond. 500 MMF.—Mica	92	35602	Resistor 1 Megohm 1/4 W.		49796	Headed Bushing—Chassis Mtg. (6)
30	22688	Cond. .1 MF.—400 V.	93	36688	Resistor 3 Megohm 1/4 W.		130312	Chassis Bottom
31	G2-34002	Cond. 100 MMF.—Mica	94	35602	Resistor 1 Megohm 1/4 W.		47761 (FS-18)	Oval Phil. Mch. Screw—Bracket Mtg. (4)
32	48122	Cond. 16 MF.—250 V. Elect.	95	35602	Resistor 1 Megohm 1/4 W.		47728 (FS-88)	Decorative Washer—Bracket Mtg. (4)
			96	36318	Resist. 15,000 Ohm 1/4 W.		130197	Knob (6 req.)
33	G3-34002	Cond. 500 MMF.—Mica	97	35928	Resist. 60,000 Ohm 1/4 W.		130563	Recording Unit Assy.—110 V.-60 Cy.
34	45780	Cond. .02 MF.—160 V.	98	35601	Resist. 300,000 Ohm 1/4 W.		47339	Needles (Tone Arm) (pkg. 10)
35	G1-34002	Cond. 250 MMF.—Mica	99	23013	Resist. 2,000 Ohm 1/4 W.		MG35-130610	Cutting Needle (Stylus)
36	30488	Cond. .02 MF.—400 V.	100	36321	Resist. 400,000 Ohm 1/4 W.		130648	Screw—Tone Arm Ndle.
37	30488	Cond. .02 MF.—400 V.	101	36322	Resist. 500,000 Ohm 1/4 W.		130647	Screw—Cut. Arm Needle
38	G3-34002	Cond. 500 MMF.—Mica	102	130841	Resistor 13 Ohm 1/2 W.		130460	Cloth—Cab. Protector & Polishing
39	G5-34002	Cond. 50 MMF.—Mica	103	35600	Resist. 100,000 Ohm 1/4 W.		130232	Bracket—Loop Ant. Mtg.
40	50105	Cond. .1 MF.—160 V.	104	49945	Resistor 5000 Ohm 1/4 W.		130839	Needle Package Holder
41	45780	Cond. .02 MF.—160 V.	105	49703	Resistor 250 Ohm 2 W.		130158	Screw—Holder Mtg.
42	34713	Cond. .006 MF.—160 V.	106				130884	Recording Unit—220 V.-60 Cy.
43	130171	Cond. .01 MF.—160 V.	107				130885	Recording Unit—110 V.-50 Cy.
44	34713	Cond. .006 MF.—160 V.	108					
45	45817	Cond. .05 MF.—160 V.	109					
46	G2-34002	Cond. 100 MMF.—Mica	110	130815	Socket Assy Indic. Tube			
47	45810	Cond. .006 MF.—160 V.		G2-130328	Speaker & Plug			
48	38090	Cond. .05 MF.—400 V.		49853	Rubber Grommet—Spkr. Mtg.			
49	34713	Cond. .006 MF.—160 V.		47219	Headed Bushing—Spkr. Mtg.			
50	50105	Cond. .1 MF.—160 V.		37953	Flat Washer—Spkr. Mtg.			
51	50105	Cond. .1 MF.—160 V.		130753	Band Change Switch			
52	130246	3 Sect. Electrolytic Cond.	111	130602	Mike Level Cont. (3 Meg.) & Sw.			
			112	130602	Function Cont Switch			
			113	130656	Switch—Phono Motor			
53	30805	Cond. .01 MF.—400 V.	114	130856				



## MODELS 35AK AND 38BM

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

This does not apply to the models J35 or J38 as the power supply is isolated from the chassis by a .25 mf. condenser. See Wiring Diagram.

#### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### TUNING I-F AMPLIFIER TO 455 KILOCYCLES

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located through front chassis flange below the speaker (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on top of 1st I-F assy., item 6, (Fig. 2) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

#### ALIGNING THE R-F AMPLIFIER

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser (Fig. 3) B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output. (Fig. 3).

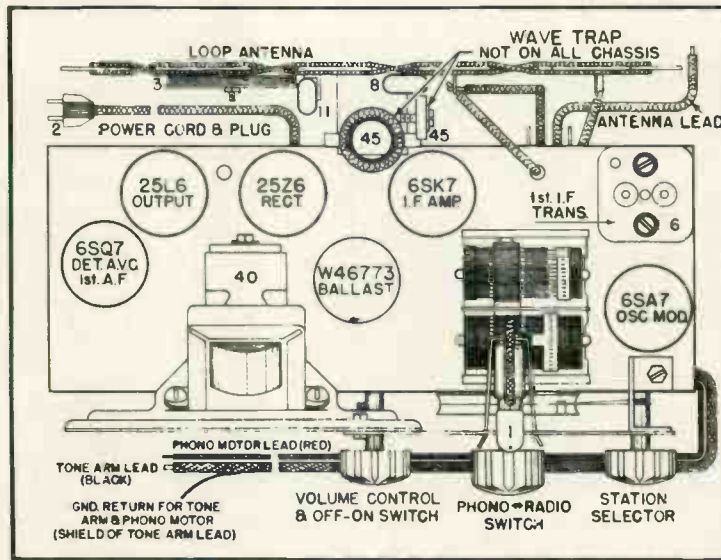
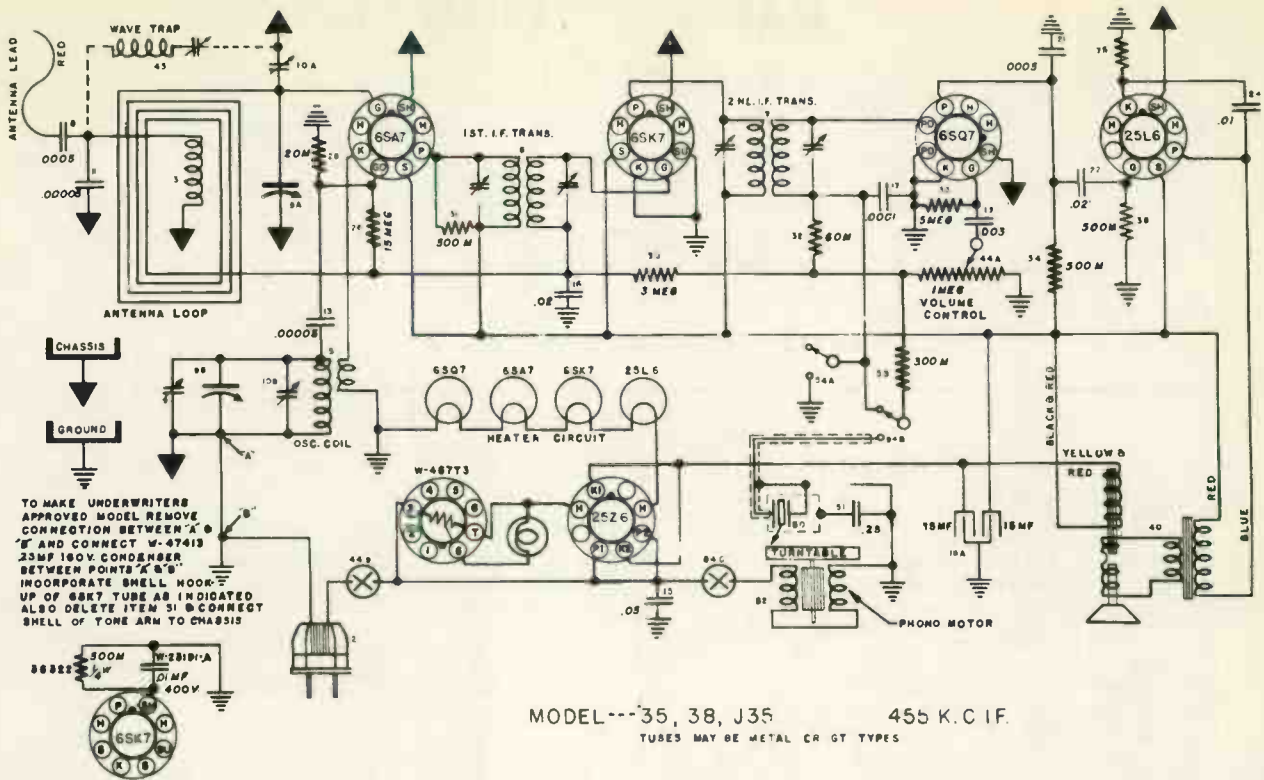
NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

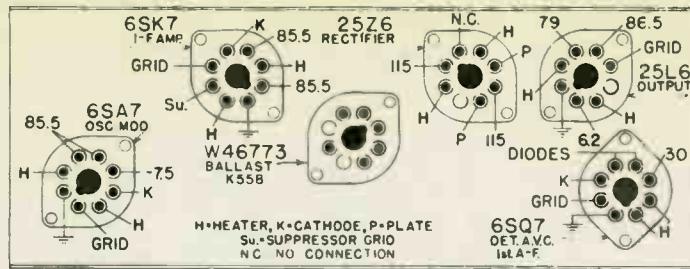
#### WAVE TRAP

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

# WIRING DIAGRAM MODEL 35 OR 38







POWER CONSUMPTION AT 117.5 LINE = 50 WATTS  
 MAXIMUM POWER OUTPUT ----- 1.2 WATTS  
 DROP ACROSS SPEAKER FIELD ----- 28.5 VOLTS

Socket Voltage Chart

**PARTS LIST — MODELS 35 & 38**

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	27	None	
	G1—49637	Socket Assy.—Dial Light	28	—36768	Resistor, 20,000 Ohms ¼ W
2	—49775	Power Cord and Plug	29	None	
3	G1—32008	Loop Antenna	30	—36688	Resistor, 3 Megohms ¼ W.
	—49739	Bracket—Loop Mtg.	31	—36322	Resistor, 500,000 Ohms ¼ W.
	—20989	Fibre Washer—Loop Mtg.	32	—35928	Resistor, 60,000 Ohms ¼ W.
	—43611	No. 8—32 x ¼" Screw—Loop Mtg. (FS-58)	33	—47131	Resistor, 5 Megohms ¼ W.
4	None		34	—36322	Resistor, 500,000 Ohms ¼ W.
5	G229—32002	Oscillator Coil	35	—47512	Resistor, 140 Ohms ½ W.
6	G240—32004	1st I-F Transformer Assy.	36	—36322	Resistor, 500,000 Ohms ¼ W.
7	G242—32004	2nd I-F Transformer Assy.	37	None	
8	G3—34002	Condenser, .0005 Mf. Mica	38	None	
9	—49737	Condenser—2 Sect. Var. Tun. Gang	39	None	
10	MG3—49708	Condenser—Dual Shunt Trim. Assy.	40	G1—49698	Spkr. and Output Trans.—Mod. 38
11	G5—34002	Condenser, .00005 Mf. Mica		G4—49698	Spkr. and Output Trans.—Mod. 35
12	None			—49697	Bracket Speaker Mtg.
13	G5—34002	Condenser, .00005 Mf. Mica	41	None	
14	None		42	None	
15	—45782	Condenser, .05 Mf. 120 V. A. C.	43	None	
16	—45780	Condenser, .02 Mf. 160 V.	44	—49774	Volume Control and Line Switch
17	G2—34002	Condenser, .0001 Mf. Mica	45	G193—32004	Wave Trap
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.	46	None	
19	—50084	Condenser, .003 Mf. 160 V.	47	None	
20	None		48	None	
21	G3—34002	Condenser, .0005 Mf. Mica	49	None	
22	—45780	Condenser, .02 Mf. 160 V.	50	—130618	Tone Arm
23	None			—47333	Rest Brkt.—Tone Arm
24	—23191	Condenser, .01 Mf. 400 V.		—47724	Rubber Rest—Rest Brkt.
25	None		51	—34712	Cond., .25 MF.—160 Volt
26	—50671	Resistor, 15 Megohms ¼ W.*	52	—130582	Phono Motor—110 V.—60 Cycle
			53	—35601	Resistor—300,000 Ohm—¼ W
			54	—49808	Phono-Radio Switch
				—46364	Phono. Needle
	—47790	Lid—Needle Cup		AK	Cabinet—Model 35
	—47791	Cup—Needle		—130608	Back—For AK Cabinet
	—47324	Needle Screw (Tone Arm)		—130585	Shipping Carton—AK Cabinet
	—45979	Variable Condenser—Wave Trap		—130313	Knob—(3 Req.)
	—49766A	Dial Face		—41742	Spring—Knob Insert
	—130445	Bracket—R. H. Dial Face Mtg.		—49770	Trimount Stud—Lens Mtg. (7 Req.)
	—49742	No. 6—32 x ¼" Screw—L. H. Dial Face Mtg.		—45020	Flat Washer (Chassis Mtg.) FS-58
	—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)		—130490	No. 8—32x¾" Screw (Chassis Mtg.) (FS-58)
	—49780	Pointer—Dial Hand		—130307	Felt Pad—Mtg. Screw Cover
	—49665	Bearing—Drive Shaft—Riveted to Chassis		MG17—130115	Bottom Cover Assy. (Chassis)—Model J-35
	—28032	Spring—Drive Shaft Retaining		—130130	Bottom Cover only—Model J-35
	—49741	Drive Shaft		—47413	Cond., .25 Mf. 160 V.—Model J-35
G11—41582	Drive Cord			—23191	Cond., .01 Mf. 400 V.—Model J-35
	—51752	Spring—Drive Cord Tension		—36322	Resistor, 500,000 Ohms ¼ W.—Model J-35
	—45580	Rubber Grom.—Cond. Gang Mtg.		—49878	Hole Plug—Model J-35 (FS-58)
	—45620	Headed Bushing—Cond. Gang Mtg.		—130210	¾" Hole Plug—Mod. J-35 (FS-58)
	O—8	No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)		—130127	Switch Hole Insulator—Model J-35
	—130166	No. 8—32 x ¼" Screw—Cond. Gang Mtg.		BM	Cabinet—Model 38
				—130746	Shipping Carton—BM Cabt.
				—130078	Escutcheon and Lens

# MODEL C-35AK

## ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### TUNING I-F AMPLIFIER TO 455 KILOCYCLES

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (Blue or Red lead extending from rear of loop) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located on top 2nd I-F Assm. item 7, (Fig. 1) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on top of 1st I-F assy., item 6, (Fig. 1) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

### ALIGNING THE R-F AMPLIFIER

(a) Set the signal generator to 1650 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser B. C. "OSC" so that the 1650 kilocycle signal is heard. It is not necessary that the receiver tunes through this signal.

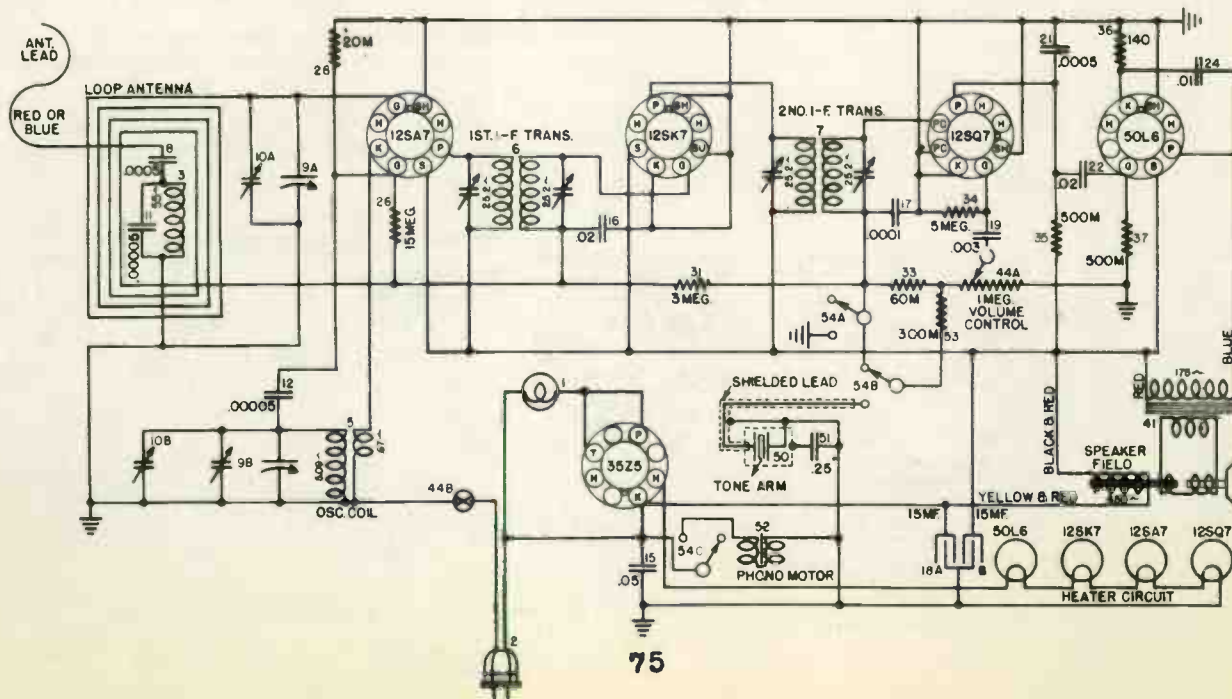
(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condensers B. C. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

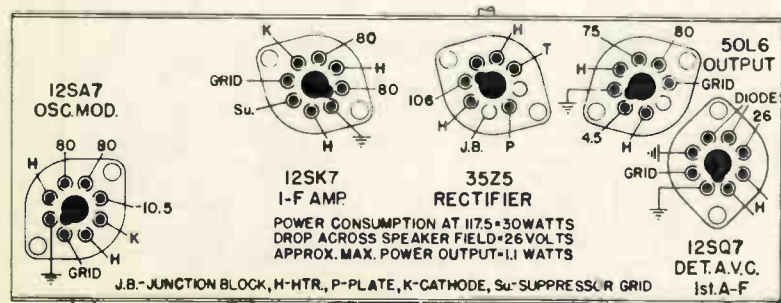
(f) Repeat operations (d) and (e) for more accurate adjustments.



PARTS LIST — MODELS C-35 AK

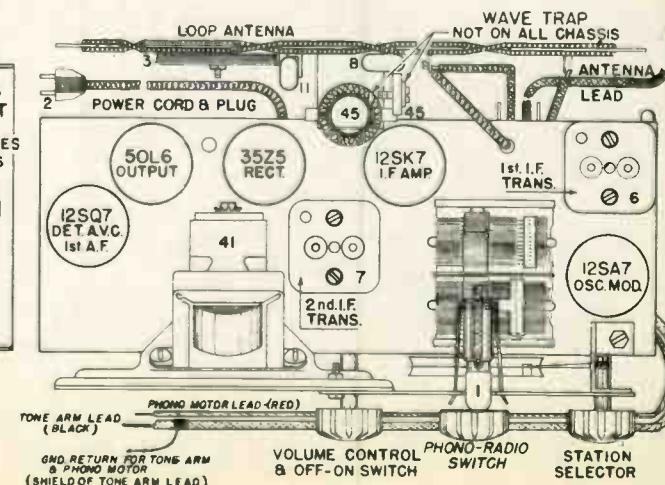
Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	51	—34712	Cond., .25 MF.—160 Volt
	G1—49637	Socket Assy.—Dial Light	52	—130582	Phono Motor—110 V.—60 Cycle
2	—49775	Power Cord and Plug	53	—35601	Resistor—300,000 Ohm— $\frac{1}{4}$ W.
3	G1—32008	Loop Antenna	54	—49808	Phono-Radio Switch
	—49739	Bracket—Loop Mtg.		—47328	Shake. Washer—Tone Arm Mtg.
	—20989	Fibre Washer—Loop Mtg.		—47329	Nut—Tone Arm Mtg.
	—23880	Thumb Screw—Loop Mtg.		—47327	Flat Washer—Tone Arm Mtg.
4	None			—47339	Needles (Pkg. 10)
5	G229—32002	Oscillator Coil		—46364	Chrome Tipped Needle
6	G240—32004	1st I-F Transformer Assy.		—47790	Lid—Needle Cup
7	G241—32004	2nd I-F Transformer Assy.		—47791	Cup—Needle
8	G3—34002	Condenser, .0005 Mf. Mica		—47324	Needle Screw (Tone Arm)
9	—49737	Condenser—2 Sect. Var. Tun. Gang		—45979	Variable Condenser—Wave Trap
10	MG3—49708	Condenser—Dual Shunt Trim. Assy.		—49766A	Dial Face
11	G5—34002	Condenser, .00005 Mf. Mica		—130445	Bracket—R. H. Dial Face Mtg.
12	G5—34002	Condenser, .00005 Mf. Mica		—49742	No. 6— $32 \times \frac{1}{4}$ " Screw—L. H. Dial Face Mtg.
13	None			—49770	Trimount Stud—R. H. Dial Face Mtg. (FS-58)
14	None			—49780	Pointer—Dial Hand
15	—45782	Condenser, .05 Mf. 120 V. A. C.		—49665	Bearing—Drive Shaft—Riveted to Chassis
16	—45780	Condenser, .02 Mf. 160 V.		—28032	Spring—Drive Shaft Retaining
17	G2—34002	Condenser, .0001 Mf. Mica		—49741	Drive Shaft
18	—49664	Condenser—Dual Electrolytic Section A—15 Mf. 140 V. Section B—15 Mf. 120 V.		G11—41582	Drive Cord
19	—50084	Condenser, .003 Mf. 160 V.		—51752	Spring—Drive Cord Tension
20	None			—45580	Rubber Grom.—Cond. Gang Mtg.
21	G3—34002	Condenser, .0005 Mf. Mica		—45620	Headed Bushing—Cond. Gang Mtg.
22	—45780	Condenser, .02 Mf. 160 V.		O—8	No. 8 Flat Washer—Cond. Gang Mtg. (FS-58)
23	None			—130166	No. 8— $32 \times \frac{1}{4}$ " Screw—Cond. Gang Mtg.
24	—23191	Condenser, .01 Mf. 400 V.		—130584	Cabinet—AK
25	None			—130608	Back—For AK Cabinet
26	—50671	Resistor, 15 Megohms $\frac{1}{4}$ W.*		—130585	Shipping Carton—AK Cabinet
27	None			—130313	Knob—(3 Req.)
28	—36760	Resistor, 20,000 Ohms $\frac{1}{4}$ W.		—41742	Spring—Knob Insert
29	None			—49770	Trimount Stud—Lens Mtg. (7 Req.)
30	None			—30409	Flat Washer (Chassis Mtg.) FS-58
31	—36688	Resistor, 3 Megohms $\frac{1}{4}$ W.		—130490	No. 8— $32 \times \frac{3}{4}$ " Screw (Chassis Mtg.) (FS-58)
32	None			—130334	Felt Pad—Mtg. Screw Cover
33	—35928	Resistor, 60,000 Ohms $\frac{1}{4}$ W.		—20881	Screw—No. 6 x $\frac{3}{8}$ Rd. Hd. Wood Phono Mtg.
34	—47131	Resistor, 5 Megohms $\frac{1}{4}$ W.		—130385	Screw—No. 8 x $\frac{3}{8}$ Rd. Hd. Wood Tone Arm Brkt. Mtg.
35	—36322	Resistor, 500,000 Ohms $\frac{1}{4}$ W.		—47335	Rubber Lock Ring Tone Arm Brkt.
36	—47512	Resistor, 140 Ohms $\frac{3}{4}$ W.		—130988	Phono Motor—25 Cycle—117 Volt
37	—36322	Resistor, 500,000 Ohms $\frac{1}{4}$ W.		—49995	Cond. 30-45 Mf.—100 V.—25 Cycle Kit
38	None			—49224	Resistor—100 Ohm 5 W.—25 Cycle Kit
39	None			MG42—131514	25 Cycle Conversion Kit
40	None			—131126	60 to 50 Cycle Motor Bushing Ratio Spring
41	G1—49698	Spkr. and Output Trans.		—130078	Escutcheon and Lens
	—49697	Bracket Speaker Mtg.		—130376	Cabt. Protector & Pol. Cloth
42	None			S—80	Screw—Back Mtg. (7 Req.) (FS-18)
43	None				
44	—49774	Volume Control and Line Switch			
45	G193—32004	Wave Trap			
46	None				
47	None				
48	None				
49	None				
50	—130618	Tone Arm			
	—47333	Rest Brkt.—Tone Arm			
	—47724	Rubber Rest—Rest Brkt.			



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER. READINGS MAY VARY 10%

Socket Voltage Chart



# MODEL 36 AM

## TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS)

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	Oscillator-Modulator	—	1.5	86	45	Neg.	86	—	—
1N5-GT	I-F Amplifier	—	1.5	86	86	—	J.B.	—	—
1H5-GT	Detector & 1st A-F Amp.	—	1.5	12	—	—	—	—	—
1A5-GT	Output	—	1.5	84	85	4.3*	—	—	J.B.

Power Output approximately 200 milliwatts. "A" Battery Drain approximately .20 Ampere at 1.5 Volts.  
 "B" Battery Drain approximately 9.0 Milliamperes at 90 Volts. \*Measured across item 19. J.B. = Junction Block.

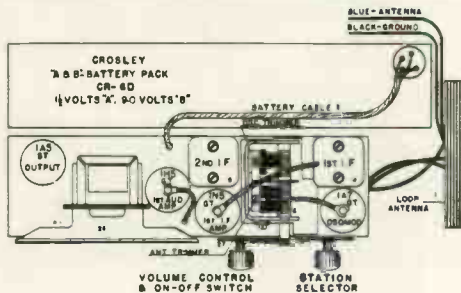


Fig. 1

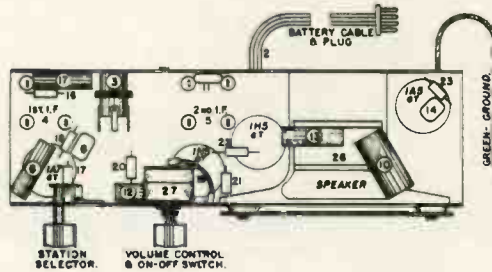


Fig. 2

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1A5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier to 455 Kilocycles

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" lead or chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust both 2nd I-F trimmers for maximum reading on the output meter.
- Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

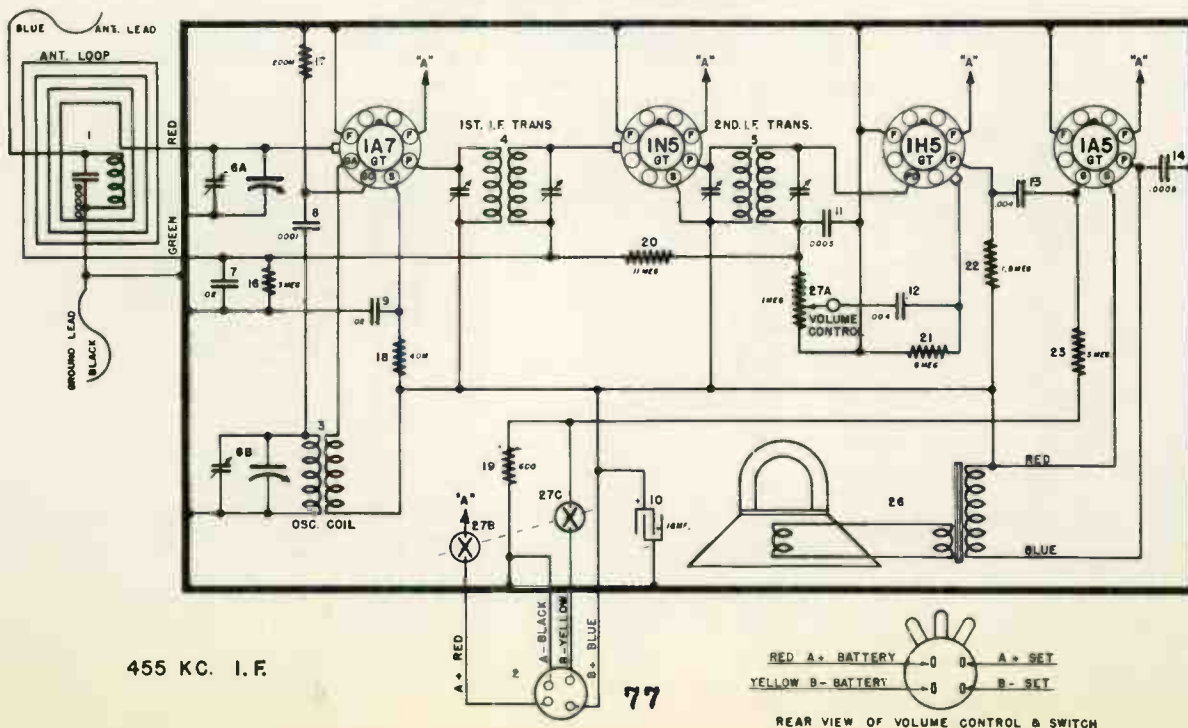
**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

#### 2. Aligning B-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

- Set the signal generator to 1500 kilocycles.
- Open the condenser gang all the way.
- Adjust the "OSC" trimmer condenser on gang for maximum output.
- Set the signal generator to 1400 kilocycles.
- Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).
- Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**
- Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

### WIRING DIAGRAM — MODEL 36AM



455 KC. I. F.

**PARTS LIST — MODEL 36AM**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G3 —130368	Loop Antenna	16	—36688	Resistor, 3 Megohms 1/4 Watt Ins.
2	—130493	Battery Cable	17	—35930	Resistor, 200,000 Ohms 1/4 Watt Ins.
3	G215—32002	Oscillator Coil	18	—36761	Resistor, 40,000 Ohms 1/4 Watt Ins.
4	G194—32004	1st I-F Transformer Assembly	19	—29585	Resistor, 600 Ohms 1/2 Watt Flex.
5	G195—32004	2nd I-F Transformer Assembly	20	—48693	Resistor, 11 Megohms 1/4 Watt Ins.
6A	G88 —33001	2 Sect. Var. Cond. { Antenna Section	21	—47131	Resistor, 5 Megohms 1/4 Watt Ins.
			22	—48692	Resistor, 1 1/2 Megohms 1/4 Watt Ins.
6B	—31388	No. 8—32 x 1/8" W. Hd. Screw (Var. Cond.) (2 Req.)	23	—47131	Resistor, 5 Megohms 1/4 Watt Ins.
			26	392-PL-6-"W"	Speaker
	—48695	Drive Shaft		—48801	Output Transformer
	—44808B	Drive Shaft Bracket	27A	—48800	V. C. and Cone Assembly
	—6876	No. 6—32 x 1/4" W. Hd. Mach. Screw (Drive Shaft Bracket)	27B	—48709	Volume Control, 1 Megohm
	—5062	No. 6—32 Hex. Nut (Drive Shaft Brack.)	27C		Battery Switch, A+
	G19 —41582	Drive Cord, 17"			Battery Switch, B—
	—44989	Drive Cord Spring		—46662	3/4" Pal Nut (Volume Control)
	—46290	Drive Cord Clamp		—51108A	8 Prong Socket (No Marking)
	—43549	Retaining Ring (Drive Shaft)		AM	Cabinet
	—130534	Dial Face		—130470	Carton
	—6415	No. 8—32 x 1/4" W. Hd. Mach. Screw (Dial Face) (2 Req.)		—48605	Speaker Screen
	O —8	No. 8 Flat Washer (Dial Face) (2 Req.)		—44827	No. 8 x 1/8" H. H. P. K. Screw (Chassis Mtg.)
	—49113	Dial Pointer		—37953	Flat Washer (Chassis Mtg.)
	—49111	No. 6—32 x 1/4" Gulmite Screw (Dial Pointer)		—130540	Knob
	—20800	No. 6 Shakeproof Washer (Dial Pointer)		—48720A	Indicator Tack
7	—28621	Condenser, .02 Mf. 200 Volts Paper		CR60	CR60 Battery Pack and Carton
8	—34002	Condenser, .0001 Mf. Molded		—130508	Escutcheon and Lens (Dial)
9	—28621	Condenser, .02 Mf. 200 Volts Paper		—130376	Cab. Protector and Polishing Cloth
10	—45783	Condenser, 16 Mf. 125 Volts Elect.		CR28	CR28 Battery Pack and Carton
11	G3 —34002	Condenser, .0005 Mf. Molded			
12	—28904	Condenser, .004 Mf. 200 Volts Paper			
13	—28904	Condenser, .004 Mf. 200 Volts Paper			
14	G3 —34002	Condenser, .0005 Mf. Molded			

*Due to the age of certain sets shown in the manual, it is necessary for the factory to make substitutions for many parts. The Crosley distributor in your area is up-to-date on all parts substitutions. It will be to your advantage to check with him regarding any Crosley parts that you may require.*

**PARTS LIST — MODEL B36BS**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G5 —130368	Loop Antenna	30	NONE	
2	—130493	Battery Cable	31	G2 —130446	Speaker
3	G240—32002	Oscillator Coil		—131395	Output Trans.
4	G244—32004	1st I-F Assy.		—46905	V. C. & Cone Assy. (not replaceable)
5	G248—32004	2nd I-F Coil & Trimmer		—130076	Tip—Speaker Cable—small
6	—130996	Shunt Trimmer (on loop)	32	—130990	Tip—Speaker Cable—large
7	—49737	2 Gang Var. Condenser		—130400	Volume Cont. 1 Meg. & Off-On Sw.
8	G5 —34002	Condenser 50 Mmf.—Mica		—130445	Dial Face
9	—45780	Condenser .02 Mf.—160 V.		—130445	Bracket—Dial Face Mtg.
10	—45780	Condenser .02 Mf.—160 V.		—49780	Pointer—Dial Hand
11	—45783	Condenser 16 Mf.—250 V.		—49975	Drive Shaft
12	—50105	Condenser .1 Mf.—160 V.		—49665	Bearing—Drive Shaft
13	G2 —34002	Condenser 100 Mmf.—Mica		—28032	Spring—Shaft Retainer
14	—50084	Condenser .003 Mf.—160 V.		G11 —41582	Drive Cord
15	G1 —34002	Condenser 250 Mmf.—Mica		—51752	Spring—Drive Cord Tension
16	—50084	Condenser .003 Mf.—160 V.		—49674	8 Prong Socket
17	—130462	Condenser .002 Mf.—160 V.		—49693	Socket Insulator
18	G6 —34002	Condenser 25 Mmf.—Mica		—130389	Speaker Socket
19	NONE			—46447	Tube Shield
20	—35930	Resistor 200,000 Ohm 1/4 W.		—131090	BS. Cabinet
21	—35928	Resistor 60,000 Ohm 1/4 W.		—131091	Carton—BS. Cab. Shipping
22	—38918	Resistor 600 Ohm 1/2 W.		—130313	Knob—V.C. & On-Off Sw.
23	—35927	Resistor 2 Megohm 1/4 W.		—130540	Knob—Tuning
24	—36688	Resistor 3 Megohm 1/4 W.		—41742	Spring—Knob Insert
25	—35928	Resistor 60,000 Ohm 1/4 W.		—48720	Off Indicator Tack
26	—48693	Resistor 11 Megohm 1/4 W.		—130376	Cloth—Cab. Prot. & Pol.
27	—35602	Resistor 1 Megohm 1/4 W.		—130508	Escutcheon & Lens
28	—35927	Resistor 2 Megohm 1/4 W.		CR 60	Crosley "A & B" Battery Pack
29	NONE				

# MODEL B36BS

## TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS) PIN NUMBER

Tube	Function	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Osc.-Mod.	GND.	1.5	87	43	Osc. Grid	87	F—	J.B.
1N5GT	I-F Amp.	GND.	1.5	87	87	N.C.	N.C.	F—	N.C.
1H5GT	Det.-A.V.C.-1st A. F.	GND.	1.5	20	DIODE	J.B.	J.B.	F—	GND.
1T5GT	Output	GND.	1.5	84	87	-6	N.C.	F—	J.B.

\* —6 volts measured across item 22.

Max. Power Output approximately 320 milliwatts.

"A" Battery Drain approximately .20 Ampere at 1.5 Volts.

"B" Battery Drain approximately 11 Milliamperes at 90 Volts. \*Measured across item 22. J.B.=Junction Block.

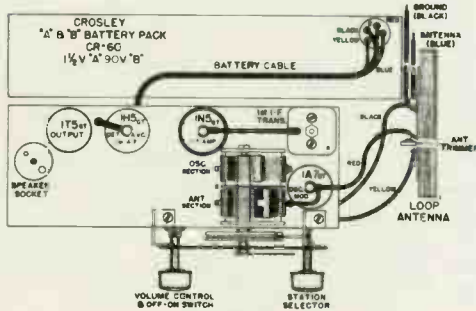


Fig. 1

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1T5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the

signal generator to the "GND" lead or chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust 2nd I-F trimmer, located below spk. front chassis flange, for maximum reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

(a) Set the signal generator to 1650 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

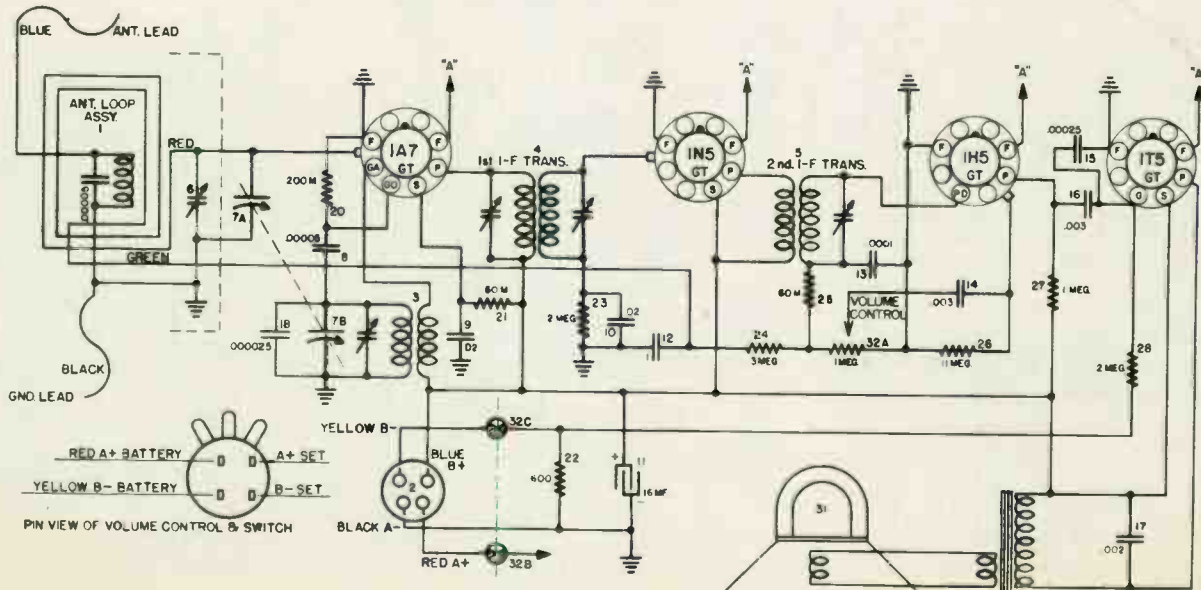
(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on loop for maximum output. DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

### WIRING DIAGRAM — MODEL B36BS



PARTS LIST ON PAGE 78

# CHASSIS No. 37

## ALIGNMENT PROCEDURE

Preliminary  
 Output Meter Connections.....To Voice Coil Terminals of Speaker or to Plate of 35L6GT and Cathode of 35Z5GT  
 Generator Ground Connections.....In Series with .001 MFD. Condenser  
 Dummy Antenna.....400 Ohm Carbon Resistor in Series with Generator Output  
 Position of Volume Control.....Fully On

### ALIGNMENT CHART

Step	Signal Generator Frequency Setting	Input	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks	Location
1	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2)	Adjust for maximum output.	Tops of I. F. Trans.
1-A	456	Antenna	S. B.	Fully open	1st I-F (2) Wave trap	Adjust for minimum output.	Center Section of 3 Sec. Trimmer.
2	15.3 Mc.	Antenna	S. W.	Fully open	S. W. "OSC"	Adjust for maximum output.	Top of Tuning Condenser
3	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant."	Adjust for maximum output while rocking gang thru signal.	L. H. Section of 3 Sec. Trimmer.
4	1650 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.	R. H. Section of 3 Sec. Trimmer.
5	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT"	Adjust for maximum output.	On Cabinet Back.

When aligning the short wave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position). Repeat original alignment procedure for more accurate adjustments. Always keep signal generator output low as possible to prevent action of A.S.C. circuit.

Socket Voltage is measured @ 117.5 V line

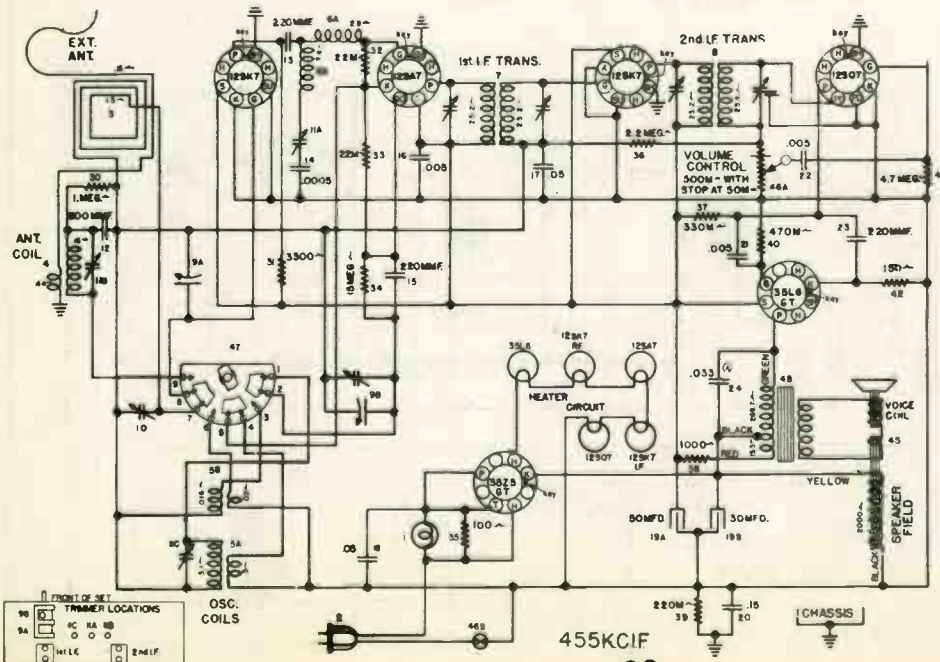
### TUBE VOLTAGE CHART

(BETWEEN SOCKET PINS AND B-) WITH 1000 OHM PER VOLT—500 V. RANGE D. C. VOLTMETER

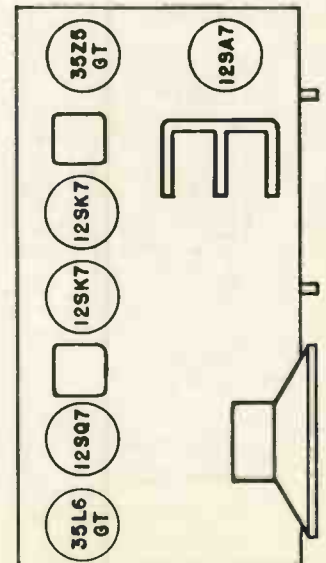
TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
12SK7	R. F. Amp.	.....	.....	0	Neg.	0	76.	.....	40
12SA7	Osc. Mod.	.....	.....	76	76	Neg.	0	.....	Neg.
12SK7	I. F. Amp.	.....	.....	0	Neg.	0	76	.....	76
12SQ7	Det., Etc.	.....	0	0	0	Neg.	16°	.....	0
35L6	B. P. O.	.....	.....	92	76	0	.....	.....	4
35Z5	Rect.	.....	.....	.....	.....	113AC	.....	.....	100

All voltages may vary 10% of values indicated. Neg. indicates Neg. reading on Voltmeter Scale but of too small a value to record accurately.  
 \* Measured on 100 V. Scale. Power consumption at 117.5 V. line, 30 watts. Drop across Speaker Field—100 V. Current thru Speaker Field—52 M.A.

### WIRING DIAGRAM



### TUBE LOCATION



PARTS LIST — MODELS 62-TA, 62-TC, 62-TD — CHASSIS No. 37

Figures in first column refer to parts in Diagrams.

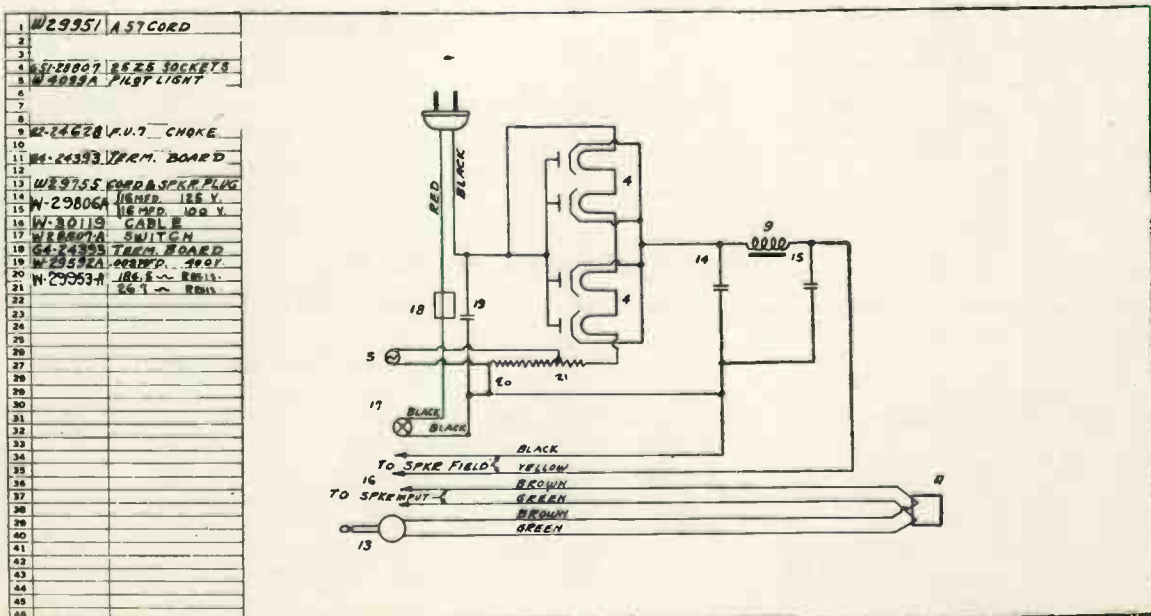
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb, Dial Light 6.3V.	29		
	G15 —49637	Socket Assem.—Dial Light.	30	G25 —39002	Res. 1 Meg. ¼ W.
2	—132300-1	Power Cable & Plug.	31	G10 —39002	Res. 330 Ohm ¼ W.
3	—132266-1	Loop Ant. & Back Assem.—TA & TC.	32	G15 —39002	Res. 22,000 Ohm ¼ W.
	—132265-1	Loop Ant. & Back Assem.—TD.	33	G15 —39002	Res. 22,000 Ohm ¼ W.
4	G235 —32000	Ant. Coil—H.F.	34	—50671	Res. 15 Meg. ¼ W.
5A	G264 —32002	Osc. Coil—B.C.	35	G63 —39002	Res. 100 Ohm 1 W.
5B	G264 —32002	Osc. Coil—H.F.	36	G27 —39002	Res. 2.2 Meg. ¼ W.
6A	G117 —32001	R. F. Plate Coil.	37	G22 —39002	Res. 330,000 Ohm 1 W.
6B	G117 —32001	I. F. W. T. Coil.	38	G69 —39002	Res. 1000 Ohm 1 W.
7	G270 —32004	1st I. F. Trans.	39	G21 —39002	Res. 220,000 Ohm ¼ W.
8	G271 —32004	2nd I. F. Trans.	40	G23 —39002	Res. 470,000 Ohm ¼ W.
9A	—132150-1	Var. Cond. Ant. Sec.	41	G29 —39002	Res. 4.7 Meg. ¼ W.
9B	—132150-1	Var. Cond. Osc. Sec.	42	G33 —39002	Res. 150 Ohm ½ W.
10	—132267	Ant. Trimmer.	43		
11A	—132240-2	Cond. Trimmer—R. F. Plate.	44		
11B	—132240-2	Cond. Trimmer H. F. Ant. Coil.	45	—49675-4	Speaker.
11C	—132240-2	Cond. Trimmer B. C. Osc. Coil.	46A	—132222-1	Vol. Control 500,000 Ohm.
12	G21 —34002	Cond. 600 Mmf.	46B	—132222-1	A. C. Switch.
13	G9 —39004	Cond. 220 Mmf. Mica.	47	—49772	Switch B. C.
14	G5 —39001	Cond. .0005 Mfd. 600 V.	48	—132152	Output Trans.
15	G9 —39004	Cond. 220 Mmf.		—132231-1	Dial Assem.
16	G11 —39001	Cond. .005 Mfd. 600 V.		—132097-6	Dial Pointer.
17	G65 —39001	Cond. .05 Mfd. 200 V.	G3	—132167	Drive Cord Assem.
18	—45782	Cond. .05 120 V. A. C.		—132119-3	Drive Shaft.
19A	—132228-1	Cond. 50 Mfd. Elec.		—51071	Ret. Ring Dr. Shaft.
19B	—132226-1	Cond. 30 Mfd. Elec.		—132256-1	TA Cabinet—Br.
20	G68 —39001	Cond. .15 Mfd. 200 V.		—132255	TC Cabinet—Wh.
21	G11 —39001	Cond. .005 Mfd. 600 V.		—132260-1	TD Cabinet—Wood.
22	G11 —39001	Cond. .005 Mfd. 600 V.		—132127	Knob—3 Req.
23	G9 —39004	Cond. 220 Mmf.		—42911	Paper Washer—Knob
24	G37 —39001	Cond. .01 Mfd. 400 V.		—132258-1	Dial Lens.
25				—48200	Trimount Stud—Lens Mtg. (6)
26				—132124	Trimount Stud—Back Mtg. (4)
27				—45580	Grommet—Rubber—Var. Cond.
28					

# GROSLY

*Twice Tested*

## SERVICE PARTS

### Model 38





## EXPORT DIVISION — MODELS 39AE, 39BK, 39BN

Output Meter Connection . . . . .	Plate to Screen of 50L6GT
Generator Ground Connection . . . . .	See foot note 1
Dummy Antenna in series with generator output . . . . .	See chart below
Position of volume control . . . . .	Fully on

### ALIGNMENT PROCEDURE CHART

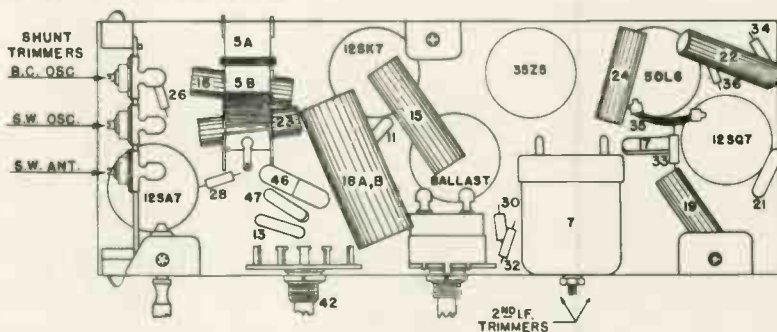
Step	Signal Dummy Antenna	Generator Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 Mf.	455 Kc.	Ant. Lead	B.C. (left)	Fully Open	2nd I-F(2) 1st I-F(2)	Located front chassis flange. Adjust for maximum output. Top 1st I-F Assm. Adjust for maximum output.
2.	400 ohm (Carbon)	15.3 Mc.	Ant. Lead	S.W. Eight	Fully Open	S.W. "OSC" (On Gang)	Adjust for Peak.
3.	400 Ohm Carbon	15.0 Mc.	Ant. Lead	S.W. (Right)	Approx. 15 Mc. on dial	S.W. "Ant" Center trimmer right end of chassis	Adjust for maximum signal while rocking gang.
4.	.0002 Mf.	1650 Kc.	Ant. Lead	B.C. (Left)	Fully Open	B.C. "OSC" Front trimmer right end of chassis	Adjust for Peak. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Ant. Lead	B.C. (Left)	Approx. 1400 on dial	B.C. "ANT" Rear trimmer right end of chassis	Adjust for maximum output.

‡The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. If a ground return from the signal generator is necessary connect generator ground lead through a .001 Mf. condenser to receiver chassis.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency (fundamental) rather than on the image frequency which is approximately 910 kilocycles less as indicated on the radio dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak (correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.



Bottom View — Model 39

### SOCKET VOLTAGES — MODEL 39

Measured from socket contact to chassis with 1000 ohm/volt 250 range voltmeter. Readings may vary 10% values given.

TUBE	FUNCTION	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
12SA7	Converter	GND.	H	80	80	10.5	—	H	Grid
12SK7	I-F Amp.	GND.	H	GND.	Grid	—	80	H	80
12SQ7	Det. A.V.C. A-F	GND.	Grid	J.B.	Diode	Diode	26	H	H
50L6GT	Output	GND.	H	75	80	Grid	N.C.	H	4.5
35Z5GT	Rectifier	N.C.	H	HT	N.C.	117 A.C.	N.C.	H	106

Gnd.=Ground. H=Heater. J.B.=Junction Block. N.C.=No Connection.

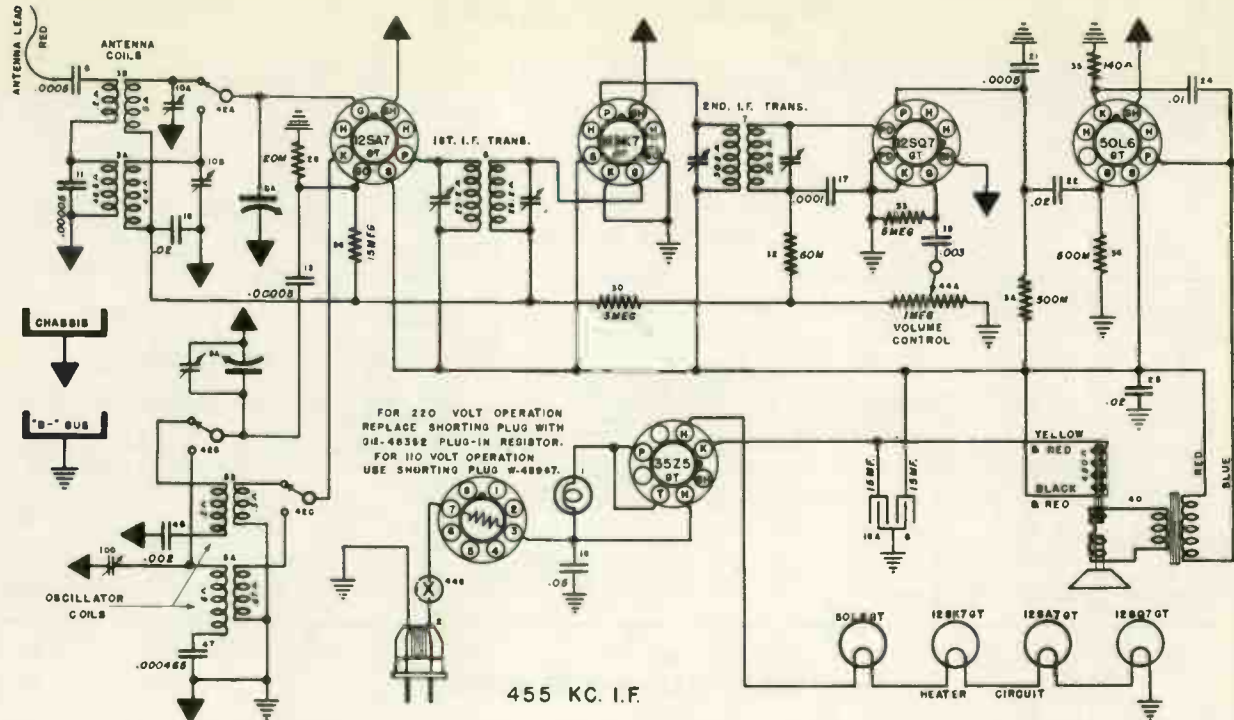
Power Consumption @ 117 V.A.C.=30 watts.

Power Consumption @ 230 V.A.C. with G12-48392 Ballast=60 watts.

Drop Across Speaker=26 volts.

Maximum Power Output=1.5 watts.

# MODEL 39



Wiring Diagram — Model 39

## PARTS LIST — MODEL 39

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light	40	G6 —49698	Speaker & Output Trans.
	G1 —49637	Socket Assm. Dial Light		—131337	Output Transformer
2	—49775	Power Cord & Plug	41	NONE	
	G12 —48392	Ballast Resistor—220 V. Operation	42	—49808	Band Change Switch
	—48947	Shorting Plug—110 V. Operation	43	NONE	
3	G225—32000	Dual Antenna Coil	44	—49774	Vol. Cont. (1 Meg.) & Switch
		A=B.C. Coil—650-1600 Kc.	45	NONE	
		B=S.W. Coil—4.8-15.0 Mc.	46	G23 —34005	Condenser 2000 Mmf.—Mica
4	NONE		47	G22 —34005	Condenser 465 Mmf.—Mica
5	G243—32002	Dual Oscillator Coil		—130989	Dial Face
		A=B.C. Coil—550-1600 Kc.		—4978	Pointer—Dial Hand
		B=S.W. Coil—4.8-15.0 Mc.		—130445	Bracket—Dial Mtg.
6	G250—32004	1st I-F Assy.—455 Kc.		—49741	Drive Shaft
7	G252—32004	2nd I-F Assy.—455 Kc.		—49665	Bearing (D.S.) Riv. to Chassis
8	G20 —34005	Condenser 500 Mmf.—Mica		—28032	Spring—Shaft Retainer
9	—130920	Condenser—2 Sect. Var. Tuning Gang		—49770	Trimount Stud—Dial Mtg.
10	MG4—49710	Condenser—3 Sect. Shunt Trimmer & Brkt. Assy.		—45580	Rubber Grommet—Gang Mtg.
		Section 10A=S.W. "Ant" Trimmer		—45620	Headed Bushing—Gang Mtg.
		Section 10B=B.C. "Ant" Trimmer		—130429	8-32 x 1/8 Screw—Gang Mtg.
		Section 10C=B.C. "Osc" Trimmer	11	G11 —41582	Drive Cord
		Condenser 50 Mmf.—Mica		—51752	Spring—Cord Tension
11	G21 —34005	Condenser 50 Mmf.—Mica		—49674	Socket—8 Prong Octal.
12	NONE			—49693	Insulator—Socket Mtg.
13	G21 —34005	Condenser 50 Mmf.—Mica		—49697	Bracket—Speaker Mtg.
14	NONE			—130022	AE Cabinet
15	—130923	Condenser .05 Mf.—400 V.		—49971	Shipping Carton—AE Cabt.
16	—49487	Condenser .02 Mf.—160V.		—130097	Back—AE Cabt. Back
17	G19 —34005	Condenser 100 Mmf.—Mica		—48758	Trimount Stud—AE & BK Back Mtg.
18	—49664	Condenser Dual Electrolytic		—46953	Knob (3 req.) AE Cabt.
		Section A—15 Mf.—140 Volt		—41742	Spring Knob Insert
		Section B—15 Mf.—120 Volt		—49832	Dial Lens—AE & BK Cabts.
		Condenser .003 Mf.—400 V.		—49770	Trimount Stud—AE & BK Lens Mtg.
19	—130922			—130490	Screw—Chassis Mtg.—(AE & BK)
20	NONE			—30409	Flat Washer—Chassis Mtg. (AE & BK)
21	G20 —34005	Condenser 500 Mmf.—Mica		MG16—49800	BK Cabt.—Ivory
22	—49487	Condenser .02 Mf.—160 V.		—130098	Back—BK Cabt.
23	—49487	Condenser .02 Mf.—160 V.		—130552	Shipping Carton BK Cabt.
24	—49489	Condenser .01 Mf.—400 V.		—49117	Handle—BK Cabt.
25	NONE			—49161	Screw—Handle Mtg. (BK)
26	—50671	Resistor 15 Megohm 1/4 W.		O-8	Washer—Handle Mtg. (BK)
27	NONE			—130769	Knob—(3 req.) BK Cabt.
28	—36760	Resistor 20,000 Ohm 1/4 W.		—131219	BN Cabinet (Wood)
29	NONE			—131221	Back—BN Cabt.
30	—36688	Resistor 3 Megohm 1/4 W.		S-80	Screw—BN Back Mtg. (8)
31	NONE			—131220	Shipping Carton BN Cabt.
32	—35928	Resistor 60,000 Ohm 1/4 W.		—131243	Knob (3 req.) BN Cabt.
33	—47131	Resistor 5 Megohm 1/4 W.		—131162	Dial Escutcheon & Lens
34	—36322	Resistor 500,000 Ohm 1/4 W.		—130580	Screw—Chassis Mtg.—BN Cabt.
35	—47512	Resistor 140 Ohm 1/4 W.		—45020	Washer—Chassis Mtg. BN Cabt.
36	—36322	Resistor 500,000 Ohm 1/4 W.		—130334	Felt Pad—Mtg. Screw Cover
37	NONE			—130376	Cabt. Protector Polishing Cloth
38	NONE				
39	NONE				

## EXPORT MODEL 40-BP

### ALIGNMENT PROCEDURE—MODEL 40-BP

PRELIMINARY	
Output Meter Connections . . . . .	Plate and Screen 6K6G
Generator Ground Connection . . . . .	To Chassis or Ground Lead
Dummy Antenna in series with Generator Output . . . . .	See chart below
Position of Volume Control . . . . .	Fully on

### ALIGNMENT CHART

Step	DUMMY ANTENNA	SIGNAL GENERATOR Frequency Setting	INPUT CONNECTION To Radio	Band Switch	Tuning Cond. Setting	TRIMMERS Adjusted	REMARKS
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm Carbon	15.4 Mc.	Antenna	S. W.	Fully Open	S. W. "Osc." (Rear Section of Tuning Cond.)	Adjust for maximum output.
3.	400 Ohm Carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on Dial	S. W. "Ant." (Center Trimmer Right End of Chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1650 Kc.	Antenna	S. B.	Fully Open	S. B. "Osc." (Front Trimmer Right End of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on Dial	S. B. "Ant." (Rear Trimmer Right End of Chassis)	Adjust for maximum output.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

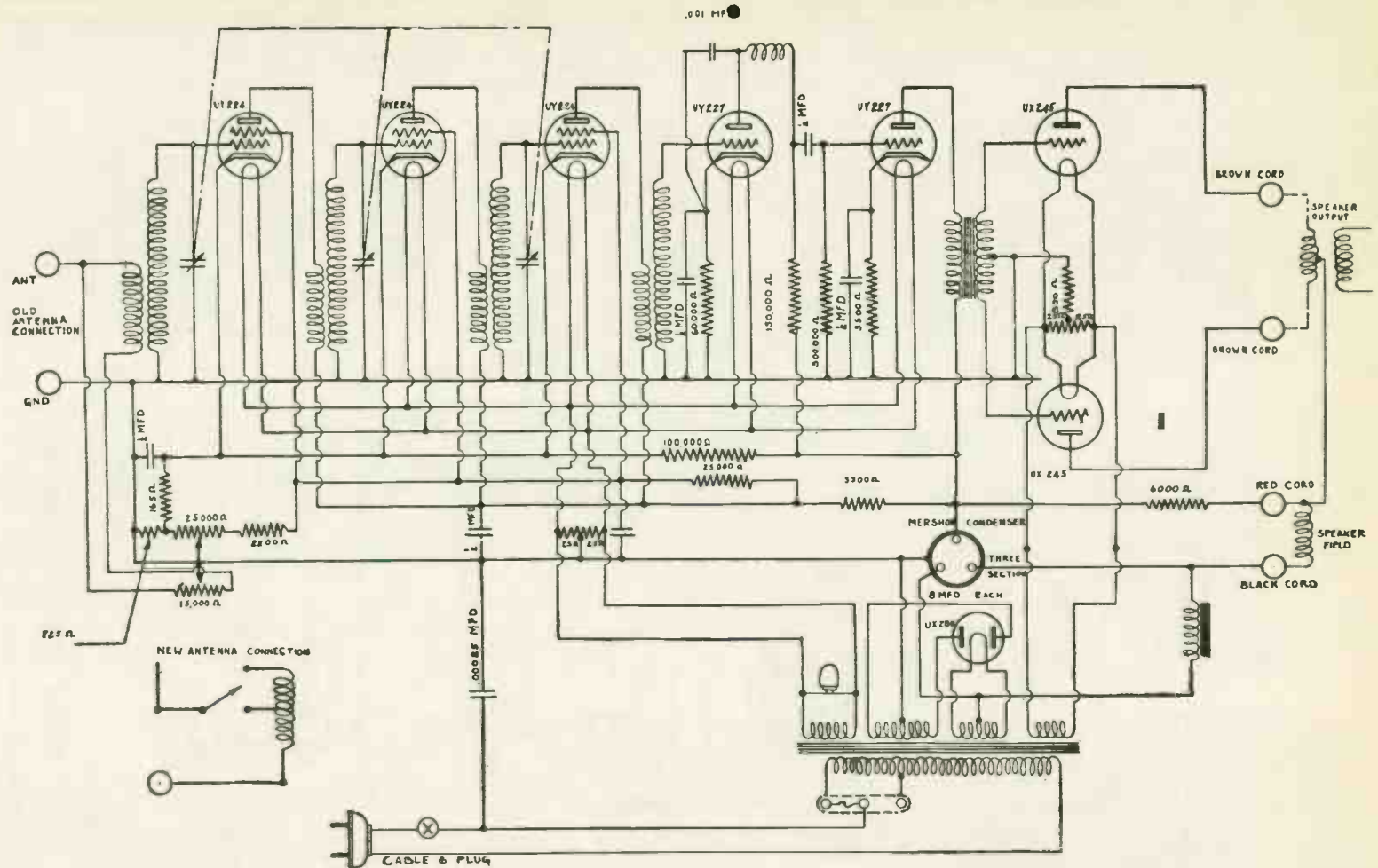
Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

### PARTS LIST—MODEL 40-BP

Figures in first column refer to parts in Diagrams						
Item No.	Part No.	Description	Item No.	Part No.	Description	
1		Bulb—Dial Light 6-8 Volt	34	NONE		
2	G9	Socket Assy. Dial Light	35	—35600	Resistor 100,000 Ohm ¼ W.	
3		Power Cord and Plug	36	—47131	Resistor 5 Megohm ¼ W.	
4	G227	—32000	37	—36761	Resistor 40,000 Ohm ¼ W.	
		Dual Antenna Coll	38	—35801	Resistor 300,000 Ohm ¼ W.	
		A=550-1600 Kc. Band	39	—36322	Resistor 500,000 Ohm ¼ W.	
		B=6.0-15.0 Mc. Band	40	—38918	Resistor 600 Ohm ¼ W.	
5	G243	—32002	41	NONE		
		Dual Oscillator Coll	42	NONE		
		A=550-1600 Kc. Band	43	NONE		
		B=6.0-15.0 Mc. Band	44	NONE		
6	G250	—32004	45	G4	—49792	Speaker
7	G251	—32004	46	NONE		
8		1st I-F Assy.—455 Kc.	47	—49809	Band Selector Switch	
9	MG11	—49820	48	G56	—26719	Phono Terminal Board
		2nd I-F Assy.—455 Kc.	49	—130514	Power Transformer	
		2 Sect. Var. Tuning Cond. Gang	50	—49817	Strap—P. T. Support	
		3 Sect. Shunt Trimmer Cond. Assy.	51	—130044	Vol. Contr. (1 Meg.) & Pwr. Sw.	
		A=Std. B. C. Antenna	52	—49674	Socket 8 Prong Octal Tube	
		B=S. W. Antenna	53	—130860	Retainer—5Y3G Tube	
		C=Std. B. C. Oscillator	54	—131120	Dial Face & Support	
10	G21	—34005	55	—49845	Pointer—Dial Hand	
11	G23	—34005	56	—49847	Drive Shaft	
12	G22	—34005	57	—49865	Bearing—Drive Shaft—Riv. to Chassis	
13		Condenser 50 Mmf.—Mica	58	—28032	Spring—Drive Shaft Retaining	
14	G21	—34005	59	G39	—41582	Drive Cord 23" Long
15		Condenser 2000 Mmf.—Mica	60	—50607	Spring—Drive Cord Tension	
16		Condenser 465 Mmf.—Mica	61	—130323	Plate—Speaker Mounting	
17		Condenser .05 Mf.—400 V.	62	—130310	Bracket—Speaker Support	
18		Condenser 50 Mmf.—Mica	63	—46460	Headed Bushing—Spkr. Mtg. (3 Req.)	
19		Condenser .01 Mf.—400 V.	64	—45580	Rubber Grommet—Spkr. Mtg. (3 Req.)	
		Condenser .02 Mf.—400 V.	65	—43885	Screw—Spkr. Plate Mtg. (2 Req.)	
		Condenser 25 Mmf.—Mica	66	—35066	Screw—No. 8-32x¼" Spkr. (2 Req.)	
		Condenser—3 Section Electrolytic	67	—49001	Screw—No. 6-32x¼" Spkr. (2 Req.)	
		Section A—20 MF.—250 Volts	68	—130165	Screw—No. 8-32x¼" Spkr. Sup. Brkt. Mtg. (1)	
		Section B—20 MF.—250 Volts	69	—131199	BP Cabinet	
		Section C—20 MF.—25 Volts	70	—131200	Shipping Carton BP Cabinet	
20			71	—131205	Back—BP Cabinet	
21	G19	—34005	72	S-80	—(FS-18)	Screw—No. 4x¾ Cabt. Back Mtg. (8)
22		Condenser 100 Mmf.—Mica	73	—130376	Cloth—Prot. & Polishing	
23		Condenser .003 Mf.—400 V.	74	—131246	Knob—(3 Req.)	
24		Condenser .01 Mf.—400 V.	75	—131163	Escutcheon & Lens	
25		Condenser .02 Mf.—400 V.	76	—130580	Screw—Chassis Mtg. (4 Req.)	
26	G24	—34005				
27		Condenser 250 Mmf.—Mica				
28						
29		Resistor 40,000 Ohm ¼ W.				
30		Resistor 2 Megohm ¼ W.				
31		Resistor 10,000 Ohm 2 W.				
32						
33						



# Models 40-S, 41-S, 42-S and 82-S



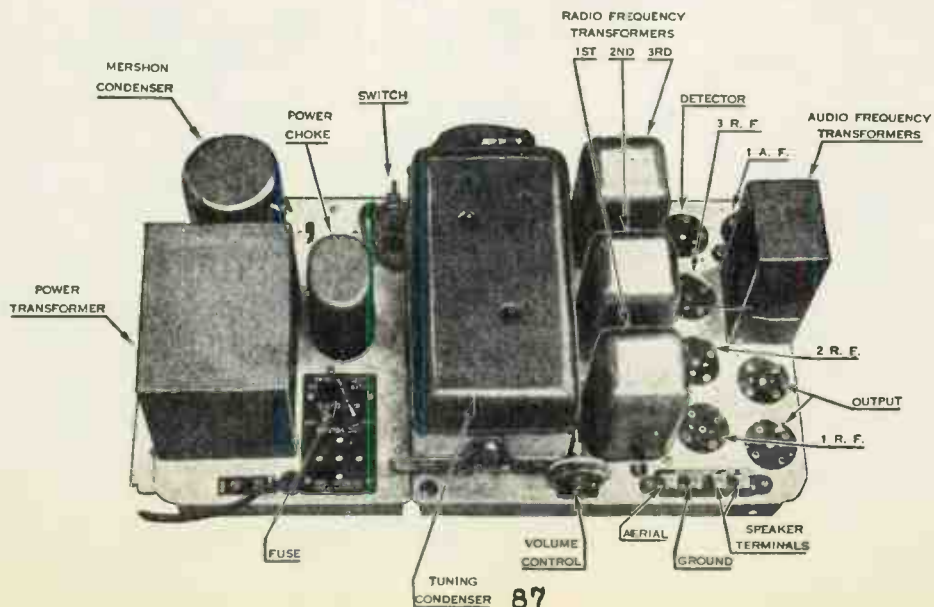
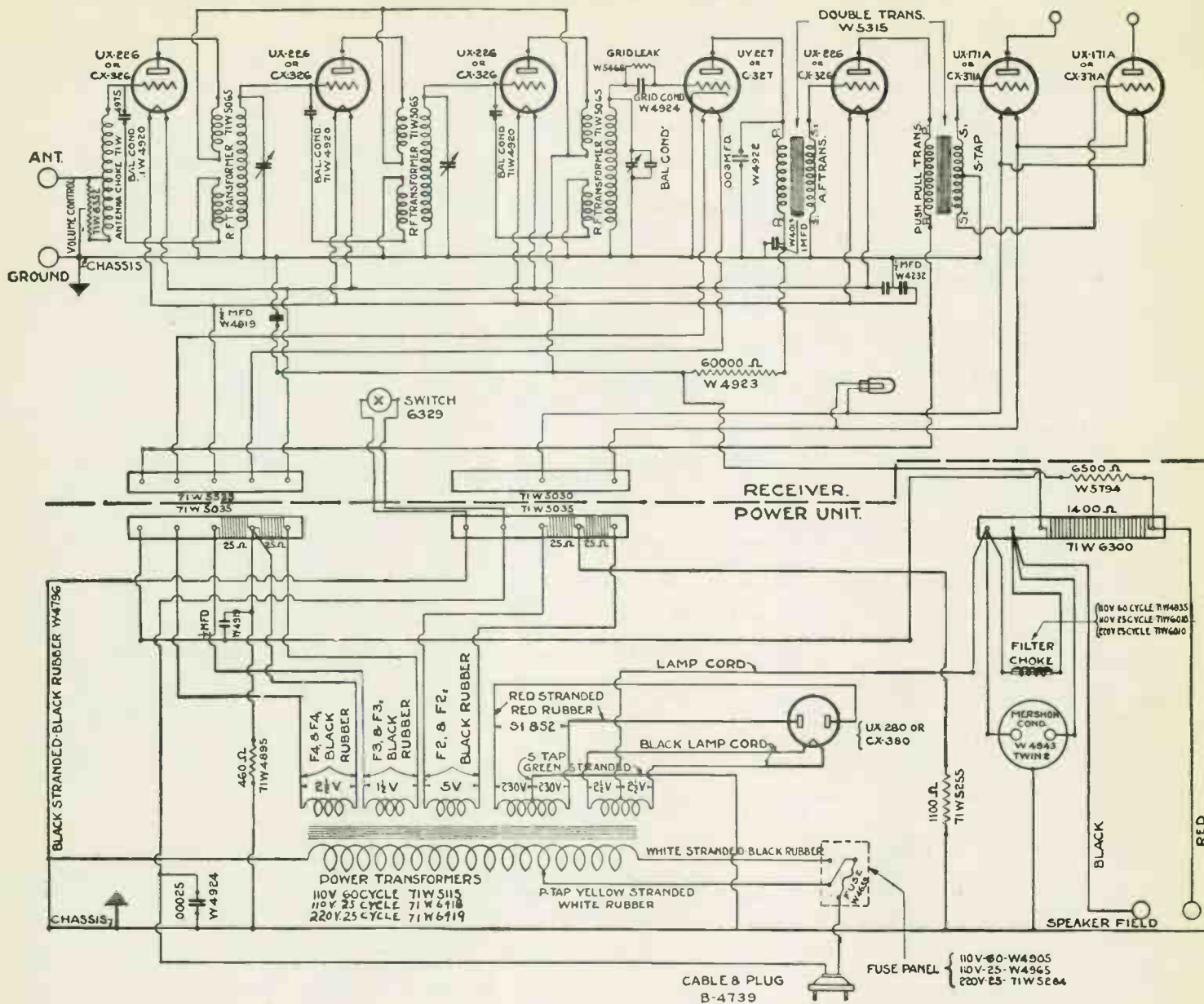
98

## PARTS LIST MODELS 40S, 41S, 42S, 82S

1	W-7145	Antenna Coupler
2	W-6797-B	R.F. Transformer
1		R.F. Choke
1	W-7022	Volume Control
1	W-6742	Filter Choke
1	W-5253	Filter Con. (8-8-8)
1	W-6590	Push Pull Input Trans.
1	B-6249-A	Output Trans. (on speaker)
1		

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

# Models 41-A and 42



# EXPORT DIVISION — EXPORT MODEL 41-BQ

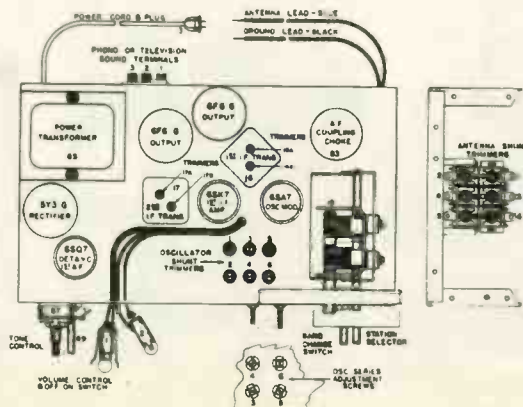
## ALIGNMENT PROCEDURE — MODEL 41-BQ

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Plate of 6F6G's
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech

### ALIGNMENT PROCEDURE CHART

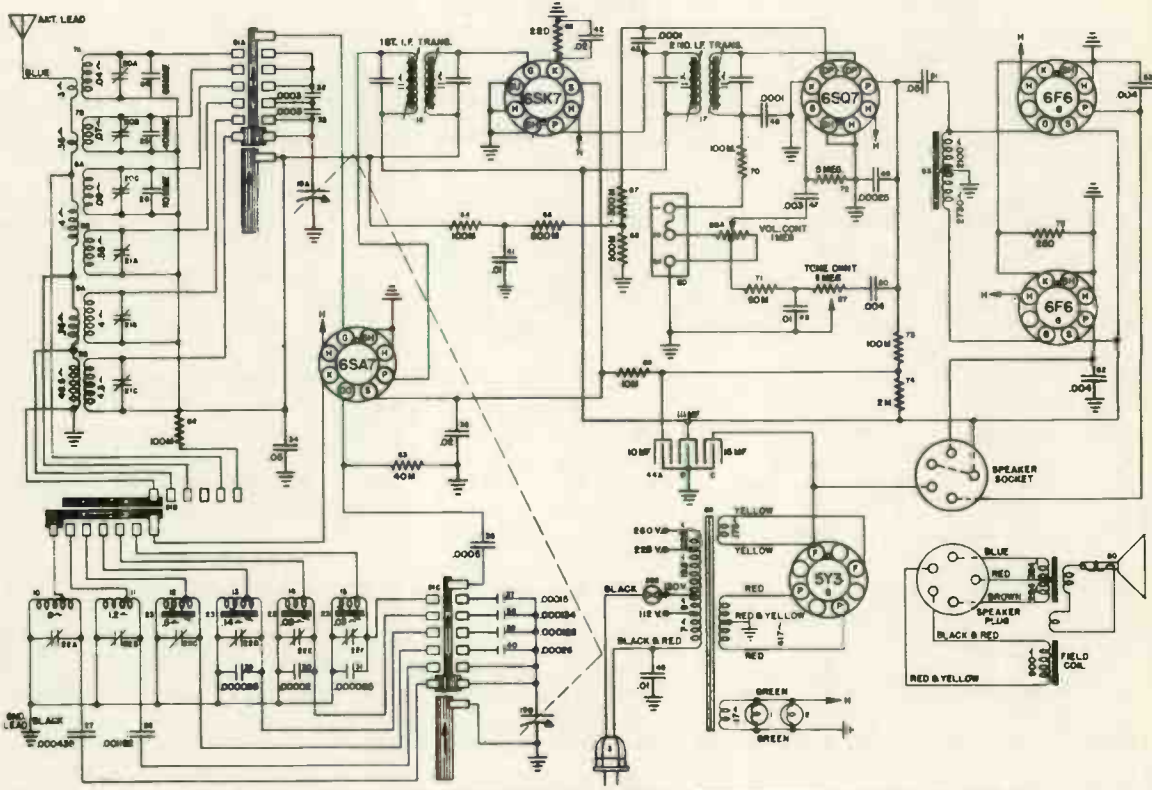
Step	Dummy Antenna	Signal Generator Frequency Setting	Generator Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Antenna	Band No. 1	Fully open	16A, 16B and 17A, 17B, 1st and 2nd I-F' assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Antenna	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Antenna	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Antenna	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Antenna	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Antenna	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Antenna	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Antenna	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Antenna	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Antenna	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Antenna	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Antenna	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Antenna	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Antenna	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Antenna	Band No. 6	Closed	No. 6 Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Antenna	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



SOCKET VOLTAGES—MODEL 41-BQ

All voltages measured from socket contact to chassis using 1000 ohm/volt D.C. voltmeter except heaters.

Table with columns: TUBE, FUNCTION, No. 1, No. 2, No. 3, No. 4, No. 5, No. 6, No. 7, No. 8. Rows include 1-6SA7, 1-6SK7, 1-6SQ7, 2-6F6G, 1-6Y3G.



Parts list table with columns: Item No., Part No., Description, Item No., Part No., Description. Lists various components from 1 to 80, including bulbs, capacitors, coils, and chassis parts.



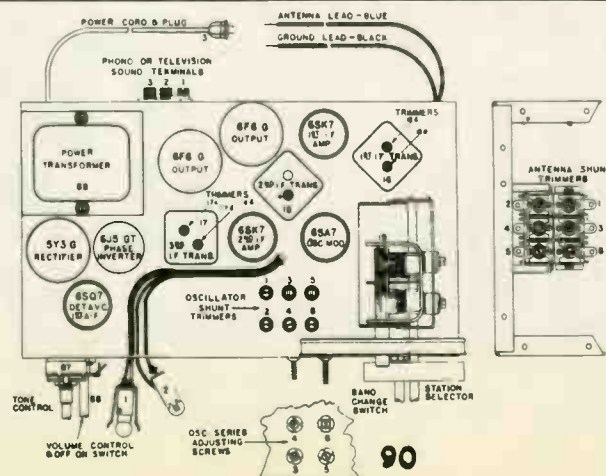
# EXPORT MODEL 42-BR

## PRELIMINARY

Output Meter Connections	Plate to Plate of 6F6G's
Generator Ground Connections	To Chassis nr Ground Lead
Dummy Antenna in Series with Generator Output	See Chart Below
Position of Volume Control	Fully On
Position of Tone Control	To Treble or Speech

## ALIGNMENT CHART

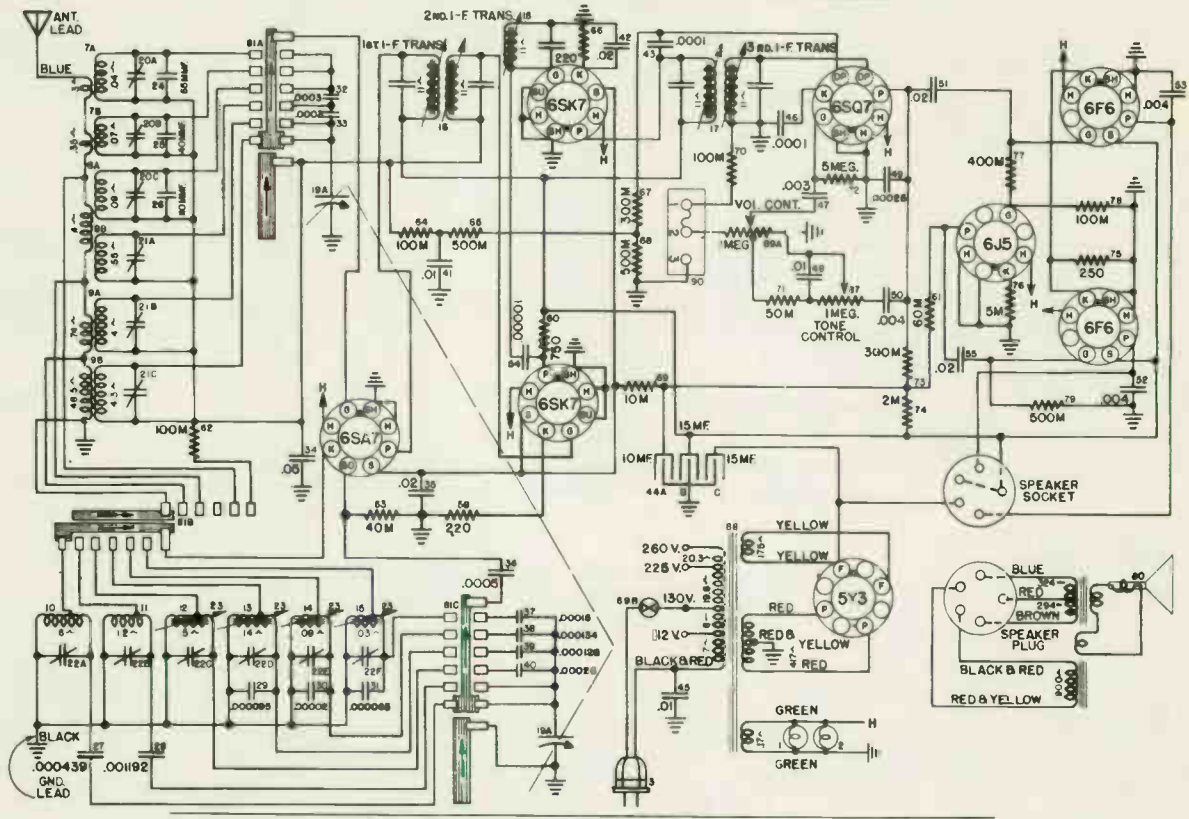
Step	Dummy Antenna	Signal Generator Frequency Setting	Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Ant.	Band No. 1	Fully open	16A, 16B, and 17A, 17B, 18A 1st, 2nd and 3rd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Ant.	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Ant.	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Ant.	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Ant.	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Ant.	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Ant.	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Ant.	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Ant.	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Ant.	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Ant.	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Ant.	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Ant.	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Ant.	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Ant.	Band No. 6	Closed	No. 6 Oscillator series	Adjust for, maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Ant.	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



## SOCKET VOLTAGES—MODEL 42-BR

Measured with 1000 ohm/volt D.C. voltmeter from chassis to tube socket contact.

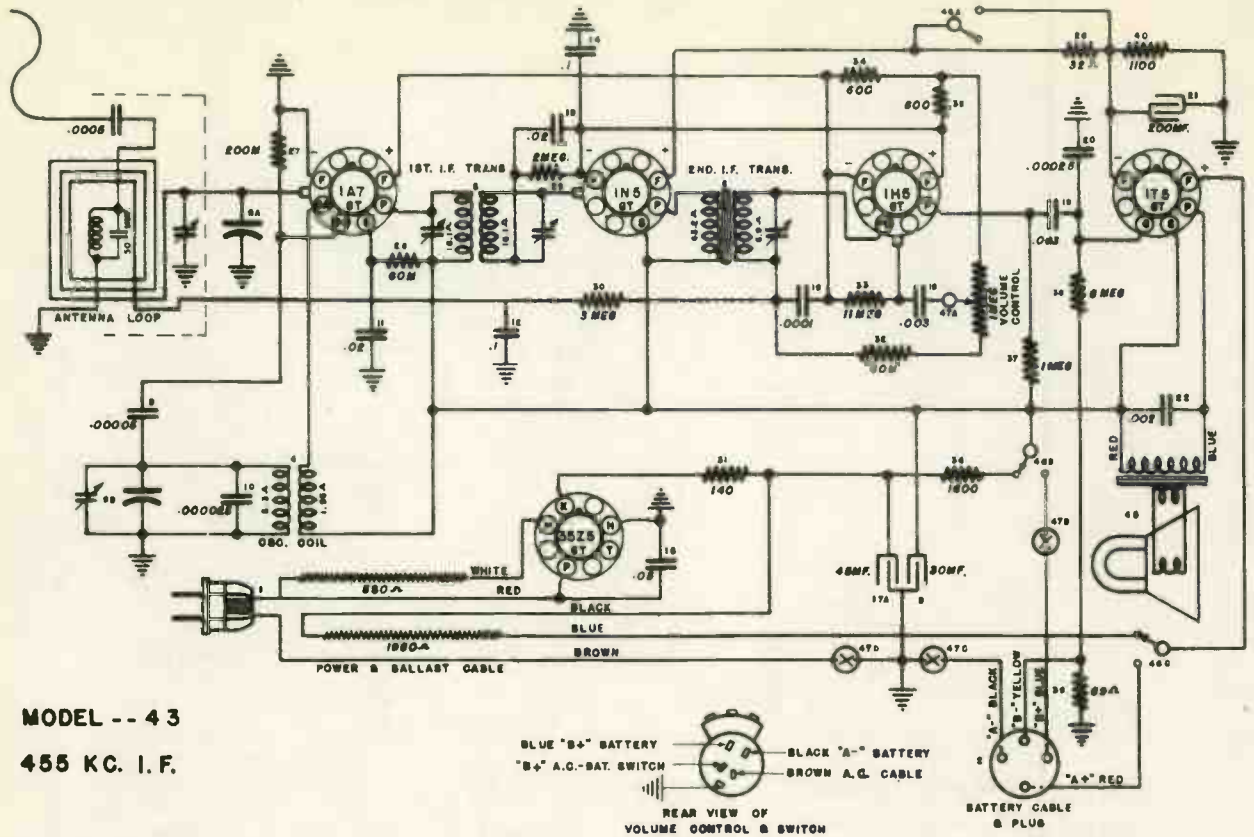
TUBE	FUNCTION	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6SA7	Oscillator-Mixer	GND.	GND.	220	96	—	9.3	6.3	—
6SK7	1st I-F Amp.	GND.	GND.	GND.	—	2.5	96	6.3	213
6SK7	2nd I-F Amp.	GND.	GND.	GND.	—	2.5	96	6.3	220
6SQ7	Det.-A.V.C.-1st Audio	GND.	—	0	—	—	68	6.3	GND.
6J5GT	Phase Inverter	GND.	GND.	107	J.B.	—	J.B.	6.3	5.5
2-6F6G	Output	GND.	GND.	211	220	—	J.B.	6.3	14.0
5Y3G	Rectifier	N.C.	308 D.C.	J.B.	330 A.C.	N.C.	330 A.C.	N.C.	308 D.C. 4.5



Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-45867	Bulb Dial Light	57		
2	W-45867	Bulb Dial Light	58		
3	G11-45337	Socket Assy.—Dial Light	59		
4	B-45769-A	Cable & Plug (Power)	60		
5			61		
6			62		
7A	G229-3200	Coil—Ant. 16-13 M	63		
7B		Coil—Ant. 25-19 M	64		
8A	G228-3200	Coil—Ant. 31 M	65		
8B		Coil—Ant. 80-49 M	66		
9A	G230-3200	Coil—Ant. 90 M	67		
9B		Coil—Osc. BC	68		
10	G246-3202	Coil—Osc. 90 M	69		
11	G244-3202	Coil—Osc. 80-49 M	70		
12	G248-3202	Coil—Osc. 31 M	71		
13	G249-3202	Coil—Osc. 25-19 M	72		
14	G247-3202	Coil—Osc. 16-13 M	73		
15	G245-3202	1st I-F Trans.	74		
16	G257-3204	2nd I-F Trans.	75		
17	G254-3204	3rd I-F Trans.	76		
18	G253-3204	End I-F Trans.	77		
19A	13114-A	Var. Cond. Ant. Sect.	78		
19B		Var. Cond. Osc. Sect.	79		
20A		Cond. Trim. 16-13 M Ant.	80		
20B	-131129	Cond. Trim. 25-19 M Ant.	81		
20C		Cond. Trim. 31 M Ant.	82		
21A	-131129	Cond. Trim. 80-49 M Ant.	83		
21B		Cond. Trim. 90 M Ant.	84		
21C		Cond. Trim. BC Ant.	85		
22A	MG28-131181	Cond. Trim. 80 M Osc.	86		
22B		Cond. Trim. BC Osc.	87		
22C		Cond. Trim. 80-49 M Osc.	88		
22D		Cond. Trim. 31 M Osc.	89A		
22E		Cond. Trim. 25-19 M Osc.	89B		
22F		Cond. Trim. 16-13 M Osc.	90		
23	W-131197	Iron Core (4) Osc. Coils	G56-28713		Phono Terminal Board
24	G3-131502	Cond. 85 Mmf. Mica	D-131200		Cabinet—BR
25	G2-131502	Cond. 40 Mmf. Mica	-131231		Carton—Shipping
26	G6-131502	Cond. 110 Mmf. Mica	-131232		Instructions
27	G12-131502	Cond. 439 Mmf. Mica	W-45023		Flat Washer—Chassis Mtg.
28	G1-131501	Cond. 1192 Mmf. Mica	W-45066		Grommet—Chassis Mtg.
29	G13-131502	Cond. 95 Mmf. Mica	W-4558CA		Grommet—Spkr Mtg.
30	G1-131502	Cond. 20 Mmf. Mica	W-49796		Headed Bushing—Spkr. Mtg.
31	G8-131502	Cond. 85 Mmf. Mica	W-2399		Flat Washer—Spkr. Mtg.
32	G11-131502	Cond. 300 Mmf. Mica	-130776		Cloth—Cab. Protector
33	G11-131502	Cond. 300 Mmf. Mica	B-131234		Cabinet Back
34	W-130923-A	Cond. 05 Mf. 400 V. Paper	-131119		Knob—B.C. Sw.
35	W-131118	Cond. 02 Mf. 400 V. Paper	-131190		Knob—Vol.—Tuning—T.C.
36	G5-131502	Cond. 600 Mmf. Mica	W-131188B		Dial Pointer
37	G4-131502	Cond. 150 Mmf. Mica	MG27-131112		Dial Back Assy.
38	G8-131502	Cond. 131 Mmf. Mica	W-131130		Dial Back Mtg. Bracket
39	G7-131502	Cond. 128 Mmf. Mica	W-131101		Dial Background
40	G10-131502	Cond. 250 Mmf. Mica	W-131119		Idler Pulley Brkt. (Single)
41	W-49889	Cond. 01 Mf. 400 V. Paper	W-131182A		Dial Pointer Guide Rod
42	W-131118	Cond. 02 Mf. 400 V. Mica	W-131184		Pointer Rod Spring
43	G19-34066	Cond. 100 Mmf. Mica	MG15-131111		Drive Shaft & Flywheel Assy.
44A	W-130246	Cond. 10 Mf. Elect.	G45-41582		Drive Cord
44B		Cond. 15 Mf. Elect.	G46-41582		Drive Cord
44C		Cond. 15 Mf. Elect.	W-131114		Retaining Spring—Idler
45	W-49489	Cond. 01 Mf. 400 V. Paper	W-131217		Rubber Tubing
46	G19-34005	Cond. 100 Mmf. Mica	W-131256		Screw 4x 1/2 RH—Cab. Mtg.
47	W-130922-A	Cond. 003 Mf. 400 V. Paper	-131215		Screw 6x 1/2 RH—Cab. Mtg.
48	W-131118-A	Cond. 01 Mf. 400 V. Paper	B-131121		Dial Glass (Face)
49	G24-34005	Cond. 250 Mmf. Mica	W-131380		Spring—Guide Cord Tension
50	W-131117	Cond. 004 Mf. 400 V. Paper	W-131391-A		Spring—Drive Cord Tension
51	W-131118	Cond. 02 Mf. 400 V. Paper	W-131485-A		Idler Pulley
52	W-131117	Cond. 004 Mf. 400 V. Paper	W-131481-B		Idler Pulley
53	W-131117	Cond. 004 Mf. 400 V. Paper	W-131196		Spring Washer—Trimmer Screw
54	G25-34005	Cond. 10 Mmf. Mica	W-130922		Chassis End Plate
55	W-131118	Cond. 02 Mf. 400 V. Paper	W-130860		Tab Clamp
56			W-49176		Cond. Clamp—Elect.

# MODEL 43 BT



MODEL -- 43

455 KC. I. F.

## PARTS LIST

Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION	Diagram Part No.	Part No.	DESCRIPTION
1	130340	Power Cord & Plug (dual resistance in cord)	25	37681	Resistor 32 Ohm 1/2 W.	G11-41582	41742	Drive Cord (15")
2	131124	A & B Bat. Cable complete	26	35930	Resistor 20000 Ohm 1/4 W.	51752	48720	Spring—Drive Cord Tension
	131380	Plug—Battery Cable	27	35928	Resistor 60000 Ohm 1/4 W.	130393	130508	Trimount Stud—Dial Face Mtg.
3	G5-130368	Loop Antenna Assy.	28	35927	Resistor 2 Megohm 1/4 W.		130430	Socket—8 Prong Tube
4	G240-32002	Oscillator Coil	29	36688	Resistor 3 Megohm 1/4 W.		49674	Socket Insulator
5	G244-32004	1st I-F. Trans. Assy.	30	130073	Resistor 140 Ohm 2W.	49693	130389	Socket—Sp'k'r Plug
6	G248-32004	2nd I-F. Trans. Assy.	31	35928	Resistor 11 Megohm 1/4 W.	49665	49665	Bearing—Drive Shaft
7			32	35928	Resistor 60000 Ohm 1/4 W.	130928	131107	Cond.—2nd I-F Trimmer
8	G5-34002	Cond. 50 MMF.—Mica	33	48693	Resistor 11 Megohm 1/4 W.		131107	BT—Cabinet
9	49737	Cond.—Variable Tuning	34	38918	Resistor 600 Ohm 1/2 W.	130376	130376	Cloth—Pol. & Protector
10	G6-34002	Cond. 25 MMF.—Mica	35	38918	Resistor 600 Ohm 1/2 W.	131108	131108	Crtn.—BT Cabt. Shipping
11	45780	Cond. .02 MF.—160V. Tub.	36	130274	Resistor 1600 Ohm 1/2 W.	130313	130313	Knob—Vol. Control
12	50105	Cond. .1 MF.—160V. Tub.	37	35802	Resistor 1 Megohm 1/4 W.	130540	130540	Knob—Batt. A.C. Sw. & Tuning
13	45780	Cond. .02 MF.—160V. Tub.	38	35927	Resistor 2 Megohm 1/4 W.			
14	50105	Cond. .1 MF.—160V. Tub.	39	42401	Resistor 99 Ohm 1/4 W.			
15	45782	Cond. .05 MF.—120V. Tubular (A.C.)	40	21452	Resistor 1100 Ohm 3/4 W.			
16	G2-34002	Cond. 100 MMF.—Mica	41					
17	49995	Cond.—Dual Electrolytic Section A—45 MF. — 120V. Section B—30 MF. — 100V.	42					
18	50084	Cond. .003 MF.—160V. Tub.	43	G2-130446	Speaker			
19	50084	Cond. .003 MF.—160V. Tub.	44	130075	Switch—AC-DC/Battery			
20	G1-34002	Cond. 250 MMF.—Mica	45	49974	Vol. Control & On-Off Sw.			
21	130404	Cond. 200 MF.—8 1/2 V. Elec.	46	46447	Shield—1N5GT Tube			
22	130462	Cond. .002 MF.—160V. Tub.	47	130400	Dial Face			
23				130445	Bracket—Dial Mounting			
24				49780	Pointer—Dial Hand	46905	46905	Tip Spkr. Cable (small)
				49975	Drive Shaft	130076	130076	Tip Spkr. Cable (large)
				28032	Spring—Shaft Retaining			

## ALIGNMENT PROCEDURE

Volume Control on full

Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Grid 1A7GT	.02 MF	Fully open	2nd 1-F (1) located on front chassis flange	Adjust for maximum signal.
455 Kc	Grid 1A7GT	.02 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F assy.
1650	Ant. Lead	.0001 MF	Approx. 140	"OSC": Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	on dial	"ANT" shunt on loop ant.	Adjust for maximum output.

Repeat above for more accurate adjustments  
 Maximum power output @ 75 V. "B" — approx. 200 M. W.  
 Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ 90 V., 12 M. A.  
 Power consumption @ 117.5 volts line—30 Watts

**EXPORT DIVISION — EXPORT MODEL 44-BU**

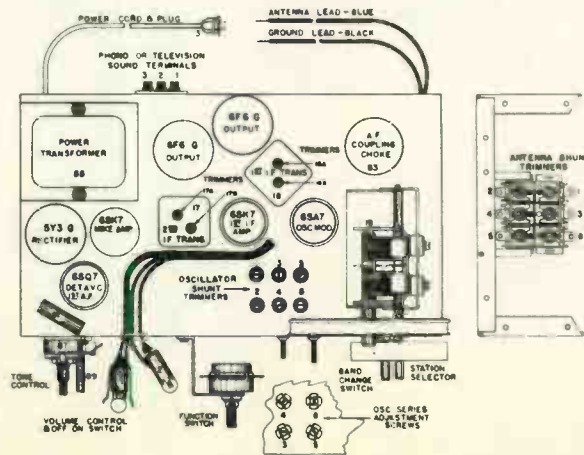
**ALIGNMENT PROCEDURE — MODEL 44-BU**

**PRELIMINARY**

Output Meter Connections	Plate to Plate of 6F6G's
Generator Ground Connections	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output	See Chart Below
Position of Volume Control	Fully On
Position of Tone Control	To Treble or Speech
Mike Control	All the way OFF
Functional Control Switch	Radio

**ALIGNMENT PROCEDURE CHART**

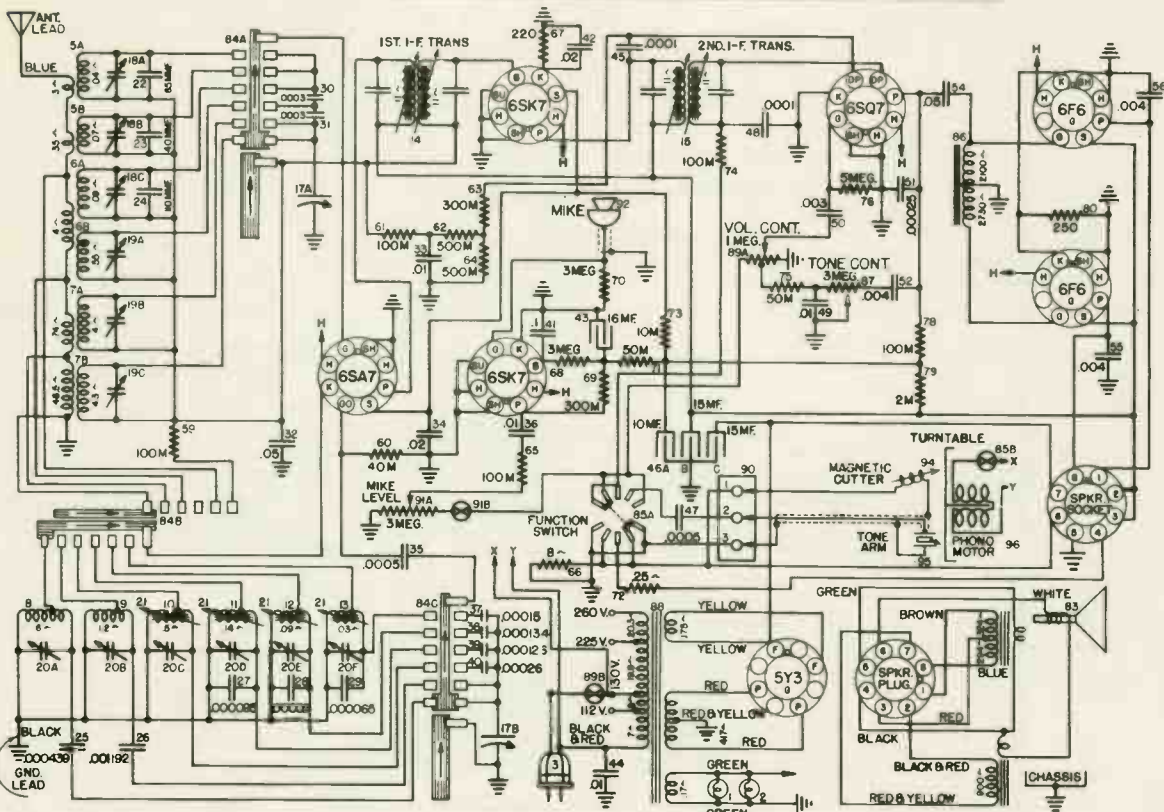
Step	Dummy Antenna	Signal Generator Frequency Setting	Generator Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	200 Mmf.	456 Mc.	Antenna	Band No. 1	Fully open	14A, 14B, and 15A, 15B, 1st and 2nd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Antenna	Band No. 1	Fully open	No. 1 oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Antenna	Band No. 1	Approx. 1400 on dial	No. 1 Antenna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Antenna	Band No. 2	Fully open	No. 2 Oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
5.	400 Ohm carbon	4500 Kc.	Antenna	Band No. 2	Approx. 4.5 90 Meter band	No. 2 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Antenna	Band No. 3	Fully open	No. 3 Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Antenna	Band No. 3	Closed	No. 3 Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Antenna	Band No. 3	Approx. 9.0 60 Meter band	No. 3 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Antenna	Band No. 4	Fully closed	No. 4 Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Antenna	Band No. 4	Closed	No. 4 Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Antenna	Band No. 4	Approx. 11.0 31 Meter Band	No. 4 Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Antenna	Band No. 5	Fully open	No. 5 Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Antenna	Band No. 5	Closed	No. 5 Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Antenna	Band No. 6	Fully open	No. 6 Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Antenna	Band No. 6	Closed	No. 6 Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Antenna	Band No. 6	Approx. 22 16 Meter band	No. 6 Antenna shunt	Adjust for maximum output while rocking gang thru signal.



# SOCKET VOLTAGES — MODEL 44-BU

All voltages measured from socket contact to chassis using a 1000 ohm volt D.C. voltmeter, except heaters

TUBES	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1-6SA7	Oscillator-Mixer	GND.	GND.	230	103	0	6.3	—	—
1-6SK7	I-F Amplifier	GND.	GND.	GND.	0	2.3	103	6.3	230
1-6SQ7	Det. A.V.C.-1st A-F Amp	GND.	0	GND.	0	0	92	6.3	GND.
1-6SK7	Mike Pre-Amp	GND.	GND.	GND.	0	0	0	6.3	0
2-6F6G	Output (push pull)	GND.	GND.	221	230	—	L.B.	6.3	15
1-5Y3G	Rectifier	N.C.	312 D.C.	4.5	335 A.C.	N.C.	335 A.C.	N.C.	312 D.C.

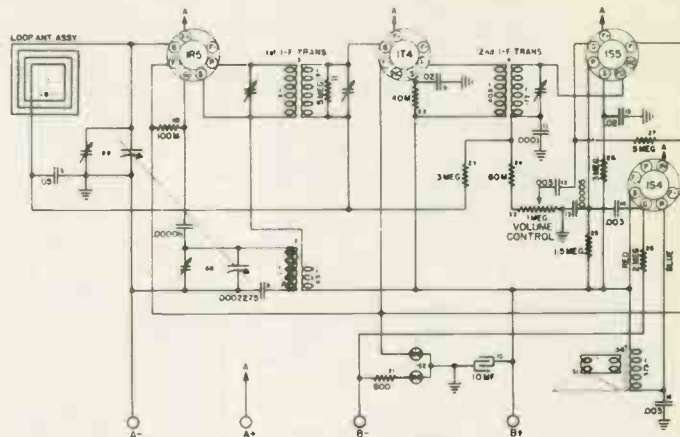
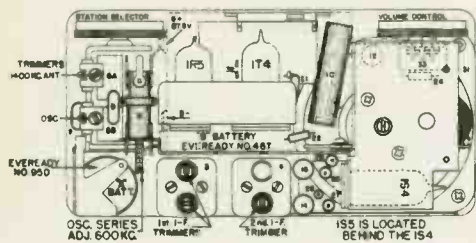


Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Bulb-Dial Light	66	W-41258	Res. 8 Ohm 1/2 W. Flex.
2	W-43567	Bulb-Dial Light	67	-38977	Res. 220 Ohm 1/2 W. W. Ins.
3	B-40786-A	Cable & Plug (Power)	68	-36888	Res. 3 Meg Ohm 1/2 W. Ins.
4			69	-33601	Res. 300 M Ohm 1/2 W. Ins.
5A	G229-32000	Coil 16-13 M Ant.	70	-36884	Res. 3 Meg Ohm 1/2 W. Ins.
5B		Coil 31 M Ant.	71	-40757	Res. 50 M Ohm 1/2 W. Ins.
6A	G228-32000	Coil 31 M Ant.	72	W-131410	Res. 1 Ohm 1 W.
6B		Coil 60-49 M Ant.	73	-47100	Res. 10 M Ohm 2 W. W. Ins.
6C		Coil 90 M Ant.	74	-38600	Res. 100 M Ohm 1/2 W. Ins.
7A	G230-32000	Coil B.C. Ant.	75	-40757	Res. 50 M Ohm 1/2 W. Ins.
7B		Coil B.C. Osc.	76	-47131	Res. 5 Meg Ohm 1/2 W. Ins.
8	G246-32002	Coil B.C. Osc.	77		
9	G244-32002	Coil 60-49 M Osc.	78	-35600	Res. 100 M Ohm 1/2 W. Ins.
10	G248-32002	Coil 21 M Osc.	79	W-28013	Res. 2 M Ohm 1/2 W. Flex.
11	G249-32002	Coil 25-19 M Osc.	80	-49703	Res. 250 Ohm 2 W. Ins.
12	G247-32002	Coil 16-13 M Osc.	81		
13	G245-32002	Coil 16-13 M Osc.	82		
14	G253-32004	1st I-F Trans.	83		
15	G254-32004	2nd I-F Trans.	84		
16			84A		Speaker—8 Inch
17A	-13119*	Iron Core (I-F Adj.)	84B	-131145	Output Transformer
17B	-131164-B	Var. Cond. Ant. Sect.	84C		Switch, Band Change
18A		Var. Cond. Osc. Sect.	85A	-131225	Switch, Band Change
18B	-131129	Cond. Trim. 16-13 M Ant.	85B		Switch, Band Change
18C		Cond. Trim. 25-19 M Ant.	86	G2-190432A	Switch, Function
18D		Cond. Trim. 31 M Ant.	87		Switch, Phono Motor
18E	-131129	Cond. Trim. 60-49 M Ant.	88		A-F Coupling Choke
19A		Cond. Trim. 90 M Ant.	89	-130515	Transformer (Power)
19B		Cond. Trim. 31 M Ant.	90	-131146	Vol. Control 1 Meg. Ohm
19C		Cond. Trim. B.C. Ant.	91A	G50	Switch (Power Trans.)
20A	MG22-131131	Cond. Trim. B.C. Osc.	91B	-26719	Terminal Board, Phono
20B		Cond. Trim. 90 M Osc.	92B	-130579	Mike Level Control
20C		Cond. Trim. 60-49 M Osc.	93	-131202	Switch (Microphone)
20D		Cond. Trim. 31 M Ant.	94		Microphone complete
20E		Cond. Trim. 25-19 M Osc.	95	-130748	Magnetic Cutter
20F		Cond. Trim. 16-13 M Osc.	96	-130707	Tone Arm
21	W-131197	Iron Core (4) Osc. Coils		-131560	Phono Motor—50 cycle-115 V.
22	G3-131502	Cond. 65 Mmf. Mica		-131290	Mike Socket Shell
23	G2-131502	Cond. 40 Mmf. Mica		W-131279	Mike Socket Bracket
24	G6-131502	Cond. 110 Mmf. Mica		G308-34403	Shielded Lead (Mike)
25	G12-131502	Cond. 489 Mmf. Mica		G11-44837	Light Socket Assy—Dial
26	G1-131502	Cond. 1192 Mmf. Mica		G28-43564	Pulley & Hub Assy.
27	G1-131502	Cond. 95 Mmf. Mica		MG15-131131	Drive Shaft Assy.
28	G1-131502	Cond. 20 Mmf. Mica		W-43092	Chassis End Plate
29	G3-131502	Cond. 65 Mmf. Mica		W-42911	Cabinet Protector
30	G11-131502	Cond. 300 Mmf. Mica		W-43056	Grommet (Chassis)
31	W-130923-A	Cond. 05 Mf. 400 V. Paper		W-43580-A	Knob (Speaker)
32	W-49489	Cond. 01 Mf. 400 V. Paper		W-43580-A	Headed Bushing (Speaker)
33	W-131116	Cond. 02 Mf. 400 V. Paper		W-2909	Flat Washer (Speaker)
34	G5-131502	Cond. 500 Mmf. Mica		-131189	Knob B.C. & Function Switch
35	W-49489	Cond. 01 Mf. 400 V. Paper		-131190	Knob—Tone-Vol.-Tuning
36	G9-131502	Cond. 150 Mmf. Mica		-48298	Knob—Level Con.
37	G10-131502	Cond. 134 Mmf. Mica		MG10-131251	Recorder Assy—50 cycle-110 V.
38	G7-131502	Cond. 126 Mmf. Mica		MG12-131251	Recorder Assy—60 cycle-110 V.
39	G18-131502	Cond. 280 Mmf. Mica		G1-130632	Cutting Needle
40	W-131278	Cond. 1 Mf. 400 V. Paper		G4-130600	Recorder—Blank (6 inch)
41	W-131116	Cond. 02 Mf. 400 V. Paper		MG28-131132	Pointer Assy.
42	W-131253	Cond. 16 Mf. 250 V. Elect.		MG27-131251	Dial Back Assy.
43	W-49489	Cond. 01 Mf. 400 V. Paper		MG30-131132	Riv. Idler Bracket
44	W-131116	Cond. 01 Mf. 400 V. Paper		W-131194	Drive Spring
45	G19-34005	Cond. 100 Mmf. Mica		G47-41582	Drive Cord
46A	W-49773-B	Cond. 10 Mf. Elect.		W-47791	Needle Cup
46B		Cond. 15 Mf. Elect.		W-47790	Needle Cup Lid
47	G5-131502	Cond. 500 Mmf. Mica		W-47339	Needles (pkg. 10)
48	G19-34005	Cond. 100 Mmf. Mica		W-38460	Protector Clots
49	W-131116-A	Cond. 01 Mf. 400 V. Paper		W-49874	Tube Socket—8 Prong
50	W-130922-A	Cond. 003 Mf. 400 V. Paper		-131154	Retaining Spring (Drive Shaft)
51	G24-34006	Cond. 250 Mmf. Mica		-524	Spring Washer (Drive Shaft)
52	W-131117	Cond. 100 Mmf. Mica		-131481	Idler Pulley
53	W-130923-A	Cond. 05 Mf. 400 V. Paper		-130800	Recordo Blanks (5) 10 Inch
54	W-131117	Cond. 004 400 V. Paper		-130600	Recordo Blanks (3) 10 Inch
55	W-131117	Cond. 004 400 V. Paper		-131181	Dial Background or Diffuser
56				-131121	Dial Glass
57				-131194	Pointer Rod Assy.
58				-131185	Pulley Shaft
59	-35600	Res. 100 M Ohm 1/2 W. Ins.		-131186	Pulley Stud
60	-35671	Res. 40 M Ohm 1/2 W. Ins.		-131194	Retainer Spring (Pulley Shaft)
61	-35600	Res. 100 M Ohm 1/2 W. Ins.		-27981	Tube Shield Base
62	-3632*	Res. 300 M Ohm 1/2 W. Ins.		-130534	Tube Socket Cover
63	-35600	Res. 300 M Ohm 1/2 W. Ins.		-49176	Clamp—Cond. Mfg.
64	-3632*	Res. 500 M Ohm 1/2 W. Ins.		-131146	Brkt. T.C. Mfg.
65	-35600	Res. 100 M Ohm 1/2 W. Ins.			

# "COMMUTER" MODEL 45 BV

## ALIGNMENT PROCEDURE—MODEL 45

## WIRING DIAGRAM



Step	Signal Generator Dummy Antenna	Generator Frequency Setting	Input to Receiver	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02	455 Kc.	Stator of top section of gang	Fully open	2nd I-F(2) 1st I-F(2)	Adjust for maximum output. Adjust for maximum output.
2.	None	1620 Kc.	Signal radiated by loop on generator	Fully open	"OSC" Trimmer	Adjust for peak gang; does not have to tune through signal.
3.	None	1400 Kc.	"	Approx. 140 on dial knob	"ANT" Trimmer	Adjust for maximum output.
4.	None	600 Kc.	"	Approx. 60 on dial knob	Iron core in osc coil	Adjust for maximum output while rocking gang through signal.
5.	REPEAT THE ABOVE ALIGNMENT PROCEDURE TO INSURE ACCURATE ADJUSTMENTS.					

### PARTS LIST—MODEL 45

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	MG17-131276	Loop Ant. and Front Cover Assy.	27	-47131	Resistor 5 Megohm 1/4 W.
2	-131375	Loop Connector Springs (2 req.)	28	-35927	Resistor 2 Megohm 1/4 W.
	G250-32002	Oscillator Coil—Coil only	29	NONE	
	-49859	Iron Core—Osc. Coil	30	NONE	
	-131419	Spring—Iron Core Retainer	31	-131342	Speaker
3	G255-32004	1st I-F Assm. 455 Kc.		-131406	Gasket—Spkr. Mtg.
4	G256-32004	2nd I-F Assm. 455 Kc.	32	-131264	Switch—Off-On
5	-45817	Condenser .05 Mf.—160 V.		-131281	Insulator—On-Off Switch
6	-131343	Condenser 2 Sect. Tuning Gang	33	131345	Volume Control—1 Meg.
7	G5-34002	Condenser 50 Mmf.—Mica	34	-131369	Output Transformer
8	G22-34002	Condenser 2275 Mmf.—Mica		MG6-131275	Yellow "B" Lead and Fastener Assm.
9	-45780	Condenser .02 Mf.—160 V.		-131351	Fastener—"B" Minus
10	-131338	Condenser 10 Mf.—65 V.		MG7-131275	Red "B" Lead and Fastener Assm.
11	G2-34002	Condenser 100 Mmf.—Mica		-131352	Fastener—"B" Positive
12	-50084	Condenser .003 Mf.—160 V.		-131371	"A" Battery Hinge Contact
13	G5-34002	Condenser 50 Mmf.—Mica		-131346	Socket—Prong Shield
14	-50084	Condenser .003 Mf.—160 V.		-131369	Spring—Socket Mounting
15	-45780	Condenser .02 Mf.—160 V.		-131347	Socket—No Shield
16	-50084	Condenser .003 Mf.—160 V.		MG17-131276	Front Cover and Loop Assy.
17	NONE			-131364	Hinge Pins—Front Cover Mtg.
18	NONE			-131365	Catch—Front Cover
19	-35600	Resistor 100,000 Ohm 1/4 W.		-131465	Latch—Front Cover
20	-35602	Resistor 1 Megohm 1/4 W.		-131382	Front Half of Case
21	-131263	Resistor 800 Ohm 1/4 W.		-131383	Rear Half of Case
22	-36761	Resistor 40,000 Ohm 1/4 W.		-131357	Insulator—Battery Clip
23	-36688	Resistor 3 Megohm 1/4 W.		-131377	Grille Cloth
24	-35928	Resistor 60,000 Ohm 1/4 W.		-131413	Handle—Carrying Strap
25	-48622	Resistor 1.5 Megohm 1/4 W.		M-30	Rivet—Handle Mounting
26	-36688	Resistor 3 Megohm 1/4 W.			

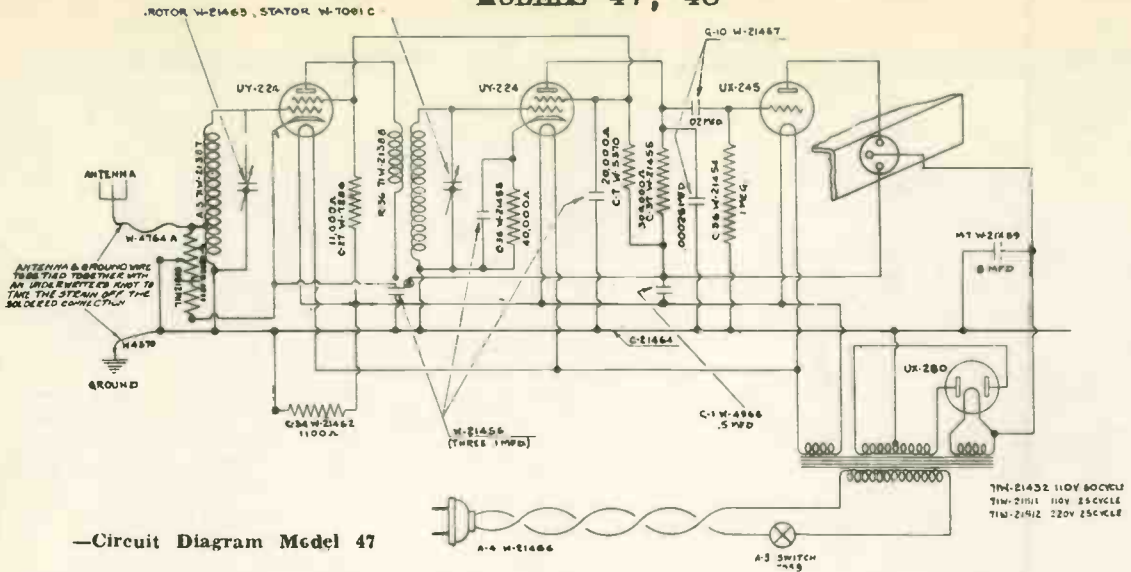
### SOCKET PIN NUMBER

TUBE	FUNCTION	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
1R5	Osc-Mod	Gnd.	51	51	—	—	—	1.3
1T4	I-F Amp.	Gnd.	51	33	—	—	—	1.3
1S5	Det.—A.V.C. 1st A.F.	Gnd.	—	—	5	5	—	1.3
1S4	Pwr. Output	Gnd.	51	*7.9	51	—	—	1.3

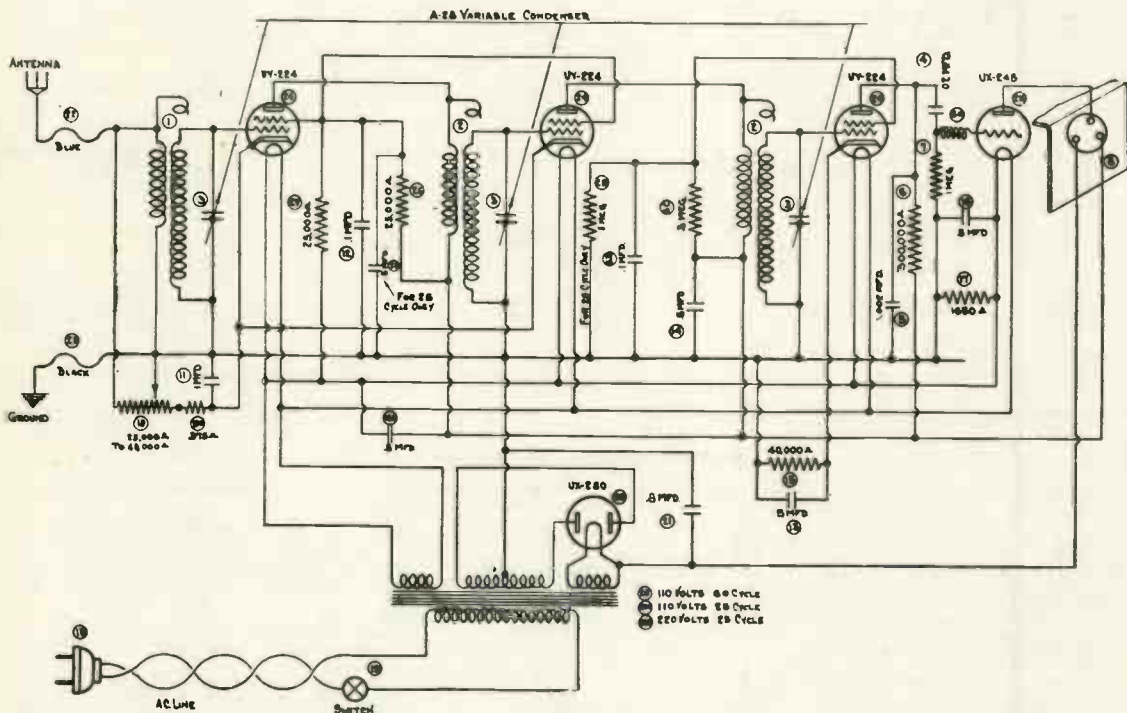
\*Measured across item 21, a 800 ohm resistor.

"A" Battery drain approximately 250 M.A. "B" Battery drain @ 58.9 Volts approximately 9.2 M.A.

# MODELS 47, 48



—Circuit Diagram Model 47



—Circuit Diagram Model 48

## Parts List—48 Chassis

Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-22157	Chassis	1	W-21456	0.1-0.1-0.1 Mfd. Fixed Condenser
1	W-22198	Volume Control	2	W-22199	Resistor 25,000 ohm
1	W-21432	Power Transformer	1	W-21455	Resistor 300,000 ohm
1	W-21450	Mershon Condenser (8 mfd.)	1	W-4794	Stiffened Sleeving (1 1/2")
1	W-21485	Mershon Condenser Socket	1	W-22173	Mounting Plate
1	W-22201	Tube Shield	1	W-22210	R. F. Transformer (ant.)
1	W-22178	Tube Shield (Removable)	2	W-22218	R. F. Transformer
1	C-22139	Variable Condenser Assembly	8	W-21987	R. F. Coil Shields
2	W-7871	Sockets (4 prong)	1	W-22220	Shield (bent)
3	W-7873	Sockets (5 prong)	1	W-22217	Shield (straight)
1	W-21207	Socket Guide (280)	1	W-22174	Power Switch
4	W-7874	Socket Guide	1	W-4313	0.5 mfd. Fixed Condenser
2	W-22182	Screen Grid Connectors	1	W-22180	Flexible Resistor (1650 ohms)
1	W-22200	Screen Grid Connector	1	W-6428	0.5-0.5 mfd. Fixed Condenser
<b>PARTS UNDER CHASSIS</b>					
1	W-4302	Plate Choke	1	W-20264	Terminal (A. & G.)
1	W-4313	0.5 Mfd. Fixed Condenser	1	W-21466	Cable
1	W-21453	Resistor 40,000 ohm	1	W-21965	Flexible Resistor (375 ohms) (In Vol Cont. lead under R. F. coils)
1	W-21454	Resistor 1 megohm	1	W-21577	Repwood Cabinet "P" (Wig-it)
1	W-22244	.02 & .002 Mfd. Twin Fixed Condenser	1	W-20578	Coat of Arms Crest
1	W-21518	Speaker Terminal	2	W-4018D	Knobs (Walnut finish)
1	W-22215	Resistor 3 megohm	1	W-2244A	Knob (Walnut finish)
			1	W-21820	Speaker Model 230

# MODEL 48BF, 48CB

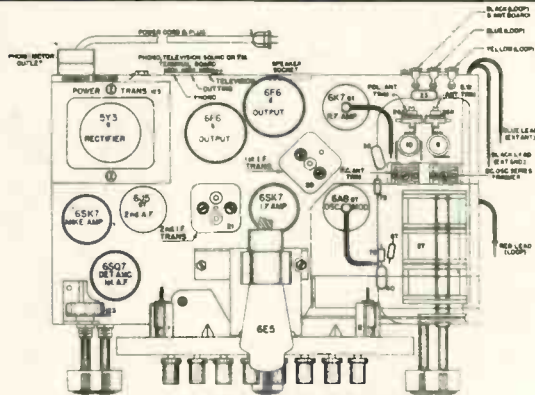
## RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary  
 Output Meter Connections.....Plate to Plate of 6F6G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Coupl. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimms	Adjust for maximum output while rocking gang thru signal.

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



TUBE	FUNCTION	SOCKET PIN NUMBER							
		1	2	3	4	5	6	7	8
6K7GT	R-F Amp.			195	78.6		2.0	*6.3	2.0
6A8GT	Osc.-Mod.			195	78.6		136	*6.3	1.0
6SK7	I-F Amp.					5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7	Det. A.V.C. 1st A.F.						110	*6.3	
6J5GT	Phase Invert			118	195		110	*6.3	4.5
6F6G	Output			220	228			*6.3	15.0
6F6G	Output			220	228			*6.3	15.0
6SK7	Mike Amp.							*6.3	POS.
5Y3G	Rectifier		305 D.C.		*325		*325		305 D.C.
6E5	Indicator				225			*6.3	

\*Measured with A.C. volt meter

VOLTAGE DROP ACROSS SPEAKER FIELD=77 VOLTS

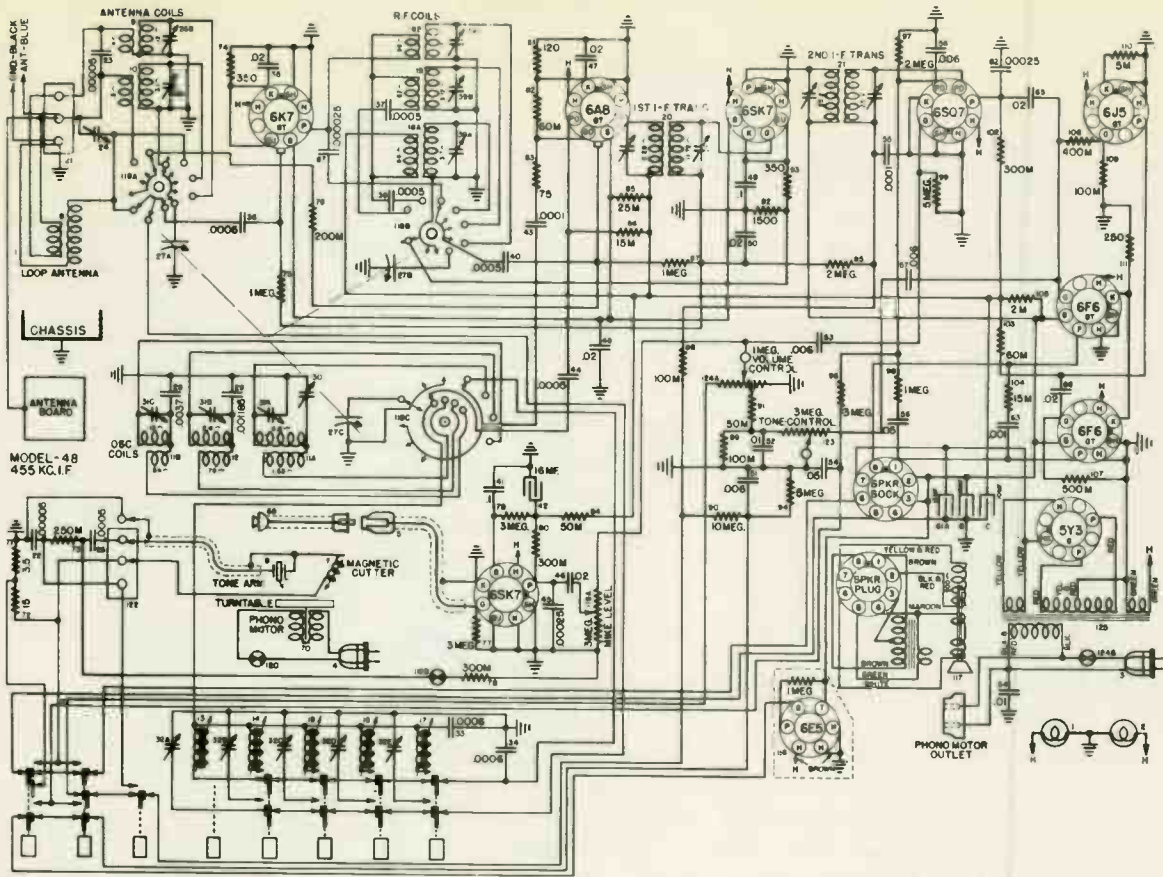
MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts

POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS

Voltages may vary 10% of values given.



MODEL 48



Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION	Item No.	Part No.	DESCRIPTION
1	14567	Bulb, Dial Light	54	45917-A	Cond. .05 Mf. 160 V. Paper	114		
2	45765-A	Bulb, Dial Light	55	G2-34002	Cond. 100 Mmf. Mica	115		
3	130655-A	Cable & Power Plug	56	34750-B	Cond. .05 Mf. 400 V. Paper	116	130815	Socket & Cable Magic Eye
4	130657	Cable & Plug (Phono)	57	45810-B	Cond. .006 Mf. 160 V. Pap.	117	G2-120728	Speaker & Plug
5	G294-34003	Cable & Socket (Mike)	58	34713	Cond. .006 Mf. 160 V. Pap.	118	47319	Speaker Headed Hushing 4
6	130857	Crystal Cart. (Tone Arm)	59			119	47353	Speaker Mtg. Flat Washer 4
7	130854	Crystal Magnet	60				N-8	Speaker Mtg. Nut
8	G2-130234	Loop Ant.	61A	130246	Cond. 15 Mf. 450 V. Elect.	49219	49219	Spkr. Mtg. Brkt. 4
9	G224-32000	Coil H.F. Ant.	61C		Cond. 10 Mf. 250 V. Elect.	32814	32814	Speaker Mtg. Brkt.
10	G225-32006	Coil P.B. Ant.	62	G1-34002	Cond. 250 Mmf. Mica			Speaker S
11A	G241-32002	Coil B.C. Osc.	63	30270	Cond. .001 Mf. 400 V. Pap.			N-5096 Spkr. Mtg. Brkt. Nut 4
11B		Coil H.F. Osc.	64	30905	Cond. .01 Mf. 400 V. Paper	130359	130359	Speaker Mtg. Brkt.
12	G242-32002	Coil Pol. Osc.	65	30488	Cond. .02 Mf. 100 V. Paper			Flat Washer 4
13	G234-32002	Coil P.B. Osc. 540-940 Kc.	66	30488	Cond. .02 Mf. 400 V. Paper	118A	130487	Switch, Band Change
14	G235-32002	Coil P.B. Osc. 1000-1620 Kc.	67	G6-34002	Cond. 25 Mmf. Mica	118B		Switch, Band Change
15	G237-32002	Coil P.B. Osc. 740-1280 Kc.	68	130764	Microphone (Crystal)	118C	130602	Switch, Hand Change
16	G238-32002	Coil P.B. Osc. 880-1550 Kc.	70	107670	Motor, Phono 60-110 V.	119A		Mike Level 3 Meg. Ohm
17	G239-32002	Coil P.B. Osc. 1000-1620 Kc.	71	130674	Res. 3.5 Ohm 1/2 W. Ins.	119B		Switch
18A	G114-32004	Coil B.C. R.F.	72	139650	Res. 15 Ohm 2 W. Ins.	120	130650	Terminal Board, Loop
18B		Coil H.F. R.F.	73	38976	Res. 250.000 Ohm 1/2 W.			Ant.
19	G115-32004	Coil Pol. R.F.	74	38916	Res. 350 Ohm 1/2 W. Ins.	122	G50-26719	Terminal Board, Phono
20	G246-32004	1st I-F Trans.	75	35602	Res. 1 Meg. 1/2 W. Ins.	123	130741-A	Tone Cont., 3 Meg. Ohm
21	G240-32004	2nd I-F Trans.	76	35930	Res. 100.000 Ohm 1/2 W.	124	47783-A	Vol. Control, 1 Meg. Ohm
22	G5-34002	Cond. 50 Mmf. Mica	77	36688	Res. 200.000 Ohm 1/2 W.			Transformer (Power)
23	G5-34002	Cond. 50 Mmf. Mica	78	35930	Res. 200.000 Ohm 1/2 W.	125	130784	Res. 100.000 Ohm 1/2 W. Ins.
24	49932	Cond. Trimmer	79	36688	Res. 3 Meg. 1/2 W. Ins.	130763	130763	Res. 3 Meg. 1/2 W. Ins.
25	G3-34002	Cond. 200 Mmf. Mica	80	35601	Res. 300.000 Ohm 1/2 W.	130764-A	130764	Res. 300.000 Ohm 1/2 W.
26A	37986-A	Cond. Pol. Ant. Trimmer	81	130311	Res. 120 Ohm 1/2 W. Ins.	130765	130765	Res. 120 Ohm 1/2 W. Ins.
26B		Cond. H.F. Ant. Trimmer	82	35292	Res. 60.000 Ohm 1/2 W.	130766	130766	Res. 60.000 Ohm 1/2 W.
27A	49929	Var. Cond. Ant. Sect.	83	47699	Res. 75 Ohm 1/2 W. Ins.	130767	130767	Res. 75 Ohm 1/2 W. Ins.
27B		Var. Cond. R.F. Sect.	84	40757	Res. 50.000 Ohm 1/2 W.	130768	130768	Res. 50.000 Ohm 1/2 W.
27C		Var. Cond. Osc. Sect.	85	130318	Res. 25.000 Ohm 1/2 W. Ins.	130769	130769	Res. 25.000 Ohm 1/2 W. Ins.
28	G17-34000	Cond. 3700 Mmf. Mica	86	47819	Res. 15000 Ohm 1/2 W. Ins.	130469	130469	Res. 15000 Ohm 1/2 W. Ins.
29	G14-34000	Cond. 1185 Mmf. Mica	87	35602	Res. 1 Meg. 1/2 W. Ins.	130470	130470	Res. 1 Meg. 1/2 W. Ins.
30	130106	Cond. B.C. Osc. Ser. Trim.	88	35600	Res. 100.000 Ohm 1/2 W.	130471	130471	Res. 100.000 Ohm 1/2 W.
31A	35951-A	Cond. B.C. Osc. Trimmer	89	35600	Res. 100.000 Ohm 1/2 W.	130472	130472	Res. 100.000 Ohm 1/2 W.
31B		Cond. Pol. Osc. Trimmer	90	50956	Res. 10 Meg. 1/2 W. Ins.	130473	130473	Res. 10 Meg. 1/2 W. Ins.
31C		Cond. H.F. Osc. Trimmer	91	40757	Res. 80.000 Ohm 1/2 W.	130474	130474	Res. 80.000 Ohm 1/2 W.
32A	49933	Cond. P.B. Trim. 540-940 Kc.	92	130488	Res. 1500 Ohm 1/2 W. Ins.	130475	130475	Res. 1500 Ohm 1/2 W. Ins.
32B	49934	Cond. P.B. Trim. 600-1050 Kc.	93	38916	Res. 350 Ohm 1/2 W. Ins.	130476	130476	Res. 350 Ohm 1/2 W. Ins.
32C	49936	Cond. P.B. Trim. 740-1280 Kc.	94	47131	Res. 2 Meg. 1/2 W. Ins.	130477	130477	Res. 2 Meg. 1/2 W. Ins.
32D	49937	Cond. P.B. Trim. 880-1550 Kc.	95	35927	Res. 2 Meg. 1/2 W. Ins.	130478	130478	Res. 2 Meg. 1/2 W. Ins.
32E	49938	Cond. P.B. Trim. 1000-1620 Kc.	96	35927	Res. 2 Meg. 1/2 W. Ins.	130479	130479	Res. 2 Meg. 1/2 W. Ins.
33	G21-34002	Cond. 800 Mmf. Mica	97	35927	Res. 2 Meg. 1/2 W. Ins.	130480	130480	Res. 2 Meg. 1/2 W. Ins.
34	G21-34002	Cond. 800 Mmf. Mica	98	35602	Res. 1 Meg. 1/2 W. Ins.	130481	130481	Res. 1 Meg. 1/2 W. Ins.
35	45780-B	Cond. .02 Mf. 160 V. Paper	99	35602	Res. 1 Meg. 1/2 W. Ins.	130482	130482	Res. 1 Meg. 1/2 W. Ins.
36	G3-34002	Cond. 500 Mmf. Mica	100	47131	Res. 5 Meg. 1/2 W. Ins.	130483	130483	Res. 5 Meg. 1/2 W. Ins.
37	G3-34002	Cond. 500 Mmf. Mica	101			130484	130484	Res. 500.000 Ohm 1/2 W.
38	G3-34002	Cond. 500 Mmf. Mica	102	35601	Res. 300.000 Ohm 1/2 W.	130485	130485	Res. 300.000 Ohm 1/2 W.
39A	35961-A	Cond. B.C. R.F. Trimmer	103	35928	Res. 60.000 1/2 W. Ins.	130486	130486	Res. 60.000 1/2 W. Ins.
39B		Cond. Pol. R.F. Trimmer	104	36318	Res. 1500 Ohm 1/2 W. Ins.	130487	130487	Res. 1500 Ohm 1/2 W. Ins.
40	G3-34002	Cond. S.W. R.F. Trimmer	105	23013	Flex.	130488	130488	Res. 2000 Ohm 1/2 W. Ins.
41	22868	Cond. 1 Mf. 400 V. Paper	106	36321	Res. 400.000 Ohm 1/2 W.	130489	130489	Res. 400.000 Ohm 1/2 W.
42	48122	Cond. 16 Mf. 250 V. Elect.	107	36822	Res. 500.000 Ohm 1/2 W.	130490	130490	Res. 500.000 Ohm 1/2 W.
43	G2-34002	Cond. 100 Mmf. Mica	108			130491	130491	Res. 100.000 Ohm 1/2 W.
44	G3-34002	Cond. 500 Mmf. Mica	109	35600	Res. 100.000 Ohm 1/2 W.	130492	130492	Res. 100.000 Ohm 1/2 W.
45	G-134002	Cond. 250 Mmf. Mica	110	49845	Res. 5000 Ohm 1/2 W. Ins.	130493	130493	Res. 5000 Ohm 1/2 W. Ins.
46	30488	Cond. .02 Mf. 400 V. Paper	111	49703	Res. 250 Ohm 2 W. Ins.	130494	130494	Res. 250 Ohm 2 W. Ins.
47	45780-B	Cond. .02 Mf. 160 V. Paper	112					
48	30488	Cond. .02 Mf. 400 V. Paper	113					
49	50105	Cond. .01 Mf. 160 V. Paper						
50	45780-B	Cond. .02 Mf. 160 V. Paper						
51	34713	Cond. .006 Mf. 160 V. Pap.						
52	130171	Cond. .01 Mf. 100 V. Paper						
53	34713	Cond. .006 Mf. 160 V. Pap.						

# MODEL 49-BZ

## ALIGNMENT PROCEDURE

### PRELIMINARY

Output meter connections.....Plate to Screen 6K6GT  
 Generator ground connection.....To chassis or ground lead  
 Dummy antenna to be in series with generator output.....See chart below  
 Position of volume control.....Fully on  
 Position of tone control.....Treble or speech

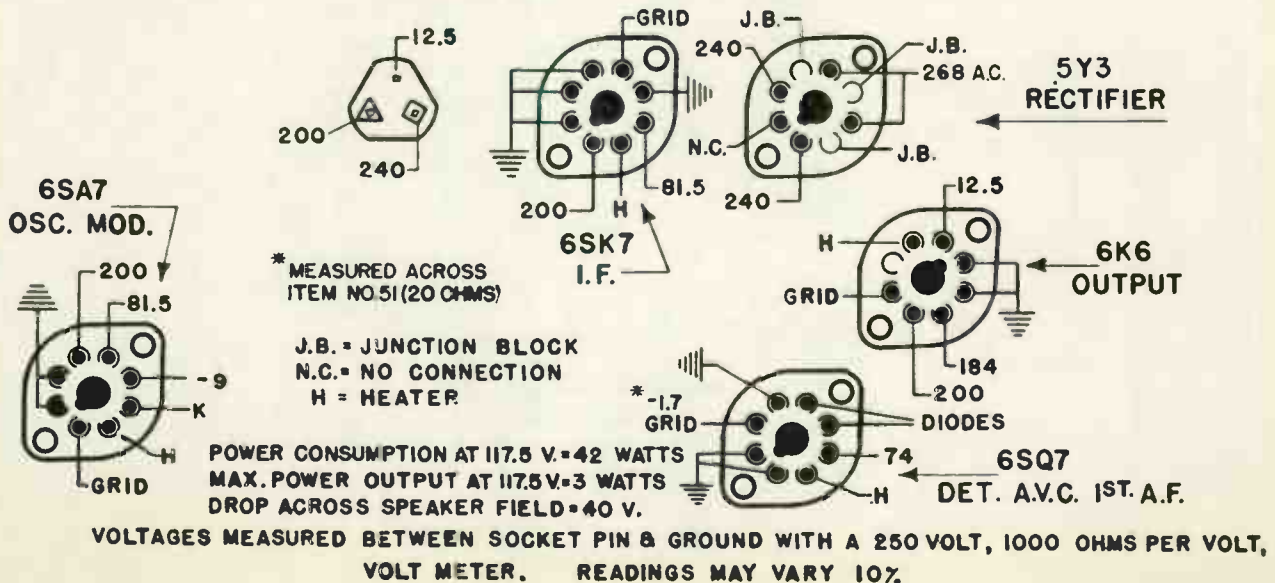
### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Dummy Antenna	Generator Frequency Setting	Input Connection To Receiver	Band Switch	Tuning Cond.	Trimmer Adjusted	Remarks
1	.02 Mf.	455 Mc.	Ant. Lead	B. C.	Fully open	2nd I-F 1st I-F	Adjust for maximum output.
2	400 Ohm Carbon	15.4 Mc.	Ant. Lead	S. W.	Fully open	S. W. "OSC" rear section of gang	Adjust for Peak.
3	400 Ohm Carbon	15.0 Mc.	Ant. Lead	S. W.	Approx. 15 on dial	S. W. Ant.	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1650 Kc.	Ant. Lead	B. C.	Fully open	B. C. "OSC"	Adjust for peak; gang does not have to tune thru signal.
5	.0002 Mf.	1400 Kc.	Ant. Lead	B. C.	Approx. 140 on dial	D. C. Ant.	Adjust for maximum output.
6	.0002 Mf.	2.5 Mc.	Ant. Lead	B. C. and switch on loop to POL.	Approx. 2.5 on dial	POL. Ant. on loop	Adjust for maximum output.

### IMPORTANT ALIGNMENT NOTES

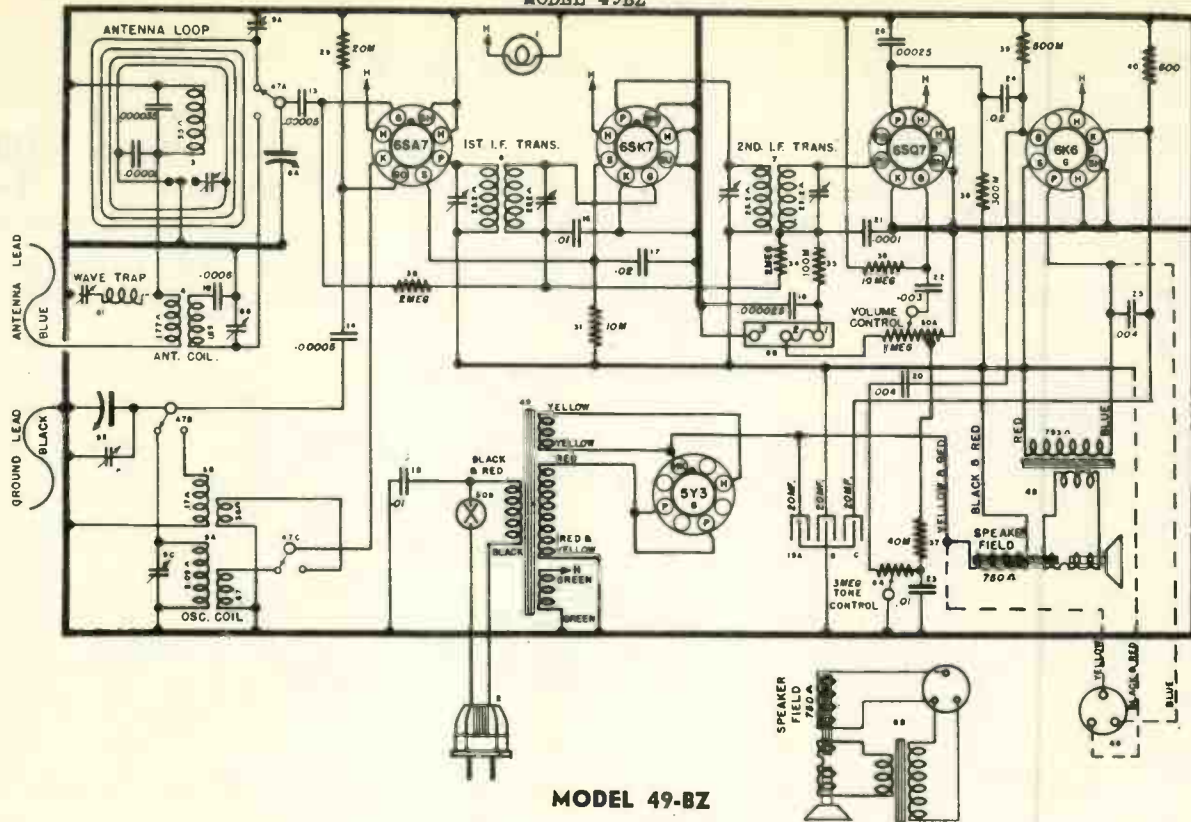
When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less AS INDICATED ON THE DIAL. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles LOWER ON THE DIAL than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. Circuit.



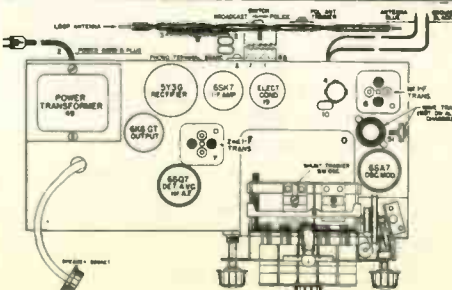
SOCKET VOLTAGE CHART

MODEL 49BZ



MODEL 49-BZ

Figures in first column refer to parts in Diagrams					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	-45567	Dial Light	G2	-130145	Speaker—3 inch
	G9	Socket Assy.—Dial Light		-45580	Rubber Grommet—Sprkr. Mtg.
2	-49637	Socket Assy.—Dial Light		-49796	Headed Bushing—Sprkr. Mtg.
	G10	Power Cord and Plug		-2309	Flat Washer—Sprkr. Mtg. (FS-58)
3	-32008	Loop Antenna Assy.	46	-131228	Sprkr. Cable and Plug
	G8	Bracket—Loop Mtg.	47	-49879	Band Change Sw.
	-49810	Thumb Screw—Loop Mtg.	48	-49849	Band Change Sw.
	-130084	Flat Washer—Loop Mtg.	G56	-49881	Phono Terminal Board
	-37963	Trimmer Condenser—Ant. Padder		-49881	Jumper—Strip—Phono Terminals
	-49732	B. C.—Pol. Switch—On Loop	49	-49838	Power Trans.—117.5 Volt—60 Cycle
4	G221—32000	S. W. Antenna Coil		-49837	Bracket—Power Trans. Mtg.
	G231—32002	Dual Oscillator Coil	50	-130044	1 Meg. Vol. Cont. and Sw.
5		B.—S. W. Oscillator		-130264	Wave Trap—455 Kc.
	G240—32004	1st I.F. Assy.—455 Kc.	51	-49874	Tube Socket—4 Prong
	G245—32004	2nd I.F. Assy.—455 Kc.		-45748	Lock Plate—Power Cord
6	-49879	2 Section Gang Cond.		-49818	Bracket—Trimmer Front Mtg.
7	-130266	Gang Condenser and Push Button Assy.		-49819	Brkt.—Coil and Trimmer Rear Mtg.
8	-49732	A.—B. C. Antenna Trimmer		-49814	R. H. Chassis End Cover (Trimmer Hole) (FS-8)
9		B.—S. W. Antenna Trimmer		-49815	L. H. Chassis End Cover (FS-8)
10	G21—34002	Condenser, .0008 Mf. Mica			Miscellaneous Parts
11	NONE		MG12—49822	Dial Face Assy.	
12	NONE		GW—130280	Pointer Pulley and Shaft Assy.	
13	G5—34002	Condenser, .0005 Mf. Mica		-51709	Pointer—Dial Hand
14	G5—34002	Condenser, .001 Mf. 400 V.		-130277	Trimmout Studs—Dial Face Mtg. (FS-55)
15	-30805	Condenser, .01 Mf. 160 V.	G11—41582	Drive Cord—Pointer Shaft (18" Long)	
16	-30867	Condenser, .02 Mf. 400 V.	G41—41582	Drive Cord—Cond. Gang (18 1/2" Long)	
17	-30488	Condenser, .02 Mf. 400 V.		-130276	Manual Drive Shaft
18	G6—34002	Condenser, .00025 Mf. Mica		-130274	Pulley—Manual Drive Shaft
19	-49734	Condenser—3 Section Electrolytic		-4523	No. 8—32 x 1/2" Headless Set Screw—Drive Shaft Pulley
		Section A—20 Mf.—250 V.	G26—42564	Pulley & Hub Assy.—On Gang (Large)	
		Section B—20 Mf.—250 V.	MG10—49822	Bracket Assy.—Tuning Unit Mtg.	
		Section C—20 Mf.—25 V.		-49762	Wood Pulley—Dr. Cord Idler (1 Req.)
20	-28904	Condenser, .01 Mf. 200 V.		-49867	Spring—Drive Cord Tension
21	G2—34002	Condenser, .01 Mf. Mica		-130266	Push Button (5 Req.)
22	-50084	Condenser, .03 Mf. 160 V.	G1—130264	Hub & Arm Assy.—Band Change Sw.	
23	-49867	Condenser, .02 Mf. 400 V.		-130264	Hub & Shaft and Arm Assy.—Band Change Switch
24	-30488	Condenser, .02 Mf. 400 V.		-49829	Spring—Retainer for G2—130266 Assy.
25	-35139	Condenser, .004 Mf. 400 V.		-49836	Link—G1—130264 and G2—130264 Connector
26	G1—34002	Condenser, .00025 Mf. Mica		-49770	Trimmout Studs—Link to Arms Fastener (FS-58)
27	NONE			-45580	Rubber Grommet—Bracket Mtg.
28	NONE			-130330	Cabinet
29	-36780	Resistor, 50,000 Ohms 1/2 W.		-130280	Escutchion—Dial Opening
30	-35927	Resistor, 2 Megohms 1/2 W.		-130382	Escutchion—Push Button Opening
31	-47100	Resistor, 10,000 Ohms 2 W.		-130158	Screws—P. B. Escutch. Mtg. (FS-77)
32	NONE			-130133	Knob—Vol. Cont.—Tune Cont.—Tun. Lever Knob—Band Switch
33	NONE			-130281	Station Call Tab Sheet
34	-35927	Resistor, 2 Megohms 1/2 W.		-130282	Celluloid Call Tab Cover (5)
35	-35600	Resistor, 100,000 Ohms 1/2 W.		-130444	Cab. Protector and Polishing Cloth
36	-67956	Resistor, 10 Megohms 1/2 W.		-45380-A	Rubber Bump—Sprkr.
37	-36761	Resistor, 40,000 Ohms 1/2 W.		-50679	Envelope Assy.—Instructions, Call Sheets, Covers Etc.
38	-35601	Resistor, 300,000 Ohms 1/2 W.		-45020	Flat Washer—Chassis Mtr. (4 Req.) (FS-58)
39	-36322	Resistor, 500,000 Ohms 1/2 W.		-49814	Chassis End—R
40	-39916	Resistor, 600 Ohms 1/2 W.		-49815	Chassis End—L
41	NONE				
42	NONE				
43	NONE				
44	-130263	3 Meg. Tone Control			
45	-47273	Speaker (6 inch)			
	-130310	Bracket (Rear) Sprkr. Mtg.			
	-130353	Bracket (Front) Sprkr. Mtg.			
	-45640	Headed Bushing—Sprkr. Bracket Mtg.			
	-45580	Grommet—Gang and Speaker Mtg.			
	-45620	Headed Bushing—Gang Mtg.			



# CROSLLEY EXPORT MODEL 50-BQ

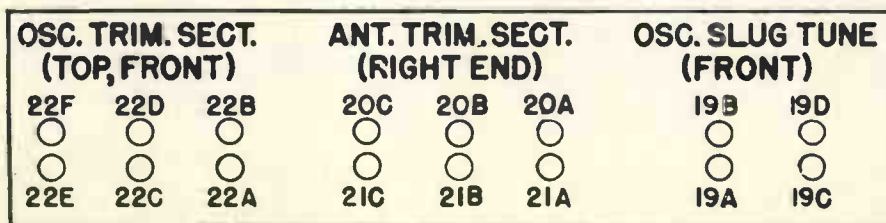
## ALIGNMENT PROCEDURE — MODEL 50-BQ

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Plate of 1G6GT
Generator Ground Connections . . . . .	To Chassis or Ground Lead
Dummy Antenna in Series with Generator Output . . . . .	See Chart Below
Position of Volume Control . . . . .	Fully On
Position of Tone Control . . . . .	To Treble or Speech

### ALIGNMENT CHART

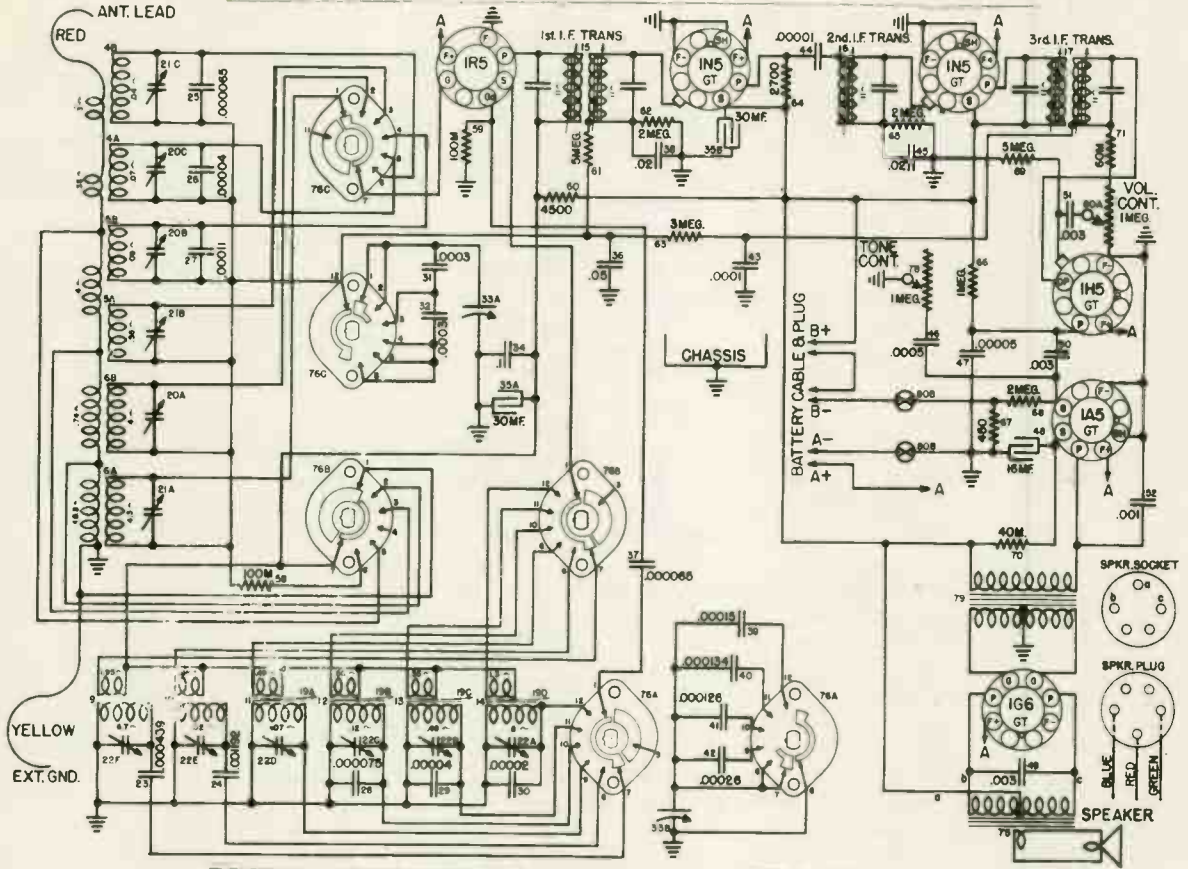
Step	Dummy Antenna	Signal Generator Frequency Setting	Input Connection	Band Switch	Tuning Condenser	Trimmers Adjusted	Remarks
1.	.02 Mf.	456 Mc.	Ant.	Band No. 1	Fully open	15A, 15B, and 16A, 17A, 17B 1st, 2nd and 3rd I-F assm.	Adjust for maximum output reading on meter.
2.	200 Mmf.	1650 Kc.	Ant.	Band No. 1	Fully open	No. 22F oscillator shunt	Adjust for peak; gang does not have to tune thru signal.
3.	200 Mmf.	1400 Kc.	Ant.	Band No. 1	Approx. 1400 on dial	No. 21A Ant-enna shunt	Adjust for maximum output.
4.	400 Ohm carbon	4800 Kc.	Ant.	Band No. 2	Fully open	No. 22E Oscillator shunt	Adjust for peak; gang does not have to tune thru signal
5.	400 Ohm carbon	4500 Kc.	Ant.	Band No. 2	Approx. 4.5 90 Meter band	No. 20A Antenna shunt	Adjust for maximum output while rocking gang thru signal.
6.	400 Ohm carbon	9.2 Mc.	Ant.	Band No. 3	Fully open	No. 22D Oscillator shunt	Adjust for peak.
7.	400 Ohm carbon	4.5 Mc.	Ant.	Band No. 3	Closed	No. 19A Oscillator series	Adjust for maximum output.
8.	Repeat steps 6 and 7 until one adjustment does not effect the other.						
9.	400 Ohm carbon	9.0 Mc.	Ant.	Band No. 3	Approx. 9.0 60 Meter band	No. 21B Antenna shunt	Adjust for maximum output while rocking gang thru signal.
10.	400 Ohm carbon	11.3 Mc.	Ant.	Band No. 4	Fully closed	No. 22C Oscillator shunt	Adjust for peak.
11.	400 Ohm carbon	8.9 Mc.	Ant.	Band No. 4	Closed	No. 19B Oscillator series	Adjust for maximum output.
12.	Repeat steps 10 and 11 until one adjustment does not effect the other.						
13.	400 Ohm carbon	11.0 Mc.	Ant.	Band No. 4	Approx. 11.0 31 Meter Band	No. 20B Antenna shunt	Adjust for maximum output while rocking gang thru signal.
14.	400 Ohm carbon	16.2 Mc.	Ant.	Band No. 5	Fully open	No. 22B Oscillator shunt	Adjust for peak.
15.	400 Ohm carbon	10.9 Mc.	Ant.	Band No. 5	Closed	No. 19C Oscillator series	Adjust for maximum output.
16.	Repeat steps 14 and 15 until one adjustment does not effect the other.						
17.	400 Ohm carbon	22.6 Mc.	Ant.	Band No. 6	Fully open	No. 20G Oscillator shunt	Adjust for peak.
18.	400 Ohm carbon	15.9 Mc.	Ant.	Band No. 6	Closed	No. 19D Oscillator series	Adjust for maximum output.
19.	Repeat steps 17 and 18 until one adjustment does not effect the other.						
20.	400 Ohm carbon	22.0 Mc.	Ant.	Band No. 6	Approx. 22 16 Meter band	No. 21G Antenna shunt	Adjust for maximum output while rocking gang thru signal.



## SOCKET VOLTAGES MODEL 50-BQ

Measured with 1000 ohm/volt D.C. voltmeter from chassis to tube socket contact.

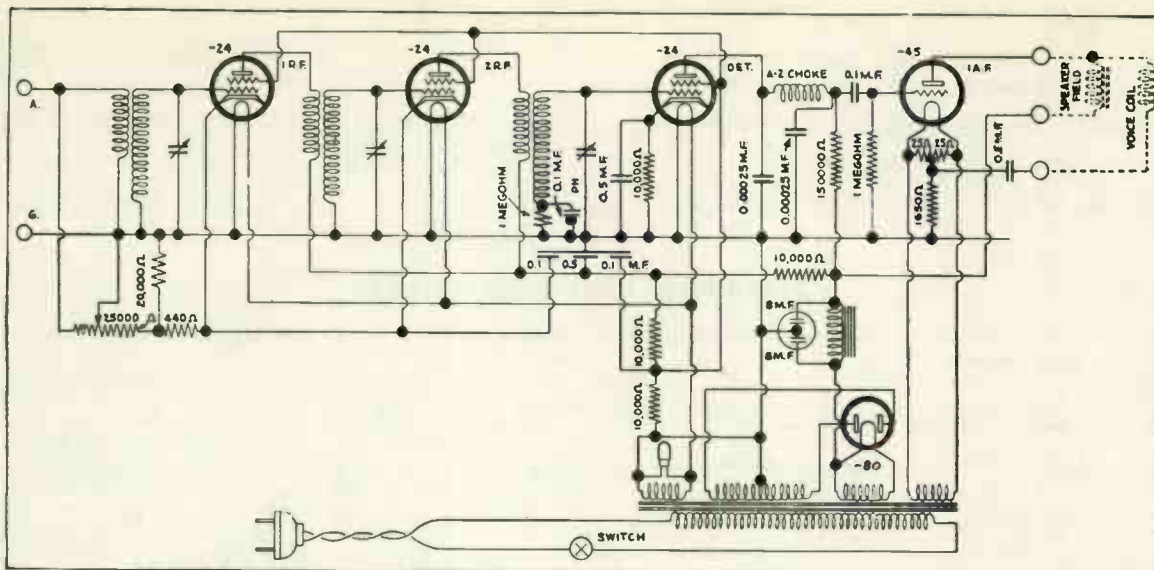
TUBE	FUNCTION	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1R5	Oscillator-Mixer	GND.	85	85	OSC. GRID	GND.	GRID	1.5	NONE
1N5GT	1st I-F Amp.	GND.	1.5	90	80	N. C.	N. C.	GND.	J. B.
1N5GT	2nd I-F Amp.	GND.	1.5	90	90	N. C.	N. C.	GND.	J. B.
1H5GT	Det. A.V.C. 1st Audio	GND.	1.5	15	N. C.	DIODE	J. B.	GND.	J. B.
1A5GT	A.F. Driver	GND.	1.5	90	62	-4.5	J. B.	GND.	N. C.
1G6GT	Output	GND.	GND.	90	GRID	GRID	90	1.5	J. B.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	-131891	Batt. Cable & Plugs	59	-35600	Res. 100,000 Ohms 1/2 W. Ins.
2			60	-38123	Res. 450 Ohms 1/2 W. Ins.
3			61	-47131	Res. 5 Megohm 1/2 W. Ins.
4A	G229-32000	Coil-25-19 M Ant.	62	-35927	Res. 2 Megohm 1/2 W. Ins.
4B		Coil-16-13 M Ant.	63	-36688	Res. 3 Megohm 1/2 W. Ins.
5A	G228-32000	Coil-60-49 M Ant.	64	-36318	Res. 280 Ohm 1/2 W. Ins.
5B		Coil-31 M. Ant.	65	-35927	Res. 2 Megohm 1/2 W. Ins.
6A	G230-32000	Coil-S.B.B. Ant.	66	-35872	Res. 1 Megohm 1/2 W. Ins.
6B		Coil-90 M Ant.	67	-38917	Res. 450 Ohm W. W.
7			68	-35927	Res. 2 Megohm W. W.
8			69	-47131	Res. 5 Megohm W. W.
9	G254-32002	Coil-S.B.B. Osc.	70	-35928	Res. 10,000 Ohm W. W.
10	G225-32002	Coil-90 M Osc.	71	-35928	Res. 60,000 Ohm W. W.
11	G253-32002	Coil-86-49 M Osc.	72		
12	G267-32002	Coil-31 M Osc.	73		
13	G256-32002	Coil-25-18 M Osc.	74		
14	G258-32002	Coil-16-13 M Osc.	75		
15	G264-32004	1st I-F Trans.			
16	G265-32004	2nd I-F Trans.			
17	G263-32004	3rd I-F Trans.			
18	-132054	Iron Core (I.F.)			
19	NONE	NONE			
20A	-131137	Iron Core (4) Osc. (Tuning)			
20B	-131129	Cond. Trim. 31 M Ant.	76A		
20C		Cond. Trim. 25-19 Ant.	77		
21A	-131129	Cond. Trim. 16-13 M Ant.	78		
21B		Cond. Trim. S.B.B. Ant.	79		
21C		Cond. Trim. 90 M Ant.	80A		
22A	MG22-131131	Cond. Trim. 60-49 M Ant.	80B		
22B		Cond. Trim. 16-13 M Osc.			
22C		Cond. Trim. 25-19 M Osc.			
22D		Cond. Trim. 31 M Osc.			
22E		Cond. Trim. 60-49 M Osc.			
22F		Cond. Trim. S.B.B. Osc.			
23	G12-131502	Cond. 139 Mmf. Mica			
24	G1-131501	Cond. 1192 Mmf. Mica			
25	G3-131502	Cond. 65 Mmf. Mica			
26	G2-131502	Cond. 40 Mmf. Mica			
27	G6-131502	Cond. 110 Mmf. Mica			
28	G4-131502	Cond. 75 Mmf. Mica			
29	G2-131502	Cond. 40 Mmf. Mica			
30	G1-131502	Cond. 20 Mmf. Mica			
31	G11-131502	Cond. 300 Mmf. Mica			
32	G11-131502	Cond. Mmf. Mica			
33A	-131118	Var. Cond. Ant. Sect.			
33B	-131887	Cond. 1 Mf. 400 V. Paper			
34	-47892	Cond. 30 Mf. 150 V. Elect.			
35A		Cond. 30 Mf. 150 V. Elect.			
35B	130923-A	Cond. .05 Mf. 400 V. Paper			
36	G3-131502	Cond. 65 Mmf. Mica			
37	G3-131502	Cond. .02 Mf. 400 V. Paper			
38	G9-131502	Cond. 150 Mmf. Mica			
39	G8-131502	Cond. 134 Mmf. Mica			
40	G7-131502	Cond. 126 Mmf. Mica			
41	G10-131502	Cond. 260 Mmf. Mica			
42	G16-131502	Cond. 100 Mmf. Mica			
43	G17-131502	Cond. 10 Mmf. Mica			
44	-131118	Cond. .02 Mf. 400 V. Paper			
45	G5-131502	Cond. 500 Mmf. Mica			
46	G15-131502	Cond. 50 Mmf. Mica			
47	-47893	Cond. 18 Mf. 125 V. Elect.			
48	-130922-A	Cond. .003 Mf. 400 V. Paper			
49	-130922-A	Cond. .003 Mf. 400 V. Paper			
50	-130922-A	Cond. .003 Mf. 400 V. Paper			
51	-131886	Cond. .001 Mf. 400 V. Paper			
52					
53					
54					
55					
56					
57					
58	-35600	Res. 100,000 Ohms 1/2 W. Ins.			
			76A		
			77		
			78		
			79		
			80A		
			80B		
			G1	-131973	Speaker-5"
				-45580	Grommet-Sprk. Mtg.
				-49798	Headed Bushing-Sprk. Mtg.
				-20769	Flat Washer-Sprk. Mtg.
				-33265	No. 6 Lock Washer-Sprk. Mtg.
				-132056	No. 6 Hex Nut-Sprk. Mtg.
				-132056	Speaker Plug
			G103	-28807	Speaker Socket
				-131937	Switch-Band Change
				-131147	Tone Control (1 Megohm)
				-131953	Driver Transformer
				-131890	Vol Control (1 Megohm)
				-52109	Socket-3 Prong Octal
			MG15	-131884	Socket-For 1R5 Tube
				-46447	Tube Shields (1N5)
				-49176	Elect. Cond. Mtg. Clamp
			MG26	-131132	Speaker Assy.
				-131188-B	Dial Pointer
				-131183	Dial Pointer-Guide Rod
				-131184	Dial Pointer-Rod Spring
				-131185	Pulley Stud
			MG27	-131132	Dial Back Assy.
				-131181	Dial Background
				-131121	Dial Glass
				-131481-B	Idle Pulley (Pulley Stud)
				-131485-A	Idle Pulley (Pulley Shaft)
			MG30	-131132	Riv. Idle Brkt.
				-131179	Idle Pulley Brkt. (Single)
				-131186	Pulley Stud
				-131154	Pulley Stud Ret. Spring
			G45	-41582	Drive Cord (Dial Back)
				-131194	Drive Spring
			G46	-41582	Guide Cord
				-131390	Guide Cord Spring
				-131391-A	Drive Cord Spring
			G47	-41582	Drive Cord (22")
			G28	-43564	Pulley and Hub Assy.
				-131151-A	Drive Pulley
			MG15	-131131	Drive Shaft and Flywheel Assy.
				-131154	Ret. Spring-Drive Shaft
				-131166-C	Cabinet-B. Q.
				-131167	Shipping Carton Cabt.
				-131191	Cabinet Back
				-131189	Knob-B. C. Switch
				-131190	Knob-Tone. Vol. Tuning
				-130600	Screw-Chassis-No. 8 32x1 1/2, Mch
			L-4	-45056	No. 8 Lock Washer-Chassis
				-40920	Grommet-Chassis
				-40920	Flat Washer-Chassis
				-131154	Screw-Cab. Back No. 4 x 1/4 Wood
				-131952	Chassis End Plate
				-131950	Operating Instructions
				-40934	Short Wave Chart
				-130378	Cab. Protect. Cloth
				-131955	CRG A and B Battery Pack

## Models 53, 54 and 57



Qty.	Part No.	Description	Qty.	Part No.	Description
<b>MODEL 54</b>					
1	D-20727	Chassis .....			
2	W-7871	Socket (4 prong) .....		W-7335	Black, Green Spot) .....
2	W-7872	Socket Guide .....		W-4921	440 Ohm Resistor (Yellow, Brown Spot) .....
3	W-7873	Socket (5 prong) .....			10,000 Ohm Resistor (Brown, Black, Orange Spot) .....
3	W-7874	Socket Guide .....			Terminal Board (A. G. & Ph.) .....
1	W-20553	Volume Control .....	1	W-20883	Terminal Board (A. G. & Ph.) .....
1	W-20381	Filter Choke .....	1	B-6887	Cable & Plug .....
1	W-4943	Mershon Condenser (8. - 8. Mfd. ....	1		Grommet .....
2	W-5033	Condenser Clamp .....	1	C-20872	Chassis Bottom .....
1	W-4794	Stiffened Sleeving (8 1/2") .....	1	W-20873	Bottom Bracket .....
1	W-20730	Variable Condenser Gang ..	2	W-20482	Knobs .....
1	W-20970	Dial Drum .....	2	W-7947	Knob Springs .....
1	W-20978	Dial Drum Cover .....	<b>MODEL 53</b>		
1	W-20977	Dial Band .....	(Except as noted below same parts are used on Model 53 as on Model 54)		
2	W-20445	R. F. Transformer .....	1	D-20593-C	Chassis .....
1	W-20444	R. F. Trans. (antenna).....	3	B-7558	R. F. Coil Shield .....
3	W-7272	Screen Grid Connectors.....	1	W-20530	Variable Condenser Gang ..
3	W-21257	R. F. Coil Shield .....	1	W-20722	Dial Light Assembly .....
1	W-20570	Power Switch .....	1	W-7154	Dial .....
1	W-20553	Power Transformer 110 V. 60 Cycle .....	1	W-5354	Dial Indicator .....
	W-20093	Power Transformer 110 V. 25 Cycle .....	1	W-20504	Pinion Inner Bracket .....
	W-20694	Power Transformer 220 V. 25 Cycle .....	1	W-4899	Pinion .....
1	C-20871	R. F. Shield .....	1	W-4907	Pinion Washer .....
			1	W-20596	Pinion Outer Bracket .....
			1	C-20455-D	R. F. Shield Assembly .....
			1	W-7496	Power Transformer Shield..
			1	W-4946	Condenser Cap .....
			1	W-4968	0.5 Mfd. Fixed Condenser (2 paper) .....
			1	W-5713	Mounting Strip .....
			1	W-5382	0.00025 Mfd. Fixed Condenser ..
			1	W-6471	0.1 Mfd. Fixed Condenser (2 paper) .....
			1	W-5382	0.00025 Mfd. Fixed Condenser ..
			1	W-5713	Mounting Strip .....
			1	W-5735	150,000 ohm Resistor (Brown, Green, Yellow Spot) .....
			1	W-20555	Mounted Resistor Assembly .....
			1	W-20630	Bottom Bracket .....
			1	C-20658-A	Chassis Bottom .....
			4	W-20458	Spring Clips .....
			1	W-20167	Knob (Large) .....
			1	W-20482	Knob (Small) .....
<b>MODEL 57</b>					
This model employs a different speaker socket and an additional 0.25 m. f. condenser for the filter system. Otherwise parts for Model 57 are the same as those for Model 53.					

# CHASSIS MODEL No. 55

## ALIGNMENT PROCEDURE

### Preliminary

Output Meter Connections.....	Plate to Plate of 6AC5G's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Master Tone Control.....	All Buttons Out

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear sec- tion of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rock- ing gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

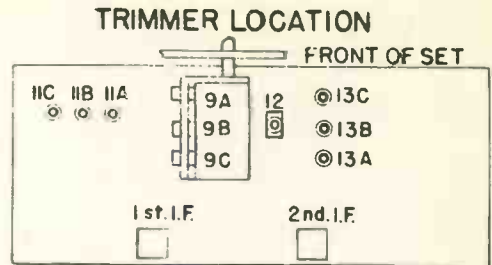
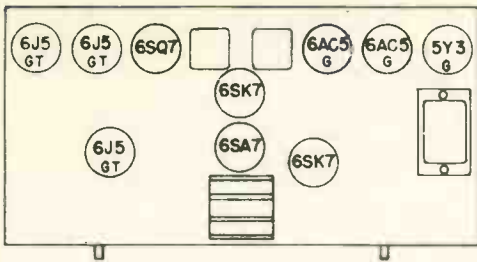
### TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

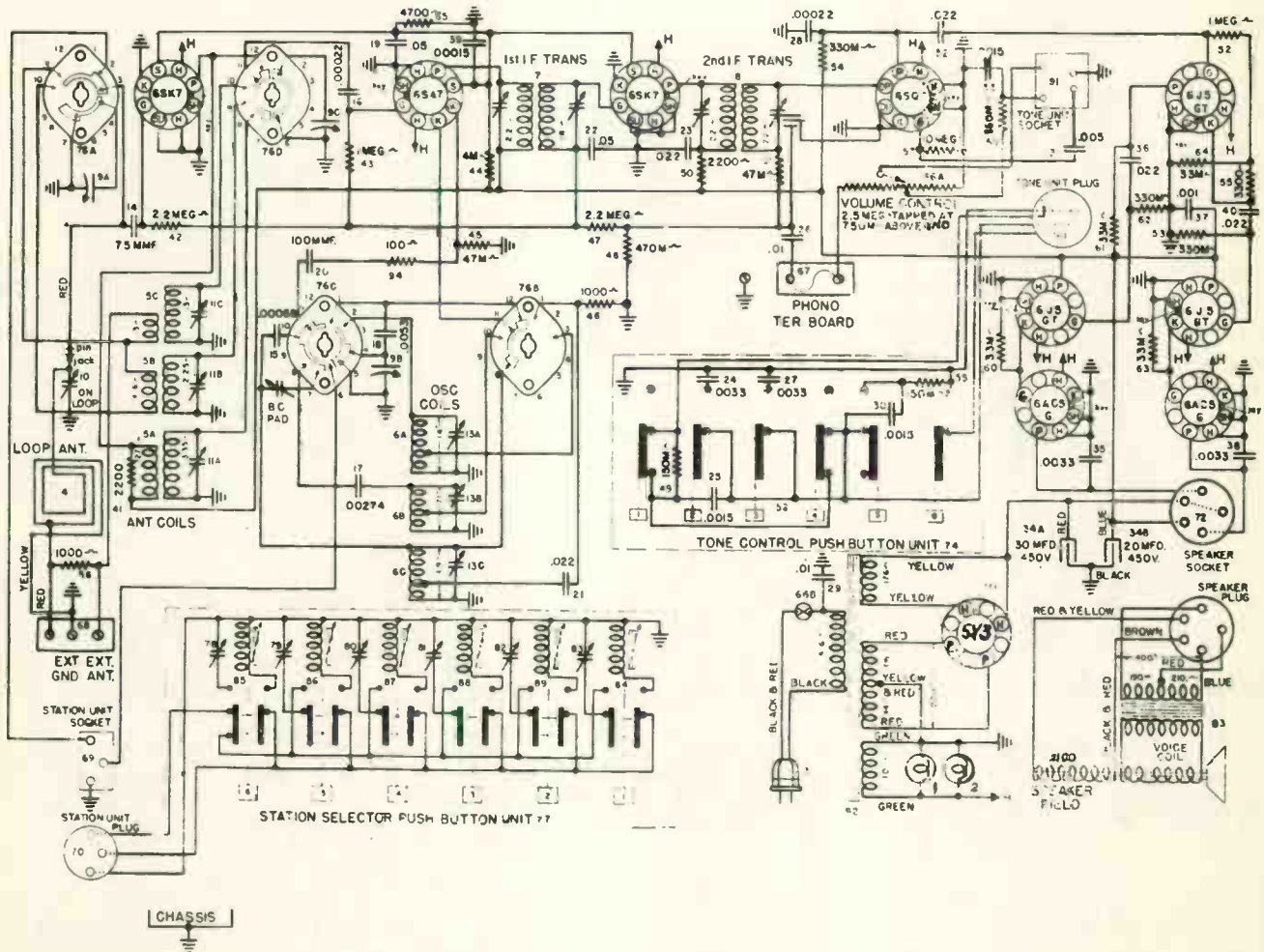
TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter		Gnd.	Gnd.	180	74	0	10-S. W.   14.0 B. C.	6.3 A. C.	0
6SK7—I. F. Amplifier		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3C—Rectifier		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310
MAN. POWER OUTPUT						12.0 WATTS			
POWER CONSUMPTION						90 WATTS			
DROP ACROSS SPEAKER FIELD						120 VOLTS			
J. B.—Junction Block						N. C.—No Connection			

Voltages may vary 10% of values given.

# MODELS 02CA, 02CB TUBE AND TRIMMER LAYOUT



**WIRING DIAGRAM, MODELS 02CA AND 02CB — CHASSIS MODEL No. 55**





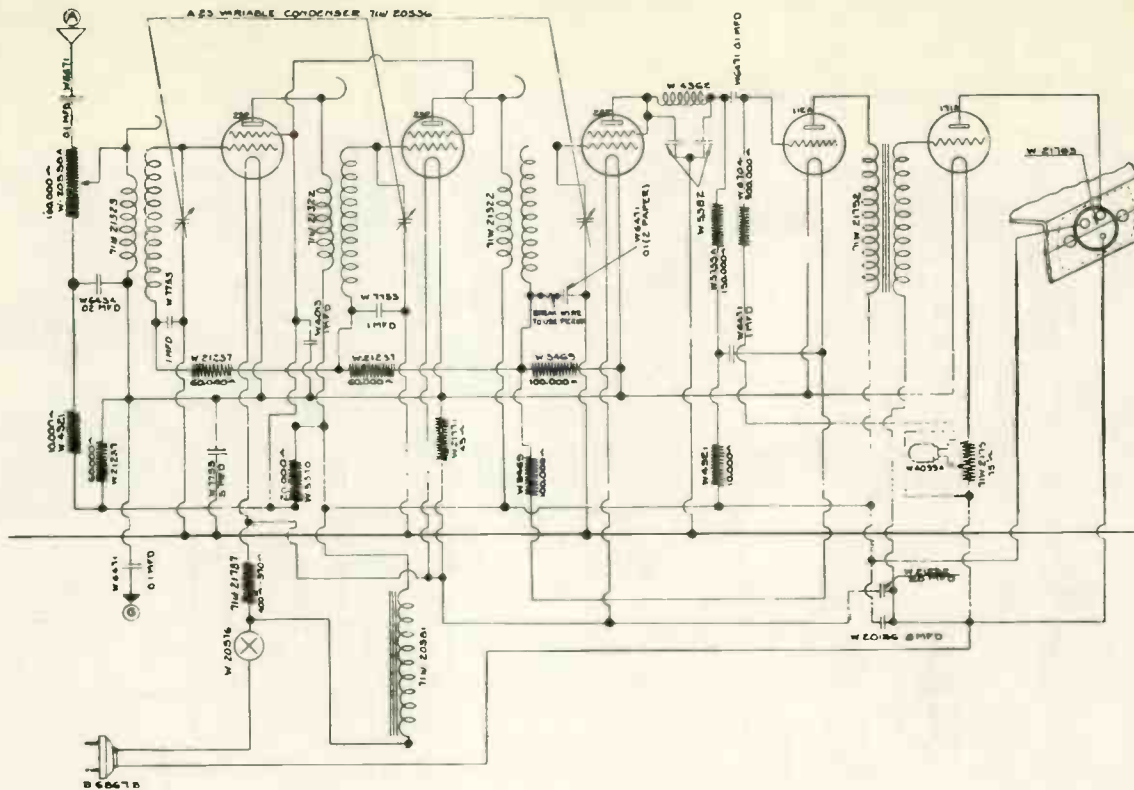
## PARTS LIST, MODELS 02CA AND 02CB — CHASSIS MODEL No. 55

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	64	G51—26719	Ant. Term. Board.
2	—48858	Dial Light.	69	—47133	Socket—Sta. Selector.
3	—49637-17	Dial Light Socket (2)	70	—132437-2	Cable & Plug—Sta. Selector.
4	—132300-2	Power Cord & Plug.	71		
		Antenna Loop.	72	G103—28907	Socket Speaker.
5A	L <sub>1</sub> —132384	Ant. Coil & Trimmer Assem.	73		
5B	G236—32000	B. C. R. F. Coil.	74	—132411	Tone Sw. Assem.
5C		Pol. Band Ant. Coil.	75		
6A		S.W. Ant. Coil.	76A	—132298-1	Band Chg. Sw. Ant. Sec.
6B	L <sub>2</sub> —132385	Osc. Coil & Trimmer Assem.	76B		Band Chg. Sw. Osc. Sec.
6C	G265—32002	S.W. Osc. Coil.	76C		Band Chg. Sw. Osc. Sec.
7		Pol. Band Osc. Coil.	76D		Band Chg. Sw. R. F. Sec.
8	G272—32004	B. C. Osc. Coil.	77	—132429	Sta. Selector Assem.
9A	G273—32004	1st I. F. Trans.	78	—132436-4	Trimmer—Sta. Sel.
9B	—132296-2	2nd I. F. Trans.	79	—132436-3	Trimmer—Sta. Sel.
9C		Var. Cond. Osc. Section.	80	—132436-3	Trimmer—Sta. Sel.
10	—132418-1	Var. Cond. Osc. Section.	81	—132436-2	Trimmer—Sta. Sel.
11A	—132386-1	Var. Cond. B. C. R. F. Sec.	82	—132436-2	Trimmer—Sta. Sel.
11B		Ant. Loop Trimmer.	83	—132436-1	Trimmer—Sta. Sel.
11C		B. C. R. F. Coil Trimmer.	84	G269—32002	Coil—Sta. Sel.
12	—49652-1	Pol. Band Ant. Trimmer.	85	G267—32002	Coil—Sta. Sel.
13A	—132386-1	S. W. Ant. Coil Trimmer.	86	G268—32002	Coil—Sta. Sel.
13B		Padder Cond. B. C. Osc. Coil.	87	G268—32002	Coil—Sta. Sel.
13C		S. W. Osc. Coil Trimmer.	88	G270—32002	Coil—Sta. Sel.
14	G6*—39004	Pol. Band Osc. Coil Trimmer.	89	G270—32002	Coil—Sta. Sel.
15	G20—131502	B. C. Osc. Coil Trimmer.	90	—132437-1	Cable & Plug—Tone Sw.
16	G9—39004	7.5 Mmf. Cond.	91	—132303-1	Socket—Tone Sw.
17	G35—34005	680 Mmf. Cond.	92	—132313-1	Power Trans. (110-50-60)
18	G34—34005	220 Mmf. Cond.	93	—132348-4	Speaker (02C B Only)
19	G41—39001	00274 Mf. Cond.			Output Trans.
20	G27—39004	0053 Mf. Cond.		—131880-3	Speaker (02C A Only)
21	G63—39001	03 Mf. 400 V. Cond.	94	G1—39002	Output Trans.
22	G65—39001	100 Mmf. Cond.		—52109	100 Ohm 1/4 W. Res.
23	G15—39001	022 Mf. 200 V. Cond.		—131863	Tube Socket (10)
24	G10—39001	05 Mf. 200 V. Cond.		—132231-2	Clamp—Power Cable.
25	G8—39001	022 Mf. 600 V. Cond.		—132320-1	Dial Face Assem.
26	G61—39001	0043 Mf. 600 V. Cond.		—132167-4	Dial Pointer.
27	G10—39001	0015 Mf. 600 V. Cond.		—132332-1	Drive Cord Assem.
28	G9—39001	01 Mf. 300 V. Cond.		—132332-1	Drive Shaft.
29	G8—39001	0033 Mf. 600 V. Cond.		—19789-1	Drive Shaft Bearing.
30	G11—39001	220 Mmf. Cond.		—4982913	Lock Spring—Dr. Shaft.
31	G30—39001	01 Mf. 120 V. A. C. Cond.		—132321-1	Chassis Mfg. Feet (4)
32	G8—39001	0015 Mf. 600 V. Cond.		—132403-1	Toggle Arm & Link.
33	G8—39001	005 Mf. 600 V. Cond.		—132417-2	Cabinet (02C A)
34A	—132301-2	30 Mf. Elect. Cond.		—132326-1	Cabinet (02C B)
34B		20 Mf. Elect. Cond.		—132310-1	Carton (02C A)
35	G10—39001	0033 Mf. 600 V. Cond.		—132327-1	Carton (02C B)
36	G39—39001	022 Mf. 100 V. Cond.		—132371-1	Screw—Chassis Mfg. (4)
37	G7—39001	001 Mf. 600 V. Cond.		—44725	Washer—Chassis Mfg. (4)
38	G10—39001	0033 Mf. 600 V. Cond.		—132322-1	Spring—Top—Chassis Mfg. (1)
39	G8—39004	150 Mmf. Cond.		—132323-2	Spring—Bot.—Chassis Mfg. (1)
40	G39—39001	022 Mf. 400 V. Cond.		—45580A	Grommet—Spkr. Mfg. (4)
41	G9—39002	2200 Ohm 1/4 W. Res.		—37953	Washer—Spkr. Mfg. (4)
42	G27—39002	222 Megohm 1/4 W. Res.		—N8	Nut—Spkr. Mfg. (4)
43	G25—39002	1 Megohm 1/4 W. Res.		—18	Lockwasher—Spkr. Mfg. (4)
44	—132458-1	4000 Ohm 1/4 W. Res.		—132346-1	Dial Glass.
45	G17—39002	47000 Ohm 1/4 W. Res.		—132347-1	Rubber Gasket—Dial Glass.
46	G7—39002	1000 Ohm 1/4 W. Res.		—132393-1	Knob—Large (2)
47	G27—39002	2.2 Megohm 1/4 W. Res.		—132341-1	Knob—Small (2)
48	G23—39002	470,000 Ohm 1/4 W. Res.		—132398-1	Paper Washer—Knob (2)
49	G20—39002	150,000 Ohm 1/4 W. Res.		—132343-4	Escutcheon—Dial.
50	G9—39002	2200 Ohm 1/4 W. Res.		—90405	Speed Nut—P. B. Mfg. (8)
51	G17—39002	17,000 Ohm 1/4 W. Res.		—132396-1	Push Button—Sta. Sel. (6)
52	G25—39002	1 Megohm 1/4 W. Res.		—132344-2	Plate—Sta. Sel. P. B.
53	G22—39002	330,000 Ohm 1/4 W. Res.		—132345-2	Plate—Tone Sw. P. B.
54	G22—39002	330,000 Ohm 1/4 W. Res.		—132397-1	Tone Button—No. 1.
55	G10—39002	3300 Ohm 1/4 W. Res.		—132397-2	Tone Button—No. 2.
56	G7—39002	1000 Ohm 1/4 W. Res.		—132397-3	Tone Button—No. 3.
57	G31—39002	10 Megohm 1/4 W. Res.		—132397-4	Tone Button—No. 4.
58	G20—39002	150,000 Ohm 1/4 W. Res.		—132397-5	Tone Button—No. 5.
59	G20—39002	450,000 Ohm 1/4 W. Res.		—132397-6	Tone Button—No. 6.
60	G16—39002	33,000 Ohm 1/4 W. Res.		—132430-1	Loop Spacer Assem. (1)
61	G16—39002	33,000 Ohm 1/4 W. Res.		—131960-2	Loop Spacer (2)
62	G22—39002	330,000 Ohm 1/4 W. Res.		—131970-2	Loop Spacer—Ecc. (1)
63	G16—39002	33,000 Ohm 1/4 W. Res.		—132416-1	Brkt.—Loop Spacer (4)
64	G16—39002	33,000 Ohm 1/4 W. Res.		—32657	Loop Ant. Wire—(80')
65	—132459-1	4700 Ohm 2 W. Res.		—132311	Instr. Envelope Assem.
66A	—132299-2	Vol. Control 2.5 Megohm.		—132434-1	Call Letter Sheet.
66B		A. C. On-Off Switch.		—132399-1	Call Letter Cover.
67	G61—26719	Phono Term. Board.		—132312-1	Instruction.

*Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.*

# MODEL 55

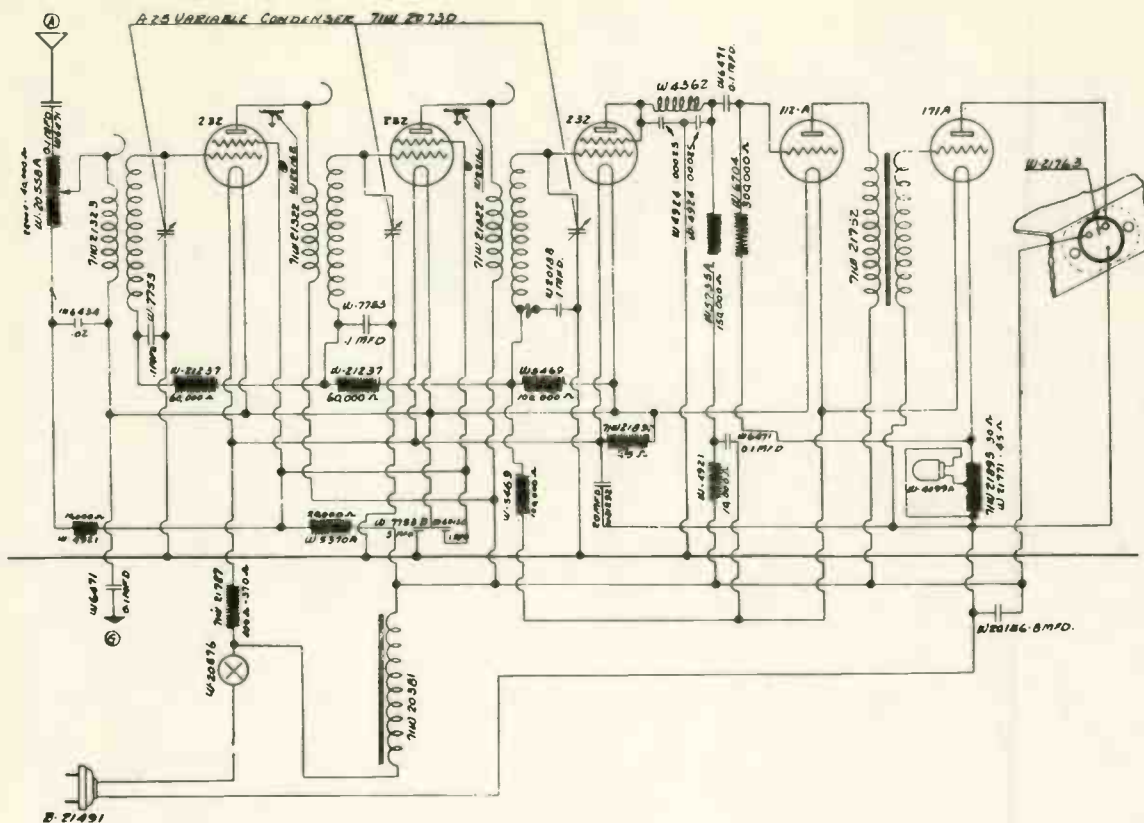


## Parts List Model 55

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-21761	Chassis .....	2	W-5382	0.00025 Mfd. Fixed Condenser
5	W-7871	Socket (4 Prong) .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
5	W-7874	Socket Guide .....	1	W-5409	Resistor 100,000 ohms (brown, black, yellow spot)
2	W-21322	R. F. Transformer .....	2	W-21237	Resistor 60,000 ohm
1	W-21323	R. F. Transformer (Ant.) .....	1	W-6434	0.02 Mfd. Fixed Condenser
3	W-21739	Grid Connectors .....	1	W-20940	Resistor Assembly
3	B-21174	R. F. Coil Shield .....	1	W-5713	Mounting Strip
1	W-20558	Volume Control .....	1	W-4021	Resistor 10,000 ohms
1	W-20536	Variable condenser gang .....	1	W-4362	Plate Choke
1	W-20981	Spider .....	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser
1	W-7154	Dial Gear .....	1	W-4013	1. Mfd. Fixed Condenser (2 paper)
1	W-5590	Set Screw .....	1	W-6471	0.1 Mfd. Fixed Condenser
1	W-5354D	Dial Indicator .....	1	W-21754	Resistor Assembly
1	W-4899	Pinion .....	1	W-21771	Mounting Strip & Resistance (45 ohm)
1	W-20594	Pinion Bracket (inner) .....	1	W-5735	Resistor 150,000 ohms (brown, green, yellow spot)
1	W-20595	Pinion Bracket (outer) .....	1	W-4921	Resistor 10,000 ohms (brown, black, orange spot)
1	W-4907	Spring Washer .....	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)
1	W-20722	Dial Light Bracket .....	1	W-6704	Resistor 300,000 ohms (orange black, yellow spot)
1	W-20576	Power Switch .....	1	W-20630	Bottom Bracket
1	B-21762	Chassis Plate .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
1	W-20156	8 Mfd. Condenser .....	1	W-21751	Resistance Assembly (45-30 ohms)
1	W-21760	Filament drop resistor (400-370 ohms) .....	1	W-21798	Junction Block
1	W-21770	Filament drop resistor bracket .....	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
2	W-4435	Asbestos Washer .....	1	W-20883	Terminal (A. G. & P. H.)
1	W-20381	Filter Choke .....	1	W-21763	Speaker Terminal Socket
1	W-21292	Electrolytic Condenser (20 mfd.) .....	1	B-6807	Cable
1	W-21752	A. F. Transformer .....	1	C-21581	R. F. Shield Assembly
<b>PARTS UNDER CHASSIS</b>					
1	W-6471	0.1 Mfd. Fixed Condenser (2 paper) .....	1	C-20658	Chassis Bottom
1	W-21109	Resistor Assembly .....	1	W-20167	Knob (large)
1	W-5713	Mounting Strip .....	2	W-20482	Knob (small)
1	W-5370	Resistor 20,000 ohms (red, black, orange spot) .....			
1	W-21237	Resistor 60,000 ohms (blue, black, orange spot) .....			

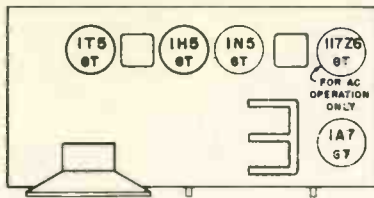
MODELS 56



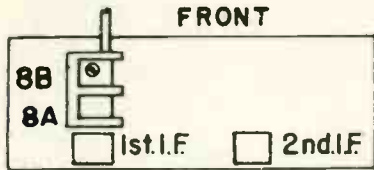
Parts List Model 56

Qty.	Part No.	Description	Qty.	Part No.	Description
1	C-21900	Chassis	1	W-6434	0.02 Mfd. Fixed Condenser
5	W-7871	Socket (4 prong)	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser
5	W-7874	Socket Guide	1	W-4013	1. Mfd. Fixed Condenser (2 paper)
1	W-20558	Volume Control	1	W-21237	Resistor (60,000 ohms) Blue, black, orange
1	W-21752	A. F. Transformer	1	W-5460	Resistor 100,000 ohms Brown, black, yellow
1	W-21760	Filament Drop Resistor (400-370 ohms)	1	W-21237	Resistor (60,000 ohms)
1	W-21770	Filament Drop Resistor Bracket	3	W-21127	Stiffened Sleeving (3-8"x2")
2	W-4435	Asbestos Washer	1	W-20873	Bottom Bracket
1	W-20730	Variable Condenser Gang	2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)
1	W-20681	Spider	1	W-21895	Fixed Resistance Assembly
1	W-25003	Dial	1	W-21771	Resistance and mounting strip (45 ohms)
1	W-22604	Dial Strip	1	W-5735	Resistor 150,000 ohms (Brown, green, yellow)
1	W-20977	Dial Band	1	W-6704	Resistor 300,000 ohms (Orange, black, yellow)
2	W-21522	R. F. Transformers	1	W-4021	Resistor 10,000 ohms (Brown, black, orange)
1	W-21223	R. F. Transformers (antenna)	1	W-21804	Resistance Assembly
3	W-21739	Grid Connectors	1	W-6028	Mounting Strip
3	W-21257	R. F. Coll Shields	1	W-4021	Resistor (10,000 ohm Brown, black, orange)
1	C-20871	R. F. Shield	1	W-5460	Resistor (100,000 ohm) Brown, black, yellow
1	W-20576	Power Switch	1	W-5370	Resistor (20,000 ohm) Red, black, orange
1	W-22090	Dial Light Bracket	1	W-21232	20 Mfd. Condenser
1	W-21001	Chassis Plate	1	R-21491	Cable
1	W-20381	Filter Choke	1	C-20872	Chassis Bottom
1	W-20156	Condenser (8 Mfd. 2 paper)	2	W-20482	Knob (Small)
1	W-21703	Speaker Terminal			
1	W-20883	Terminal A. G. & P.H.			
<b>PARTS UNDER CHASSIS</b>					
1	W-21893	Fixed Resistance (30 ohm)			
1	W-21892	Fixed Resistance (45 ohm)			
1	W-20188	0.1 Mfd. Fixed Condenser			
1	W-4332	Plate Choke			
2	W-4924	0.00025 Mfd. Fixed Condenser			
2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)			

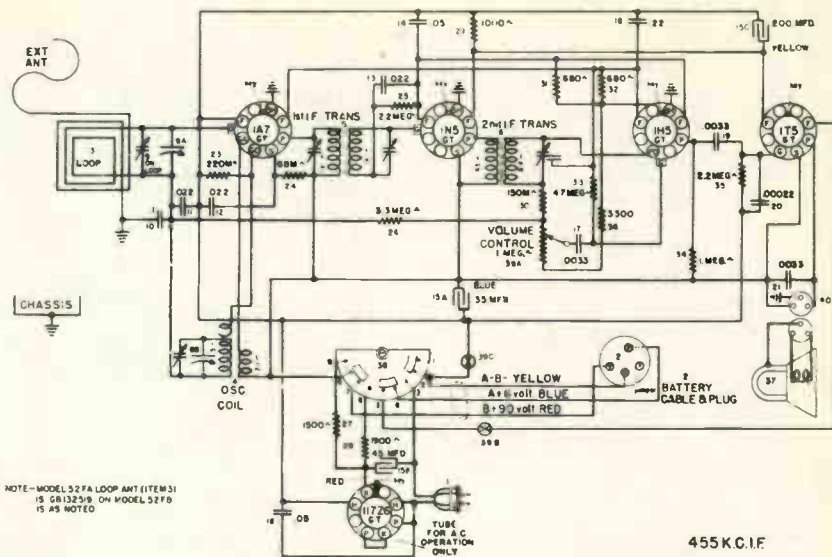
TUBE LAYOUT



TRIMMER LOCATIONS



WIRING DIAGRAM



Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F.	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
11726GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	115	.....	.....	.....	.....

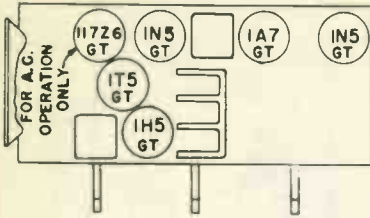
ALIGNMENT PROCEDURE Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop	Adjust for maximum output.

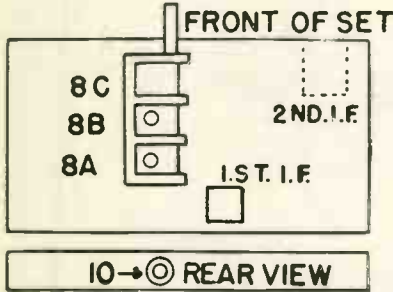
Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-3	A. C. Cable and Plug	31	39002-G6	Res. 680 Ohm. 1/4 W.
2	132503-1	Battery Cable and Plug—(32 FA Only)	32	39002-G6	Res. 680 Ohm. 1/4 W.
	132503-2	Battery Cable and Plug—(52 FB Only)	33	39002-G20	Res. 4.7 Meg. 1/4 W.
3	132550	Loop Antenna—(52 FA Only)	34	39002-G25	Res. 1 Meg. 1/4 W.
	132519	Loop Antenna—(52 FB Only)	35	39002-G27	Res. 2.2 Meg. 1/4 W.
4	32002-G272	Osc. Coil	36	39002-G10	Res. 3300 Ohm. 1/4 W.
5	32004-G268	1st I.F. Trans.	37	142670-2	Speaker
6	32004-G276	2nd I.F. Trans.	38	49772-1	Bat. Switch
7	NO ITEM		39A	130520-2	Vol. Control—1 Meg.
8A	132150-1	Var. Cond. R.F. Sec.	39B		On-Off Switch
8B		Var. Cond. Osc. Sec.	39C		On-Off Switch
9	132267-1	Trimmer Cond.		132256-1	Cabinet (52 FA)
10	39001-G87	Cond. .1 Mfd. 200 V.		132517-1	Cabinet (52 FB)
11	39001-G63	Cond. .022 Mfd. 200 V.		132221-1	Mtg. Screw (52 FA)
12	39001-G63	Cond. .022 Mfd. 200 V.		130536	Mtg. Screw (52 FB)
13	39001-G63	Cond. .022 Mfd. 200 V.		132127-1	Knob (3)
14	39001-G65	Cond. .05 Mfd. 200 V.		42911	Cabinet Protector (3)
15A	132501-1	Cond. .35 Mfd. Elec.		G-132231-0	Dial Assem.
15B		Cond. .45 Mfd. Elec.		132258-1	Dial Lens
15C		Cond. 200 Mfd. Elec.		132124	Trimount Stud—Dial
16	39001-G65	Cond. .05 Mfd. 200 V.		132097-6	Dial Pointer
17	39001-G10	Cond. .0033 Mfd. 600 V.		132167-3	Drive Cord Assem.
18	39001-G69	Cond. .22 Mfd. 200 V.		132119-3	Drive Shaft
19	39001-G10	Cond. .0033 Mfd. 600 V.		51071	Retaining Ring
20	39004-G9	Cond. .00022 Mfd.		132123	Tube Socket
21	39001-G10	Cond. .0033 Mfd. 600 V.		45580-A	Grömmet—Spkr. Mtg. (3)
22				46460	Headed Bushing—Spkr. Mtg. (3)
23	39002-G21	Res. 220000 Ohm. 1/4 W.		132546-1	Speaker Brkt.—L.H.
24	39002-G18	Res. 68000 Ohm. 1/4 W.		130181	Screw—Spkr. Mtg. (4)
25	39002-G27	Res. 2.2 Meg. Ohm. 1/4 W.		132520-1	Screw—Spkr. Mtg. (3)
26	39002-G28	Res. 3.3 Meg. Ohm. 1/4 W.		N-5096	Nut—Spkr. Mtg. (3)
27	39002-G8	Res. 1500 Ohm. 1/4 W.		132512-1	Instructions
28	132502-1	Res. 1900 Ohm. Candohm.		132829-1	Speaker Brkt.—R.H.
29	39002-G7	Res. 1000 Ohm. 1/4 W.		48230	Trimount Stud—Back
30	39002-G20	Res. 150000 Ohm. 1/4 W.			

# SERVICE INFORMATION — Model 58 Chassis

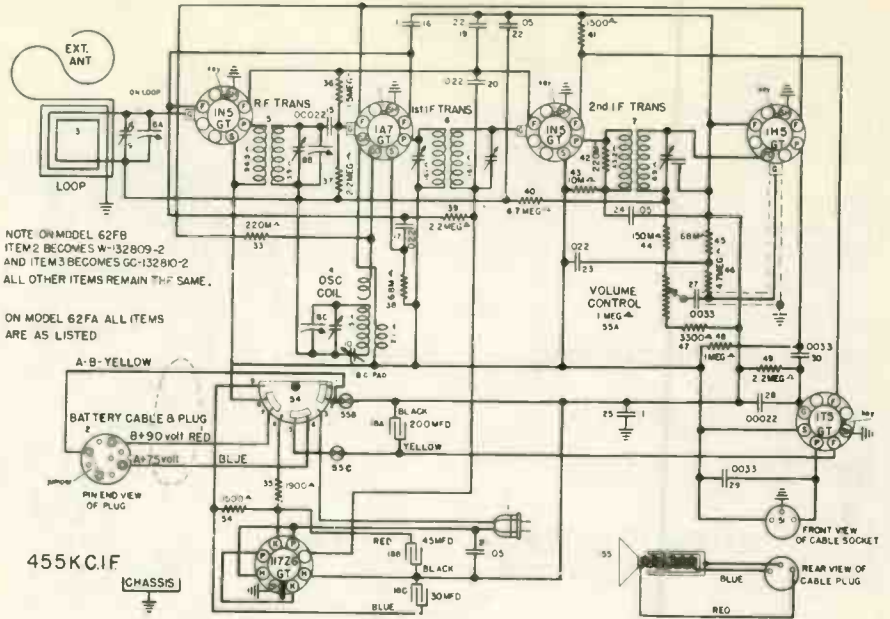
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



## PARTS LIST — MODELS 62-FA AND 62-FB

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-3	A. C. Cable & Plug	42	39002-G23	Res. 220,000 Ohm. 1/4 W.
2	132809-1	Battery Cable & Plug (62 FA)	43	39002-G13	Res. 10,000 Ohm. 1/4 W.
	132809-2	Battery Cable & Plug (62 FB)	44	39002-G20	Res. 150,000 Ohm. 1/4 W.
3	132810-1	Loop & Back Assem. (62 FA)	45	39002-G18	Res. 68,000 Ohm. 1/4 W.
	132810-2	Loop & Back Assem. (62 FB)	46	39002-G29	Res. 4.7 Megohm 1/4 W.
4	32002-G275	Osc. Coil	47	39002-G10	Res. 3300 Ohm. 1/4 W.
5	32001-G119	R. F. Transformer	48	39002-G25	Res. 1. Megohm 1/4 W.
6	32004-G285	1st I. F. Trans.	49	39002-G27	Res. 2.2 Megohm 1/4 W.
7	32004-G286	2nd I. F. Trans.	50		
8A	132759-1	Var. Cond. Ant. Sec.	51	132822-2	Speaker Cable & Socket
8B		Var. Cond. R. F. Sec.	52		
8C		Var. Cond. Osc. Sec.	53	L-132731	Speaker Assem.
9	132267-1	Trimmer Cond.		132670-2	Speaker Only
10	132267-2	Trimmer Cond.		132546-1	Speaker Brkt. L. H.
11				132329-1	Speaker Brkt. R. H.
12				132820-1	Speaker Gasket
13				49853	Speaker Grommet
14				132725-1	Speaker Bushing
15	39004-G9	Cond. .00022 Mfd.	54	49772-3	Tunction Switch
16	39001-G67	Cond. .1 Mfd. 200 V.	55A	130520-3	Volume Control
17	39001-G63	Cond. .022 Mfd. 200 V.	55B		Power Switch
18A	132501-1	Cond. 200 Mfd. 30 V. Elect.	55C		Power Switch
18B		Cond. 45 Mfd. 200 V. Elect.		132686-1	Cabinet (62 FA)
18C		Cond. 35 Mfd. 200 V. Elect.		132687-1	Carton (62 FA)
19	39001-G69	Cond. .22 Mfd. 200 V.		132816-1	Cabinet (62 FB)
20	39001-G63	Cond. .022 Mfd. 200 V.		132817-1	Carton (62 FB)
21	39001-G65	Cond. .05 Mfd. 200 V.		132127-1	Knob (3)
22	39001-G65	Cond. .05 Mfd. 200 V.		49211	Cabinet Protector (3)
23	39001-G63	Cond. .022 Mfd. 200 V.		132231-10	Dial Face Assem. (62 FA)
24	39001-G65	Cond. .05 Mfd. 200 V.		132231-11	Dial Face Assem. (62 FB)
25	39001-G67	Cond. .1 Mfd. 200 V.		132320-1	Dial Pointer
26				132648-1	Screw Dial
27	39001-G10	Cond. .0033 Mfd. 600 V.		132688-1	Dial Lens (62 FA)
28	39004-G9	Cond. .00022 Mfd.		132708-2	Dial Lens (62 FB)
29	39001-G10	Cond. .0033 Mfd. 600 V.		48200	Trimount Stud—Dial Lens
30	39001-G10	Cond. .0033 Mfd. 600 V.		132124	Trimount Stud—Loop & Back
31				132812-1	Instructions
32				132709	Grille Cloth
33	39002-G21	Res. 220,000 Ohm. 1/4 W.		132830-1	Screw—Dial Mtg. (62 FA)
34	39002-G8	Res. 1500 Ohm. 1/4 W.		132668-1	Screw—Dial Mtg. (62 FB)
35	132502-1	Res. 1900 Ohm. Candohm.		132641-1	Drive Shaft
36	39002-G26	Res. 1.5 Megohm 1/4 W.		49820-B	Retaining Spring
37	39002-G27	Res. 2.2 Megohm 1/4 W.		131930	Drive Shaft Bearing
38	39002-G18	Res. 68,000 Ohm. 1/4 W.		132123	Tube Socket
39	39002-G27	Res. 2.2 Megohm 1/4 W.		131717	Socket—Batt. Cable
40	39002-G29	Res. 4.7 Megohm 1/4 W.		132167-6	Drive Cord Assem.
41	39002-G8	Res. 1500 Ohm. 1/4 W.		132490-2	Junction Block

### ALIGNMENT PROCEDURE

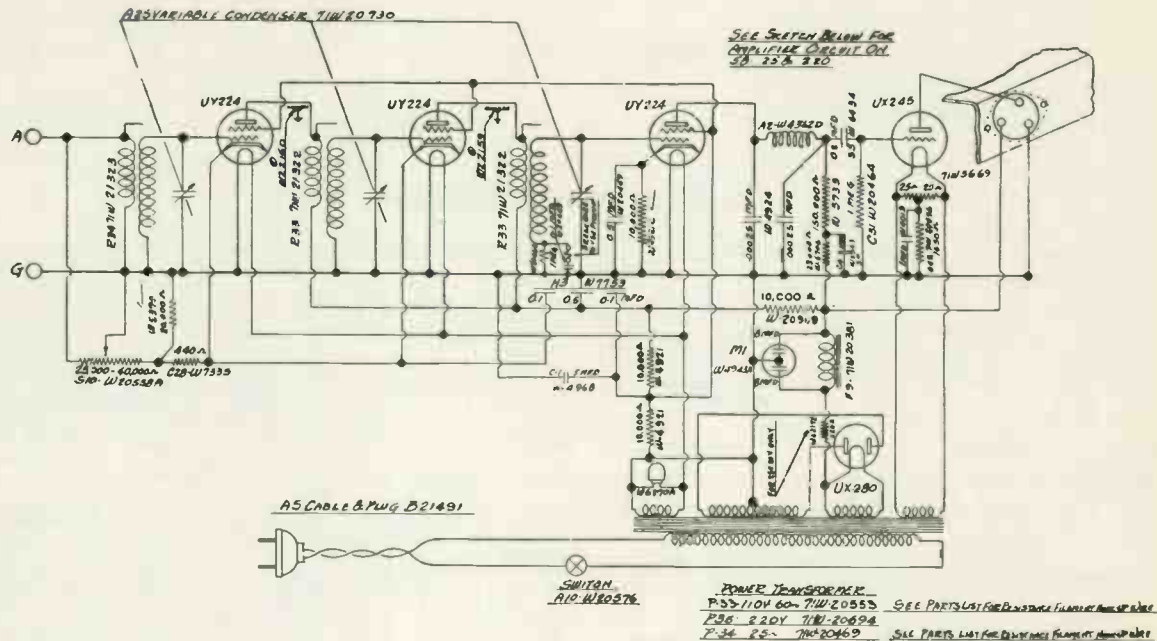
Volume Control on full Output meter connected to Plate and Screen of 1T5GT

#### SIGNAL GENERATOR

FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on-dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W. **110**

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A.;  
Power consumption @ 117.5 volts line — 22 Watts



# CROSLEY

*Twice Tested*

## SERVICE PARTS

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	Qty.	Part No.	Description			
1	W-21569	Chassis .....	<b>PARTS UNDER CHASSIS</b> 25 -25 ohm Resistance .....					
3	W-7873	Socket (5 Prong) .....				1	W-20556	1650 ohm Resistance .....
2	W-7871	Socket (4 Prong) .....				1	W-5943	.1 Mfd. Fixed Condenser .....
1	W-21518	Speaker Socket .....				2	W-4924	.00025 Mfd. Fixed Condenser .....
4	W-7874	Socket Guide .....				1	W-4362	Plate Choke .....
1	W-21297	Socket Guide (280) .....				1	W-6434	.02 mfd. Fixed Condenser .....
1	W-20683	Terminal Board (A. G. & Ph.) .....				1	W-4013	1. mfd. Fixed Condenser .....
1	W-20558	Volume Control .....				1	W-20449	.5 -.1 mfd. Fixed Condenser .....
1	W-20381	Filter Choke .....				1	W-7753	.1 -.5 -.1 mfd. Fixed Condenser .....
1	W-4943	Meshon Condenser .....				1	W-4968	.5 mfd. Fixed Condenser .....
2	W-5033	Condenser Clamp .....				1	W-21935	3250 ohm Candohm Resistance (2 Section) .....
1	W-4946	Condenser Cap .....				1	W-21956	3160 ohm Candohm Resistance .....
1	W-20730	Variable Condenser Gang .....				1	W-22043	Mounted Resistor Assembly .....
1	W-22060	Dial Light Bracket Assembly .....				W-20090	Mounting Strip .....	
1	W-22095	Dial Drum Assembly .....				W-5735	150,000 ohm Resistor .....	
1	W-22094	Dial Indicator Cover .....				W-5370	20,000 ohm Resistor .....	
2	W-20077	Dial Band .....				W-6706	25,000 ohm Resistor .....	
1	W-21322	R. F. Transformer .....	1	W-22082	Mounted Resistor Assembly .....			
1	W-21323	R. F. Transformer (Antenna) .....	W-20090	Mounting Strip .....				
3	W-21730	Grid Connector .....	W-4921	10,000 ohm Resistor .....				
3	W-21257	R. F. Coil Shield .....	2	W-20464	1 Meg. Resistor .....			
1	W-20576	Power Switch .....	W-7335	440 Ohm Resistor .....				
1	W-22025	Power Transformer (110 V. 60 Cycle) .....	1	B-21491	Cable .....			
2	W-21507	Tie Straps .....	1	C-20872	Chassis Bottom .....			
1	C-20871	R. F. Shield .....	1	W-20873	Bottom Bracket .....			
			2	W-20482	Knob .....			
				W-7947	Knob Spring .....			

## A. M. ALIGNMENT PROCEDURE FOR MODEL 59 CHASSIS USED IN 22CA-22CB, AND 22CP RECEIVERS

### Preliminary

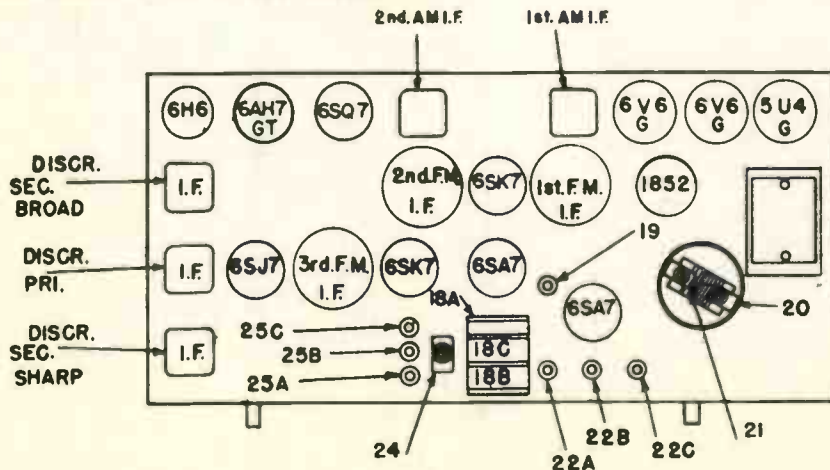
Output Meter Connections.....Plate to Plate of 6V6's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Master Tone Control.....All Buttons Out

### A. M. ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	456 Kc.	Stator lug Middle section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer 25-C	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer 24	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. Loop 22-C	Adjust for maximum output do not touch B. C. Osc. Trimmer.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC" 25-B	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0 on dial	Pol "ANT" Trimmer 22-B	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC" 25-A	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18 on dial	S. W. "ANT" Trimmer 22-A	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).



# F. M. ALIGNMENT PROCEDURE FOR MODEL 59 CHASSIS USED IN 22CA-22CB, AND 22CP RECEIVERS

**EQUIPMENT NECESSARY:** 1 modulated signal generator accurately calibrated and an output meter.

1. Connect output meter from plate to plate 6V6's.
2. Remove F. M. oscillator tube—6SA7 to right of gang.
3. Connect generator input to #4 pin of 6SJ7 F. M. limiter tube and generator ground to chassis.
4. Set generator to exactly 13.6 megacycles (AM signal with 400 cycle modulation).
5. Turn function switch to FM2.
6. Adjust the discriminator primary and secondary (broad) for peak.
7. Set generator to exactly 13.7 megacycles.
8. Adjust discriminator secondary (broad) for null (minimum reading on output meter). This null is very sharp and one peak will be considerably higher than the other.
9. Adjust discriminator primary until uniform peaks are obtained by shifting generator alternately from 13.6 to 13.8 MC, and carefully noting output meter readings.
10. Set generator to exactly 13.7 MC and note null point reading on output meter. Then turn function switch to FM1 (sharp) and adjust discriminator secondary (sharp) to null point. This adjustment is necessary to assure that FM1 and FM2 positions have same cross-over point.

**NOTE:** The relative height of peaks on FM1 is somewhat less than the FM2 position as can be noted by comparing with readings obtained in operation 9.

### IF ALIGNMENT

1. Connect generator output to #4 pin of second I-F 6SK7 amplifier.
2. While shifting generator from 13.6 to 13.8 MC, adjust 3rd FM I-F primary and secondary for maximum gain and **EQUAL PEAKS**.
3. Connect generator output to #4 pin of 1st I-F 6SK7.
4. Follow same procedure outlined in step #2, using just enough output to give a reasonable indication on meter.

5. Clip generator output to 3rd terminal on antenna board and adjust 1st FM I-F primary and secondary, following same procedure as in step #2, using just enough input to give a reasonable indication on meter.

### F. M. R-F ALIGNMENT

#### (a) Check Dial Calibration

1. Leave generator output connected to antenna—replace FM oscillator 6SA7.
2. Set generator to exactly 12.5 MC (fourth harmonic is 50 MC). Tune in 50 MC signal on dial, null between peaks.
3. Set generator to 10.5 MC (fourth harmonic—42 MC). Tune in 42 MC signal on dial, null between peaks. Correct dial calibration by bending osc. plate on gang.

#### (b) Set Generator to 11.5 MC (fourth harmonic—46 MC).

4. Remove dipole shorting clip (not on all models) and ground #2 dipole lug. Place a 100 ohm carbon resistor between terminals #2 and #3.
5. Connect signal generator output to #3 terminal.
6. Tune dial to either of signal peaks (not null).
7. Turn FM antenna primary trimmer, item 20, all the way in.
8. Adjust FM antenna secondary trimmer, item 21, for peak.
9. Repeak FM antenna primary.
10. Check at 42 MC (Gen. 12.5 MC), 50 MC (Gen. 12.5 MC), output meter readings should be approximately the same over band, with slight humps on ends.

**NOTE:** If there is an appreciable variation between readings on the output meter on the frequencies in step #10, carefully repeat complete R-F alignment.

**NOTE:** If some receivers oscillate at one end of dial and not at the other end, it is possible that the red lead (top) on the FM oscillator coil is too close to the secondary side. This lead should be dressed down toward the chassis and closest to the grounded end of oscillator coil, using top as reference point.

## TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS)  
WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER

TUBE	FUNCTION	1	2	3	4	5	6	7	8	POSITION OF FUNCTION SW
6SA7	Oscillator	Gnd	Gnd	290	100	—8	0	6.3	0	A. M.
6SA7	Converter—A. M.	Gnd	Gnd	260	260	—2	0	6.3	Gnd	F. M. 1 or 2
6AC7	Det.—1st F. M.	Gnd	Gnd	Gnd	—6	Gnd	85	6.3	260	F. M. 1 or 2
6SK7	I. F. Amp. (A. M. 1st FM)	Gnd	Gnd	Gnd	0	3	100	6.3	300	A. M.
6SK7	I. F. Amp. 2nd F. M.	Gnd	Gnd	Gnd	0	3	100	6.3	190	F. M. 1 or 2
6BJ7	Limiter F. M.	Gnd	Gnd	Gnd	0	.5	200	6.3	100	F. M. 1 or 2
6H6	Discriminator	Gnd	Gnd	—5(FM)	+5(AM)	—5(FM)	J.B.	6.3	Gnd	Note range settings for 3, 4 & 5
6BQ7	Det. A. M.—1st A. F.	Gnd	0	1	.4	0	140	6.3	Gnd	F. M. or A. M.
6AH7GT	2nd A. F. Driver	0	2	195	7	0	160	6.3	Gnd	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
5U4	Rectifier	N.C.	400	J.B.	360AC	J.B.	360AC	J.B.	400	

MAX. POWER OUTPUT..... 15 WATTS

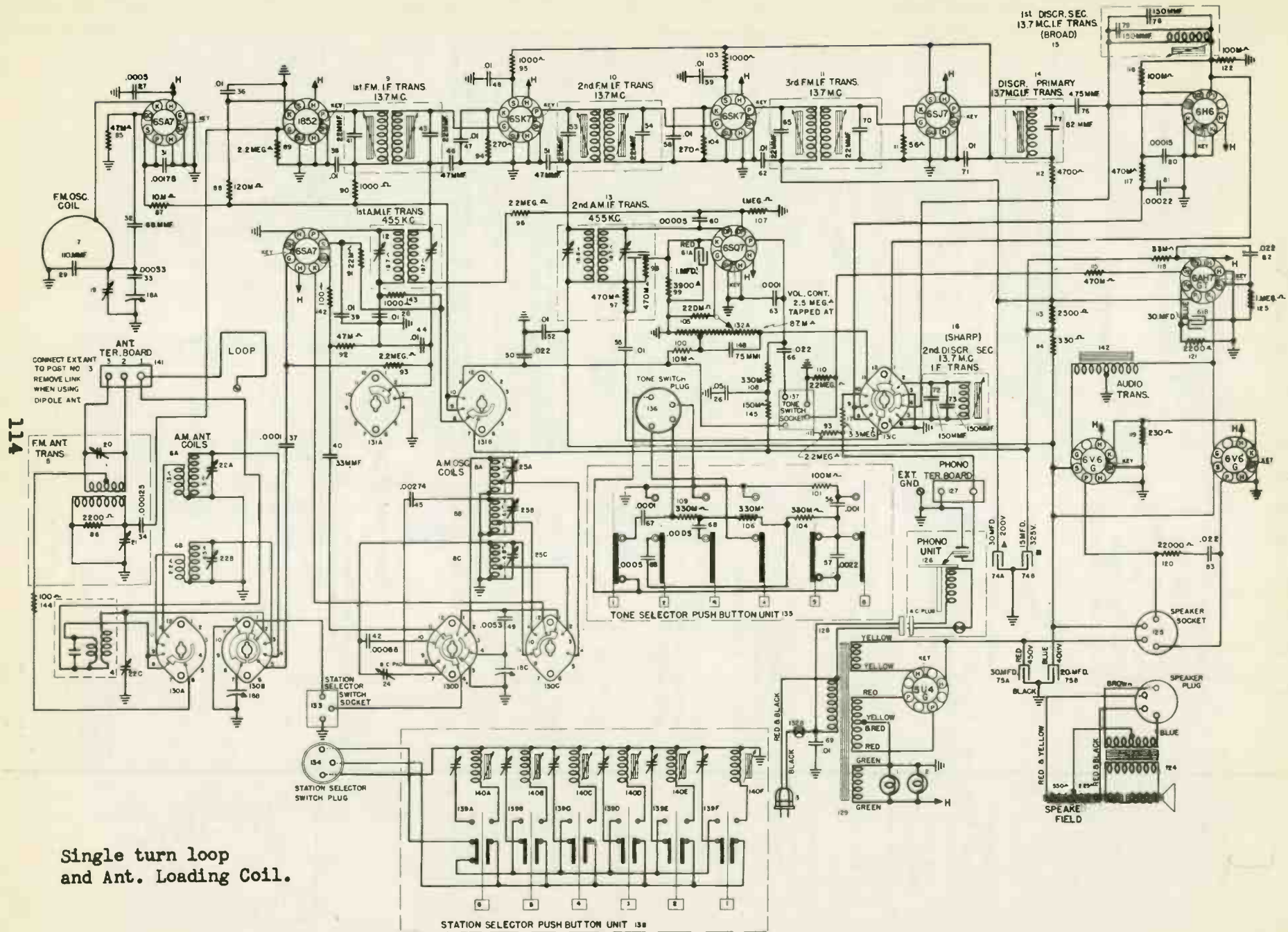
POWER CONSUMPTION..... 120 WATTS

DROP ACROSS SPEAKER FIELD..... 80 VOLTS

J. B.—Junction Block. N. C.—No Connection.

Voltages may vary 10% of values given.

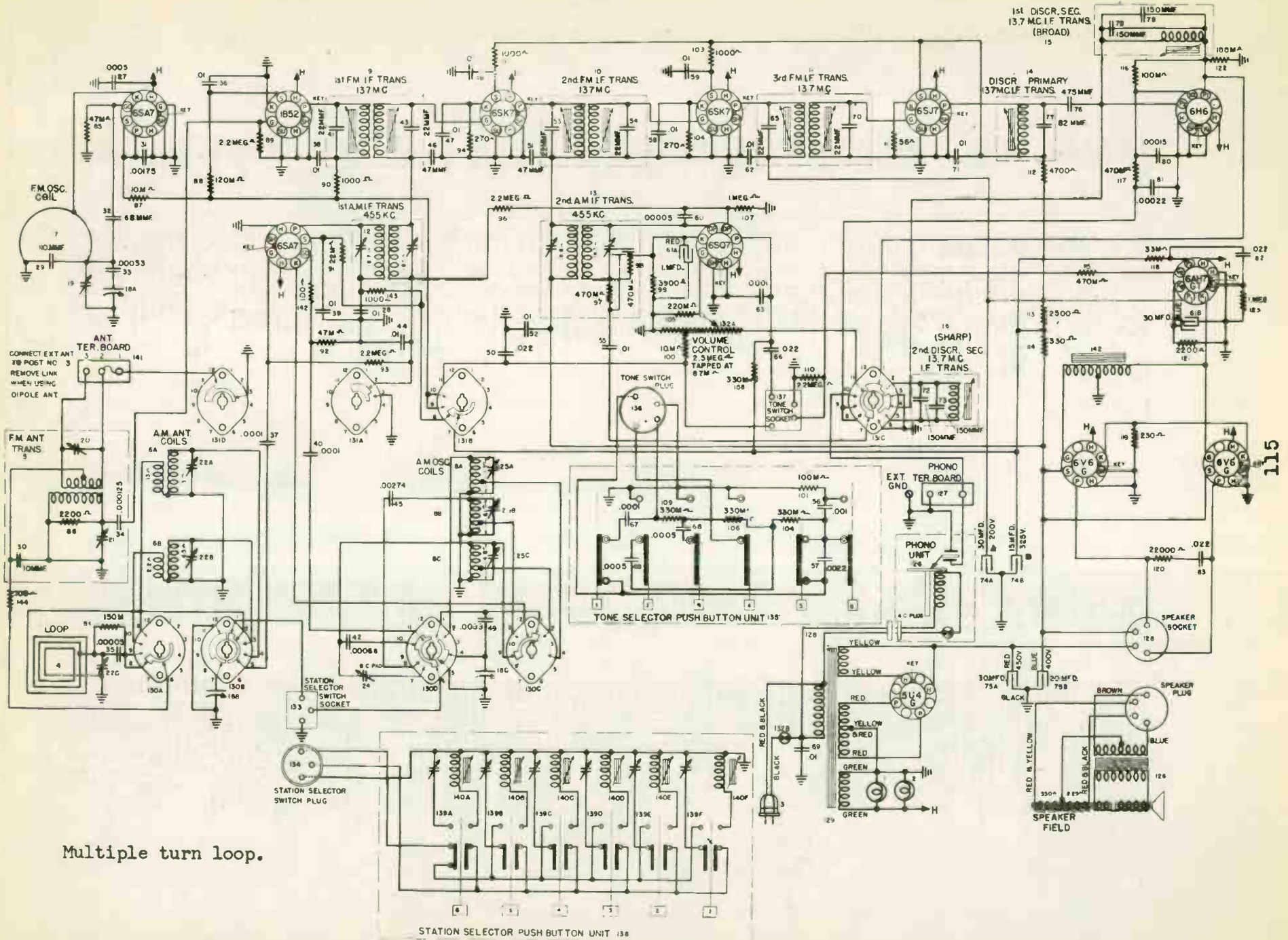




MODELS 22CA, 22CB, 22CP

Single turn loop and Ant. Loading Coil.

MODELS 22CA, 22CB, 22CP

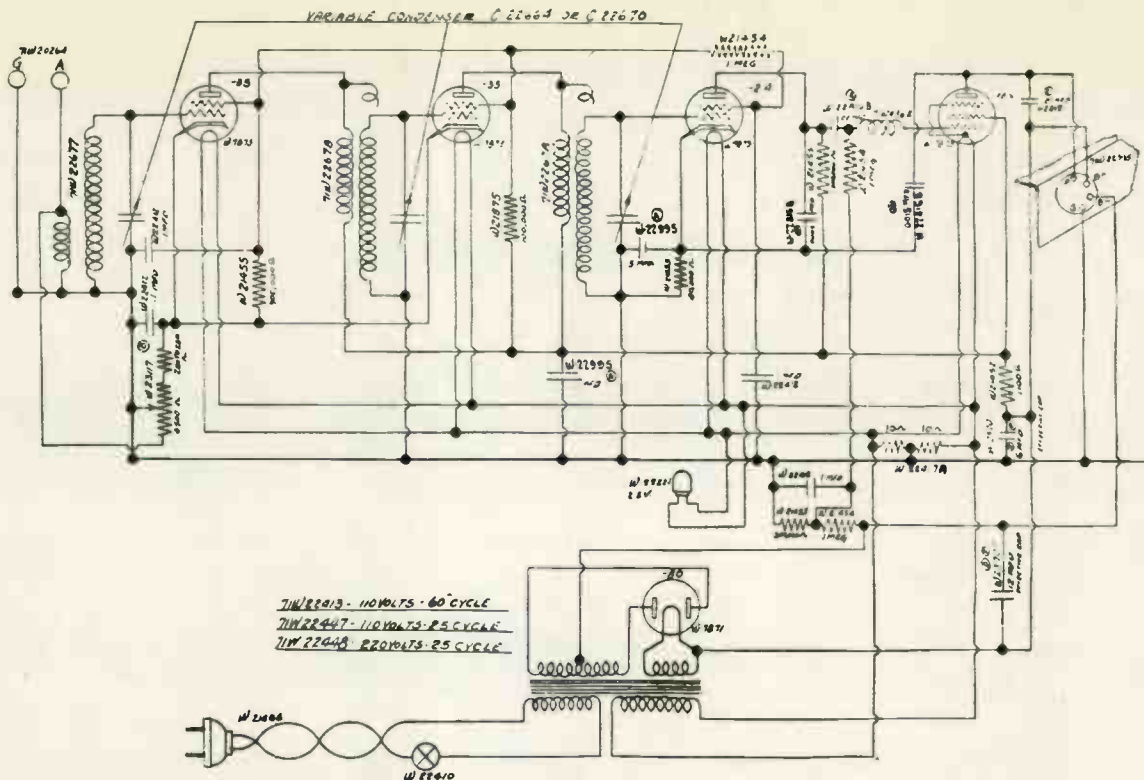


PARTS LIST, MODELS 22CA-CB-CP—CHASSIS MODEL No. 59

Figures in first column refer to parts in Diagrams.

ITEM No.	PART No.	DESCRIPTION	ITEM No.	PART No.	DESCRIPTION
1	48485	Dial Light 6 V.	97	39002-23	Res. 470,000 Ohm 1/2 W.
2	48885	Dial Light 6 V.	98	39002-23	Res. 470,000 Ohm 1/2 W.
	132343-6	Escutcheon & Lens.	99	13214-1	Res. 3900 Ohm 1/2 W.
	132344-1	Lens.	100	39002-13	Res. 10,000 Ohm 1/2 W.
	132347-1	Quasket.	101	39002-19	Res. 10,000 Ohm 1/2 W.
	132390-1	Dial Pointer.	102	39002-22	Res. 330,000 Ohm 1/2 W.
	132421-5	Dial Face Assem.	103	39002-7	Res. 1000 Ohm 1/2 W.
	48899	Screw—Dial Face Mtg. (2)	104	132672-1	Res. 270 Ohm 1/2 W.
	49637-22	Light Socket Assem.	105	39002-21	Res. 220,000 Ohm 1/2 W.
	132167-4	Drive Cord Assem.	106	39002-23	Res. 330,000 Ohm 1/2 W.
	132584-1	Tuning Shaft Assem.	107	39002-25	Res. 1 Megohm 1/2 W.
	49786-1	Drive Shaft Br't.	108	39002-22	Res. 330,000 Ohm 1/2 W.
	132608-1	Drive Shaft Br't.	109	39002-22	Res. 330,000 Ohm 1/2 W.
3	132800-3	A. C. Power Plug & Cable.	110	39002-27	Res. 2.2 Megohm 1/2 W.
4	133769-3	Antenna Coil or Q243-32000 Coll.	111	132576-1	Res. 56 Ohm 1/2 W.
5	39000-239	F. M. Ant. Trans. Assem.	112	132573-1	Res. 4700 Ohm 1 W.
6A	32000-238	A.M. Ant. Coil H. F.	113	132576-1	Res. 2500 Ohm 4 W. Carbon.
6B		A.M. Ant. Coil Pol.	114	132574-1	Res. 390 Ohm 2 W. Carbon.
7	132583	F. M. Osc. Coil Assy.	115	39002-23	Res. 470,000 Ohm 1/2 W.
8A	32002-265	A. M. Osc. Coil H. F.	116	132579-3	Res. 100,000 Ohm Ceramic.
8B		A. M. Osc. Coil Pol.	117	39002-23	Res. 470,000 Ohm 1/2 W.
8C		A. M. Osc. Coil B. C.	118	39002-16	Res. 33,000 Ohm 1/2 W.
9	32004-279	1st F. M. I. F. Trans.	119	132893-1	Res. 230 Ohm 2.5 W. Cer.
10	32004-279	2nd F. M. I. F. Trans.	120	39002-9	Res. 22,000 Ohm 3 W. Carbon.
11	32004-279	3rd F. M. I. F. Trans.	121	39002-9	Res. 2200 Ohm 1/2 W.
12	32004-277	1st A. M. I. F. Trans.	122	132579-3	Res. 100,000 Ohm Ceramic.
13	32004-278	2nd A. M. I. F. Trans.	123	39002-25	Res. 1 Megohm 1/2 W.
14	32004-280	Discr. Primary I. F. Trans.	124	132348-7	Speaker
15	32004-281	1st Discr. Sec. I. F. Trans.	43580-A	Grommet (4) Spkr. Mtg.	
16	32004-281	2nd Discr. Sec. I. F. Trans.	37053	Flat Washer (4) Spkr. Mtg.	
17	39002-28	Res. 3.3 Megohm 1/2 W.	N-8	Nut (4) Spkr. Mtg.	
18A	132296-3	Var. Cond. F. M. Section.	L-8	Lock Washer (4) Spkr. Mtg.	
18B		Var. Cond. A. M. Ant. Section.	131512	Headed Bushing (4) Spkr. Mtg.	
18C		Var. Cond. A. M. Osc. Section.	28807-103	Speaker Socket.	
19	132852-1	F. M. Osc. Trimmer Cond.	126	Phono Unit Assem.	
20	49634	F. M. Ant. Pri. Trimmer.	127	Phono Ter. Board.	
21	131786-3	F. M. Ant. Sec. Trimmer.	26719-65	Phono A. C. Cable.	
22A	132386-1	A. M. Ant. Trimmer H. F.	129	132601-3	Power Trans.
22B		A. M. Ant. Trimmer Pol.	130A	132586-1	Band Switch Ant. Sec.
22C		Trimmer A. M. B. C. Loop.	130B	Band Switch Ant. Sec.	
23			130C	Band Switch Osc. Sec.	
24	49652-1	B. C. Padder Cond.—600 Kc.	131A	Band Switch Osc. Sec.	
25A	132389-1	Trimmer H. F. Osc.	131B	Function Switch A.M. I. F.	
25B		Trimmer Pol. Osc.	131C	Function Switch F. M. I. F.	
25C		Trimmer B. C. Osc.	131D	Function Switch F. M. & Phono.	
26	39001-41	Cond. 0.05 Mf. 400 V. Paper.	132A	Function Switch F. M. Ant.	
27	39001-5	Cond. 0.05 Mf. 600 V. Paper.	132B	Volume Control.	
28	13227-1	Cond. .01 Mf. Bakelite.	47133	A. C. Power Switch.	
29	132361-2	Cond. 110 Mmf. Ceramic.	134	Station P. B. Cable Socket.	
30			134	Station P. B. Unit Cable.	
31	34007-7	Cond. .00175 Mf. Mica.	135	Tone Push Button Unit.	
32	132582-2	Cond. .06 Mmf. Ceramic.	136	Tone Switch Plug & Cable.	
33	132591-8	Cond. .00033 Mf. Ceramic.	137	Tone Switch Cable Socket.	
34	132591-6	Cond. .000126 Mf. Ceramic.	138	Station Push Button Unit.	
35			139A	Trimmer Cond.	
36	132627-1	Cond. .01 Mf. Bakelite	139B	Trimmer Cond.	
37	39004-1	Cond. .0001 Mf. Mica.	139C	Trimmer Cond.	
38	132627-1	Cond. .01 Mf. Bakelite.	139D	Trimmer Cond.	
39	132627-1	Cond. .01 Mf. Bakelite.	139E	Trimmer Cond.	
40	39004-4	Cond. 100 Mmf. Mica.	139F	Trimmer Cond.	
41	132591-3	Cond. 22 Mmf. Ceramic.	140A	Osc. Coil	
42	34003-37	Cond. 680 Mmf. Mica.	140B	32002-268	
43	132591-3	Cond. 22 Mmf. Ceramic.	140C	32002-268	
44	132627-1	Cond. .01 Mf. Bakelite.	140D	32002-270	
45	34005-35	Cond. 2740 Mmf. Mica.	140E	32002-270	
46	132591-4	Cond. 47 Mmf. Ceramic.	140F	32002-269	
47	132627-1	Cond. .01 Mf. Bakelite.	41	26719-51	
48	132627-1	Cond. .01 Mf. Bakelite.	142	132615-1	
49	34005-34	Cond. 6300 Mmf. Mica.	143	39002-7	
50	39001-63	Cond. .022 Mf. 300 V.	144	39002-1	
51	132591-4	Cond. 47 Mmf. Ceramic.	145	39002-20	
52	132627-1	Cond. .01 Mf. Bakelite.	146	39002-27	
53	132591-8	Cond. 22 Mmf. Ceramic.	147	39002-28	
54	132627-1	Cond. .01 Mf. Bakelite.	132531-1	Cabinet 22CA.	
55	132627-1	Cond. .01 Mf. Bakelite.	132612-1	Cabinet 22CB.	
56	39001-7	Cond. .001 Mf. 600 V. Paper.	132714-1	Cabinet 22CP.	
57	39001-9	Cond. .0022 Mf. 600 V. Paper.	132632-1	Carton 22CA.	
58	132627-1	Cond. .01 Mf. Bakelite.	132613-1	Carton 22CB.	
59	132627-1	Cond. .01 Mf. Bakelite.	132716-1	Carton 22CP.	
60	39004-6	Cond. 60 Mmf. Mica.	132371-1	Screw—Chassis Mtg. (4) 22CA, CB & CP.	
61B	132673-2	Cond. 30 Mfd. Electro.	44726	Flat Washer—Chassis Mtg. (4) 22CA, CB & CP.	
61A		Cond. 1 Mfd. Electro.	132323-2	Mtg. Spring Bottom (4) 22CA, CB & CP.	
62	132627-1	Cond. .01 Mf. Bakelite.	132323-1	Mtg. Spring Top (4) 22CA, CB & CP.	
63	39004-7	Cond. 100 Mmf. Mica.	132393-1	Knob (2) 22CA-CB-CP.	
64	39001-8	Cond. .0005 Mf. 600 V.	132341-1	Knob Large (2) CA-CB-CP.	
65	132591-3	Cond. 22 Mmf. Ceramic.	132398-1	Cabinet Protector.	
66	39001-16	Cond. .022 Mf. 600 V.	131411-1	Knob Spring.	
67	39001-1	Cond. 100 Mmf. 600 V.	132429	Push Switch Assem.	
68	39001-5	Cond. .0005 Mf. 600 V.	132658	Tone Switch Assem.	
69	30805	Cond. .01 Mf. 120 V. A. C.	132396-1	Push Button.	
70	132591-8	Cond. 22 Mmf. Ceramic.	132397-1	Tone Button.	
71	132627-1	Cond. .01 Mf. Bakelite.	132397-2	Tone Button.	
72	132591-7	Cond. 180 Mmf. Ceramic.	132397-3	Tone Button.	
73	132591-7	Cond. 180 Mmf. Ceramic.	132397-4	Tone Button.	
74A	132671-1	Cond. 30 Mfd. 200 V. Electro.	132397-6	Tone Button.	
74B		Cond. 16 Mfd. 328 V. Electro.	132397-6	Tone Button.	
75A	132570-1	Cond. 30 Mfd. 450 V. Electro.	60628-A	Button Springs (12).	
75B		Cond. 20 Mfd. 400 V. Electro.	132478-2	Envelope Assem. 22CA-CB.	
76	132591-1	Cond. 4.75 Mmf. Ceramic.	132478-4	Envelope Assem. 22CP.	
77	132591-6	Cond. 82 Mmf. Ceramic.	134232-1	Di-Pole Antenna.	
78	132591-7	Cond. 180 Mmf. Ceramic.	134216-1	Instruction Envelope.	
79	132591-7	Cond. 180 Mmf. Ceramic.	43662	Speaker Plug Retainer Clamp.	
80	39004-8	Cond. 150 Mmf. Mica.	45808	4 1/2 x 1/4 P. K. Screw.	
81	39001-3	Cond. 220 Mmf. 600 V. Paper.	133174	Record Chgr. Assem. 22CP.	
82	39001-15	Cond. .022 Mf. 600 V. Paper.	132472-2	Hinge Roller (2).	
83	39001-43	Cond. .022 Mf. 200 V. Paper.	132473-2	Hinge Roller Stud (2).	
84			5096	Nut Hinge Roller Stud (2).	
85	132679-1	Res. 47,000 Ohms Ceramic.	132463-1	Hinge Assem. R. H.	
86	39002-9	Res. 2200 Ohms 1/2 W.	132463-2	Hinge Assem. L. H.	
87	132878-1	Res. 10,000 Ohms 1/2 W.	132537-1	Slide Rail (3).	
88	96320	Res. 120,000 Ohms 1/2 W.	131133	Slide (9) Slide Rail.	
89	132476-2	Res. 2.2 Megohm Ceramic.	132850-1	Screw (8) Hinge Assem.	
90	39002-7	Res. 1000 Ohms 1/2 W.	132454-5	Record Change Cable.	
91	132677-1	Res. 22,000 Ohms 3 W.	134060	Cabinet Back.	
92	39002-17	Res. 47,000 Ohms 1/2 W.	8-90	Screw (8) Cabinet Back.	
93	39002-27	Res. 2.2 Megohms 1/2 W.	134331	Complete Fold. Brkt. for Radio Comp. Door.	
94	132372-1	Res. 270 Ohms 1/2 W.	132434-1	Station Call Letters.	
95	39002-7	Res. 1000 Ohms 1/2 W.	132399-1	Call Letter Covers.	
96	39002-27	Res. 2.2 Megohm 1/2 W.			

# Model 59



**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

## PARTS LIST, MODEL 59

Qty.	Part No.	Description
1	W-22413	Power Trans. 110 v. 60 cycle
1	W-21459	Mershon Cond. 8 mfd.
1	W-22689-A	Mershon Cond. 12 mfd.
1	W-22664	Tuning Cond. Gang
1	W-22410	Switch
1	W-23117	Volume Control
1	W-22995	Fixed Cond. .5 - .1 mfd.
1	W-22677	R.F. Trans. (Ant)
2	W-22678	R.F. Trans. (Int)
3	W-7558-A	R.F. Coil Shields
1	W-4362	R.F. Plate Choke

# CHASSIS MODEL 60

## ALIGNMENT PROCEDURE

Preliminary  
 Output Meter Connections.....Plate to Plate of 6AC5G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1600 Kc.	Ant. Lead (Red)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Lead (Red)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Red)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Red)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Red)	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Red)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Red)	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

#### SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.) PIN NUMBER

TUBE FUNCTION	1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....	GND	GND	GND	0	0	59	6.3 NC	217
6SA7—Converter.....	GND	GND	217	59	0	3.0 B.C.O.-S.W.	6.3 NC	0
6J5GT—Oscillator.....	GND	GND	217	0	0	0	6.3 NC	0
6SK7—I. F. Amplifier.....	GND	GND	GND	0	GND	59	6.3 NC	204
6SQ7—Det. A. V. C. 1st A. F.....	GND	0	0	0	0	74	6.3 NC	GND
6J5GT—Phase Inverter.....	GND	0	153	J. B.	0	0	6.3 NC	3.5
6J5GT (2)—P. P. A. F. Drivers.....	GND	GND	217	J. B.	0	0	6.3 NC	8.5
6AC5GT(2)—P. P. Output.....	GND	GND	305	0	8.5	0	6.3 NC	GND
5Y3G—Rectifier.....	NC	310	0	308 AC	0	308 AC	5 AC	0

MAX. POWER OUTPUT @ 117.5 V. LINE.....8.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE.....80 Watts  
 DROP ACROSS SPEAKER FIELD.....90 Volts

J.B.—JUNCTION BLOCK.

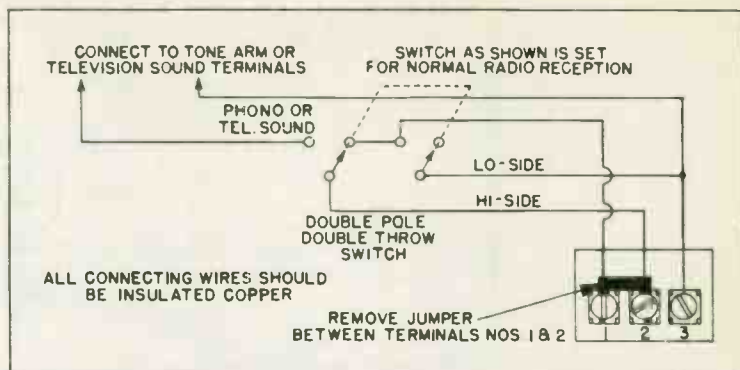
Voltages may vary 10% of values given.

N.C.—NO CONNECTION.

## MODEL CA12

### PHONO CONNECTIONS

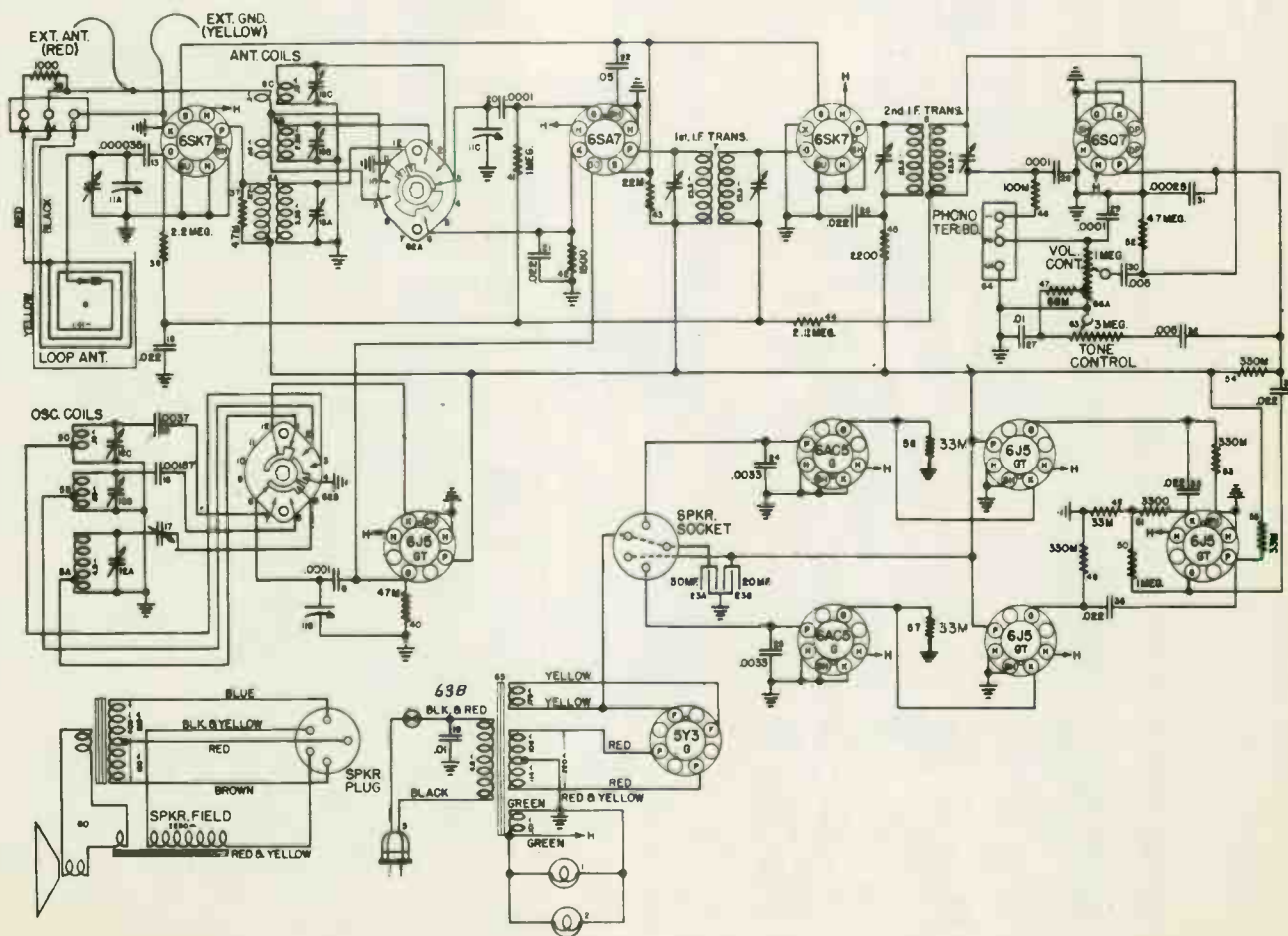
This chassis is so constructed as to be adaptable to a phonograph pickup (high impedance type) for the reproduction of recordings. The terminals may also be used for the reproduction of television sound as supplied by a suitable television converter unit. The double pole double throw switch for changing from Radio to Phono or television sound, should be connected as shown in the diagram. The terminals are coded as follows: 1, 2, 3, respectively. The No. 2 terminal connects to the high side of the phono pickup or television A-F connections.



NOTE: The jumper wire between No. 1 and No. 2 terminals must be removed when phono-radio switch is connected. If phono switch is removed, it is absolutely essential that the jumper wire between No. 1 and No. 2 terminals be replaced. Be sure all connections are tight.

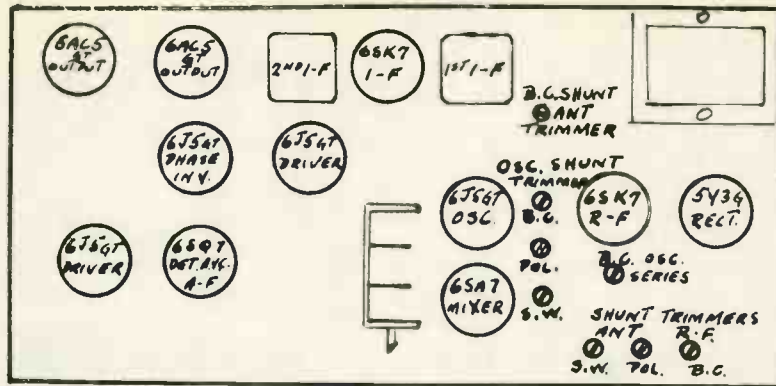
The No. 3 terminal is the ground or low side connection. The No. 1 terminals should be connected to the No. 3 terminals by some means (as indicated in the above diagram). This prevents any radio signals from the receiver proper interfering with the Phono or Television sound reproduction.

### WIRING DIAGRAM, MODEL CA12, CHASSIS MODEL 60



# TUBE AND TRIMMER LAYOUT

## MODEL CA12

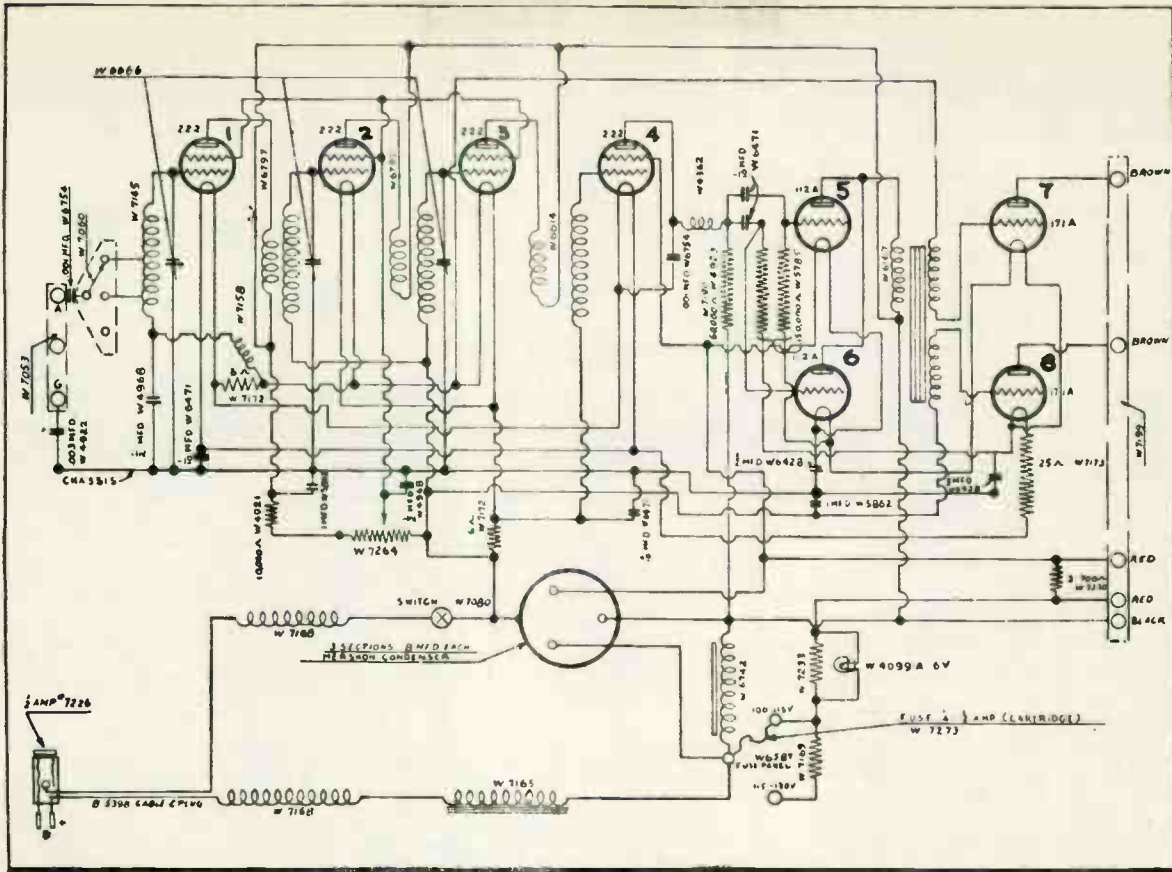


### PARTS LIST — MODEL CA12 — CHASSIS MODEL 60

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	50	G25 —39002	Res. 1 Meg. Ohm 1/4 W. Ins.
2	—49870	Bulb, Dial Light	51	G10 —39002	Res. 3,300 Ohms 1/4 W. Ins.
3	—45769A	Socket Assy. (Dial Light)	52	G29 —39002	Res. 4.7 Meg. Ohms 1/4 W. Ins.
4	—131969	Cable & Plug (Power)	53	G22 —39002	Res. 330,000 Ohms 1/4 W. Ins.
	—30302	Spacer—Loop	54	G22 —39002	Res. 330,000 Ohms 1/4 W. Ins.
	—131970	Loop—Wire	55	G16 —39002	Res. 3,300 Ohms 1/4 W. Ins.
	132084—FS88	Spacer—Loop (Eccentric)	56	G16 —39002	Res. 3,300 Ohms 1/4 W. Ins.
	130433—	Loop Supporting Brkt. (4 Req.)	57	G16 —39002	Res. 3,300 Ohms 1/4 W. Ins.
	—14762	Phillips Hd. Screws — Brkt. Mtg.	58	G16 —39002	Res. 3,300 Ohms 1/4 W. Ins.
5A	G252—32002	Screws, Spacer Mtg. (4 Req.)	59		
5B		Coil—B. C. Osc.	60	G1 —131880	Speaker, 12-in
5C		Coil—Pol. Osc.		G103—28807	Socket (speaker)
6A	G231—32000	Coil—H. F. Osc.		—45580	Grommet—Spkr. Mtg.
6B		Coil—B. C. Ant.		—131512	Headed Bushing—Spkr. Mtg.
6C		Coil—Pol. Ant.		—37953	Flat Washer—Spkr. Mtg.
7	G262—32004	Coil—H. F. Ant.		N —8	Hex Nut—Spkr. Mtg.
8	—49692	1st I. F. Trans.	61	L —8	Lockwasher—Spkr. Mtg.
9	G262—32004	Condenser	62A	—131855	Switch, B. C.
10	G2 —32002	2nd I. F. Trans.	62B		Switch, B. C.
11A	—131852	Cond. 100 Mmf. Mica	63A	—131853	Tone Control (3 Meg. Ohm)
11B	—131849	Cond. Trim. Ant. Sect.	64	G60 —26719	Terminal Bd. (Phono.)
11C		Var. Cond. Ant. Sect.	65	—131958	Trans. (Power)
12A		Var. Cond. R. F. Sect.		N —5096	#8-32 Hex Nut (Trans. Mtg.)
12B	—131850	Var. Cond. Osc. Ant.	66	—44773	Vol. Control
12C		Cond. Trim. B. C. Osc.	63B	MG11—131840	Switch (Power)
13		Cond. Trim. Pol. Osc.			Drive Shaft Assy.
14	G13 —34002	Cond. Trim. H. F. Osc.		MG14—131840	Dial Back Assy.
15	G63 —39001	Cond. 35 Mmf. Mica		MG26—131132	Pointer Assy.
16	G17 —34005	Cond. .002 Mf. 200 V. Paper		—49787A	Drive Shaft Bearing
17	G29 —34005	Cond. 3700 Mmf. Mica		—131151A	Pulley
18A	—131860	Cond. 1570 Mmf. Mica		—131152	Hub
18B	—49720	Cond. Trim. B. C. Series		—131866	Idler Pulley Brkt.
18C		Cond. Trim. B. C. Ant.		—131183A	Dial Pointer Guide Rod
19	—30605	Cond. Trim. Pol. Ant.		—131184	Dial Pointer Guide Rod Spring
20	G2 —34002	Cond. Trim. H. F. Ant.		—131965	Dial Background
21	G63 —39001	Cond. .01 Mf. 400 V. Paper		—131868	Dial Glass
22	G41 —39001	Cond. 100 Mmf. Mica		—131194	Drive Spring
23A	—131847	Cond. .02 Mf. 200 V. Paper		—131154	Retainer Spring—Dial Back
23B		Cond. .05 Mf. 400 V. Paper		G48 —41582	Drive Cord (39-inch)
24	G10 —39001	Cond. 30 Mf. 450 V. Elect.		G49 —41582	Drive Cord (21.5-inch)
25	G10 —39001	Cond. 20 Mf. 450 V. Elect.		—131867	Pulley—Dial Back
26	G39 —39001	Cond. .0033 Mf. 600 V. Paper		—35086	Screws—Dial Mtg.
27	G61 —39001	Cond. .0033 Mf. 600 V. Paper		—41582	Guide Cord
28	G2 —34002	Cond. .02 Mf. 400 V. Paper		—131390	Guide Cord Spring
29	G2 —34002	Cond. .01 Mf. 200 V. Paper		—131838A	Cabinet
30	G11 —39001	Cond. 100 Mmf. Mica		—131839	Carton
31	G1 —34002	Cond. 100 Mmf. Mica		—131874	Knob—Tone
32	G11 —39001	Cond. .005 Mf. 600 V. Paper		—131875	Knob—Tuning
33	G39 —39001	Cond. 250 Mmf. Mica		—131876	Knob—Volume
34	G39 —39001	Cond. .005 Mf. 600 V. Paper		—131877	Knob—B. C.—Switch
35	G39 —39001	Cond. .022 Mf. 400 V. Paper		—131910	Escutcheon
36	G39 —39001	Cond. .022 Mf. 400 V. Paper		—28760B	Escutcheon Pin
37	G17 —39002	Res. 47,000 Ohms 1/4 W. Ins.		—45579	Flat Washer—Chassis Mtg.
38	G7 —39002	Res. 1,000 Ohms 1/4 W. Ins.		—45580A	Rubber Grommet—Chassis Mtg.
39	G27 —39002	Res. 22 Meg. Ohms 1/4 W. Ins.		—46460	Headed Bushings—Chassis Mtg.
40	G17 —39002	Res. 47,000 Ohms 1/4 W. Ins.		—43885	#8x3/4 P. K. Screw—Chassis Mtg.
41	G25 —39002	Res. 1 Meg. Ohm 1/4 W. Ins.		—25846	#10x3/4 P. K. Screw—Chassis Mtg.
42	G8 —39002	Res. 1,500 Ohms 1/4 W. Ins.		—130600	Wing Screw—Chassis Mtg.
43	—131963	Res. 22,000 Ohms 2 W. Ins.		—130347	Chassis Support Brkt.
44	G27 —39002	Res. 22,000 Ohms 2 W. Ins.		—130348	Chassis Support Brkt.
45	G9 —39002	Res. 2.200 Ohms 1/4 W. Ins.		MG 3—131841	Tip Sack Assy.
46	G19 —39002	Res. 100,000 Ohms 1/4 W. Ins.		S —159	#8x3/4 Wood Screw
47	G18 —39002	Res. 68,000 Ohms 1/4 W. Ins.		—42177	Screw—Spkr. to Baffle
48	G22 —39002	Res. 330,000 Ohms 1/4 W. Ins.		—43553	Chassis Mtg. Foot
49	G16 —39002	Res. 33,000 Ohms 1/4 W. Ins.		—132058	Antenna Board
				G28 —43564	Pulley & Hub Assy.
				—131863	Power Cord Clamp

# Models 60S, 61S, 62S, 63S



Qty.	Part No.	Description	Qty.	Part No.	Description
<b>Chassis Assembly</b>			<b>Parts Under Chassis</b>		
1	D-0000	Chassis	1	W-0587	Fuse Panel Assembly
6	W-5538	Sockets	1	W-7273	1-2 Amp. Fuse
2	W-5544	Sockets	1	W-7253	Fixed Resistance (45 ohms)
1	W-5253	Mershon Condenser (3 Sec. SMFD. Each)	1	W-7100	Fixed Resistance (45 ohm)
1	W-7405	Mershon Condenser Cap	2	W-7230	Fixed Resistance (700 ohm)
1	W-7406	Mershon Condenser Screw	2	W-7168	Line Chokes
1	W-4741	1-36 Sq. Nut	1	B-5208	Cable & Plug
1	W-4794-A	1.4 in. Sq. Stiffened Sleeve	1	7226	Fuse 1-2 Amp
2	W-6742	Mounting Clamp	1	W-4751-B	Cable Clamp
1	W-7165	Filter Choke	1	W-7190	Resistance block assembly complete (4 Resistors)
1	W-5654	Gromet	2	W-6583	Terminal Strip Assembly
1	W-7496	Shield	2	W-5735	Fixed Resistance (150,000 ohms)
1	W-6742	Filter Choke	1	W-4921	Fixed Resistance (10,000 ohms)
1	W-5654	Gromet	1	W-4923	Fixed Resistance (80,000 ohms)
1	W-7167	Push Pull Trans.	1	W-4362	Plate Choke
1	W-5654	Gromet	1	W-6754	Fixed Condenser (.001 Mfd.)
1	W-7199	Speaker Terminal Assembly	1	W-6428	Fixed Condenser (2 1-2 Mfd.)
1	W-6010	Dial Light Support	1	W-7264-B	Volume Control
1	W-5750-A	Dial Light Socket	2	W-6471	Fixed Condenser (1-10 Mfd.)
1	W-7145	Antenna Coupler Assembly	1	W-7173	Fixed Resistance (25 Ohm)
2	W-6797	R. F. Trans. Assembly	2	W-7172	Fixed Resistance (6 Ohm)
1	W-7272-A	Tube Terminal Connection	1	W-6614	R. F. Coupling Choke
3	W-6436	Shields	1	W-4908	Fixed Condenser (1-2 Mfd.)
3	B-6473	Shield Cover	1	W-6471	Fixed Condenser (1-10 Mfd.)
3	W-6474	Shield Cover Nut	1	W-7158	R. F. Choke
1	W-7215-A	Tube Terminal Connection	1	W-4908	Fixed Condenser (1-2 Mfd.)
1	W-7053	A & G Terminal Board	1	W-6471	Fixed Condenser (1-10 Mfd.)
1	W-6068	Complete 3 Gang Variable Condenser Assembly (Including Drum Dial)	1	W-7158	R. F. Choke
1	B-6674-A	Dial Indicator Strip	1	W-4908	Fixed Condenser (1-2 Mfd.)
		<b>Parts On Gang Condenser Sold Separately</b>	1	W-4922	Fixed Condenser (.003 Mfd.)
	W-6068	Drive Pulley Sub Assembly	1	W-5842	Fixed Condenser (2-1 Mfd.)
	W-6047	Stirrup Assembly	1	W-7080	Switch Assembly
	W-6871	Drive Pulley	1	W-7059	Switch Only
	W-5506	Set Screw	1	W-7078	Bracket Sub Assembly
	W-6472	Pulley Bracket	1	W-7079-A	Shaft Sub Assembly
	H-5536	Hex Head Screw	1	W-7171	Connecting Link
	C-6673-B	Dial Drum	1	W-7080-A	Antenna Tap Switch Assembly
	W-6017	Set Screw		W-7075-A	Contact Sub Assembly
	W-5985-B	Tension Spring		W-7071-A	Base Sub Assembly
	W-5740	Drive Rope	1	W-6754	Fixed Condenser (.001 Mfd.)
	W-5719	Dial Drum Stop	3	W-4681	Gromets
	W-6874	Frame Cover	1	C-6940-B	Bottom
	W-5720-A	Rotor Thrust Collar	6	W-6570	Bottom Double Nut
	W-5504	8-32 Set Screw	1	W-6050-A	Fuse Cover
	W-4007	Spring Washer			
	W-6006	Contact Springs			



# Chassis Model 63

## ALIGNMENT PROCEDURE

Preliminary

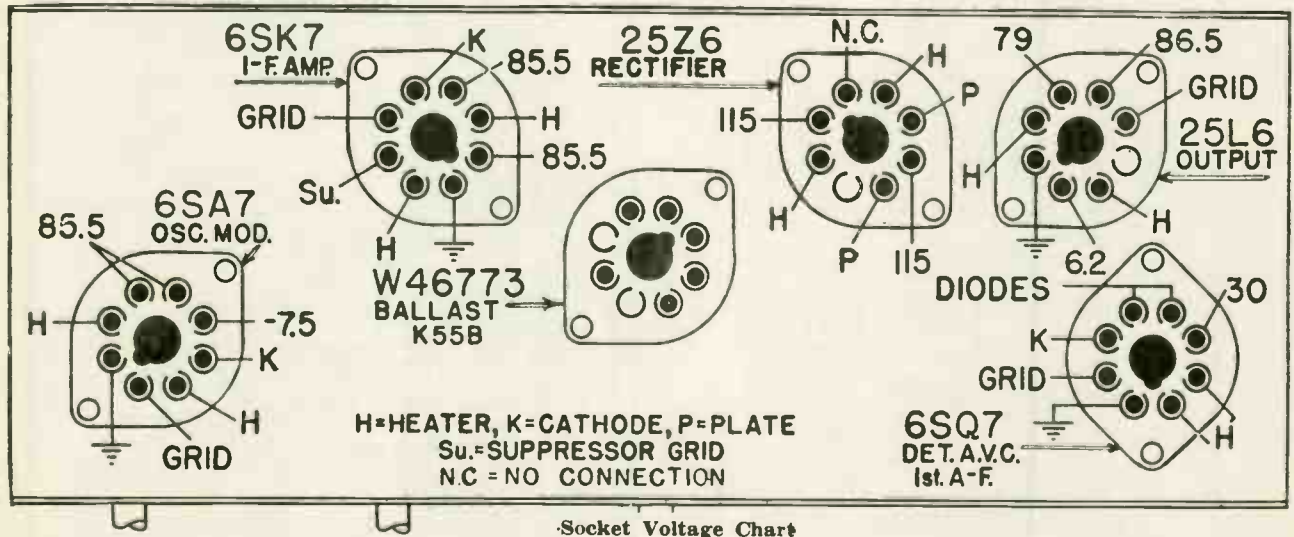
Output Meter Connections.....Plate and Screen 25L6GT  
 Generator Ground Connections.....See foot note (1)  
 Dummy Antenna in series with Generator output.....See Chart below  
 Position of Volume Control.....Fully on  
 Depress Manual Push-Button

## ALIGNMENT CHART

Signal Generator							
Sequence	Dummy Antenna	Frequency Setting	Input Connection for Radio	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.05 Mf.	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2	400 ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (rear section of tuning condenser)	Adjust for maximum output.
3	400 ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant." (center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5	.002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT" (rear trimmer right end of chassis)	Adjust for maximum output.

(1) Do not use a ground return from the signal generator unless it is found to be absolutely necessary.

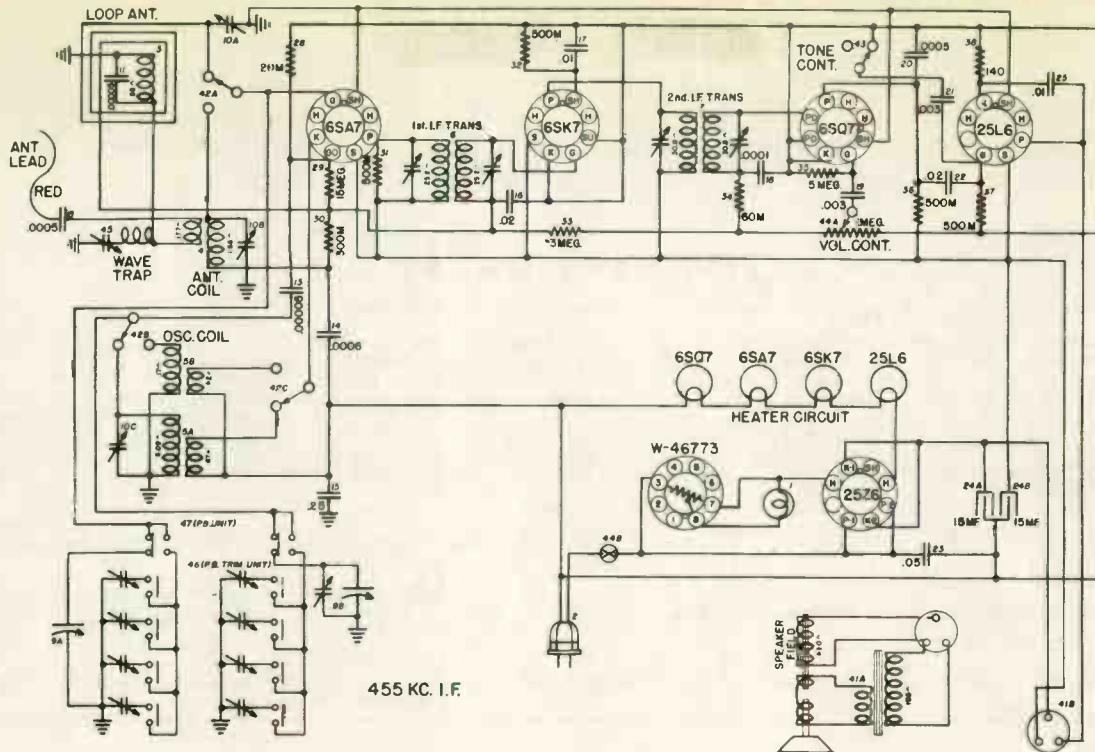
If necessary a small condenser (approx. a .001 mf.—400 Volt) should be connected in series with the ground lead of the generator and receiver chassis.



### WAVE TRAP W MODELS

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser set at approximately 60 on the dial and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Chassis Model 63



Item No.	Part No.	Description	Item No.	Part No.	Description
1	48858	Bulb, Dial Light—6.3 Volt		49733	P. B. "Osc." Padder Condenser (800-1,150 Kc.)
	49637	Socket Assy.—Dial Light		49733	P. B. "Ant." Padder Condenser (800-1,400 Kc.)
2	49775	Cable and Plug—Power		49732	P. B. "Osc." Padder Condenser (800-1,400 Kc.)
3	32448	Loop Assy.—Ant.		49732	P. B. "Ant." Padder Condenser (1,000-1,650 Kc.)
	49739	Bracket—Loop Mtg.		49732	P. B. "Osc." Padder Condenser (1,000-1,650 Kc.)
	20889	Fibre Washer—Loop Mtg.		49789	Bracket—For Mounting Padders
	43611	Screw No. 8—32 x 1/4"—Loop Mtg.		49764	P. B. Switch Only (No Buttons)
4	G221	Coil—H. F. Ant.		49731	Bracket—P. B. Unit Rear Mtg. (FS-8)
5A	G230	Coil—B. C. Osc.		49771	Bracket—P. B. Unit Front Mtg. (FS-8)
5B	G230	Coil—H. F. Osc.		49727	Bracket—Dial and P. B. Front Mtg. (FS-8)
6	G240	1st I. F. Trans.		49899	Rubber Grommet—P. B. Unit Mtg.
7	G242	2nd I. F. Trans.		46460	Beaded Bushing—P. B. Unit Mtg.
8	G3	Cond., 500 Mmf. Mica.		131588	Dial Face
9A	49737A	Var. Cond., Ant. Sect.		49770	Trimount Stud—Dial Face Mtg. (2 Req.) (FS-58)
9B	49737A	Var. Cond., Asc. Sect.		49780	Pointer—Dial Hand
10A	49722	Cond. Trim., B. C. Ant.		49665	Bearing—Drive Shaft (Riveted to Chassis)
10B	49722	Cond. Trim., H. F. Ant.		49741	Drive Shaft
10C	49722	Cond. Trim., B. C. Osc.		28032	Spring—Drive Shaft Retaining
11	G5	Cond., 50 Mmf. Mica.		G11	Drive Cord
12	G5	Cond., 50 Mmf. Mica.		51752	Spring—Drive Cord Tension
13	G5	Cond., 50 Mmf. Mica.		45580	Rubber Grommet—Gang Mtg. (3 Req.)
14	G21	Cond., 600 Mmf. Mica.		45620	Headed Bushing—Gang Mtg. (3 Req.)
15	47413	Cond., 25 Mf. 160 Volt Paper		O	Flat Washer—Gang Mtg. (3 Req.) (FS-58)
16	45780B	Cond., .02 Mf. 160 Volt Paper		130429	No. 8—32 x 1/4" Screw—Gang Mtg. (3 Req.) (FS-58)
17	23191B	Cond., .01 Mf. 400 Volt Paper		49674	8 Prong Tube Socket
18	G2	Cond., 100 Mmf. Mica.		49893	Tube Socket Insulator
19	50034	Cond., .003 180 Volt Paper		45738	Lock Plate—Power Cord
20	G3	Cond., 500 Mmf. Mica.		130033	Cabinet—Wood
21	50084	Cond., .003 160 V. Paper		130177	Back—Cabinet
22	45780B	Cond., .02 Mf. 160 V. Paper		S	No. 4 x 1/4" Wood Screw—Back Mtg. (FS-18)
23	45782B	Cond., .05 Mf. 120 V. A. C.		130034	Shipping Carton
24A	49664B	Cond., 15 Mf. 140 V. Elect.		46953	Knob—Volume—Tone—Tuning
24B	49664B	Cond., 15 Mf. 120 V. Elect.		41742	Spring—Knob Insert
25	23191A	Cond., .01 Mf. 400 V. Paper		49940	Push Button (7 Req.)
26				130078	Escutcheon and Lens—Dial Window
27				49917	Escutcheon—Call Letter Tab
28	36760	Res., 20,000 Ohms, 1/4 W. Ins.		130017	Light Deflector Felt
29	50671	Res., 15 Meg. Ohms, 1/4 W. Ins.		49970	Station Call Letter Tab Sheets
30	35601	Res., 300,000 Ohms, 1/4 W. Ins.		49951	Instruction Booklet
31	36322	Res., 500,000 Ohms, 1/4 W. Ins.		40541	Envelope Assy.—Instructions and Call Letters
32	36322	Res., 500,000 Ohms, 1/4 W. Ins.		130490	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Req.) (FS-58)
33	36322	Res., 500,000 Ohms, 1/4 W. Ins.		45020	Flat Washer—Chassis Mtg. (3 Req.) (FS-58)
34	3592R	Res., 60,000 Ohms, 1/4 W. Ins.		130334	Felt Pad—Mtg. Screw Cover
35	47131	Res., 5 Meg. Ohms, 1/4 W. Ins.		MG17	Bottom Cover Assy.
36	36322	Res., 500,000 Ohms, 1/4 W. Ins.		49770	Trimount Studs—Bottom Cover Mtg. (7 Req.)
37	36322	Res., 500,000 Ohms, 1/4 W. Ins.		130130	Bottom Cover (Insulator)
38	47512	Res., 140 Ohms, 1/4 W. Flex.		130376	Cabinet Protector Cloth
39					
40					
41A	G2	Speaker and Socket 6"			
41B	49797	Speaker Cable and Plug			
42A	49808A	Switch, B. C.			
42B	49808A	Switch, B. C.			
42C	49808A	Switch, B. C.			
43	46159	Switch, Tone Control			
44A	49774	Vol. Control, Imeg.			
44B	49774	Switch, Power			
45	G193	Wave Trap (TA 62W)			
46	MG9	P. B. Trimmer Cond. Unit			
47	49764	Push Button Unit			
	45979	Trimmer Cond. (Wave Trap)			
	49735A	P. B. "Ant." Padder Condenser (540-1,000 Kc.)			
	49734A	P. B. "Osc." Padder Condenser (540-1,000 Kc.)			
	49734A	P. B. "Ant." Padder Condenser (600-1,150 Kc.)			

# ALIGNMENT PROCEDURE— Chassis Model 64

## PRELIMINARY

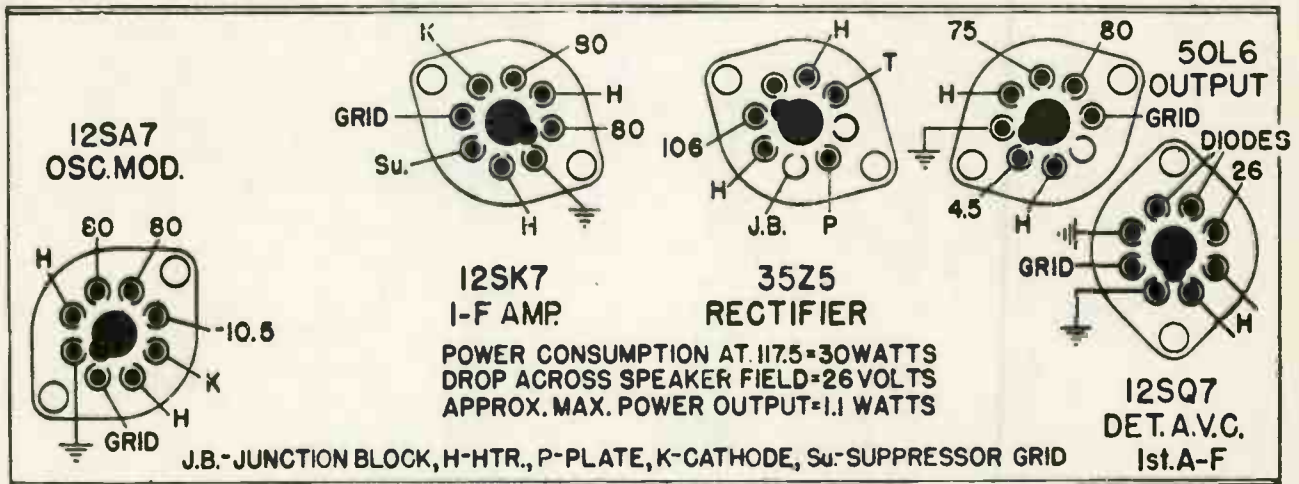
Output Meter Connections . . . . .	Plate and Screen 50L6GT
Generator Ground Connection . . . . .	See foot note (1)
Dummy Antenna in series with Generator Output . . . . .	See Chart below
Position of Volume Control . . . . .	Fully On

## ALIGNMENT CHART

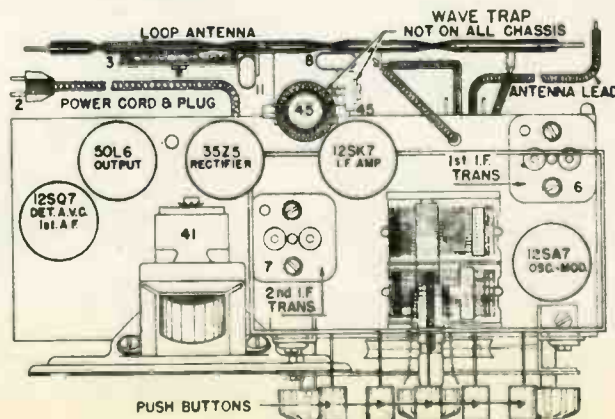
Sequence	SIGNAL GENERATOR			Band Switch	Tuning Cond. Setting	Trimmer Cond. Adjusted	Remarks
	Dummy Antenna	Frequency Setting	Input Connection To Radio				
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully on	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (Rear section tuning cond.)	Adjust for maximum output.
3.	400 Ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "ANT" (Center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully on	B. C. "OSC" (Front trimmer right end of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on dial	B. C. "ANT" (Rear trimmer right end of chassis)	Adjust for maximum output.

## IMPORTANT ALIGNMENT NOTES

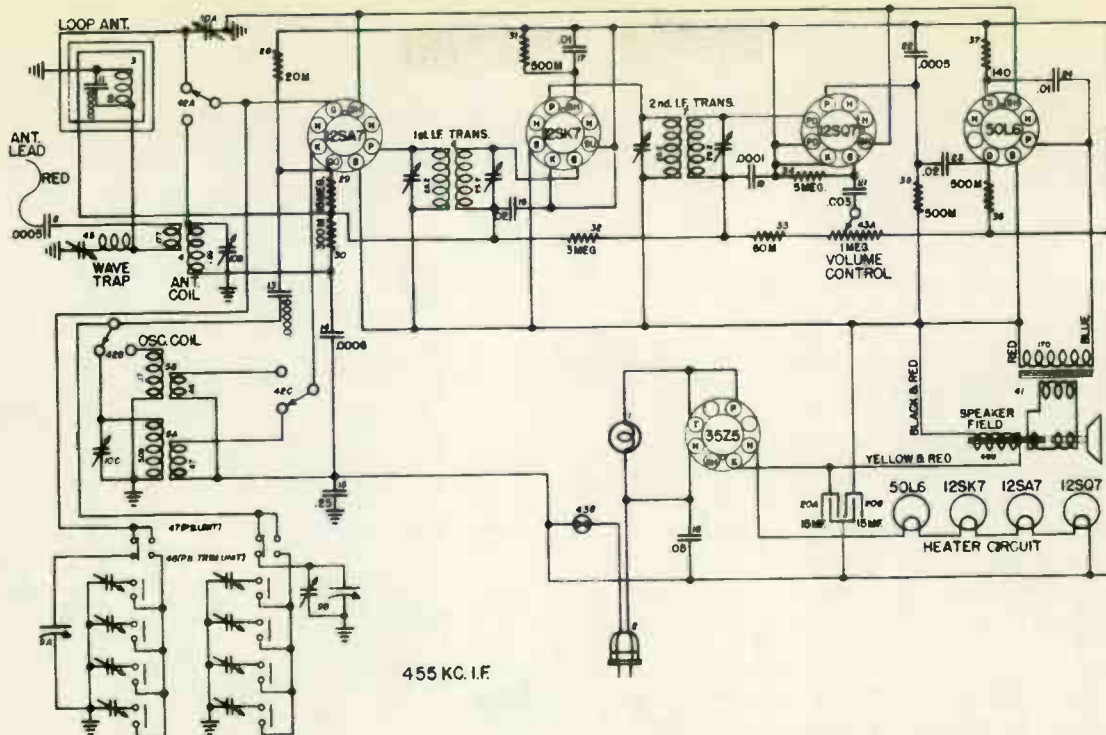
(Foot Note) (1). Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (approx. .001 mf. 400 V) should be connected in series with the ground lead of the generator and receiver chassis.



**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**



Chassis Model 64



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—49859	Bulb Dial Light—8.3 Volt	—49734A	Push Button "Osc" Padder (540-1,000 Kc.)	
2	—49637	Socket Assy—Dial Light	—49734A	Push Button "Ant." Padder (600-1,150 Kc.)	
3	—49775	Cable and Plug (Power)	—49733	Push Button "Osc." Padder (600-1,150 Kc.)	
	—45738	Insulating Lock Plate—Pwr. Cord	—49733	Push Button "Ant." Padder (800-1,400 Kc.)	
3	G1	Loop Assy.—Ant.	—49732A	Push Button "Osc." Padder (800-1,400 Kc.)	
	—49730	Brkt—Loop Mtg.	—49732A	Push Button "Ant." Padder (1,000-1,650 Kc.)	
	—20989	Fibre Washer—Loop Mtg.	—49732A	Push Button "Osc." Padder (1,000-1,650 Kc.)	
	—23880	Thumb Screw—Loop Mtg.	—49769	Push Button Padder Mtg. Strap	
4	G221—32000	Coil H.F. Ant.	—49771A	Push Button Bracket—Switch Mtg. (FS-8)	
5A	G230—32002	Coil E.C. Osc.	—49731	Push Button Rear Support Bracket (FS-8)	
6B	G230—32002	Coil H.F. Osc.	—49728	Push Button—L. H Support Brkt. (Front) (FS-8)	
6	G240—32004	1st I.F. Trans.	—49727A	Push Button—R. H Support Brkt. (Front) (FS-8)	
7	G242—32004	2nd I.F. Trans.	—49889	Rubber Grommet—P. B. Mtg. (3 Req.)	
8	G3—34002	Cond. 500 Mmf. Mica	—46460	Headed Bushing—P. B. Mtg. (3 Req.)	
9A	—49737A	Var. Cond. Ant. Sect.	L-8	Shakeproof Washer—P. B. Mtg. (2 Req.)	
9B	—49737A	Var. Cond. Osc. Sect.	—6097	No. 8—32 x 1/4" Screw—Rear Mtg. to P. B. Assy (FS-58)	
10A	—49722	Cond. Trim. B.C. Ant.	—131588	Dial Face	
10B	—49722	Cond. Trim. H.F. Ant.	—49780	Pointer—Dial Hand	
10C	—49722	Cond. Trim. B.C. Osc.	—49770	Trimount Stud—Dial Face Mtg. (FS-58)	
11	G5—34002	Cond. 50 Mmf. Mica	—49727	Screw—Dial Face Mtg.	
12			—49665	Bearing—Drive Shaft (Riveted to Chassis)	
13	G5—34002	Cond. 50 Mmf. Mica	—49741	Drive Shaft	
14	G21—34002	Cond. 600 Mmf. Mica	—28032	Spring—Drive Shaft Retaining	
15	—47413	Cond. 25 Mf. 160 V. Paper	G11	41582 Drive Cord	
16	—45780B	Cond. .02 Mf. 160 V. Paper	—51752	Spring—Drive Cord Tension	
17	—23191A	Cond. .01 Mf. 400 V. Paper	—49098	Cabinet	
18	—45782B	Cond. .05 Mf. 120 V. A.C.	—130174	Cabinet Back—AD Cabinet	
19	G2—34002	Cond. 100 Mmf. Mica	8	80 Wood Screws—Back Mtg. (FS-18)	
20A	—49684B	Cond. 15 Mf. 140 V. Elect.	—130334	Felt Pad (Mtg. Screw Cover)	
20B	—49684B	Cond. 15 Mf. 120 V. Elect.	—130001	Shipping Carton	
21	—50084	Cond. .003 Mf. 160 V. Paper	—46953	Knob—Tuning and Volume Control	
22	G3—34002	Cond. 500 Mmf. Mica	—41742	Spring—Knob Insert	
23	—45780B	Cond. .02 Mf. 160 V. Paper	—46940	Push Button only (6 Req.)	
24	—23191A	Cond. .01 Mf. 400 V. Paper	—49870	Station Call Letter Tab Set	
25			—130017	Light Deflector Felt	
26			—49817	Escutcheon—Call Letter Tab	
27			—130078	Escutcheon and Dial Lens complete	
28		Res. 20,000 Ohms 1/4 W. Ins.	—130490	No. 8—32 x 1/4" Screw—Chassis Mtg. (3 Req.)	
29		Res. 15 Meg. Ohms 1/4 W. Ins.	L-8	Washer—Chassis Mtg. (3 Req.)	
30	—50671	Res. 300,000 Ohms 1/4 W. Ins.	—49947A	Instruction Book	
31	—36322	Res. 500,000 Ohms 1/4 W. Ins.	—40541	Instructions, Call Tabs, etc., Envelope Assy.	
32	—36688	Res. 3 Meg. 1/4 W. Ins.	MG17—130115	Bottom Assy.	
33	—35928	Res. 60,000 Ohms 1/4 W. Ins.	—130130	Insulator—Bottom Cover	
34	—47131	Res. 5 Meg. Ohms 1/4 W. Ins.	—49770	Trimount Stud—Bottom Cover (7 Req.) (FS-58)	
35	—36322	Res. 500,000 Ohms 1/4 W. Ins.			
36	—36322	Res. 500,000 Ohms 1/4 W. Ins.			
37	—47512	Res. 140 Ohms 1/4 W. Flex.			
38					
39					
40					
41	G1	—49688 Speaker 5"			
42A	—49808A	Switch—B. C.			
42B		Switch—B. C.			
42C		Switch—B. C.			
43A	—49774	Vol. Control 1 Meg.			
43B		Switch—Power			
44					
45	G193—32004	Wave Trap (TK52W).			
46	MG9—49709	P. B. Trimmer Cond. Unit.			
47	B—49764	Push Button Unit.			
	—45679	Trimmer Cond. (Wave Trap).			
	MG8—49709	Push Button Condenser and Switch Assy.			
	—49735A	Push Button "Ant." Padder (640-1,000 Kc.)			

## Chassis Model 65-J-W

### ALIGNMENT PROCEDURE

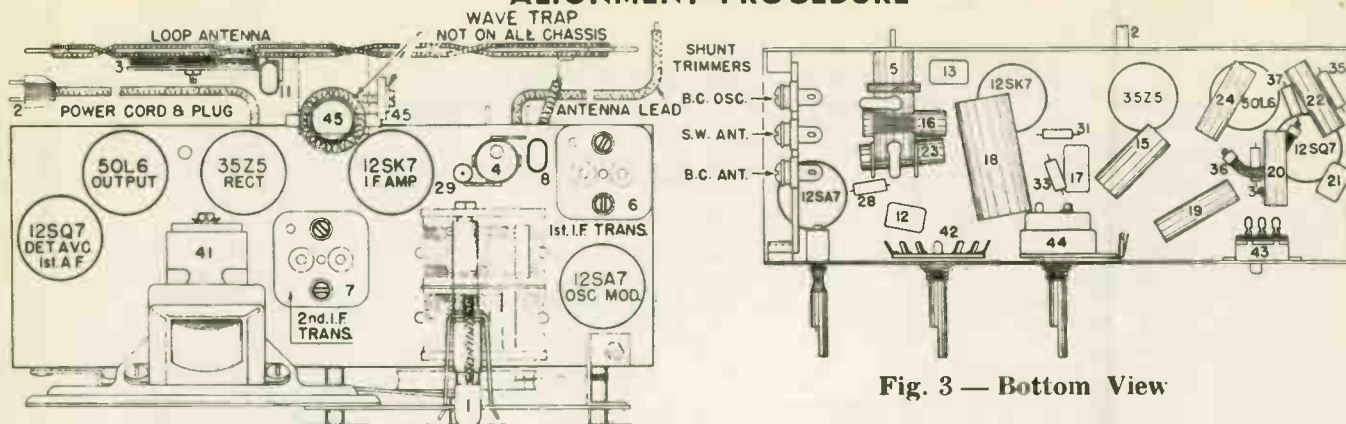


Fig. 3 — Bottom View

#### 1.—Aligning I-F TO 455 Kc. Fig. 2

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.

(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 2) for maximum output.

(e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 2) for maximum output.

(f) Repeat (d) and (e) for more accurate adjustments.

#### 2.—Aligning R-F Amplifier.

The short wave band 6-15 mc., must be aligned before the Broadcast Band 540-1600 kc.

(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band switch to S. W. (right) and open tuning condenser all the way.

(b) Set signal generator to 15.0 megacycles.

(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.

(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis).

NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.

(e) Repeat (c) and (d) for more accurate adjustments.

(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.

(g) Set the signal generator to 1650 kilocycles.

(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 2, for maximum output.

(i) Set signal generator to 1400 kilocycles.

(j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 2, for maximum output.

(k) Repeat (h) and (j) for more accurate adjustments.

#### WAVE TRAP — 65W Chassis Only

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram.

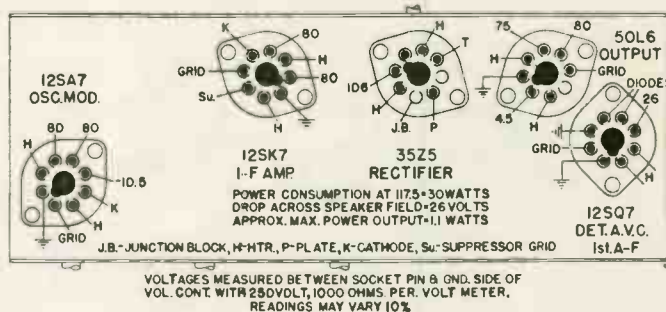


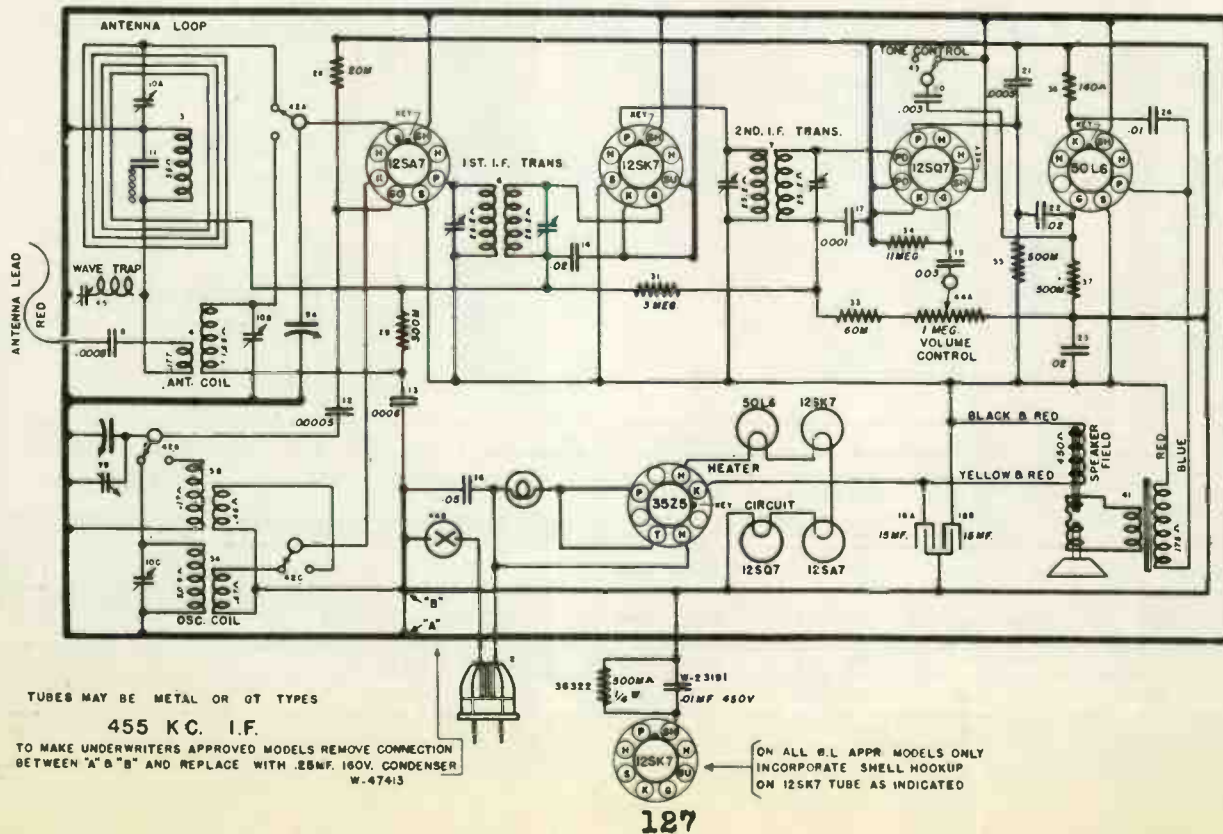
Fig. 4 — Socket Voltage Chart

# PARTS LIST, MODELS TH52, TH52W, TH52J CHASSIS MODEL 65

Figures in first column refer to parts in Diagrams.

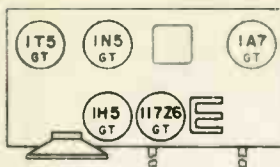
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light—6.3 Volt	40	None	
	—49636	Socket Assy.—Dial Light	41	G1 —49698	Speaker
2	—49775	Power Cord and Plug		G3 —49698	Speaker
3	G1 —32008	Loop Antenna	42	—49808	Band Change Switch
4	G221—32000	Antenna Coil—6-15 Mc.	43	—46159	Tone Switch
5	G230—32002	Dual Oscillator Coil A—550 to 1,600 Kc. Coil B—6.0 to 15.0 Mc. Coil		—131516	Handle
				—49161	Handle Screws
6	G240—32004	1st I-F. Assy.—455 Kc.	44	—49774	Volume Control (1 Meg.) and Line Sw.
7	G241—32004	2nd I-F. Assy.—455 Kc.	45	G193—32004	Wave Trap—Model W-52
8	G3 —34002	Condenser, .0005 Mf. Mica		—47413	Condenser, .25 Mf. 160 V.—Model J-53
9	—49737	Condenser—Variable Tuning Gang.		—23191	Condenser, .01 Mi. 400 V.—Model J-53
10	—49722	Condenser—3 Section Shunt Trimmer		—36322	Resistor, 500,000 Ohms—Model J-53
11	G5 —34002	Condenser, .00005 Mf. Mica		—131588	Dial Face
12	G5 —34002	Condenser, .00005 Mf. Mica		—130445	Bracket—Dial Face Mtg. (R. H.)
13	G21—34002	Condenser, .00060 Mf. Mica		—49741	Drive Shaft (With Pulley)
14	None			—49665	Bearing—Drive Shaft (Riveted to Chassis)
15	—45782	Condenser, .05 Mf. 120 V.		—28032	Spring—Shaft Retaining
16	—45780	Condenser, .02 Mf. 160 V.		G11 —41582	Drive Cord
17	G2 —34002	Condenser, .0001 Mf. Mica		—51572	Spring—Drive Cord Tension
18	—49664	Condenser—Dual Electrolytic A—15 Mf. 140 V. B—15 Mf. 120 V.		—49780	Pointer—Dial Hand
				—49832	Celluloid Dial Lens
19	—50084	Condenser, .0003 Mf. 160 V.		BK —48758	Cabinet—Ivory Bakelite
20	—50084	Condenser, .003 MF. 160 V.		—46953	Trimount Stud—Back Mtg. (4) (FS-18) (FS-18)
21	G3 —34002	Condenser, .0005 Mf. Mica		MG17—130115	Knobs—Tuning, Volume Control and Tone Control
22	—45780	Condenser, .02 Mf. 160 V.		—130127	Bottom Cover Assy.—Model TH52
23	—45780	Condenser, .02 Mf. 160 V.		—130130	Switch Hole Cover—Model TH52
24	—23191	Condenser, .01 Mf. 400 V.		—49878	Bottom Cover (Insulator) Model TH52
25	None			—131940	Hole Plug—Model TH52
26	None			—130097	Cabinet
27	None			S —80	Back—Cabinet
28	—36760	Resistor, 20,000 Ohms 1/4 W.		—130552	Screw—AE Back Mtg. (10) (FS-18)
29	—35601	Resistor, 300,000 Ohms 1/4 W.		—46953	Shipping Carton—Cabinet
30	None			—41742	Knob—Tuning—Band Switch—Volume Control
31	—36688	Resistor, 3 Megohms 1/4 W.		—49872	Spring—46953 Knob Insert
32	None			—49770	Knob—(Tail) Tone Control
33	—35928	Resistor, 60,000 Ohms 1/4 W.		—49284	Trimount Stud—Bottom Cover Mtg. (7)
34	—48693	Resistor, 11 Megohms 1/4 W.			Short Wave Station Chart
35	—36322	Resistor, 500,000 Ohms 1/4 W.			
36	—47512	Resistor, 140 Ohms 3/4 W.			
37	—36322	Resistor, 500,000 Ohms 1/4 W.			
38	None				
39	None				

## WIRING DIAGRAM — MODELS TH52 — TH52W — TH52J Chassis Model 65

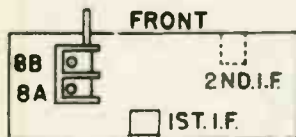


# SERVICE INFORMATION — Model 67 Chassis

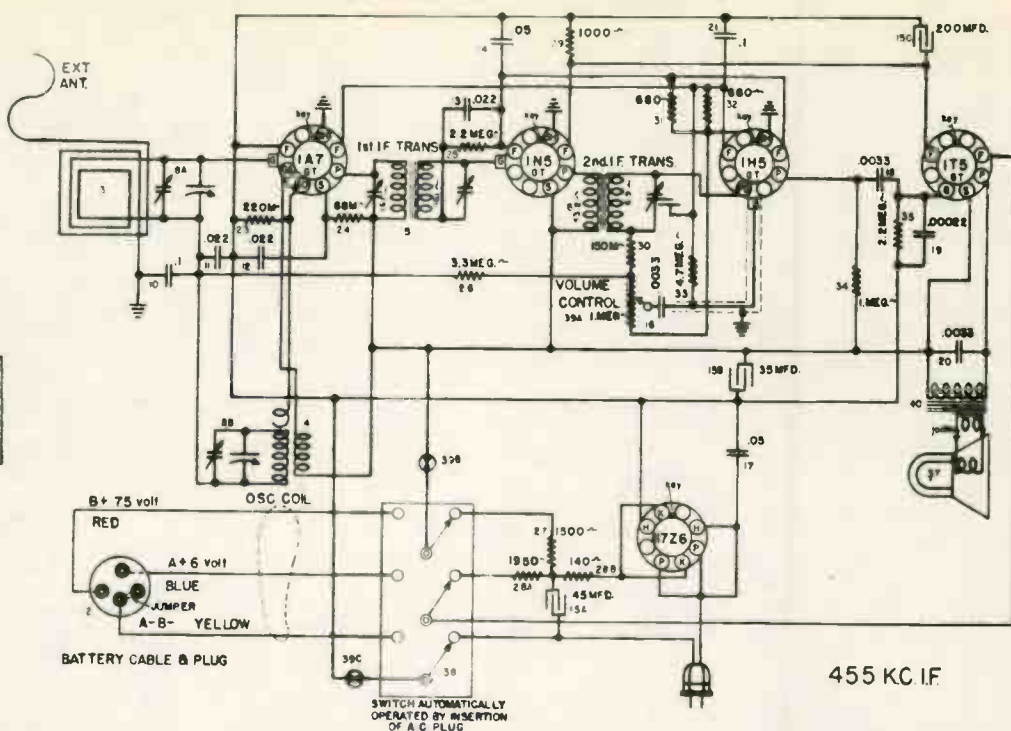
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—132300-3	A.C. Cable and Plug		—44392	Screw
2	—132165-1	Battery Cable and Plug		—30409	Flat Washer
3	GB—132196-1	Loop Antenna		—132194	Baffle
4	G268—32002	Osc. Coil	38	—132161-1	Triple Pole O.T. Switch
5	G268—32004	1st I.F. Trans.		—132212-1	Switch Sticker
6	G268—32004	2nd I.F. Trans.	39A	B—130520-1	Volume Control 1 Meg.
7		None	39B		S.P.S.T. Switch on V.C.
8A	C—132168-2	Var. Cond. R.F. Section	39C		S.P.S.T. Switch on V.C.
8B		Var. Cond. Osc. Section	40	B—132197-1	Output Trans.
9	NONE			—132276	Handle—Top Grain Leather
10	G67—39001	Cond. .1 Mfd. 200 V.		—132279	Handle Bracket (2)
11	G63—39001	Cond. .022 Mfd. 200 V.		—132277	Handle Bracket Split Rivets (4)
12	G63—39001	Cond. .022 Mfd. 200 V.		—132278	Handle Bracket Split Rivets (2)
13	G63—39001	Cond. .022 Mfd. 200 V.		—132181-1	Rivet, Split Shoulder (2) in Chassis Shelf
14	G65—39001	Cond. .05 Mfd. 200 V.		—132272	Back Panel
15A	B—132144-1	Cond. 45 Mfd. Elect.		—132179-1	Back Clamp (2)
15B		Cond. 35 Mfd. Elect.		—132275	Back Clamp Rivets (2)
15C		Cond. 200 Mfd. Elect.		—132180-1	Back Plate (2)
16	G10—39001	Cond. .0033 Mfd. 600 V.		—132274	Back Plate Rivets (4)
17	G65—39001	Cond. .05 Mfd. 200 V.		—132273	Metal Feet Glides (4)
18	G10—39001	Cond. .0033 Mfd. 600 V.		—132153	67 Chassis Assem.
19	G9—39001	Cond. .0022 Mfd.		—132175-1	Cabinet
20	G10—39001	Cond. .0033 Mfd. 600 V.		—132176-1	Carton
21	G67—39001	Cond. .1 Mfd. 200 V.		—132193-1	Cab. Front and Lens
22	NONE			—132173-1	Dial Face
23	G21—39002	Res. 220 M Ohm 1/4 W.		NONE	Dial Mtg. Brkts.
24	G18—39002	Res. 68 M Ohm 1/4 W.		—132073-1	Knob—Tuning
25	G27—39002	Res. 1.3 Meg. Ohm 1/4 W.		—132073-2	Knob—V. C.
26	G28—39002	Res. 2.2 Meg. Ohm 1/4 W.		—48720A	"ON" Indicator
27	G8—39002	Res. 1500 Ohm 1/4 W.		—132183-1	Speed Nut
28A	—132159-1	Res. 1900 Ohm Candohm		—132119-2	Drive Shaft
28B		Res. 140 Ohm		—132206-1	Dial Pointer
29	G7—39002	Res. 1000 Ohm 1/4 W.		G—132167-2	Drive Shaft Retaining Spring
30	G20—39002	Res. 150 M Ohm 1/4 W.		—51752	Drive Cord Assy.
31	G6—39002	Res. 680 Ohm 1/4 W.		—132028	Drive Cord Spring
32	G6—39002	Res. 680 Ohm 1/4 W.		—132123	Drive Cord Rivet
33	G29—39002	Res. 4.7 Meg. Ohm 1/4 W.		—46447	Sockets
34	G25—39002	Res. 1 Meg. Ohm 1/4 W.		NONE	Tube Shields
35	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.		—49770	Speaker Cable or Leads
36	NONE				Trinount Studs
37	—130446-3	Speaker			

### ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

#### SIGNAL GENERATOR

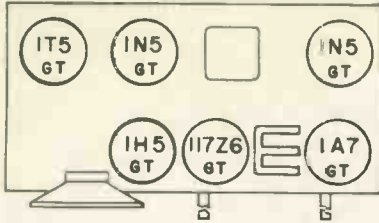
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments.  
Maximum power output @ 75 V. "B" — approx. 200 M. W.  
undistorted

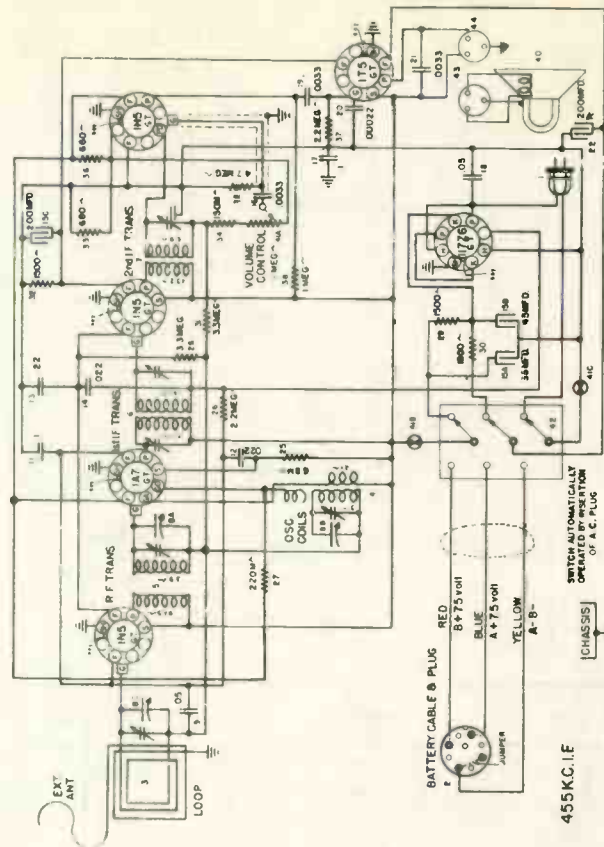
A Battery drain @ 6 volts. .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
Power consumption @ 117.5 volts line — 20 Watts

# SERVICE INFORMATION — Model 68 Chassis

**TUBE LAYOUT**



**WIRING DIAGRAM**



**PARTS LIST — MODELS 62-PA AND 62-PB**

Item No.	Part No.	Description
1	—49775	Power Cable and Plug
2	—132205-1	Battery Cable and Plug
3	GB—132196-1	Loop Antenna Assem.
4	G623—32002	Osc. Coil
5	G116—32001	R. F. Trans.
6	G268—32004	1st I.F. Trans.
7	Wd. Scr. (5)	2nd I.F. Trans.
8A	—132168-1	Var. Cond. R. F. Section
8B		Var. Cond. Osc. Section
8C		Var. Cond. Ant. Sect.
9	G65—39001	Cond. .05 Mf. 200 V.
10	None	
11	G67—39001	Cond. .1 Mf. 200 V.
12	G63—39001	Cond. .022 Mf. 200 V.
13	G69—39001	Cond. .22 Mf. 200 V.
14	G63—39001	Cond. .022 Mf. 200 V.
15A	—132144-1	Cond. 35 Mfd. Electro
15B		Cond. 45 Mfd. Electro
15C		Cond. 200 Mfd. Electro
16	G10—39001	Cond. .0033 Mf. 600 V.
17	G67—39001	Cond. .1 Mf. 200 V.
18	G65—39001	Cond. .05 Mf. 200 V.
19	G10—39001	Cond. .0033 Mf. 600 V.
20	G9—39004	Cond. .00022 Mf.
21	G10—39001	Cond. .0033 Mf. 600 V.
22	None	
23	None	
24	None	
25	G18—39002	Res. 68 M Ohm 1/4 W
26	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.
27	G21—39002	Res. 220 M Ohm 1/4 W
28	G28—39002	Res. 3.3 Meg. Ohm 1/4 W.
29	G8—39002	Res. 1500 Ohm 1/4 W.
30	—132502-1	Res. 1900 Ohm Candohm
31	G28—39002	Res. 3.3 Meg. Ohm 1/4 W.
32	G8—39002	Res. 1500 Ohm 1/4 W.
33	G6—39002	Res. 680 Ohm 1/4 W.
34	G20—39002	Res. 150 M Ohm 1/4 W
35	G29—39002	Res. 4.7 Meg. Ohm 1/4 W
36	G6—39002	Res. 680 Ohm 1/4 W.
37	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.
38	G25—39002	Res. 1 Meg. Ohm 1/4 W
39	None	
40	—132670-2	Speaker—PA and PB
41A	—44392	Screw—Speaker, PA and PB
41B	—30409	Flat Washer
41C	—132194-2	Baffle
42	—130520-1	Volume Control 1 Meg S.P.S.T. Switch
43	—132160-1	Switch Assem.
	—132212-1	Switch Sticker
	—132822-1	Speaker Cable
	—132276	Handle—62 PA and 62-PB
	—132421	Handle—Bracket Gold (62 PA)
	—132420	Handle—Bracket Rivet (62 PA)
	—132279	Handle—Bracket, 62 PA
	—132278	Handle—Bracket Rivet (62-PA)
	—132132	Handle—Bracket Rivet (62-PB)
	—132277	Handle—Bracket Rivet (62-PA)
	—132289	Door Catch (62 PA) on 6u door
	—132290	Screw—Door Catch No. 3x3/8 Rd.
	—132423	Hd. Wd Scr (5) Door Catch (62 PB) on ea. door
	—132507	Screw—Door Catch (5)
	—132508	Back Lid—PA
	—132286	Back Lid—PB
	—132425	Back Lid Hinge—PA
	—132258	Back Lid Hinge—PB
	—132426	Back Lid Hinge Rivet (4)—PA
		Back Lid Hinge Rivet (4)—PB

Item No.	Part No.	Description
	132294	1 Rubber Foot—Black (4)
	132509	Front Lid—PA
	132510	Front Lid—PB
	—132287	Front Lid Slip Hinge (2)—PA
	—132424	Front Lid Slip Hinge (2)—PB
	132288	Front Lid Slip Hinge Split Rivet (4)—PA
		Front Lid Slip Hinge Split Rivet (4)—PB
	—132181-1	Split Shoulder Rivet (2) in Chassis Shelf
	132203	68 Chassis Assem.
	132210-1	Cabinet—PA
	—132210-2	Cabinet—PB
	132211-1	Carton—PA and PB
	—132194-2	Cabinet Front and Lens.
	132177-1	Chassis Mtg. Clip
	132178	Chassis Mtg. Clip Speed Nut
	132193-2	Cab. Front and Lens
	—132173-1	Dial Face
	132206-1	Dial Pointer
	—132073-3	Knob (PA and PB)
	—132073-2	Knob (PA and PB)
	—48720-A	"Off" Indicator
	—132183-1	Speed Nut
	—132119-2	Drive Shaft
	—132167-2	Drive Cord Assy.
	—51752	Drive Cord Spring Assem.
	133028	Drive Cord Rivet
	132125	Sockets
	46447	Tube Shield
	—49770	Trimount Studs
	—132205	Battery Cable

**ALIGNMENT PROCEDURE**

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

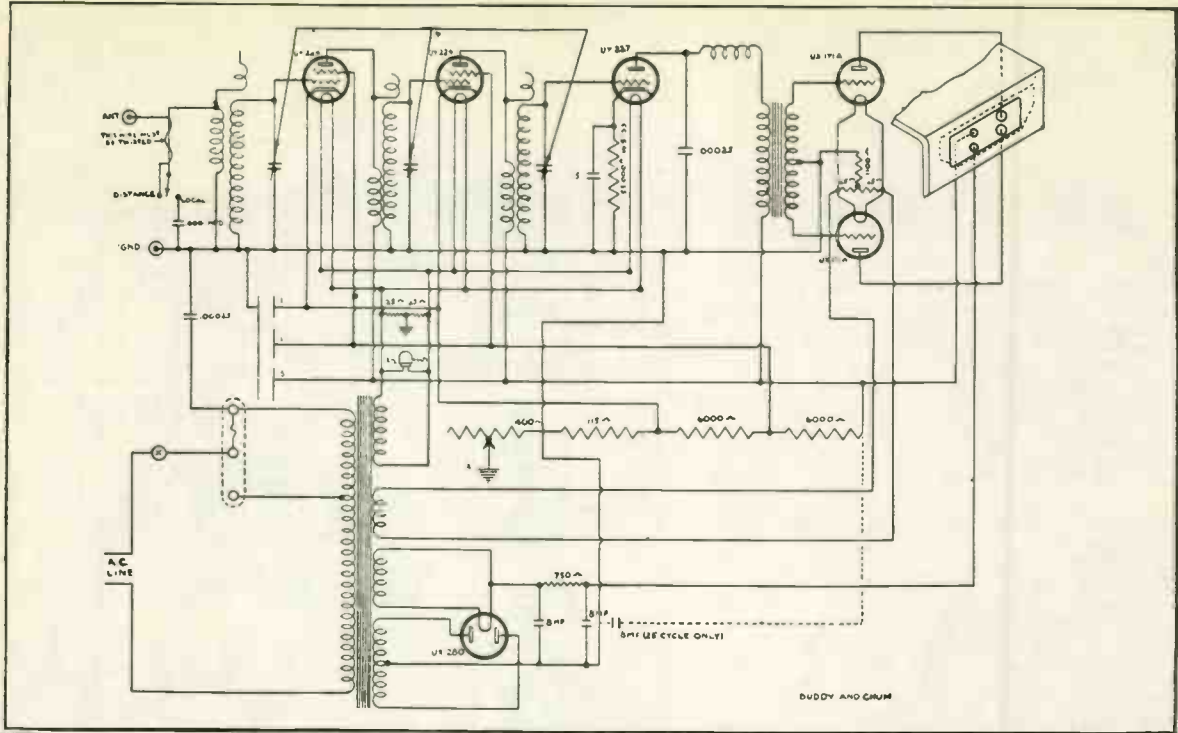
SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F (1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 75 V. "B" — approx. 200 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ Power consumption @ 117.5 volts line — 25 Watts



# BUDDY and CHUM, CHASSIS MODEL 706



Qty.	Part No.	Description	Qty.	Part No.	Description
1	B-7901	Chassis .....			
1	W-7854	Cover (socket) .....			
1	W-6590	Push-pull transformer .....			
3	W-7020	Socket (4 prong) .....			
2	W-7291	Socket Guide (171-A) .....			
1	W-7057	Socket Guide (280) .....			
3	W-7021	Socket (5 prong) .....			
3	W-7125	Socket Guide .....			
12	M-20	.120 x 7-32 tubular rivet .....			
1	W-7740	R. F. transformer (antenna) .....			
2	W-7741	R. F. Transformer (inter-stage) .....			
2	W-7272-A	Tube Connections .....			
6	L-6	No. 6 Lockwashers .....			
6	N-5062	6-32 Hex. Nuts .....			
1	B-7278-A	R. F. Coil Shield (Detector) .....			
2	B-7279-A	R. F. Coil Shield .....			
1	W-7072	R. F. Shield Assem. (large) .....			
1	W-5916-A	Dial Light Clip .....			
1	B-7074	Shield Cover .....			
2	W-6474	Shield cover nut .....			
1	W-5750-B	Dial Light socket (without lamp) .....			
1	W-7704	Grommet .....			
1	W-7083	Variable Condenser gang assembly complete .....			
1	W-7154	Dial Gear .....			
1	W-5354-D	Dial Indicator .....			
1	W-7153	Dial Spider .....			
1	W-7870	3-32 x 5-8 Groove Pin .....			
1	W-5442	Pinion (Set Screw W-2326) .....			
1	W-5495	Pinion Washer .....			
1	W-7157-A	Pinion Spring .....			
1	W-7155	Pinion Bracket .....			
1	W-7156-B	Stop Bracket .....			
1	W-4907	Spring washer .....			
1	W-5720-A	Rotor thrust collar .....			
1	W-5596	8-32 S. H. Set Screw .....			
2	W-6966-B	Springs (Rotors) .....			
1	W-4943-A	Mershon Condenser .....			
1	W-5253	Mershon Condenser (In 25 cycle units) .....			
1	W-4946-E	Condenser Cap .....			
1	W-4794	1-4" Stiffened sleeving (5 3-4" long) .....			
2	W-5033	Mounting clamps .....			
1	W-7751	Power Transformer 110 v. 60 cycle .....			
	7768	110 v. 25 cycle .....			
	7769	220 v. 25 cycle .....			
1	W-7496	Transformer shield .....			
					<b>PARTS UNDER CHASSIS</b>
1	W-4362-D	Plate Choke Assembly .....			
1	W-4076	Spacer .....			
1	W-4924	.00025 M. F. Fixed Condenser .....			
1	W-5753	55000 ohm resistance .....			
1	W-5713	Terminal Strip .....			
2	W-2478	Spacers .....			
1	W-4968	1-2 mfd. 2 paper fixed condenser .....			
1	W-4502	No. 6 Snakeproof Lug .....			
1	W-7424	Speaker terminal .....			
1	W-7430	Terminal Guide .....			
1	W-7640	Volume Control (400 Ohms) .....			
1	W-6703	6000 Ohm Resistance .....			
1	W-5713	Terminal Strip .....			
1	W-7752	115 Ohm Resistance .....			
2	W-3547	Spacers .....			
1	W-7753-A	.1 - .5 - .1 Mfd. Fixed Condenser .....			
1	W-6703	6000 Ohm Resistance .....			
1	W-5713	Terminal Strip .....			
1	W-20149	750 Ohm Fixed Resistance (Armored) .....			
1	W-7740	750 Ohm Fixed Resistance (used in first series) .....			
1	W-7876	1100 Ohm Fixed Resistance .....			
2	W-5864	Spacers .....			
1	W-7838	Terminal Board (Aerial & Ground) .....			
1	W-7059	Switch (Power) .....			
1	W-7079-E	Shaft Assembly .....			
1	W-7078-C	Bracket .....			
1	W-7192	Spacer .....			
1	W-7857-A	Switch (L-D) .....			
1	W-7865	Switch Bracket .....			
1	W-7866	Connecting Link .....			
1	W-7847	.0001 Mfd. Fixed Condenser .....			
2	W-5669	25-25 Ohm Fixed Potentiometer .....			
2	W-4476	Spacers (5-32) .....			
2	W-5864	Spacers (15-32) .....			
1	W-6587	Fuse panel .....			
1	W-7012	Fuse (1 amp.) .....			
1	W-4924	.00025 M. F. Fixed Condenser .....			
1	B-6867	Cable .....			
1	W-7704	Grommet .....			
1	W-4751-B	Cable Clamp .....			
1	W-5063	Rubber Tubing 1-2" long .....			
3	W-5654	Grommet (3-4") .....			
1	W-20053	Chassis Bottom .....			
6	W-5718-A	Bottom Double Nut .....			

# CHASSIS MODEL No. 70

## ALIGNMENT PROCEDURE

### Preliminary

Output Meter Connections.....	Plate to Plate of 6AC5G's
Generator Ground Connection.....	To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Master Tone Control.....	All Buttons Out

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear sec- tion of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rock- ing gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0	Pol "ANT" Trimmer	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

### TUBE VOLTAGE CHART

\* SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SA7—Converter.....		Gnd.	Gnd.	180	74	0	{0. S. W. 4.0 B. C.}	6.3 A. C.	0
6SK7—I. F. Amplifier.....		Gnd.	Gnd.	Gnd.	0	Gnd.	74	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.....		Gnd.	0	Gnd.	0	0	75	6.3 A. C.	Gnd.
6J5GT—Phase Inverter.....		Gnd.	Gnd.	145	J. B.	0	J. B.	6.3 A. C.	40
6J5GT(2)—P. P. A. F. Drivers.....		Gnd.	Gnd.	180	0	0	J. B.	6.3 A. C.	6.5
6AC5GT(2)—P. P. Output.....		Gnd.	Gnd.	304	J. B.	6.5	J. B.	6.3 A. C.	Gnd.
5Y3G—Rectifier.....		N. C.	310	J. B.	308 A. C.	J. B.	308 A. C.	J. B.	310

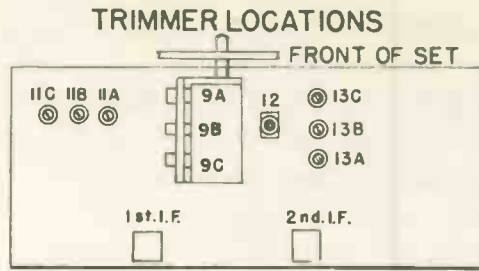
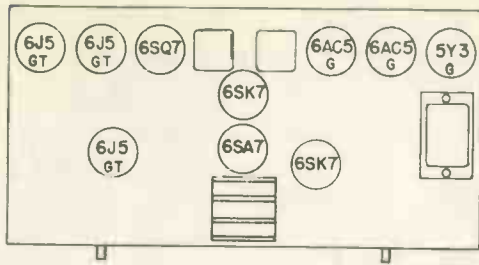
MAX. POWER OUTPUT..... 12.0 WATTS  
 POWER CONSUMPTION..... 90 WATTS  
 DROP ACROSS SPEAKER FIELD..... 120 VOLTS

J. B.—Junction Block

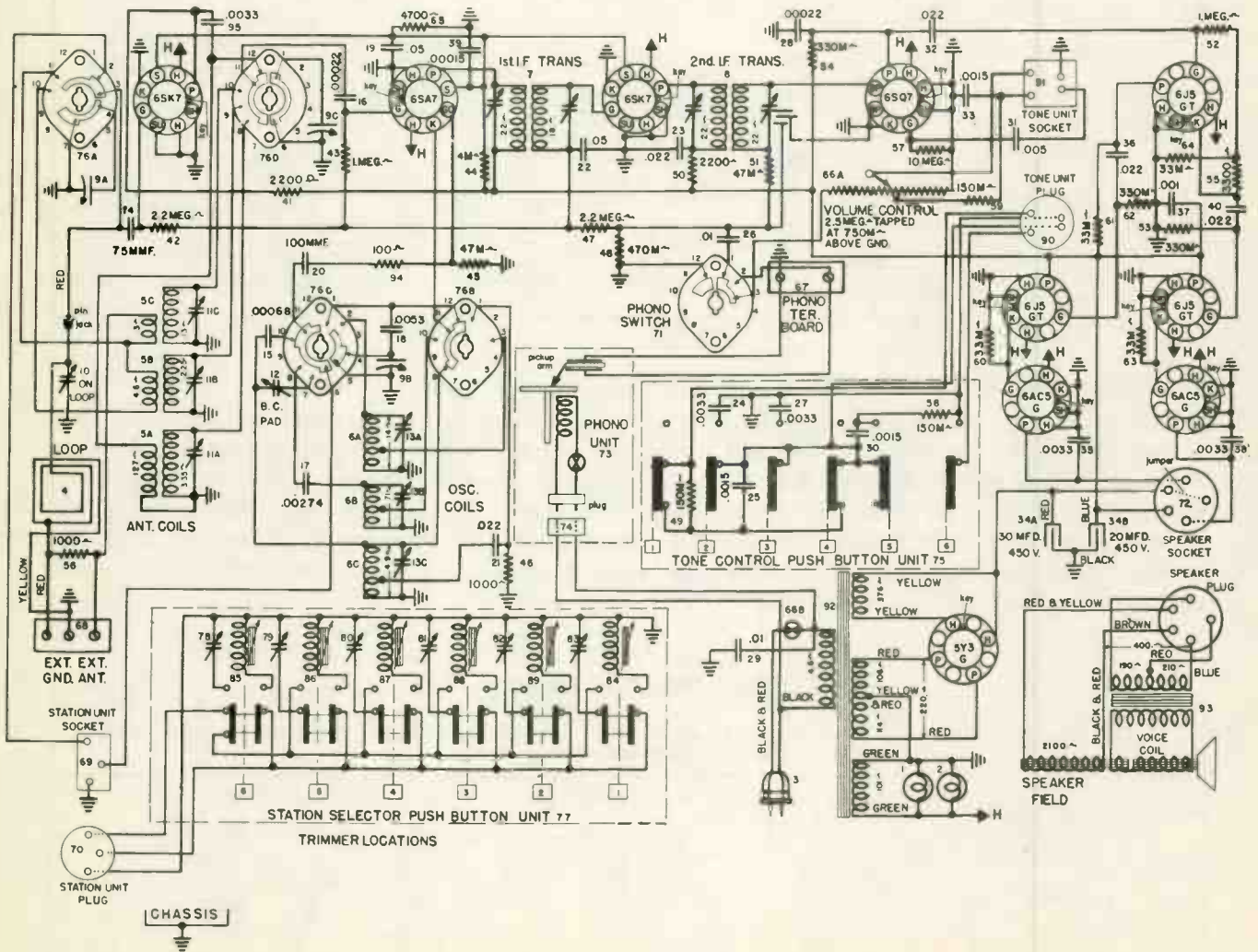
N. C.—No Connection

Voltages may vary 10% of values given.

# MODELS 02CP, 02CQ TUBE AND TRIMMER LAYOUT



## WIRING DIAGRAM, MODELS 02CP AND 02CQ — CHASSIS MODEL No. 70



**PARTS LIST, MODELS 02CP AND 02CQ — CHASSIS MODEL No. 70**

Figures in first column refer to parts in Diagrams.

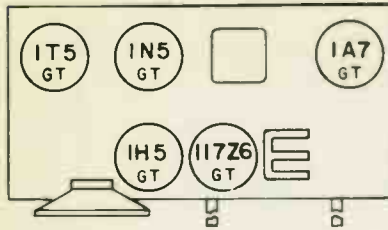
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	71	—132297-1	Phono. Switch.
2	—48858	Dial Light.	72	G103-28807	Socket Speaker
3	—49637-17	Dial Light Socket (2)	73	—132467	Record Changer & Phono. Assem.
4	—132300-2	Power Cord & Plug.	74	—132454-3	Cable & Plug—Phono. Assem.
5A	L-132384	Antenna Loop.	75	—132411-1	Tone Sw. Assem.
5B	G236-32000	Ant. Coil & Trimmer Assem.	76A	—132298-1	Band Chg. Sw. Ant. Sec.
5C		B. C. R. F. Coil.	76B		Band Chg. Sw. Osc. Sec.
6A	L-132385	Pol. Band Ant. Coil.	76C		Band Chg. Sw. Osc. Sec.
6B	G265-32002	S-W Ant. Coil.	76D		Band Chg. Sw. R. F. Sec.
6C		Osc. Coil & Trimmer Assem.	77	—132429	Sta. Selector Assem.
7	G272-32004	S-W Osc. Coil.	78	—132436-4	Trimmer—Sta. Sel.
8	G273-32004	Pol. Band Osc. Coil.	79	—132436-3	Trimmer—Sta. Sel.
9A	—132296-2	B. C. Osc. Coil.	80	—132436-3	Trimmer—Sta. Sel.
9B		1st I. F. Trans.	81	—132436-2	Trimmer—Sta. Sel.
9C		2nd I. F. Trans.	82	—132436-2	Trimmer—Sta. Sel.
10	—132418-1	Var. Cond. Ant. Section.	83	—132436-1	Trimmer—Sta. Sel.
11A	—132386-1	Var. Cond. Osc. Section.	84	G269-32002	Coil—Sta. Sel.
11B		Var. Cond. B. C. R. F. Sec.	85	G267-32002	Coil—Sta. Sel.
11C		Ant. Loop Trimmer.	86	G268-32002	Coil—Sta. Sel.
12	—49652-1	B. C. R. F. Coil Trimmer.	87	G268-32002	Coil—Sta. Sel.
13A	—132386-1	Pol. Band Ant. Trimmer.	88	G270-32002	Coil—Sta. Sel.
13B		S. W. Ant. Coil Trimmer.	89	G270-32002	Coil—Sta. Sel.
13C		Padder Cond. B. C. Osc. Coil.	90	—132437-1	Cable & Plug—Tone Sw.
14	G5-39004	S. W. Osc. Coil Trimmer.	91	—132303-1	Socket—Tone Sw.
15	G20-131502	Pol. Band Osc. Coil Trimmer.	92	—132313-1	Power Trans. (110-50-60)
16	G9-39004	B. C. Osc. Coil Trimmer.	93	—132348-6	Speaker (02CQ Only)
17	G35-34005	B. C. Osc. Coil Trimmer.			Output Trans.
18	G34-34005	75 Mmf. Cond.			Speaker (02CP Only)
19	G41-39001	680 Mmf. Cond.	94	G1-39002	Output Trans.
20	G27-39004	220 Mmf. Cond.		—52100	100 Ohm 1/4 W. Res.
21	G63-39001	200 Mmf. Cond.		—131863	Tube Socket (10)
22	G65-39001	.00274 Mf. Cond.		—132231-2	Clamp—Power Cable.
23	G15-39001	.0033 Mf. Cond.		—132320-1	Dial Face Assem.
24	G10-39001	.05 Mf. 400 V. Cond.		—132167-4	Dial Pointer.
25	G8-39001	100 Mmf. Cond.		—132332-1	Drive Cord Assem.
26	G61-39001	.022 Mf. 200 V. Cond.		—49829B	Drive Shaft.
27	G10-39001	.05 Mf. 200 V. Cond.		—132321-1	Lock Spring—Dr. Shaft.
28	G9-39004	.022 Mf. 600 V. Cond.		—132321-1	Chassis Mtg. Feet (4)
29	—30805	.0033 Mf. 600 V. Cond.		—132403-1	Toggle Arm & Link.
30	G8-39001	.0015 Mf. 600 V. Cond.		—132470-2	Cabinet (02CP)
31	G11-39001	.01 Mf. 200 V. Cond.		—132712-1	Cabinet (02CQ)
32	G39-39001	.0033 Mf. 600 V. Cond.		—132799	Cabinet Door (02CQ)
33	G8-39001	220 Mmf. Cond.		—132758	Cabinet Door (02CP)
34A	—132301-2	.01 Mf. 120 V. A. C. Cond.		—132471-1	Carton (02CP)
34B		.0015 Mf. 600 V. Cond.		—132713-1	Carton (02CQ)
35	G10-39001	.005 Mf. 600 V. Cond.		—132371-1	Screw—Chassis Mtg. (4)
36	G39-39001	.022 Mf. 400 V. Cond.		—44725	Washer—Chassis Mtg. (4)
37	G7-39001	.0033 Mf. 600 V. Cond.		—132322-1	Spring—Top—Chassis Mtg. (4)
38	G10-39001	.022 Mf. 400 V. Cond.		—132323-2	Spring—Bot.—Chassis Mtg. (4)
39	G8-39004	.0033 Mf. 600 V. Cond.		—45580A	Grommet—Spkr. Mtg. (4)
40	G39-39001	150 Mmf. Cond.		—37953	Washer—Spkr. Mtg. (4)
41	G9-39002	.022 Mf. 400 V. Cond.		—N8	Nut—Spkr. M.g. (4)
42	G27-39002	.0015 Mf. 600 V. Cond.		—L8	Lockwasher—Spkr. Mtg. (4)
43	G25-39002	2.2 Megohm 1/4 W. Res.		—132346-1	Dial Glass.
44	—132458-1	1 Megohm 1/4 W. Res.		—132347-1	Rubber Gasket—Dial Glass.
45	G17-39002	4000 Ohm 3 W. Res.		—132393-1	Knob—Large (2)
46	G7-39002	47000 Ohm 1/4 W. Res.		—132341-1	Knob—Small (2)
47	G27-39002	1000 Ohm 1/4 W. Res.		—132398-1	Paper Washer—Knob (2)
48	G23-39002	2.2 Megohm 1/4 W. Res.		—132343-1	Escutcheon—Dial. (02CP Only)
49	G20-39002	470,000 Ohm 1/4 W. Res.		—132343-7	Escutcheon—Dial (02CQ Only)
50	G9-39002	150,000 Ohm 1/4 W. Res.		—90405	Speed Nut—P. B. Mtg. (8)
51	G17-39002	2200 Ohm 1/4 W. Res.		—132396-1	Push Button—Sta. Sel. (6)
52	G25-39002	2200 Ohm 1/4 W. Res.		—132344-2	Plate—Sta. Sel. P. B.
53	G22-39002	47,000 Ohm 1/4 W. Res.		—132345-2	Plate—Tone Sw. P. B.
54	G22-39002	1 Megohm 1/4 W. Res.		—132397-1	Tone Button—No. 1.
55	G10-39002	330,000 Ohm 1/4 W. Res.		—132397-2	Tone Button—No. 2.
56	G7-39002	330,000 Ohm 1/4 W. Res.		—132397-3	Tone Button—No. 3.
57	G31-39002	3300 Ohm 1/4 W. Res.		—132397-4	Tone Button—No. 4.
58	G20-39002	1000 Ohm 1/4 W. Res.		—132397-5	Tone Button—No. 5.
59	G16-39002	10 Megohm 1/4 W. Res.		—132397-6	Tone Button—No. 6.
60	G16-39002	150,000 Ohm 1/4 W. Res.		—132430-1	Loop Spacer Assem. (1)
61	G22-39002	150,000 Ohm 1/4 W. Res.		—131969-2	Loop Spacer (2)
62	G16-39002	33,000 Ohm 1/4 W. Res.		—131970-2	Loop Spacer—Ecc. (1)
63	G16-39002	33,000 Ohm 1/4 W. Res.		—132416-1	Brkt.—Loop Spacer (4)
64	G16-39002	330,000 Ohm 1/4 W. Res.		—32657	Loop Ant. Wire—(72)
65	—132459-1	33,000 Ohm 1/4 W. Res.		—132478-1	Instr. Envelope Assem.
66A	—132299-2	4700 Ohm 2 W. Res.		—132434-1	Call Letter Sheet.
66B		Vol. Control 2.5 Megohm.		—132399-1	Call Letter Cover.
67	G61-26719	A. C. On-Off Switch.		—132479-1	Instruction.
68	G51-26719	Phono Term. Board.		—132463-1	Hinge Assem.—R. H.
69	—47133	Ant. Term. Board.		—132463-2	Hinge Assem.—L. H.
70	—132437-2	(Socket—Sta. Selector.		—132472-1	Hinge Roller (2)
		Cable & Plug—Sta. Selector.		—132473-1	Hinge Roller Stud (2)
				—132403-2	Toggle Arm & Link Assem.

**RECORD CHANGER PARTS**

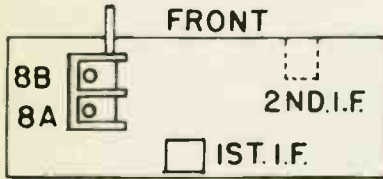
Part No.	Description	Part No.	Description
—132728	Turn Table Only.	—132743	Record Changer Shelf Cap.
—132729	Turntable Nut.	—132744	Record Clamp (Plastic)
—132	Offset Center Post.	—132745	Record Clamp Spring.
—132390-1	Changer Mounting Springs. (6)	—132746	Record Clamp Spring Pin.
—132389	Changer Mounting Screws. (3)	—132763	"Z" Bracket Spring.
—132388-1	Changer Mtg. Nut (3)	—132765	Size Change Lever Spring.
—132732	Motor Only, 60 Cycle.	—132764	Lever Link Spring.
—132733	Idler Wheel.	—132767	A. C. Switch & Cover.
—131032	50 Cycle Spring.	—132768	A. C. Switch Lever Wire Spring.
—132735	Knob (Plastic—"Off—On")	—132769	Spring Washer.
—132736	Escutcheon (Plastic)	—132770	Bearing Assembly.
—132737	Tinnerman Clamps for Mtg.	—132771	Cork Washer.
—132741	Arm Rest.	—132772	Thrust Bearing.
—132742	Arm Rest Cap (Plastic)	—132773	Starting Bracket Spring.
—132738	Pickup Crystal Cartridge	—132774	Trigger Bracket Spring.
—132739	Needle Screw (Phillips Head)	—132526-1	Pickup Arm Tension Spring.
—132740	Mounting Screw (Crystal Cartridge)	—132557	Wrap Around
—132734	Pickup Arm Adjusting Screw.	—132542-1	Roller. (6)
—132760	Pickup Arm Adjusting Spring.	—132543-1	Roller Stud. (6)
—132526-1	Pickup Arm Tension Spring.	—32721-2	Acorn Nut. (2)
—132762	Pickup Arm Pivot Pin.	—132659-1	Needle Assem. (sapphire)

# SERVICE INFORMATION — Model 71 Chassis

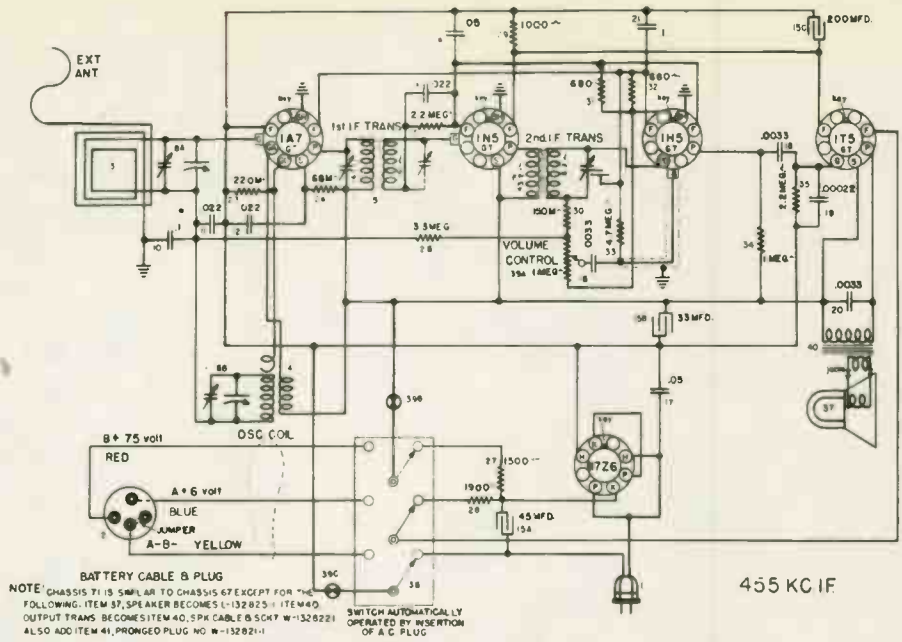
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description
1	—132300-3	A.C. Cable and Plug	—	—11392	Screw
2	—132165-1	Battery Cable and Plug	—	—30409	Flat Washer
3	GB—132196-1	Loop Antenna	—	—132191	Baffle
4	G263—32002	Osc. Coil	38	—132161-1	Triple Pole O.T. Switch
5	G268—32004	1st I.F. Trans.	—	—132212-1	Switch Sticker
6	G269—32004	2nd I.F. Trans.	39A	B—130520-1	Volume Control 1 Meg.
7	—	None	39B	—	S.P.S.T. Switch on V.C.
8A	C—132168-2	Var. Cond. R.F. Section	39C	—	S.P.S.T. Switch on V.C.
8B	—	Var. Cond. Osc. Section	40	—132821-1	Speaker Plug
9	NONE	—	—	—132276	Handle—Top Grain Leather
10	G67—39001	Cond. .1 Mfd. 200 V.	—	—132279	Handle Bracket (2)
11	G63—39001	Cond. .022 Mfd. 200 V.	—	—132277	Handle Bracket Split Rivets (4)
12	G63—39001	Cond. .022 Mfd. 200 V.	—	—132278	Handle Bracket Split Rivets (2)
13	G63—39001	Cond. .022 Mfd. 200 V.	—	—132181-1	Rivet, Split Shoulder (2) in Chassis Shelf
14	G65—39001	Cond. .05 Mfd. 200 V.	—	—132272	Back Panel
15A	B—132114-1	Cond. 45 Mfd. Elect.	—	—132179-1	Back Clamp (2)
15B	—	Cond. 35 Mfd. Elect.	—	—132275	Back Clamp Rivets (2)
15C	—	Cond. 200 Mfd. Elect.	—	—132180-1	Back Plate (2)
16	G10—39001	Cond. .0033 Mfd. 600 V.	—	—132274	Back Plate Rivets (4)
17	G65—39001	Cond. .05 Mfd. 200 V.	—	—132273	Metal Feet Glides (1)
18	G10—39001	Cond. .0033 Mfd. 600 V.	—	—132827	Instructions
19	G9—39001	Cond. .00022 Mfd.	—	—132175-1	Cabinet
20	G10—39001	Cond. .0033 Mfd. 600 V.	—	—132176-1	Caston
21	G67—39001	Cond. .1 Mfd. 200 V.	—	—132193-1	Cab. Front and Lens
22	NONE	—	—	—132173-1	Dial Face
23	G21—39002	Res. 220 M Ohm 1/4 W.	—	—132973-1	Knob—Tuning
24	G18—39002	Res. 68 M Ohm 1/4 W.	—	—132973-3	Knob—V. C.
25	G27—39002	Res. 3.3 Meg. Ohm 1/4 W.	—	—48720A	"Off" Indicator
26	G28—39002	Res. 2.2 Meg. Ohm 1/4 W.	—	—132183-1	Speed Nut
27	G8—39002	Res. 1500 Ohm 1/4 W.	—	—132119-2	Drive Shaft
28A	—132502-1	Res. 1900 Ohm Candohm	—	—132206-1	Dial Pointer
28B	—	Res. 140 Ohm	—	G—132167-2	Drive Shaft Retaining Spring
29	G7—39002	Res. 1000 Ohm 1/4 W.	—	—51752	Drive Cord Assy.
30	G20—39002	Res. 150 M Ohm 1/4 W.	—	—132928	Drive Cord Spring
31	G6—39002	Res. 680 Ohm 1/4 W.	—	—132123	Drive Cord Rivet
32	G6—39002	Res. 680 Ohm 1/4 W.	—	—46147	Sockets
33	G29—39002	Res. 4.7 Meg. Ohm 1/4 W.	—	—132822-1	Tube Shields
34	G25—39002	Res. 1 Meg. Ohm 1/4 W.	—	—48770	Speaker Cable & Socket
35	G27—39002	Res. 2.2 Meg. Ohm 1/4 W.	—	—	Trimount Studs
36	NONE	—	—	—	—
37	—132825	Speaker	—	—	—

## ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

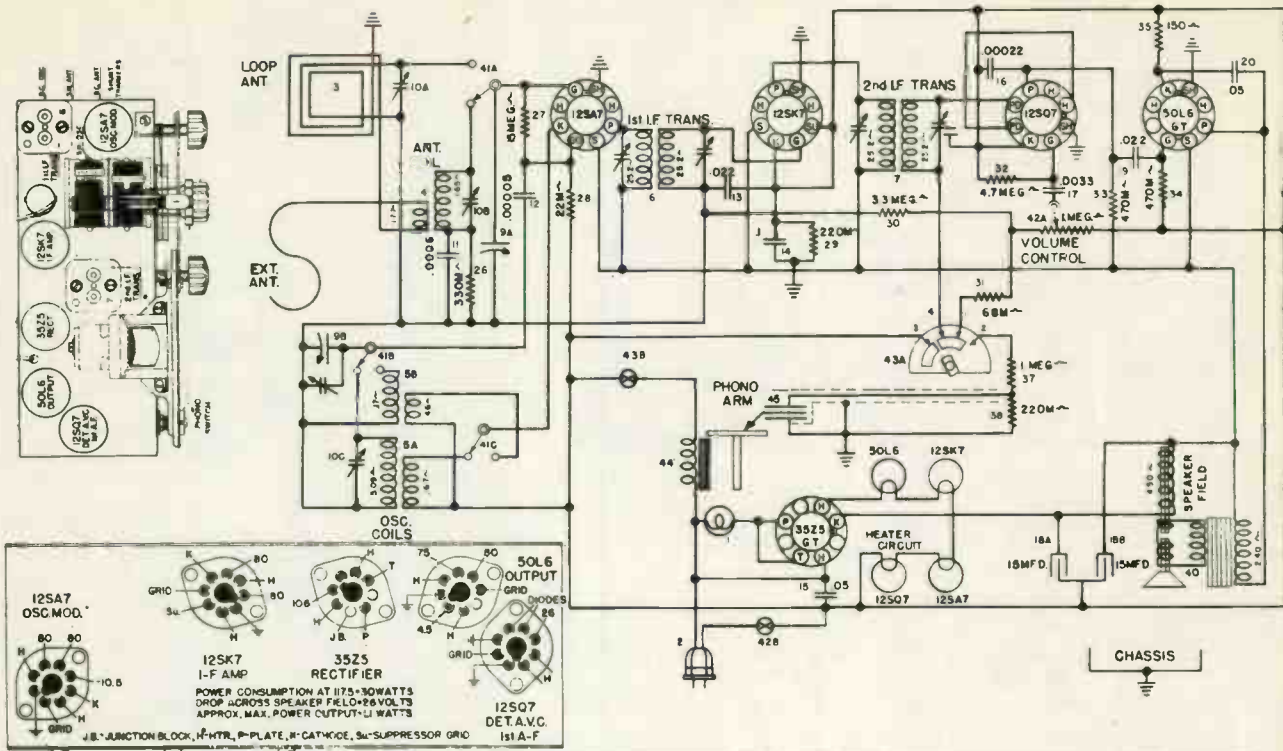
SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	2nd 1-F(1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments.  
Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
Power consumption @ 117.5 volts line — 20 Watts

# CHASSIS No. 72

## WIRING DIAGRAM



Item No.	Part No.	Description	Item No.	Part No.	Description	
1	—4885R	Bulb Dial Light 6.3V.	30	G28 —39002	Res. 3.3 Megohm 1/4 W.	
	L—132109	Dial Light Socket Assm.	31	G18 —39002	Res. 68,000 Ohm 1/4 W.	
	—132099-1	Dial Face.	32	G29 —39002	Res. 4.7 Megohm 1/4 W.	
	—132097-5	Dial Pointer.	33	G23 —39002	Res. 470,000 Ohm 1/4 W.	
	—132117	Celluloid Dial Lens.	34	G23 —39002	Res. 470,000 Ohm 1/4 W.	
	L—132131	Drive Cord Assm.	35	G33 —39002	Res. 150 Ohm 1/4 W.	
	—132119	Drive Shaft.	36	NONE		
2	—132300-1	Power Cord & Plug.	37	G25 —39002	Res. 1 Megohm 1/4 W.	
	—45738	Lock Plate Power Cord.	38	G21 —39002	Res. 220,000 Ohm 1/4 W.	
3	—132245-1	Loop Assem. Antenna.	39	NONE		
	—132102	Spacer—Loop Mtg. (2)	40	G3 —19675	Speaker.	
	—23843	Screw—Loop Mtg. (2)	41A	—19808	Band Chg. S.W.	
4	G234 —32000	Coil H.F. Ant.	41B		Band Chg. S.W.	
5A	G282 —32002	Coil B.C. Osc.	41C		Band Chg. S.W.	
5B		Coil H.F. Osc.	42A	—49774	Vol. Control—1 Megohm.	
6	G266 —32004	1st I.F. Trans.	42B		A. C. Power Switch.	
7	G267 —32004	2nd I.F. Trans.	43A	—132249-1	Phono Switch.	
8	NONE		43B		Phono Switch.	
9A	—49737-C	2 Gang Var. Cond. (Antenna Section.	43C		Phono Switch.	
9B		(Oscillator Section.)				
10A		(Cond. Trimmer B.C.—Ant.			—132019	Trimmer Only—2nd I.F. Assn.
10B	G—132240-1	(Cond. Trimmer H.F. Ant.			—132246-2	Cabinet.
10C		(Cond. Trimmer B.C. Osc.			—48200	Trimount Stud—Dial Lens Mtg. (6)
11	G21 —34002	Cond. 600 Mmf. Mica.			—132124	Trimount Stud—Cabt. Back (2)
12	G3 —39004	Cond. 50 Mmf. Mica.			—130313-1	Knob (3 Req.)
13	G83 —39001	Cond. .022 Mfd., 200 V.			—130339	Tail Knob (1 Req.)
14	G67 —39001	Cond. .1 Mfd., 200 V.			—45020	Washer—Chassis Mtg. (3)
15	G65 —39001	Cond. .05 Mfd., 200 V.			—130558	Screw—Chassis Mtg. (3)
16	G9 —39004	Cond. 200 Mmf.			—30409	Washer—Chassis Mtg. (3)
17	G10 —39001	Cond. .0033 Mfd., 160 V.			—130490	Screw—Chassis Mtg. (3)
18A	—49664-B	Cond. 15 Mfd., 140 V. Elect.			—132117	Dial Lens.
18B		Cond. 15 Mfd., 120 V. Elect.			—130502	Cabinet Hinge.
19	G63 —39001	Cond. .002 Mfd., 200 V.	44	—130582	Cab. Stay Arm.	
20	G65 —39001	Cond. .05 Mfd., 200 V.	45	—132248-1	Phono Motor Assem.	
21	NONE				—131095	Tone Arm Assem.
22	NONE				—49770	Tone Arm Crystal
23	NONE				—132234-1	Trimount Stud—(Chassis.)
24	NONE				G1 —130264	Toggle Link (Phono S.W.)
25	NONE				—130264	Toggle Arm Assem. (Phono S.W.)
26	G22 —39002	Res. 330,000 Ohms 1/4 W.			—49429-B	Bearing & Toggle Assem. (Phono S.W.)
27	—30871	Res. 15 Megohm 1/4 W.			—47321	Lock Spring (Toggle Arm)
28	G15 —39002	Res. 22,000 Ohms 1/4 W.			—47333	Needle Screw.
29	G21 —39002	Res. 220,000 Ohms 1/4 W.				Tone Arm Rest.

FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	2nd 1-F(1) front chassis fange	Adjust for maximum signal.
455 Kc	Ant. Lead 1A7GT	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum signal while rocking gang.

Repeat above procedures for more accurate adjustments.  
 Maximum power output @ 75 V. "B" — approx. 200 M. W. undistorted  
 A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.  
 Power consumption @ 117.5 volts line — 20 Watts

## CHASSIS MODEL No. 73

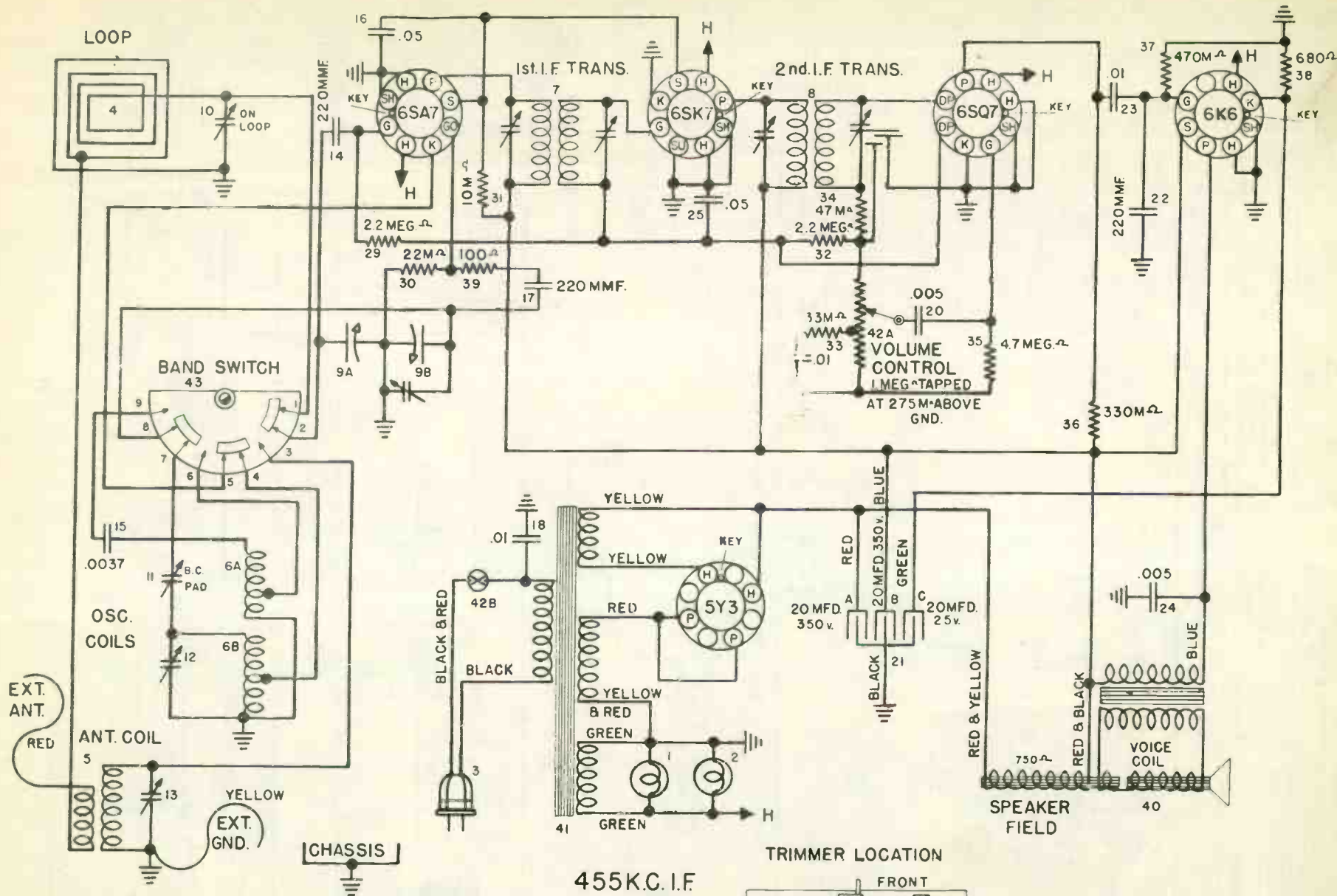
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SA7—OSC.—Mod.		0	0	180	73		0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	73	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT—Output		0	0	180	180	0	180	6.3 A. C.	9
5Y3G—Rectifier		0	225		270 A. C.			270 A. C.	225

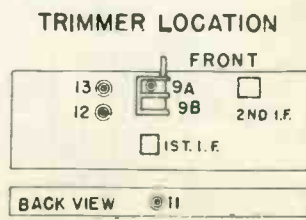
Item	Part No.	Description	Item	Part No.	Description
1	43567	Dial Light 6 V.	23	39001-G37	Cond. .01 Mf. 400 V. Paper.
2	43567	Dial Light 6 V.	24	39001-G11	Cond. .005 Mf. 600 V. Paper.
	49829-B	Lock Spring (Drive Shaft) (1)	25	39001-G65	Cond. .05 Mf. 200 V. Paper.
	49637-21	Light Socket Assem.	26		None.
	131930	Drive Shaft Bearing	27		None.
	132641-1	Drive Shaft.	28		None.
	G-132167-13	Drive Cord Assem.	29	39002-G27	Res. 2.2 Megohm $\frac{1}{4}$ W.
	132320-1	Dial Pointer.	30	39002-G15	Res. 22,000 Ohms $\frac{1}{4}$ W.
	132231-7	Dial Face Assem.	31	47100	Res. 10,000 Ohms 2 W.
	132688-1	Dial Lens.	32	39002-G27	Res. 2.2 Megohm $\frac{1}{4}$ W.
3	132300-1	Power Cable & Plug.	33	39002-G16	Res. 33,000 Ohms $\frac{1}{4}$ W.
4	G-132675-2	Loop Ant. Assem.	34	39002-G17	Res. 47,000 Ohms $\frac{1}{4}$ W.
5	32000-G241	S. W. Ant. Coil.	35	39002-G29	Res. 4.7 Megohm $\frac{1}{4}$ W.
6A	32000-G274	S. W. OSC. Coil.	36	39002-G22	Res. 330,000 Ohms $\frac{1}{4}$ W.
6B		B. C. OSC. Coil.	37	39002-G23	Res. 170,000 Ohms $\frac{1}{4}$ W.
7	32004-G282	1st I. F. Trans.	38	39002-G37	Res. 680 Ohm $\frac{1}{2}$ W.
8	32004-G283	2nd I. F. Trans.	39	39002-G1	Res. 100 Ohm $\frac{1}{4}$ W.
9A	132150-2	Var. Cond. R. F. Sec.	40	132683-5	Speaker.
9B		Var. Cond. Osc. Sec.		49853	Grommet (3) (Speaker)
10		Trimmer Cond. Ant. Loop.		48828-2	Speaker Mtg. Plate (1)
11		Trimmer Cond. B. C. Pad.		49742	Screw, Spk. Mtg. (2)
12		Trimmer Cond. B. C. Osc.		46460	Headed Bushing—Spk. (3)
13		Trimmer Cond. S. W. Ant.		132648-1	Screw-dial Face Mtg. (2)
14	39004-G9	Cond. 220 Mmf. Mica.		132604	Speaker Gasket (1)
15	34005-G17	Cond. 3700 Mmf. Mica.	41	49838	Power Trans.
16	39001-G41	Cond. .05 Mf. 400 V. Paper.	42A	49793-1	Volume Control 1 Meg.
17	39004-G9	Cond. 220 Mmf. Mica.	42B		A. C. Switch.
18	30805	Cond. .01 Mf. 120 V. A. C.	43	49772-1	Band Change Switch.
19	39001-G61	Cond. .01 Mf. 200 V. Paper.		49817	Trans. Suppt. Strap
20	39001-G11	Cond. .005 Mf. 600 V. Paper.		5096	Nut
21A	132669-1	Cond. 20 Mfd. 350 V. Elect.		134015-1	TF Cabinet.
21B		Cond. 20 Mfd. 350 V. Elect.		132707-1	Tank Point—Dial Lens (16)
21C		Cond. 20 Mfd. 25 V. Elect.		39220-36A	Screw—Chassis Mtg. (3)
22	39004-G9	Cond. 220 Mmf. Mica.		45020	Washer—Chassis Mtg. (3)

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

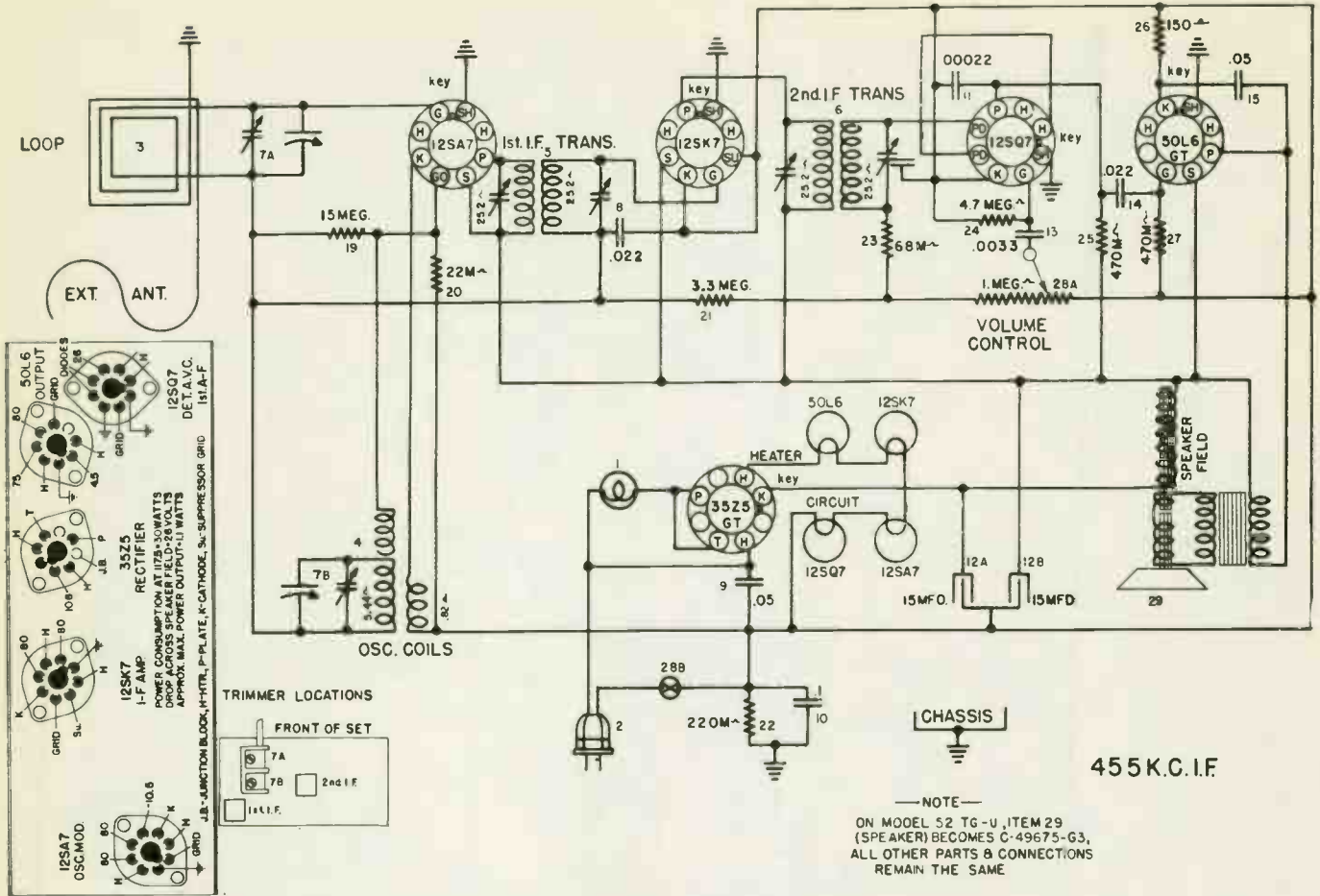


455K.C. I.F.





# CHASSIS No. 74-74U



## PARTS LIST — MODELS 74 AND 74-U CHASSIS

Figures in first column refer to parts in diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light 6.3V.	16	NONE	
	L-132109	Dial Light Socket Assm.	17	NONE	
	—132099-2	Dial Face	18	NONE	
	—132097-5	Dial Finger	19	—50671	Res. 15 Megohm $\frac{1}{4}$ W.
	L-132117-2	Celluloid Dial Lens.	20	G15 —39002	Res. 22,000 Ohms $\frac{1}{4}$ W.
	L-132131	Drive Cord Assm.	21	G28 —39002	Res. 3.3 Megohm $\frac{1}{4}$ W.
	—132119-4	Drive Shaft.	22	G21 —39002	Res. 220,000 Ohms $\frac{1}{4}$ W.
	—51071	Retaining Ring—Dr. Shaft.	23	G18 —39002	Res. 68,000 Ohm $\frac{1}{4}$ W.
2	—132300-1	Power Cord & Plug.	24	G29 —39002	Res. 4.7 Megohm $\frac{1}{4}$ W.
	—45738	Lock Plate Power Cord.	25	G24 —39002	Res. 470,000 Ohm $\frac{1}{4}$ W.
3	LB-132110	Loop Assm. Antenna.	26	G33 —39002	Res. 150 Ohm $\frac{1}{4}$ W.
	—132102	Spacer—Loop Mtg. (2)	27	G23 —39002	Res. 470,000 Ohm $\frac{1}{4}$ W.
	—23843	Screw—Loop Mtg. (2)		—132138	Bracket—Speaker Mtg.
4	G281 —32002	Coil B. C. Osc.	28A	—49774	Vol. Control 1 Meg.
5	G266 —32004	1st I. F. Trans.	28B		Power Switch.
6	G267 —32004	2nd I. F. Trans.	20	—49675-2	Speaker—74 only.
7A	—49736-1	2 Gang Var. Cond. (Antenna Sec. Oscillator Sec.)		—49675-3	Speaker—74-U only.
7B				—132136-2	Cabinet—Brown.
8	G63 —39001	Cond. .022 Mfd., 200V.		—48200	Trimount Stud—Dial Lens Mtg. (6)
9	G65 —39001	Cond. .05 Mfd., 200V.		—132124	Trimount Stud—Cab. Back (2)
10	G87 —39001	Cond. .1 Mfd., 200V.		—132137	Shipping Carton.
11	G9 —39004	Cond. 200 Mmf., Mica.		—131517	Knob (2 req.)
12A	—49664-B	Cond. 15 Mfd., 140V., Elect.		—30409	Washer—Chassis Mtg. (3)
12B		Cond. 15 Mfd., 120V., Elect.		—130490	Screw—Classis Mtg. (3)
13	G10 —39001	Cond. .0033 Mfd., 160V.		—132123	Socket—8 Prong (3)
14	G63 —39001	Cond. .022 Mfd., 200V.		—49693	Insulator—Socket (3)
15	G65 —39001	Cond. .05 Mfd., 200V.			

## ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
3.	.0001 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

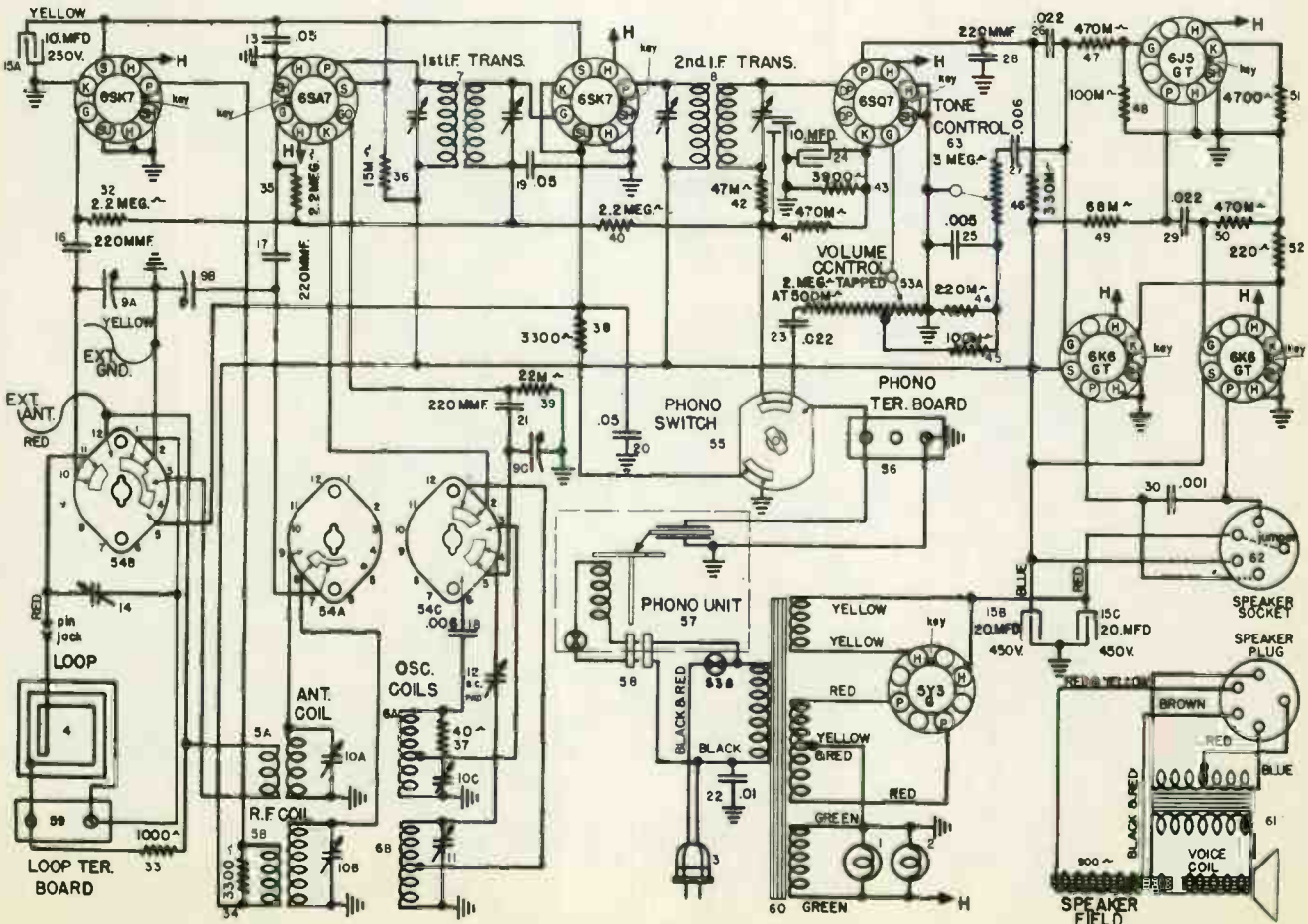
Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.S.C. circuit.

## CHASSIS MODEL NO. 75

### Signal Generator

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Garg Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
7.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal.
8.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7GT—R. F. Amplifier		0	0	0	0	0	82	6.3 A. C.	210
6SA7GT—OSC.—Mod.		0	0	210	82BC	0	0	6.3 A. C.	0
6SK7GT—I. F. Amplifier		0	0	0	0	-6.5BC - -OSW -	82	6.3 A. C.	210
6SQ7—Det. A. S. C. 1st A. F.		0	0	1.4	0	0	78	6.3 A. C.	0
6J5GT—Phase Inverter		0	0	125	N. C.	0	0	6.3 A. C.	5.2
6K6GT(2)—Output		0	0	200	210	0	0	6.3 A. C.	13
5Y3G—Rectifier		N. C.	300	N. C.	338	J. B.	338 A. C.	J. B.	300



455K.C.I.F

PARTS LIST, MODELS 82CP AND 82CQ—CHASSIS MODEL No. 75

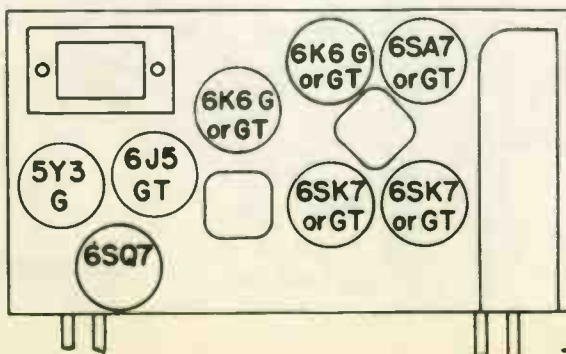
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Dial Light, 6 V.	44	G21-39002	Res. 220 M. Ohm 1/4 W. Ins.
2	-43567	Dial Light, 6 V.	45	G19-39002	Res. 100 M. Ohm 1/4 W. Ins.
	-132461-1	Escutcheon and Dial Glass—82 CQ	46	G22-39002	Res. 330 M. Ohm 1/4 W. Ins.
	-132491-2	Escutcheon and Dial Glass—82 CP	47	G23-39002	Res. 470 M. Ohm 1/4 W. Ins.
	-129158	Screw—Escutcheon	48	G19-39002	Res. 100 M. Ohm 1/4 W. Ins.
	-132231-4	Dial Back Plate	49	G18-39002	Res. 68 M. Ohm 1/4 W. Ins.
	-132374-1	Pointer Shaft	50	G23-39002	Res. 470 M. Ohm 1/4 W. Ins.
	-132481-1	Pointer	51	G11-39002	Res. 47 M. Ohm 1/4 W. Ins.
	-49829-B	Lock Spring	52	G65-39002	Res. 220 Ohm 1 W. Ins.
	-132167-5	Drive Cord Assem.	53A	-132461-1	Volume Control 2 Megohm.
3	-132300-2	Power Cable and Plug	53B		A. C. Power Switch.
4	-132493-2	Loop and Strap Assem.	54A	-132496-2	Band Switch.
5A	G237-32000	H. F. Ant. Coil	54B		Band Switch.
5B		B. C. R. F. Coil	54C		Band Switch.
6A	G271-32002	H. F. Osc. Coil	55	-132506-1	Phono. Switch.
6B		B. C. Osc. Coil	56	G64-26719	Phono. Ter. Board.
7	G274-32004	1st I. F. Trans.	57		Phono. Unit & Rec. Chgr.
8	G275-32004	2nd I. F. Trans.	58	-132454-2	Cable—Phono. Unit & Rec. Chgr.
9A	-49929	Ant. Sec.	59	G63-26719	Loop Ant. Ter. Board.
9B		R. F. Sec. Var. Cond.	60	-132313-2	Power Trans. (110 V.-50-60 Cy.)
9C		Osc. Sec.	61	-130146-4	Speaker—82CQ.
10A	B-132462-1	Trimmer Cond. H. F. Ant. Coil	62	-130146-3	Speaker—82CP.
10B		B. C. R. F. Coil	63	G103-28807	Speaker Socket.
10C		H. F. Osc. Coil		130741-A	Tone Control 3 Megohm.
11	-49652-2	Trimmer Cond. B. C. Osc. Coil		-132754	Cabinet Door—L. H. 82CQ.*
12	-49652-3	Padder B. C. Osc.		-132753	Cabinet Door—R. H. 82CQ.*
13	G41-39001	Cond. .05 Mf. 400 V. Paper		-132755	Cabinet Lid—82CP.*
14	B-132462-2	Trimmer Cond. Loop Ant.		-132380-1	Cabinet 82CP.*
15A	-132484-1	Cond. 10 Mfd. 250 V. Elect.		-132486-1	Cabinet 82CQ.*
15B		Cond. 20 Mfd. 450 V. Elect.		-132381-1	Carton 82CP.
15C		Cond. 20 Mfd. 450 V. Elect.		-132487	Carton 82CQ.
16	G9-39004	Cond. 220 Mmf. Mica.		-132736	Hinge (3)—82CP.*
17	G3-39001	Cond. 220 Mmf. 600 V. Paper		-132732	Hinge (4)—82CQ.*
18	G36-34005	Cond. .006 Mf. Mica.		-130133	Knob—Tuning.
19	G65-39001	Cond. .05 Mf. 200 V. Paper		-130134	Knob—Volume.
20	G65-39001	Cond. .05 Mf. 200 V. Paper.		-130135	Knob—Tone.
21	G3-39001	Cond. 220 Mmf. 600 V. Paper.		-132382	Knob—B. S. S.
22	-30805	Cond. .01 Mf. 120 V. A. C.		-130254	Knob—Phono. Sw.
23	G63-39001	Cond. .022 Mf. 200 V. Paper.		-42911	Paper Washer—Knob (5)
24	-132450-1	Cond. 10 Mfd. Elect.		-130423	Br'kt Assem.—R. H. 82CP.
25	G11-39001	Cond. .005 Mf. 600 V. Paper.		-130426	Br'kt Assem.—L. H. 82CP.
26	G39-39001	Cond. .022 Mf. 400 V. Paper.		-132489-1	Br'kt & Roller Assem.—82 CQ.
27	G11-39001	Cond. .006 400 V. Paper.		-132489-2	Br'kt & Roller Assem.—82CQ.
28	G3-39001	Cond. 220 Mmf. 600 V. Paper.		-132538-1	Bracket Only—R. H. 82CQ.
29	G39-39001	Cond. .022 Mf. 400 V. Paper.		-132539-1	Bracket Only—L. H. 82CQ.
30	G7-39001	Cond. .001 Mf. 600 V. Paper.		-132544-1	Roller (2) 82 CQ.
31	None			-132541-1	Roller Stud (2) 82CQ.
32	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.		-132113	Screw (9)
33	G7-39002	Res. 1000 Ohm 1/4 W. Ins.		-45580	Grommet—Spkr. (82CP & CQ) & Chassis (82CP) Mtg.
34	G10-39002	Res. 3300 Ohm 1/4 W. Ins.		-45036	Grommet—Chassis Mtg. (82CQ)
35	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.		-132379-1	Instruction.
36	-130593	Res. 15 M. Ohm 2 W.		-131512	Headed Bushing.
37	132482-1	Res. 40 Ohm 1/4 W. Ins.		-23880-B	Nut
38				N-5096	Thumb Screw.
39	G15-39002	Res. 22 M. Ohm 1/4 W. Ins.		G-132523-1	Record Changer Assem. 82CP.
40	G27-39002	Res. 2.2 Megohm 1/4 W. Ins.		-132488	Record Changer Assem. 82CQ.
41	G23-39002	Res. 4.70 M. Ohm 1/4 W. Ins.		-52109	Tube Socket (8)
42	G17-39002	Res. 47 M. Ohm 1/4 W. Ins.			
43	-132514-1	Res. 3900 Ohm 1/4 W. Ins.			

\*NOTE—In ordering complete cabinets or cabinet parts always specify cabinet model number stamped on rear of cabinet.

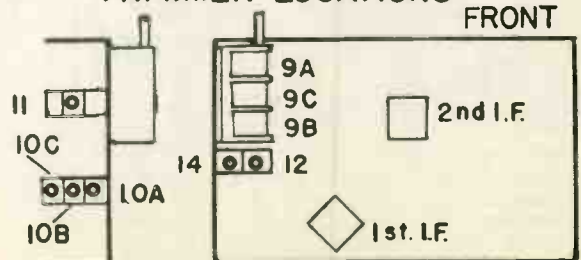
RECORD CHANGER PARTS

Part No.	Description	Part No.	Description
-132728	Turn Table Only.	-132743	Record Changer Shelf Cap.
-132729	Turntable Nut.	-132744	Record Clamp (Plastic)
-132438-1	Offset Center Post.	-132745	Record Clamp Spring.
-132390-1	Changer Mounting Springs. (6)	-132746	Record Clamp Spring Pin.
-132389	Changer Mounting Screws. (3)	-132763	"Z" Bracket Spring
-132388-1	Changer Mtg. Nut (3)	-132765	Size Change Lever Spring.
-132732	Motor Only. 60 Cycle.	-132764	Lever Link Spring.
-132733	Idler Wheel.	-132767	A. C. Switch & Cover.
-131032	50 Cycle Spring.	-132768	A. C. Switch Lever Wire Spring.
-132735	Knob (Plastic—"Off—On")	-132769	Spring Washer.
-132736	Escutcheon (Plastic)	-132770	Bearing Assembly.
-132737	Tinnerman Clamps for Mtg.	-132771	Cork Washer.
-132741	Arm Rest.	-132772	Thrust Bearing.
-132742	Arm Rest Cap (Plastic)	-132773	Starting Bracket Spring.
-132738	Pickup Crystal Cartridge	-132774	Trigger Bracket Spring.
-132739	Needle Screw (Phillips Head)	-132526-1	Pickup Arm Tension Spring.
-132740	Mounting Screw (Crystal Cartridge)	-132549-1	Wrap Around—82CQ.
-132734	Pickup Arm Adjusting Screw.	-132542-1	Roller (6)—82CQ.
-132760	Pickup Arm Adjusting Spring.	-132543-1	Roller Stud (6)—82CQ.
-132526-1	Pickup Arm Tension Spring.	-32721-2	Acorn Nut (2)—82CQ.
-132762	Pickup Arm Pivot Pin.	-132650-1	Needle Asserq. (sapphire)

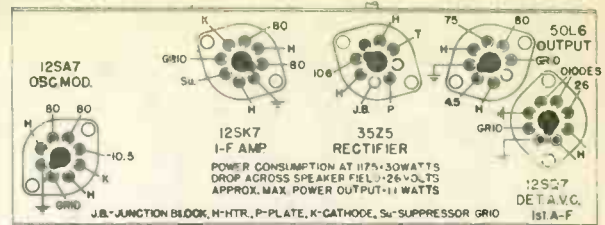
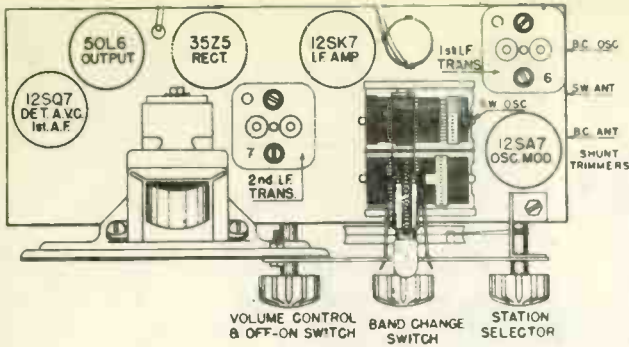


140

TRIMMER LOCATIONS



# MODELS 76 AND 77 CHASSIS



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS PER VOLT METER READINGS MAY VARY 10%.

## ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	Signal Generator .0001 MF.	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F (2) 1st L-F (2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead (red)	S.W.	Fully Open	S.W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead (red)	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0001 MF.	1650 KC.	Antenna Lead (red)	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0001 MF.	1400 KC.	Antenna Lead (red)	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

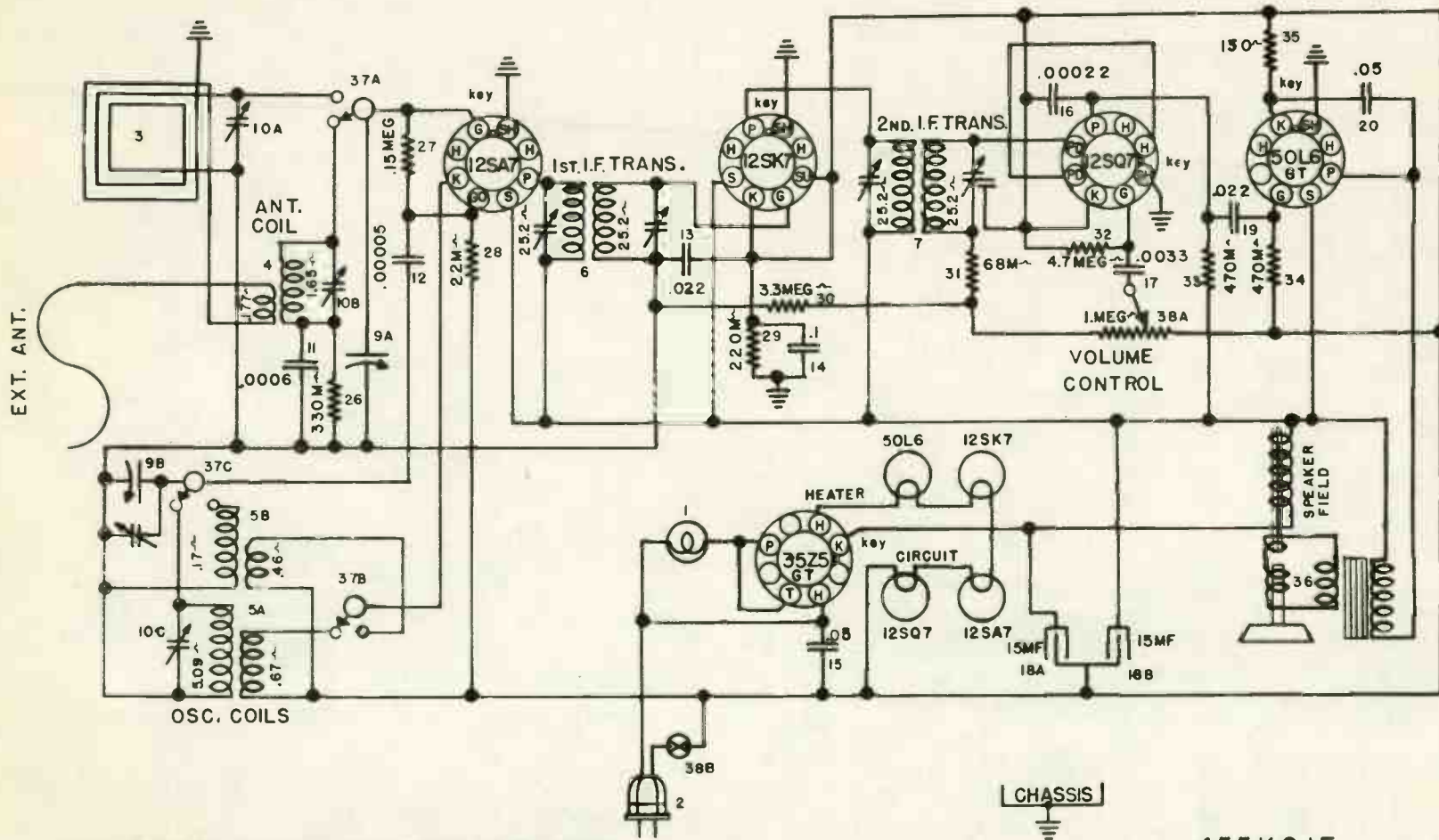
When aligning the shortwave band "OSC" trimmer, care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune in the generator frequency and then tune in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

Figures in first column refer to parts in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Bulb Dial Light 6.3V.	26	G22	Res. 330,000 Ohms 1/4 W.
	L—132109	Dial Light Socket Assm.	27	—50671	Res. 15 Megohm 1/4 W.
	—132099	Dial Face	28	G15	Res. 22,000 Ohms 1/4 W.
	—132097	Dial Pointer	29	G21	Res. 220,000 Ohms 1/4 W.
	—132117	Celluloid Dial Lens	30	G28	Res. 3.3 Megohm 1/4 W.
	L—132131	Drive Cord Assm.	31	G18	Res. 68,000 Ohm 1/4 W.
	—132119	Drive Shaft	32	G29	Res. 4.7 Megohm 1/4 W.
2	—49775	Power Cord & Plug	33	G23	Res. 470,000 Ohm 1/4 W.
	—45738	Lock Plate Power Cord	34	G23	Res. 470,000 Ohm 1/4 W.
3	LB—132110	Loop Assem. Antenna—77 Chassis	35	G33	Res. 150,000 Ohm 1/4 W.
	—132245	Loop Assem. Antenna—76 Chassis	36	G2	Speaker
	—132102	Spacer—Loop Mtg. (2)		G3	Speaker—"U" Models
	—23843	Screw—Loop Mtg. (2)		—132138	Bracket—Speaker Mtg.
4	G234—32000	Coil H.F. Ant.	37A	—49808-A	Band Change Sw.
5A	G262—32002	Coil B.C. Osc.	37B		
5B		Coil H.F. Osc.	37C		
6	G266—32004	1st I.F. Trans.	38A	—49774	Vol. Control 1 Meg.
7	G267—32004	2nd I.F. Trans.	38B		Power Switch
8	NONE		39	NONE	
9A	—49737-C	2 Gang Var. Cond. { Antenna Section Oscillator Section	40	NONE	
9B					
10A	L—132107	Cond. Trimmer B.C. Ant.	—132019	Trimmer Only—2nd I.F. Assm.	
10B		Cond. Trimmer H.F. Ant.	—132136	Cabinet—Brown Model TL	
10C		Cond. Trimmer B.C. Osc.	—48200	Trimount Stud—Dial Lens Mtg. (6)	
11	G21—34402	Cond. 600 Mmf. Mica	—132124	Trimount Stud—Cab. Back (2)	
12	G5—34002	Cond. 50 Mmf. Mica	—132137	Shipping Carton—52TD & 52TE	
13	G63—39001	Cond. .022 Mfd., 200 V., Paper	W1—132127	Knob—Brown (3 Req.) 52TD & 52TF	
14	G67—39001	Cond. .1 Mfd., 200 V., Paper	W2—132127	Knob—Ivory (3 Req.) 52TE	
15	G65—39001	Cond. .05 Mfd., 200 V., Paper	—132118	Cabinet—Ivory—Bakelite 52TE, 52TE-U	
16	G9—39004	Cond. 200 Mmf., Mica	—132098	Cabinet—Wood—52TF, 52TF-U	
17	G10—39001	Cond. .0033 Mfd., 160 V., Paper	—132100	Shipping Carton—52TF—52TF-U	
18A	—49664-B	{ Cond. 15 Mfd., 140 V., Elect.	—132242	Cabinet Back—52TF	
18B		{ Cond. 15 Mfd., 120 V., Elect.	S—80	Screw—52TF Back Mtg.	
19	G63—39001	Cond. .002 Mfd., 200 V., Paper	—132135	Bottom Assembly (U-77 & U-76 Chassis)	
20	G65—39001	Cond. .05 Mfd., 200 V., Paper	—130126	Hole Cover (U-77 & U-76 Chassis)	
21	NONE		—130127	Switch Hole Cover (U-77 & U-76 Chassis)	
22	NONE		—45020	Washer—Chassis Mtg. (3) 52TF	
23	NONE		—130558	Screw—Chassis Mtg. (3) 52TF	
24	NONE		—30409	Washer—Chassis Mtg. (3) 52TD & 52TE	
25	NONE		—130490	Screw—Chassis Mtg. (3) 52TD & 52TE	
			—132123	Socket—8 Prong (5)	
			—49693	Insulator—Socket (3)	

**MODELS 76, 77  
WIRING DIAGRAM**



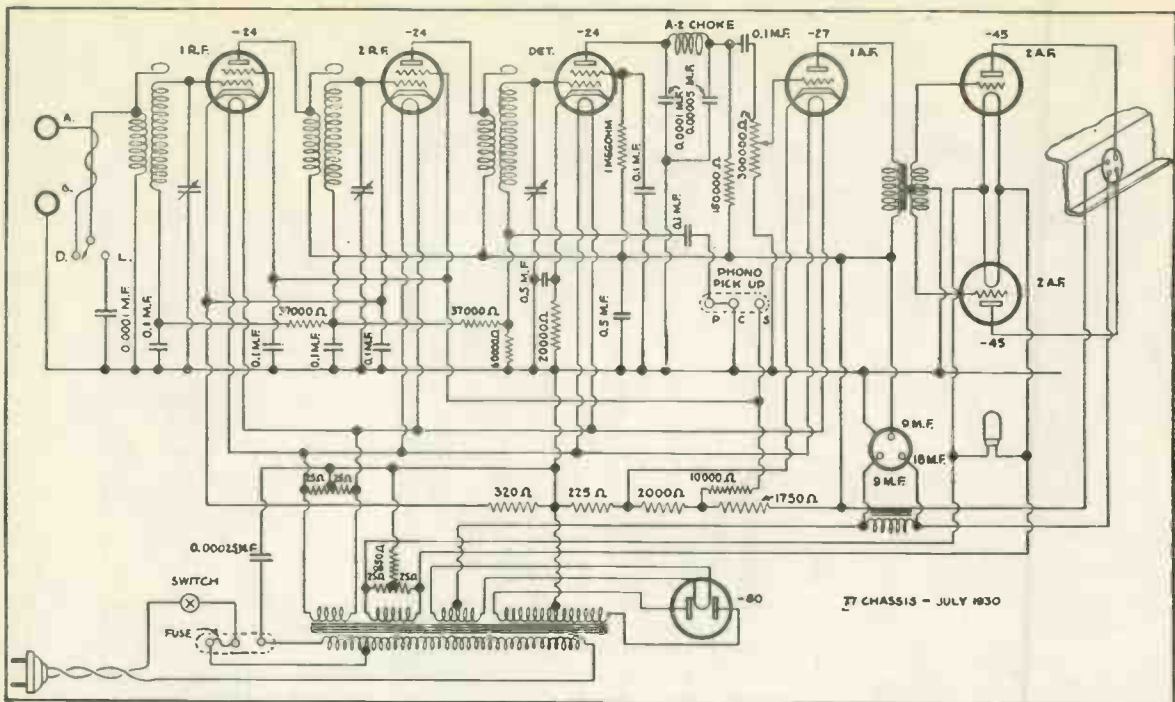
NOTE-ON 52TD-U, 52TE-U & 52TF-U, ITEM 36 (SPEAKER)  
BECOMES G3-49675, ALL OTHER PARTS & CONNECTIONS  
REMAIN THE SAME

NOTE-ON 52TF, ITEM 3 (LOOP ANT.) BECOMES GB132245-1  
ALL OTHER PARTS & CONNECTIONS REMAIN THE SAME.

455 K.C.I.F.



# Model 77



Qty.	Part No.	Description
1	D-20329	Chassis
1	W-20380	A. F. Transformer
4	W-7873	Sockets (3 prong)
4	W-7871	Sockets (4 prong)
5	W-7874	Socket Guide (5 prong)
3	W-7872	Socket Guide
1	W-20444	Antenna R. F. Transformer
2	W-20445	Interstage R. F. Transformer
3	W-7272-A	Screen Grid Connections
3	B-7558	R. F. Coil Shield
1	W-20439	Variable Condenser Gang Complete
	W-20456	Dial Assembly
	W-20443	Inner Bracket
	W-20209	Outer Bracket
	W-20431	Drive Pulley
	W-20435	Spring Washer
	W-5749	Drive Rope
	W-20434	Dial Stop
	W-20376	Shadow Box
1	C-20455	R. F. Shield Assembly
1	W-20381	Filter Choke
1	W-20341	Merston Condenser (18-0-0)
1	W-4794	Stiffened Sleeve (5 3/4 in. long)
2	W-6762	Mounting Clamp
1	W-20453	Condenser Bottom Support
1	W-20150	Power Transformer (110 v. 60 c.)
	W-20469	Power Transformer (220 v. 25 c.)
	W-20470	Power Transformer (110 v. 25 c.)
1	W-20496	Fuse Panel
1	W-4639	Fuse (2 amp.)
1	C-20451	Power Unit Shield
<b>PARTS UNDER CHASSIS</b>		
1	W-4362-D	Plate Choke
1	W-7847	.0001 Mfd. Fixed Condenser
1	W-20389	.00005 Mfd. Fixed Condenser

Qty.	Part No.	Description
1	W-20447	.1 Mfd. 3 Paper Fixed Condenser
1	W-20454	Mounted Resistor Assembly
	W-20099	Mounting Strip
	W-20464	1 megohm Resistor (Brown green spot)
	W-5735	150000 ohm Resistor (Brown, yellow spot)
	W-4923	60000 ohm Resistor (Blue, orange spot)
	W-5370	20000 ohm Resistor (Red, orange spot)
1	W-20361	Mounted Resistor Assembly
	W-20467	Mounting Strip
	(2) W-7287	37000 ohm Resistor (Orange, violet)
	W-4921	10000 ohm Resistor (Brown, Orange spot)
1	W-7944	.1-1 Mfd. Fixed Condenser
1	W-20266	Terminal Strip (P. C. S.)
1	W-20304	Volume Control
1	W-20449	.1-5 Mfd. Fixed Condenser
1	W-20448	.1 Mfd. 2 Paper Fixed Condenser
1	W-20179	Support Bracket
1	W-20446	.1-5 .1 Mfd. Fixed Condenser
1	W-20264	Terminal (A & G)
1	W-20452	Fixed Resistance (Candohms)
1	W-21000	On, off & tap Switch Assembly
		On, off Switch only
		Tap Switch Only
1	W-7847	.0001 Mfd. Fixed Condenser
1	W-7084	850 ohm Fixed Resistor
1	W-20390	Fixed Resistance Assembly (8 lugs)
1	W-4924	.00025 Mfd. Fixed Condenser
1	B-6867	Cable & Plug
7	W-20456	Spring Clips
1	C-20180	Bottom
1	W-20167	Knob (large)
2	W-20482	Knob (small)

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

# CROSLEY EXPORT MODELS 78-CJ AND 78-CK

## ALIGNMENT PROCEDURE

### PRELIMINARY

Output Meter Connections . . . . .	Plate to Screen of 6K6
Generator Ground Connection . . . . .	To Chassis or Ground Lead
Dummy Antenna to be in series with Generator Output . . . . .	See chart below
Position of Volume Control . . . . .	Fully on
Position of Tone Control . . . . .	Music—center position

### ALIGNMENT CHART

Alignment Sequence	Dummy Antenna	SIGNAL GENERATOR		Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
		Frequency Setting	Input Connection To Receiver				
1.	.02 Mf.	455 Kc.	Antenna Lead	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum. Adjust for maximum.
2.	400 Ohm (Carbon)	22.5 Mc.	Antenna Lead	S. W.	Fully open	No. 7B "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
3.	400 Ohm (Carbon)	22 Mc.	Antenna Lead	S. W.	Approx. 22 on dial	No. 8 "ANT" Trimmer	Adjust for maximum output while rocking gang through signal.
4.	400 Ohm (Carbon)	11.3 Mc.	Antenna Lead	Police	Fully open	No. 9D "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
5.	400 Ohm (Carbon)	11 Mc.	Antenna Lead	Police	Approx. 11 on dial	No. 9B "ANT" Trimmer	Adjust for maximum output while rocking gang through signal.
6.	.0002 Mf.	1650 Kc.	Antenna Lead	B. C.	Fully open	No. 9C "OSC" Trimmer	Adjust for peak; gang does not have to tune through signal.
7.	.0002 Mf.	1400 Kc.	Antenna Lead	B. C.	Approx. 140 on dial	No. 9A "ANT" Trimmer	Adjust for maximum output to not touch Osc. trimmer.

### IMPORTANT ALIGNMENT NOTES

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

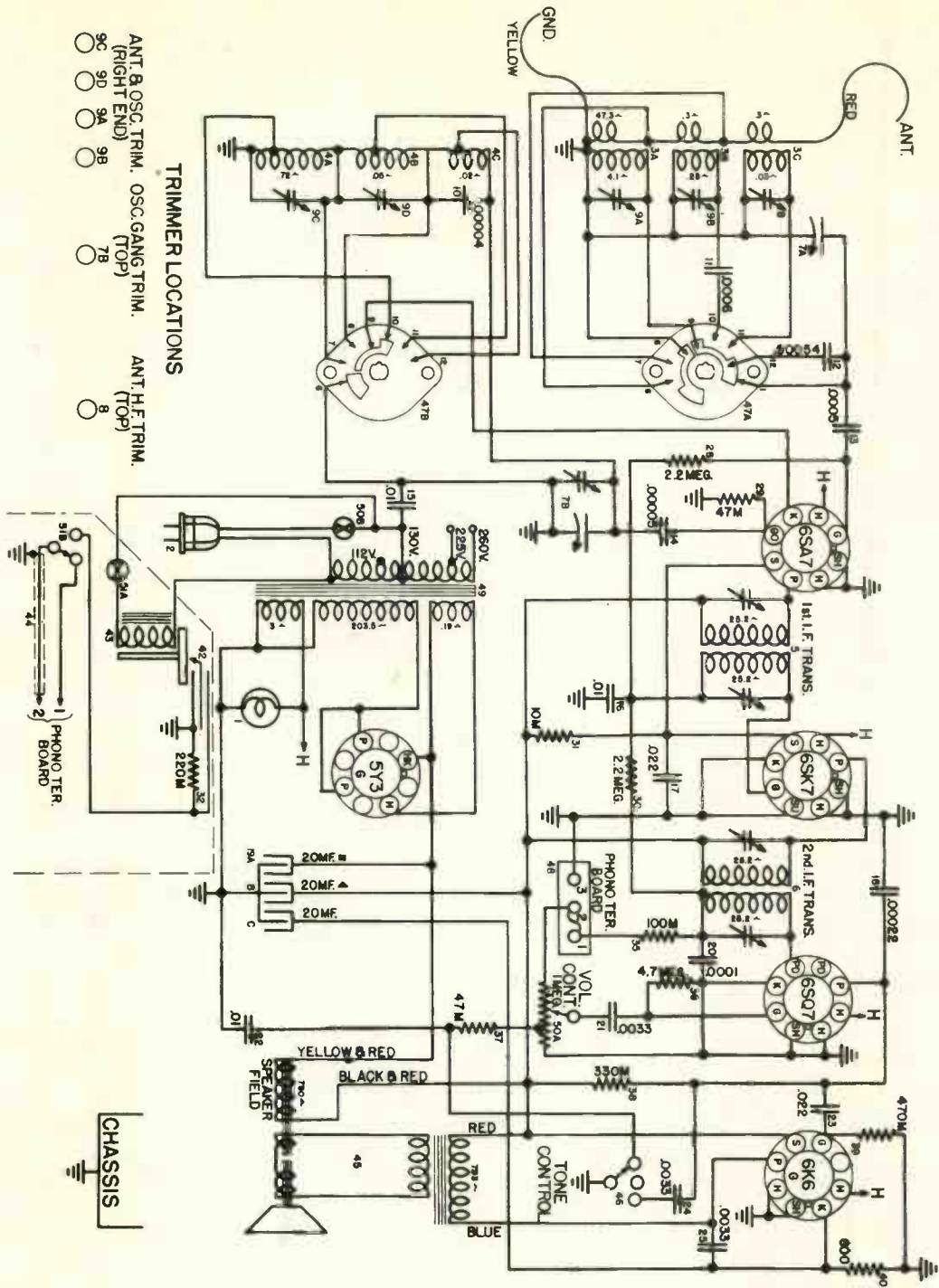
### PARTS LIST—MODEL 78CJ - 78CK

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Bulb, Dial Light	40	—38918	Res. 600 Ohm ½ Ins.
	G12 —49637	Dial Light Socket Assembly	41	NONE	
	—131966	Dial and Support	42	—132041	Tone Arm Assm.—78CK only
	—49847	Drive Shaft	43	—130582	Phono Motor—60 cy.-110 V.—78CK only
	—28032-B	Retaining Spring		—130863	Phono Motor—60 cy.-220 V.—78CK only
	—49846	Dial Pointer		—130864	Phono Motor—50 cy.-220 V.—78CK only
	—50607-C	Spring	44	G328 —34403	Shielded Lead Assm.—78CK only
	—41852	Drive Cord (23" or 56.5 cm.)	45	G4 —49792-A	Speaker
2	—45769-A	Power Cord and Plug		—130332-A	Rubber Bumpers (2 req.)
3A	G233—32000	Ant. Coil 540-1600 Kc Band		—130323	Spkr. Mtg. Plate
3B		Ant. Coil 4.8-11 Mc. Band		—130310	Spkr. Support Brkt.
3C		Ant. Coil 11-22.5 Mc. Band		—130165	No. 832 x ½ Hex. Head Mch. Scr.
4A	G260—32002	Osc. Coil 540-1600 Kc		—43885	No. 8 x ½ Hex. Hd. P.K. Scr.
4B		Osc. Coil 4.8-11 Mc.	46	—131977	Switch—Tone Control
4C		Osc. Coil 11-22.5 Mc.		—45808	No. 8 x 5-16 Hex. Hd. P.K. Scr., 10 req.
5	G250—32004	1st I.F. Trans.		—130264	Switch Arm Hub Assm.—(T.C.)
6	G251—32004	2nd I.F. Trans.		G3 —130264	Shaft Bearing Assm.—(T.C.)
7A	—49879-C	Var. Gang Cond.—Ant. Section	47AB	—131931-A	Switch, Band Chg.
7B		Osc. Section	48	G56 —26719	Ter. Board, Phono
	—45620	Headed Bushing—Gang Mtg.	49	—130514	Transformer, Power
8	—131925	Cond. Trimmer SW No. 2 Ant.	50A	—130044-A	Vol. Control, 1 Meg.
9A	MG8—131926	Cond. Trimmer Std. Bd. Ant.	50B		Power Switch
9B		Cond. Trimmer SW No. 1 Ant.	51AB	—131503	Phono-Radio Switch, 78CK only
9C		Cond. Trimmer Std. Bd. Osc.		—131987	CJ Cabinet
9D		Cond. Trimmer SW No. 1 Osc.		—131200	Carton—CJ Cabinet
10	G2 —131502	Cond. 40 Mmf. Mica		—131246	Knob—Vol. and Tone Control (2 req.)
11	G19 —131502	Cond. 600 Mmf. Mica		—41742	Knob Spring (Vol. and Tone Controls)
12	G18 —131502	Cond. 540 Mmf. Mica		—49872	Knob, Tail (1 req.)
13	G31 —39004	Cond. 500 Mmf. Mica		—131985	Knob—Phone-Radio (1 req.)
14	G25 —39004	Cond. 50 Mmf. Mica		—131163	Escutcheon
15	G37 —39001	Cond. .01 Mf., 400 V., Paper		—131203	Cabinet Back—CJ
16	G37 —39001	Cond. .01 Mf., 400 V., Paper	S-80	FS-18	No. 4 x ¾ Rd. Hd. Wd. Scr.
17	G39 —39001	Cond. .022 Mf., 400 V., Paper		—131991	CK Cabinet
18	G39 —39004	Cond. .00022 Mmf. Mica		—131994	Carton
19A	G29 —49794-A	Cond. 20 Mf., 250 V., Elect.		—131246	Knob—Vol. and Tone (2 req.)
19B		Cond. 20 Mf., 250 V., Elect.		—41742	Knob Spring (2 req.)
19C		Cond. 20 Mf., 250 V., Elect.		—131980	Knob—B.C. Switch (1 req.)
20	G27 —39004	Cond. 100 Mf. Mica		—49872	Knob, Tail (1 req.)
21	G10 —39001	Cond. .0033 Mf., 600 V., Paper		—131995	Knob—Phone-Radio (1 req.)
22	G37 —39001	Cond. .01 Mf., 400 V., Paper		—131163	Escutcheon
23	G39 —39001	Cond. .022 Mf., 400 V., Paper		—131990	Cabinet Back
24	G10 —39001	Cond. .0033 Mf., 600 V., Paper	S-80	FS-18	No. 4 x ¾ Rd. Hd. Wd. Scr. (9 req.)
25	G10 —39001	Cond. .0033 Mf., 600 V., Paper		—130760	Phono Mtg. Plate
26	NONE			—130625	No. 10—32 x 3 Mtg. Scr. (4 req.)
27	NONE			—38085	No. 10—32 Wing Nut (4 req.)
28	G27 —39002	Res. 2.2 Megohm ¼ W.		—130325	Shipping Board
29	G23 —39002	Res. 47,000 Ohm ¼ W.	L	—130628	No. 10 Lockwasher (4 req.)
30	G27 —39002	Res. 2.2 Megohm ¼ W.		—47724	Mounting Spring (8 req.)
31	—47100	Res. 10,000 Ohm 2 W.		—47733	Rubber Arm Rest
32	G21 —39002	Res. 220,000 Ohm ¼ W.—78CK only		—477333	Rest Brkt.
33	NONE		R	—155	No. 6—32 x ¾ Rd. Hd. Mch. Scr.
34	NONE		N	—B	No. 8—32 Hex. Nut
35	G19 —39002	Res. 100,000 Ohm ¼ W.		—131988	Instructions—CJ Cab.
36	G29 —39002	Res. 4.7 Megohm ¼ W.		—130842	Instructions—50 cycle
37	G17 —39002	Res. 47,000 Ohm ¼ W.		—49284	Short Wave Instructions
38	G22 —39002	Res. 330,000 Ohm ¼ W. Ins.		—47791	Needle Cup—CK Cabinet
39	G23 —39002	Res. 470,000 Ohm ¼ W. Ins.		—47790	Needle Cup Lid—CK Cabinet
				—46364	Phono Needles—Chrome Tipped



**Wiring Diagram — Model 78CK  
Less Phono Assm. — Model 78CJ**



**SOCKET VOLTAGES — MODEL 78**

All voltages measured from socket contact to chassis using 1000 OHM/VOLT D. C. Voltmeter 250 Volt Range, except heaters.

TUBE	FUNCTION	SOCKET CONTACT							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1-6SA7	Oscillator-Mixer	Gnd.	Gnd.	203	92	—	—	6.3	Grid
1-6SK7	I-F Amplifier	Gnd.	Gnd.	Gnd.	Grid	0	92	6.3	203
1-6SQ7	Det.-A.V.C.—1st A-F Amp.	Gnd.	Grid	Gnd.	—	—	70	6.3	Gnd.
1-6K6G	Output	Gnd.	Gnd.	190	203	—	J. B.	6.3	13.2
1-5Y3G	Rectifier	N. C.	*245 D.C. 4.5 A.C.	N. C.	268 A. C.	J. B.	268 A. C.	J. B.	245 D. C. 4.5 A. C.

Gnd. = Ground. J. B. = Junction Block. N. C. = No Connection.  
Voltage Drop Across Speaker Field = 42 volts.  
Maximum Power Output @ 130 Volt Line = 4.05 watts.  
Input Power @ 118 Volt Line = 42 watts.

# Model 72TA — Chassis Model No. 79

## TUBE VOLTAGE CHART

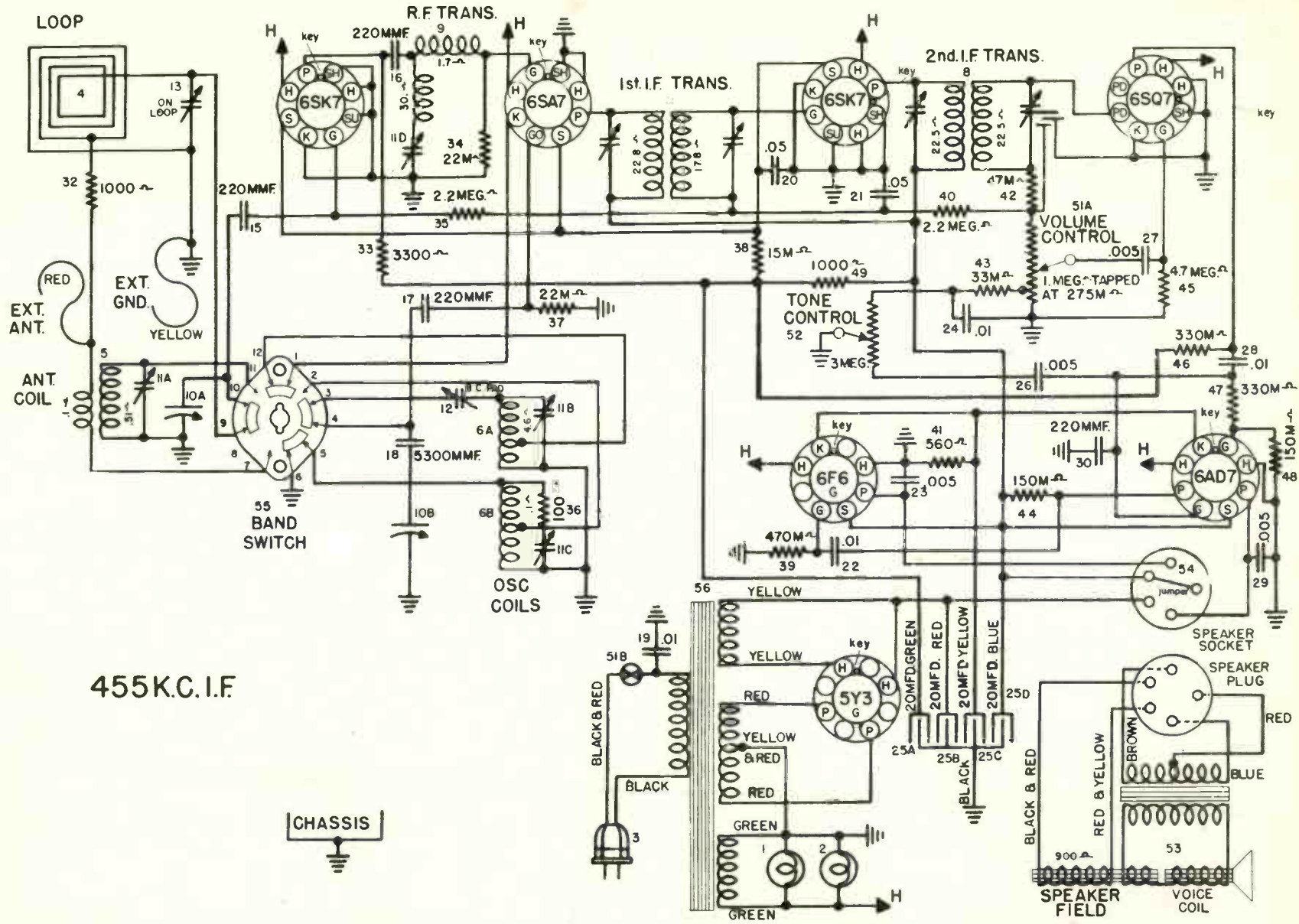
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.....		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier.....		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.....		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter and Output.....		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output.....		0	0	255	260	0	235	6.3 A. C.	23
5V3G—Rectifier.....		N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

### Signal Generator

Align-ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light (6 V.)	25D		Cond. 20 Mf. 450 V. Elect.
2	43567	Dial Light (6 V.)	26	39001-11	Cond. .005 Mf. 600 V.
	49637-21	Dial Light Socket (2)	27	39001-11	Cond. .005 Mf. 600 V.
	132231-6	Dial Face.	28	39001-37	Cond. .01 Mf. 400 V.
	132320-1	Dial Pointer.	29	39001-11	Cond. .005 Mf. 600 V.
	132167-6	Drive Cord Assem.	30	39004-9	Cond. 220 Mf.
	131930	Drive Shaft Bearing.	31		
	132641-1	Drive Shaft.	32	39002-7	Res. 1000 Ohm 1/4 W.
	49829-B	Lock Spring.	33	39002-10	Res. 3300 Ohm 1/4 W.
	132648-1	Screw—Dial Face (2)	34	39002-15	Res. 22000 Ohm 1/4 W.
3	132300-2	A. C. Cord & Plug.	35	39002-27	Res. 2.2 Megohm 1/4 W.
4	132691-2	Loop Antenna & Back Assem.	36	39002-1	Res. 100 Ohm 1/4 W.
5	32900-240	Antenna Coil.	37	39002-15	Res. 22000 Ohm 1/4 W.
6A	32002-273	Osc. Coil—B. C.	38	130593	Res. 15000 Ohm. 2 W.
6B		Osc. Coil—S. W.	39	39002-23	Res. 470000 Ohm. 1/4 W.
7	32004-282	1st I. F. Trans.	40	39002-27	Res. 2.2 Megohm 1/4 W.
8	32004-283	2nd I. F. Trans.	41	132636-1	Res. 560 Ohm. 2 1/2.
9	32001-113	R. F. Coil.	42	39002-17	Res. 47000 Ohm. 1/4 W.
10A	132428-2	Var. Cond. Ant. Sec.	43	39002-16	Res. 33000 Ohm. 1/4 W.
10B		Var. Cond. Osc. Sec.	44	39002-20	Res. 150000 Ohm. 1/4 W.
11A	132386-4	Trim. Cond. S. W. Ant.	45	39002-29	Res. 4.7 Megohm 1/4 W.
11B		Trim. Cond. B. C. Osc.	46	39002-22	Res. 330000 Ohm. 1/4 W.
11C		Trim. Cond. S. W. Osc.	47	39002-22	Res. 330000 Ohm. 1/4 W.
11D		Trim. Cond. Wave Trap.	48	39002-20	Res. 150000 Ohm. 1/4 W.
12	132267-3	Trim. Cond. B. C. Osc. Pad.	49	39002-69	Res. 1000 Ohm. 1 W.
13	132267-3	Trim. Cond.—Loop.	50		
14			51A	49793-1	Vol. Control.
15	39004-9	Cond. 220 Mmf.	51B		A. C. Power Switch.
16	39004-9	Cond. 220 Mmf.	52	131547-1	Tone Control.
17	39004-9	Cond. 220 Mmf.	53	132674-2	Speaker.
18	34005-34	Cond. 5300 Mmf.	54	28807-103	Speaker Socket.
19	30805	Cond. .01 Mf. 400 V.		52109	Tube Socket.
20	39001-41	Cond. .05 Mf. 400 V.		130860	Tube Clamp.
21	39001-65	Cond. .05 Mf. 200 V.		132697-1	Cabinet T. A.
22	39001-37	Cond. .01 Mf. 400 V.		132698-1	Carton.
23	39001-11	Cond. .005 Mf. 600 V.		132721-1	Screw—Cabt. Mtg. (3)
24	39001-61	Cond. .01 Mf. 200 V.		130197	Knob (4)
25A	132897-1	Cond. 20 Mf. 450 V. Elect.		42911	Washer—Paper (4)
25B		Cond. 20 Mf. 450 V. Elect.		132708-2	Dial Lens.
25C		Cond. 20 Mf. 25 V. Elect.			



455K.C.I.F.

WIRING DIAGRAM — MODEL 72TA

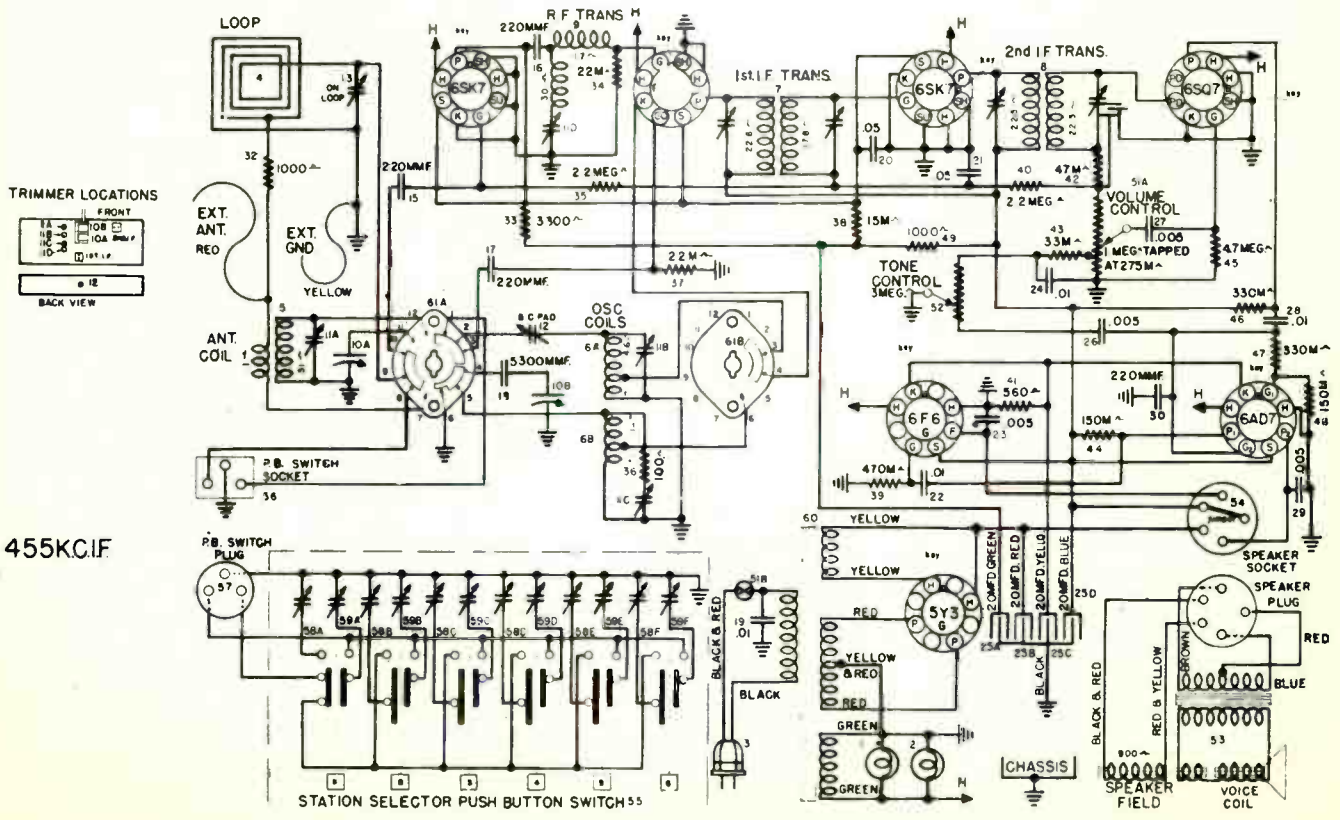
# Chassis Model No. 80

Output Meter Connections..... Plate of 6AD7 to Plate of 6F6  
 Generator Ground Connection..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

## ALIGNMENT PROCEDURE CHART

Signal Generator								
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks	
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.	
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.	
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.	
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.	
5.	Repeat Step No. 3 to check possible shift due to series adjustment.							
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.	
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.	
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.	
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.							

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)



**WIRING DIAGRAM**  
149

### TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier		N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

MAX. POWER OUTPUT ..... 6.5 WATTS  
 POWER CONSUMPTION ..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD ..... 70 VOLTS  
 J. B.—Junction Block. N. C.—No Connection

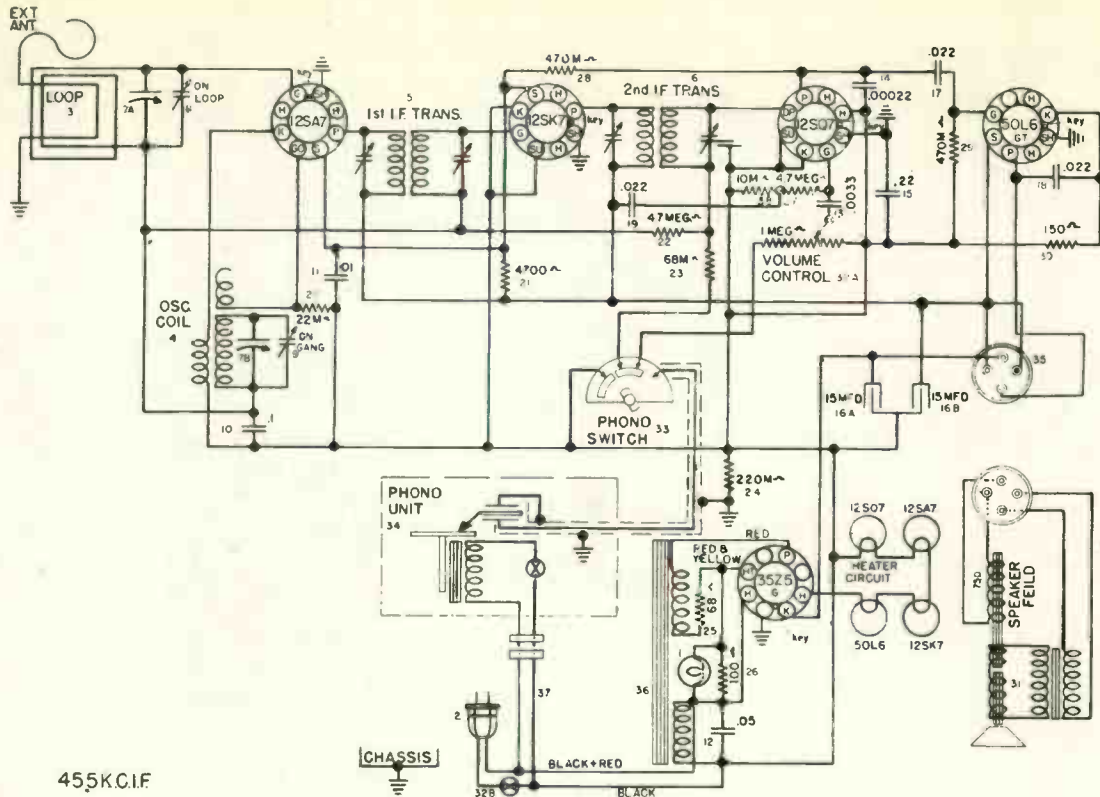
Voltages may vary 10% of values given.

### PARTS LIST, MODEL 72CA — CHASSIS MODEL No. 80

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light (6 V.)	39	39002-23	Res. 470000 Ohm. 1/4 W.
2	43567	Dial Light (6 V.)	40	39002-27	Res. 2.2 Megohm 1/4 W.
	49637-21	Dial Light Socket (2)	41	132636-1	Res. 560 Ohm. 2 W.
	132231-8	Dial Face.	42	39002-17	Res. 47000 Ohm. 1/4 W.
	132320-1	Dial Pointer.	43	39002-16	Res. 33000 Ohm. 1/4 W.
	132167-6	Drive Cord Assem.	44	39002-20	Res. 150000 Ohm 1/4 W.
	131930	Drive Shaft Bearing.	45	39002-29	Res. 4.7 Megohm 1/4 W.
	132641-1	Drive Shaft.	46	39002-22	Res. 330000 Ohm. 1/4 W.
	49829-B	Lock Spring.	47	39002-22	Res. 330000 Ohm. 1/4 W.
	132648-1	Screw—Dial Face (2)	48	39002-20	Res. 150000 Ohm. 1/4 W.
3	132300-2	A. C. Cord & Plug.	49	39002-69	Res. 1000 Ohm. 1 W.
4	132727-1	Loop Antenna Assem.	50		
5	32000-240	Antenna Coil.	51A	49793-1	Vol. Control.
6A	32002-273	Osc. Coil—B. C.	51B		A. C. Power Switch.
6B		Osc. Coil—S. W.	52	131547-1	Tone Control.
7	32004-282	1st I. F. Trans.	53	132674-1	Speaker.
8	32004-283	2nd I. F. Trans.	54	28807-103	Speaker Socket.
9	32001-118	R. F. Coil.	L-132705		Push Button Sw. Assem.
10A	132428-2	Var. Cond. Ant. Sec.	55	47133	P. B. Sw. Socket.
10B		Var. Cond. Osc. Sec.	56	132437-4	Push Button Cable.
11A	132386-4	Trim. Cond. S. W. Ant.	57	132722-1	Trimmer Cond.
11B		Trim. Cond. B. C. Osc.	58A		Trimmer Cond.
11C		Trim. Cond. S. W. Osc.	58B		Trimmer Cond.
11D		Trim. Cond. Wave Trap.	58C		Trimmer Cond.
12	132267-3	Trim. Cond. B. C. Osc. Pad.	58D		Trimmer Cond.
13	132267-3	Trim. Cond.—Loop.	58E		Trimmer Cond.
14			58F		Trimmer Cond.
15	39004-9	Cond. 220 Mmf.	59A	132722-1	Trimmer Cond.
16	39004-9	Cond. 220 Mmf.	59B		Trimmer Cond.
17	39004-9	Cond. 220 Mmf.	59C		Trimmer Cond.
18	34005-34	Cond. 5300 Mmf.	59D		Trimmer Cond.
19	30805	Cond. .01 Mf. 400 V.	59E		Trimmer Cond.
20	39001-41	Cond. .05 Mf. 400 V.	59F		Trimmer Cond.
21	39001-65	Cond. .05 Mf. 200 V.	60	132313-4	Power Trans.
22	39001-37	Cond. .01 Mf. 400 V.	61A	132640-1	Band Chg. Sw.
23	39001-11	Cond. .005 Mf. 600 V.	61B		Band Chg. Sw.
24	39001-61	Cond. .01 Mf. 200 V.		132668-1	Trans. Screen.
25A	132807-1	Cond. 20 Mf. 450 V. Elect.		52109	Tube Socket.
25B		Cond. 20 Mf. 450 V. Elect.		130860	Tube Clamp.
25C		Cond. 20 Mf. 25 V. Elect.		26719-50	Term. Bd. Assem.
25D		Cond. 20 Mf. 450 V. Elect.		132701-1	Cabinet.
26	39001-11	Cond. .005 Mf. 600 V.		132702-1	Carton.
27	39001-11	Cond. .005 Mf. 600 V.		132721-1	Screw—Cabt. Mtg. (3)
28	39001-37	Cond. .01 Mf. 400 V.		130197	Knob (4)
29	39001-11	Cond. .005 Mf. 600 V.		42911	Washer—Paper (4)
30	39004-9	Cond. 220 Mf.		132708-2	Dial Lens.
31				131412	Screw—P. B. Mtg. (2)
32	39002-7	Res. 1000 Ohm. 1/4 W.		130223-3	Escutcheon—P. B.
33	39002-10	Res. 3300 Ohm. 1/4 W.		130324	Screw—P. B. Esc. (4)
34	39002-15	Res. 22000 Ohm. 1/4 W.		132478-3	Envelope Assem.
35	39002-27	Res. 2.2 Megohm 1/4 W.		132704-1	Instruction.
36	39002-1	Res. 100 Ohm. 1/4 W.		130186-B	Call Letter Sheet.
37	39002-15	Res. 22000 Ohm. 1/4 W.		130187	Call Letter Cover.
38	130593	Res. 15000 Ohm. 2 W.		130159-4	Push Button (6)

*Twenty-five years ago the Crosley Corporation supplied the service man's need for crystal detectors. It can supply the infinitely greater radio service needs of today's fast moving industry.*

CHASSIS No. 83



PARTS LIST—MODEL 52-TQ—CHASSIS No. 83

Figures in first column refer to parts in diagrams.

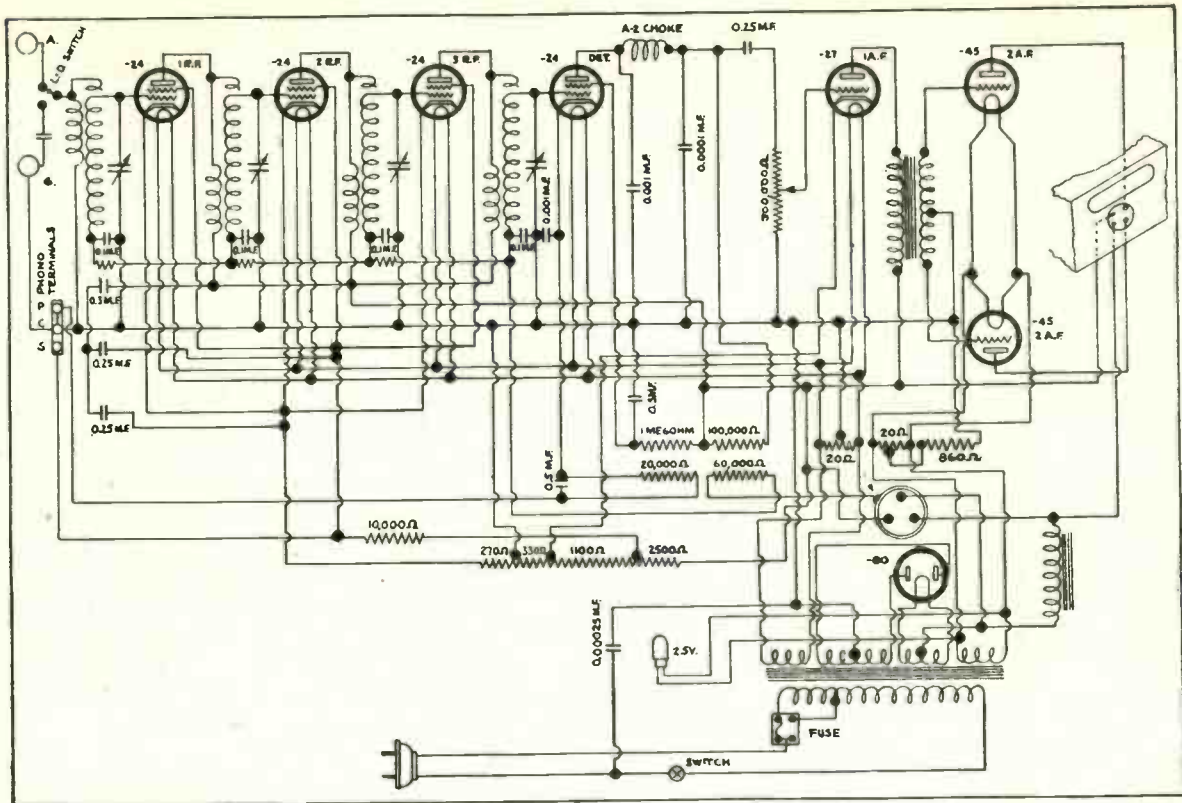
Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48858	Dial Light.	24	G21—39002	Res. 220,000 Ohms $\frac{1}{4}$ W.
	L—132109	Dial Light Socket Assm.	25	—133526-1	Res. 68 Ohms 2 W.
	—132099-2	Dial Face.	26	G63—39002	Res. 100 Ohm 1 W.
	—132097-5	Dial Pointer.	27	G29—39002	Res. 4.7 Megohm $\frac{1}{4}$ W.
	—132117-2	Celluloid Dial Lens.	28	G23—39002	Res. 470,000 Ohm $\frac{1}{2}$ W.
	L—132131	Drive Cord Assm.	29	G25—39002	Res. 470,000 Ohm $\frac{1}{2}$ W.
2	—132119-7	Drive Shaft.	30	G33—39002	Res. 150 Ohms $\frac{1}{2}$ W.
	—132300-1	A. C. Cord & Plug.	31	G—132683-2	Speaker (750 Ohm Field)
	—45738	Lock Plate Power Cord.	32A	—49774	Volume Control (1 Meg.)
3	—132142	Ant. Loop Assm.	32B	—49774	A. C. Power Switch.
	—132102	Spacer—Loop Mtg. (2)	33	—130265	Phono Switch.
	—23843	Screw—Loop Mtg. (2)	34	L—133542	Phono Unit.
4	G—32002-276	Osc. Coil (1)	35	W—133475	Speaker Cable.
5	G—32004-266	1st I. F. Trans.	36	—133528-2	Power Trans. (110 V.—60 Cycle)
6	G—32004-267	2nd I. F. Trans.	37	L—133588	Motor Cable Assm.
7A	—49736-2	Var. Cond. Ant. Sec.	30	G13—39002	Resistor 10,000 Ohm $\frac{1}{4}$ W.
7B		Var. Cond. Osc. Sec.		—133443-2	Cabinet.
8	—49652-2	Ant. Trimmer Cond.		—130313A	Knob (3)
9	On Gang	Osc. Trimmer Cond.		—41742	Knob Spring (3)
10	G67—39001	Cond. .1 Mf., 200 V.		L—133542	Record Changer (115 V.—60 Cycle)
11	G61—39001	Cond. .01 Mf., 200 V.		—133524	Screw Changer (3)
12	G65—39001	Cond. .05 Mf., 200 V.		—133524-1	Spring Motor Bd. Assn. (3)
13	G10—39001	Cond. .0033, 600 V.		—29614-2	Nut Motor Bd. Assn. (3)
14	G9—39004	Cond. .00022, Mica.		—133525-1	Washer Motor Bd. Assn. (3)
15	G69—39001	Cond. .22, 200 V. Paper.		—46279	Grommet Motor Bd. Assn. (1)
16A	—133474-1	Cond. .15 Mfd., 200 V.		N—6	Nut—Speaker (1)
16B	—133474-1	Cond. .15 Mfd., 150 V.		O—6	Washer—Speaker (1)
17	G63—39001	Cond. .022, 200 V.		—133549-1	Lead Weight—Crystal Dampner.
18	G63—39001	Cond. .022, 200 V.		—132659-1	Needle Assm.—(Floating Jewel)
19	G63—39001	Cond. .022, 200 V.		—133569-1	Spring—Motor Bd. Assn.
20	G15—39002	Res. 22,000 Ohms $\frac{1}{4}$ W.		—132221-1	Screw—Chassis (3)
21	G42—39002	Res. 4700 Ohms $\frac{1}{2}$ W.		—30409	Washer—Chassis (3)
22	G29—39002	Res. 4.7 Megohm $\frac{1}{4}$ W.		L—8	Lockwasher—Chassis (3)
23	G18—39002	Res. 68,000 Ohms $\frac{1}{4}$ W.		—133587-1	Record Changer Instructions.

ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono. Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.0001 MF.	455 KC.	Antenna Lead	Radio	Fully Open	1st I-F(2) 2nd I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	.0001 MF.	1650 KC.	Antenna Lead (red)	Radio	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
3.	.0001 MF.	1400 KC.	Antenna Lead (red)	Radio	140 Dial	B.C. "Ant."	Adjust for maximum output

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.

# Model 84



Qty.	Part No.	Description	Qty.	Part No.	Description
1	D-20204-C	Chassis .....			
1	W-20173	A. F. Transformer .....			
5	W-7873	Tube Socket—5 Prong .....			
4	W-7871	Tube Socket—4 Prong (1 for loud speaker) .....			
8	W-7874	Socket guides .....			
1	W-7872	Socket guide (loud speaker) .....			
1	W-20273	Variable Condenser gang assembly .....			
1	W-20208	Inner bracket .....			
1	W-20209	Outer bracket .....			
1	W-20431	Dial Stop .....			
1	W-20435	Spring Washer .....			
1	W-20431	Drive Pulley .....			
1	W-20426	Dial Assembly .....			
1	W-5749	Drive rope .....			
1	W-20376	Shadow box escutcheon assembly .....			
4	W-7272-A	Screen Grid connections .....			
1	C-20206	Condenser & tube shield assembly .....			
1	C-20363	Condenser & tube shield cover .....			
1	W-20341	Mershon Condenser (9-9-18) .....			
1	W-6764	Mershon Condenser cap .....			
1	W-4742	Jar Cap Screw .....			
1	W-4741	4-36 Square Nut .....			
2	W-6762	Mounting Clamp .....			
1	W-20150	Power Transformer (110 v. 60 c.) .....			
	W-20469	Power Transformer (110 v. 25 c.) .....			
	W-20470	Power Transformer (220 v. 25 c.) .....			
1	W-7496	Transformer shield .....			
1	W-20171	Fuse Panel Assembly .....			
1	W-7983	Fuse (3 amp.) .....			
1	W-20321	Fuse guard .....			
1	W-20322	Fuse guard insulator .....			
1	W-20175	A & G terminal .....			
1	W-20266	Phone pick-up terminal .....			
		<b>Miscellaneous</b>			
	W-20178	Grommets .....			
	W-7578	Spaghetti Tubing .....			
	W-20485	Knob, Large .....			
	W-20474	Knob, Small (set screw type) .....			
	W-20486	Knob, Small (spring type) .....			
					<b>PARTS UNDER CHASSIS</b>
2	W-4313	.5 mfd fixed Condenser .....			
1	W-4362	R. F. Plate Choke .....			
1	W-7847	.0001 mfd fixed Condenser .....			
1	W-20187	.25 mfd fixed Condenser .....			
1	W-20622	Mounted Resistor Assembly .....			
	W-20609	Terminal Strip Assembly .....			
	W-20464	1 meg. fixed resistance (brown, green dot) .....			
	W-5469	100,000 ohm fixed resistance (brown, yellow dot) .....			
	W-5370	20,000 ohm fixed resistance (red, orange dot) .....			
	W-4923	60,080 ohm fixed resistance (blue, orange dot) .....			
1	W-20452	Candohm fixed resistance (5 taps) .....			
1	W-5370	20,000 ohm fixed resistance .....			
1	W-5713	Terminal Strip .....			
1	W-20185	Volume Control .....			
2	W-6754	.001 mfd Condenser .....			
1	W-20186	.25-3-.25 mfd Condenser .....			
3	W-4923	60,000 fixed resistance .....			
3	W-5098	Rubber Tubing .....			
4	W-20188	.1 mfd fixed condenser .....			
1	B-20330	Coil Mounting Strip .....			
1	W-20374	Antenna R. F. Transformer Assembly .....			
3	W-20375	R. F. Transformer Assen. .....			
4	W-20330	R. F. Coil Shield .....			
4	W-20491	Rubber Washer .....			
1	W-21012	On, Off, and Tap Switch Assembly .....			
		Power Switch only .....			
		Tap Switch only .....			
1	W-20490	.00025 mfd fixed Condenser .....			
1	W-20176	Candohm fixed resistance (8 taps) .....			
1	W-20172	Filter Choke .....			
1	W-20490	.00025 mfd fixed Condenser .....			
1	B-6867	Cable and Plug .....			
1	C-20205	Chassis Bottom .....			
2	W-20177	Brackets for Bottom .....			

# Chassis Model No. 85

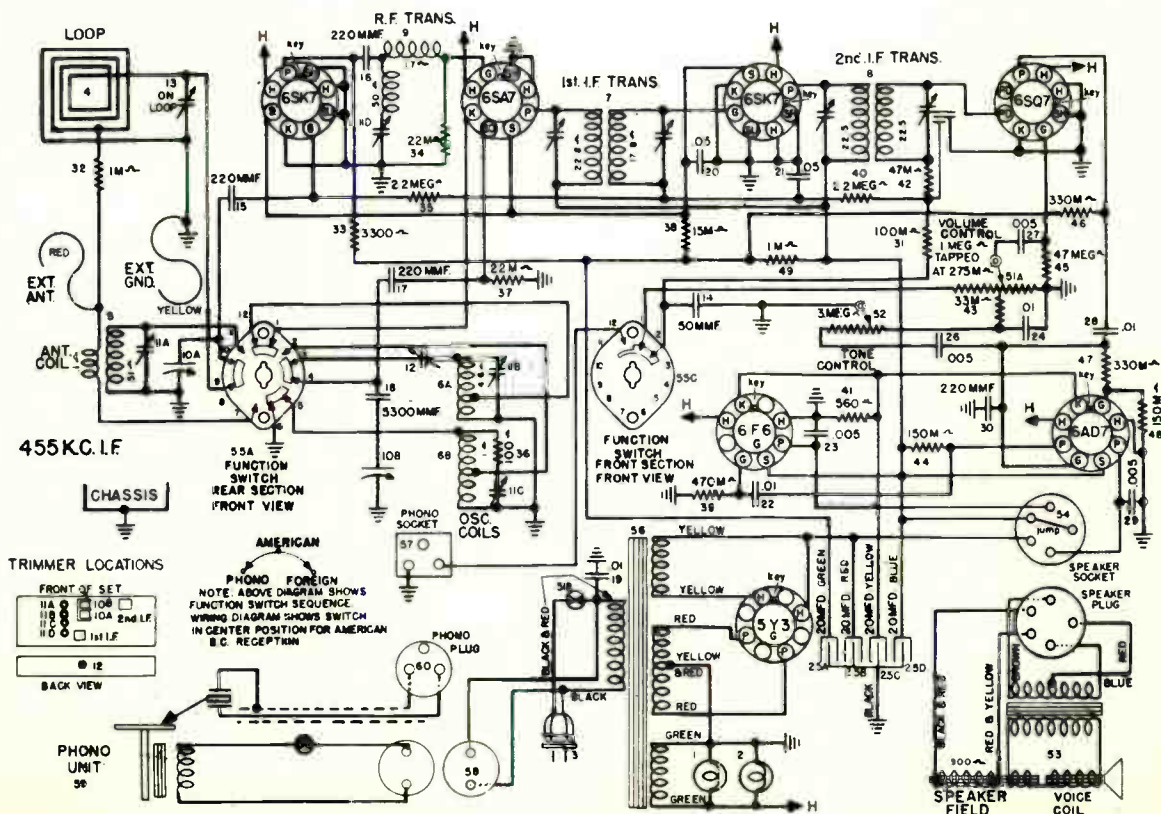
## ALIGNMENT PROCEDURE

Output Meter Connections.....	Plate of 6AD7 to Plate of 6F6
Generator Ground Connection.....	To Chassis or Ground Lead
Dummy Antenna to be in series with generator output.....	See Chart Below
Position of Volume Control.....	Fully On
Position of Tone Control.....	Treble or Speech

### ALIGNMENT PROCEDURE CHART

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully Open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1850 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)



WIRING DIAGRAM



### TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT,  
500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7—R. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	235
6SA7—OSC.—Mod.		0	0	260	80	0	0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	80	6.3 A. C.	260
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	85	6.3 A. C.	0
6AD7—Phase Inverter and Output		0	0	255	260	0	180	6.3 A. C.	23
6F6—Output		0	0	255	260	0	235	6.3 A. C.	23
5Y3G—Rectifier		N. C.	330	J. B.	300A.C.	J. B.	300A.C.	J. B.	330

MAX. POWER OUTPUT ..... 6.5 WATTS  
 POWER CONSUMPTION ..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD ..... 70 VOLTS  
 J. B.—Junction Block. N. C.—No Connection

Voltages may vary 10% of values given.

### PARTS LIST, MODEL 72CP — CHASSIS MODEL No. 85

Item No.	Part No.	Description	Item No.	Part No.	Description
1	43567	Dial Light.	42	G-39002-17	Res. 47,000 Ohms, ¼ W.
2	43567	Dial Light.	43	G-39002-16	Res. 33,000 Ohms, ¼ W.
	132708-2	Dial Lens.	44	G-39002-20	Res. 150,000 Ohms, ¼ W.
	132707	Tack Point (14) Dial Lens Mtg.	45	G-39002-29	Res. 4.7 Megohms, ¼ W.
	132231-13	Dial Face Assem.	46	G-39002-22	Res. 330,000 Ohm, ¼ W.
	132648-1	Screw—(2)—Dial Face Mtg.	47	G-39002-22	Res. 330,000 Ohm, ¼ W.
	132320-1	Dial Pointer.	48	G-39002-20	Res. 150,000 Ohm, ¼ W.
	49637-21	Light Socket Assem.	49	G-39002-69	Res. 1,000 Ohm, 1 W.
3	132300-1	A. C. Cord & Plug.	50	None	Volume Control.
4	G-133650-1	Loop Ant. Assem.	51A	49793-1	Palnut—Vol. Control (1)
	131133	Screw—(4)—Loop Ant. Mtg.	51B	46662	A. C. Power Switch.
5	G-32000-240	Ant. Coil.	52	131547-1	Tone Control.
6A	G-32002-273	Osc. Coil—B. C.		46662	Palnut—Tone Control (1)
6B	G-32002-273	Osc. Coil—H. F.	53	130146-4	Speaker Assem.
7	G-32004-282	1st I. F. Trans.	54	G-28807-103	Spk. Socket.
8	G-32004-283	2nd I. F. Trans.	55A	133652-1	Function Switch.
9	133593	R. F. Coil.	55B	133629-3	Function Switch.
10A	132428-2	Var. Cond. Ant. Sec.	56	132313-4	Power Trans.
10B		Var. Cond. Osc. Sec.	57	47133	Phono Socket.
11A	432386-4	Trim. Cond. H. F. Ant.	58	132454-3	Motor Cable.
11B		Trim. Cond. B. C. Osc.	59	132530-1	Phono. Assem.
11C		Trim. Cond. H. F. Osc.	60	133704	Phono Cable & Plug.
11D		Trim. Cond. Wave Trap.		132453-1	Phono Cable Plug.
12	132267-3	Trim. Cond. B. C. Osc. Pad.		133429-3	72CP Cabinet.
13	132267-1	Trim. Cond. Loop.		133629	Carton.
14	G-39004-5	Cond. 50 Mmf.		132721	Screw—(2)—Chassis Mtg.
15	G-39004-9	Cond. 220 Mmf.		45579	Washer—(2)—Chassis Mtg.
16	G-39004-9	Cond. 220 Mmf.		130197	Knob (4)
17	G-39004-9	Cond. 220 Mmf.		42911	Cab. Protector (4)
18	G-34005-34	Cond. 5300 Mmf.		45580-A	Grommet—(4)—Spk. Mtg.
19	30805	Cond. .01 Mf. 120 V. A. C.		37953	Flat Washer—(4)—Spk. Mtg.
20	G-39001-41	Cond. .05 Mf. 400 V.		N-8	Nut—(4)—Spk. Mtg.
21	G-39001-65	Cond. .05 Mf. 200 V.		N-8	Lockwasher—(4)—Spk. Mtg.
22	G-39001-37	Cond. .01 Mf. 400 V.		49796	Headed Bushing (4) Spk. Mtg.
23	G-39001-11	Cond. .005 Mf. 600 V.		132478-9	Envelope Assembly. ①
24	G-39001-61	Cond. .01 Mf. 200 V.		133734	Record Changer Assem. ①
25A	132807-1	Cond. 20 Mfd. 450 V. Electro.		132489-1	Brkt. & Roller Assem.
25B		Cond. 20 Mfd. 450 V. Electro.		132537-3	Slide Rail (3)
25C		Cond. 20 Mfd. 25 V. Electro.		131133	Screw—Wood—Slide Rail.
25D		Cond. 20 Mfd. 450 V. Electro.		133703	Instructions ②
26	G-39001-11	Cond. .005 Mf. 600 V.		132918-1	Tone Arm Supp. Pad. ①
27	G-39001-11	Cond. .005 Mf. 600 V.		133745	Instr. Manual (G. 1)
28	G-39001-37	Cond. .01 Mf. 400 V.		133744	Record Changer Assem. ①
29	G-39001-11	Cond. .005 Mf. 600 V.		33055	Rubber Sleeve (2) Chassis Mtg.
30	G-39004-9	Cond. 220 Mf.		47265	Flat Washer (2) Chassis Mtg.
31	G-39002-10	Res. 100,000 Ohms, ¼ W.		132831-1	Screw (2) Chassis Mtg.
32	G-39002-7	Res. 1,000 Ohms, ¼ W.		132660-1	Chassis Suppt. Brkt.
33	G-39002-10	Res. 3,300 Ohms, ¼ W.		45056	Grommet (2) Chassis Brkt.
34	G-39002-15	Res. 22,000 Ohms, ¼ W.		49796	Headed Bushing (2) Chassis Brkt.
35	G-39002-25	Res. 2.2 Megohms, ¼ W.		132520-1	Screw (2) Chassis Brkt.
36	G-39002-1	Res. 100 Ohms, ¼ W.		131930	Drive Shaft Bearing.
37	G-39002-7	Res. 22,000 Ohms, ¼ W.		132641-1	Drive Shaft.
38	130793	Res. 15,000 Ohms, 2 W.		49829-B	Lock Spring (1)
39	G-39002-23	Res. 470,000 Ohms, ¼ W.		130860	Tube Clamp.
40	G-39002-27	Res. 2.2 Megohms, ¼ W.		132167-13	Drive Cord Assem.
41	132636-1	Res. 560 Ohm, 2 W.			

*Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.*

# Chassis No. 86

## TUBE VOLTAGE CHART

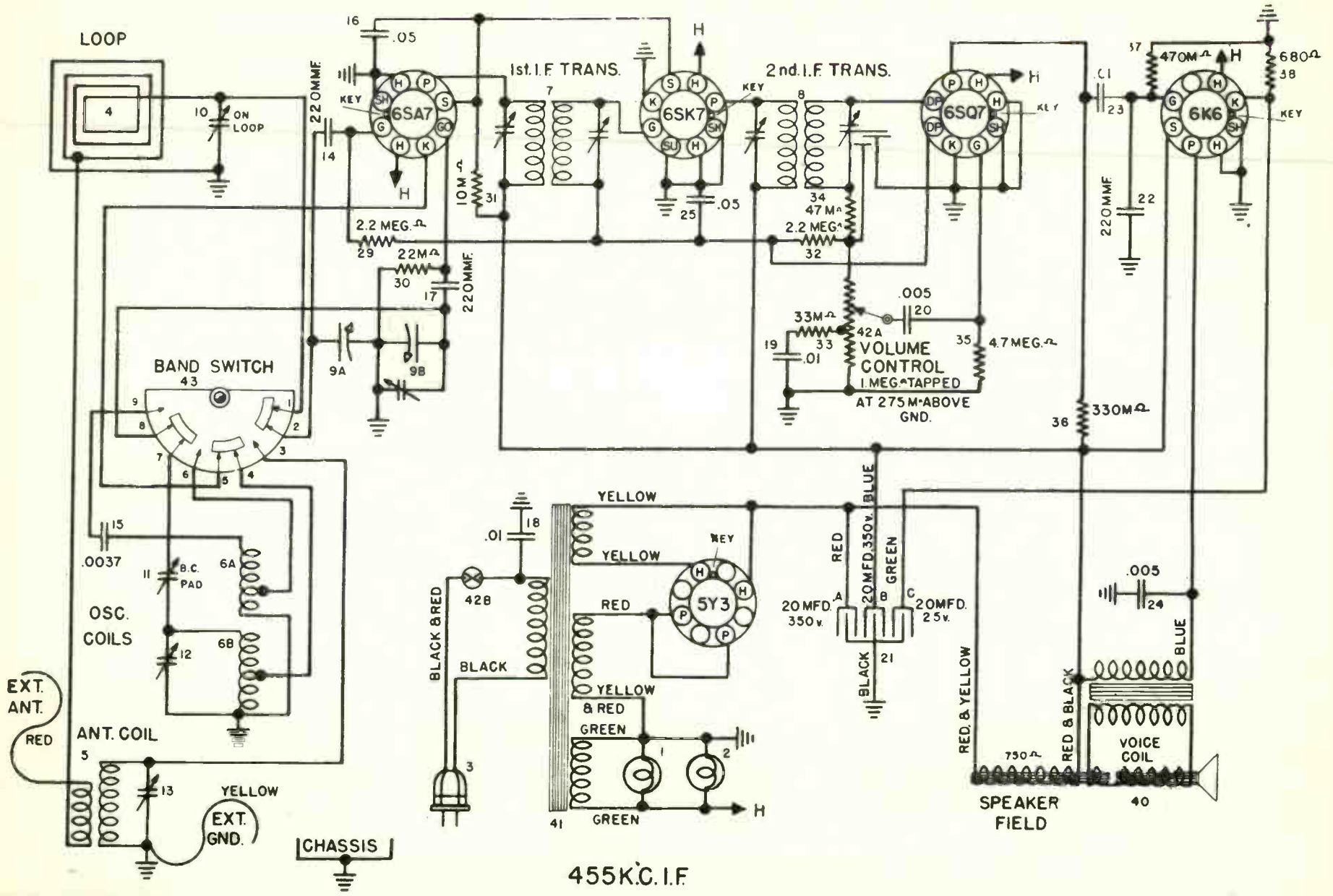
SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER						8	
		1	2	3	4	5	6		
6SA7—OSC.—Mod.		0	0	180	73		0	6.3 A. C.	0
6SK7—I. F. Amplifier		0	0	0	0	0	73	6.3 A. C.	180
6SQ7—Det. A. S. C. 1st A. F.		0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT—Output		0	0	160	180	0	180	6.3 A. C.	9
5Y3G—Rectifier		0	225		270 A. C.		270 A. C.		225

### Signal Generator

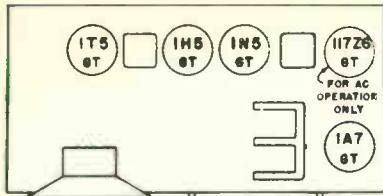
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

Item	Part No.	Description	Item	Part No.	Description
1	43567	Dial Light 6 V.	22	39004-G9	Cond. 220 Mmf. Mica.
2	43567	Dial Light 6 V.	23	39001-G37	Cond. .01 Mf. 400 V. Paper.
	49637-21	Light Socket Assem.	24	39001-G11	Cond. .005 Mf. 600 V. Paper.
	132641-1	Drive Shaft.	25	39001-G65	Cond. .05 Mf. 200 V. Paper.
	G-132167-6	Drive Cord Assem.	26		None.
	132320-1	Dial Pointer.	27		None.
	132231-12	Dial Face Assem.	28		None.
	132708-2	Dial Lens.	29	39002-G27	Res. 2.2 Megohm 1/4 W.
3	132300-1	Power Cable & Plug.	30	39002-G15	Res. 22,000 Ohms 1/4 W.
4	G-132675-2	Loop Ant. Assem.	31	47100	Res. 10,000 Ohms 2 W.
5	32000-G241	S. W. Ant. Coil.	32	39002-G27	Res. 2.2 Megohm 1/4 W.
6A	32000-G274	S. W. OSC. Coil.	33	39002-G16	Res. 33,000 Ohms 1/4 W.
6B		B. C. OSC. Coil.	34	39002-G17	Res. 47,000 Ohms 1/4 W.
7	32004-G282	1st I. F. Trans.	35	39002-G29	Res. 4.7 Megohm 1/4 W.
8	32004-G283	2nd I. F. Trans.	36	39002-G22	Res. 330,000 Ohms 1/4 W.
9A	132150-2	Var. Cond. R. F. Sec.	37	39002-G23	Res. 470,000 Ohms 1/4 W.
9B		Var. Cond. Osc. Sec.	38	39002-G37	Res. 680 Ohm 1/4 W.
10		Trimmer Cond. Ant. Loop.	39		None.
11		Trimmer Cond. B. C. Pad.	40	132683-5	Speaker.
12		Trimmer Cond. B. C. Osc.	41	49838	Power Trans.
13		Trimmer Cond. S. W. Ant.	42A	49793-1	Volume Control 1 Meg.
14	39004-G9	Cond. 220 Mmf. Mica.	42B		A. C. Switch.
15	34005-G17	Cond. 3700 Mmf. Mica.	43	49772-1	Band Change Switch.
16	39001-G41	Cond. .05 Mf. 400 V. Paper.		133564-1	52 TL Cabinet.
17	39004-G9	Cond. 220 Mmf. Mica.		GC-132601-3	Loop & Back Assem. 52 TK X Pl.
18	30805	Cond. .01 Mf. 120 V. A. C.		132127	Knob (3 Req.)
19	39001-G61	Cond. .01 Mf. 200 V. Paper.		132707-1	Tack Point—Dial Lens (11 Req.)
20	39001-G11	Cond. .005 Mf. 600 V. Paper.		S-80	Screw—Loop & Back Assem. 52 TL
21A	132669-1	Cond. 20 Mfd. 350 V. Elect.		44772	Screw—Chassis Mtg. (3 Req.)
21B		Cond. 20 Mfd. 350 V. Elect.		U-48744	Washer—Chassis Mtg. (3 Req.)
21C		Cond. 20 Mfd. 25 V. Elect.			

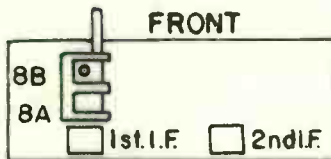


# SERVICE INFORMATION — Model 90 Chassis

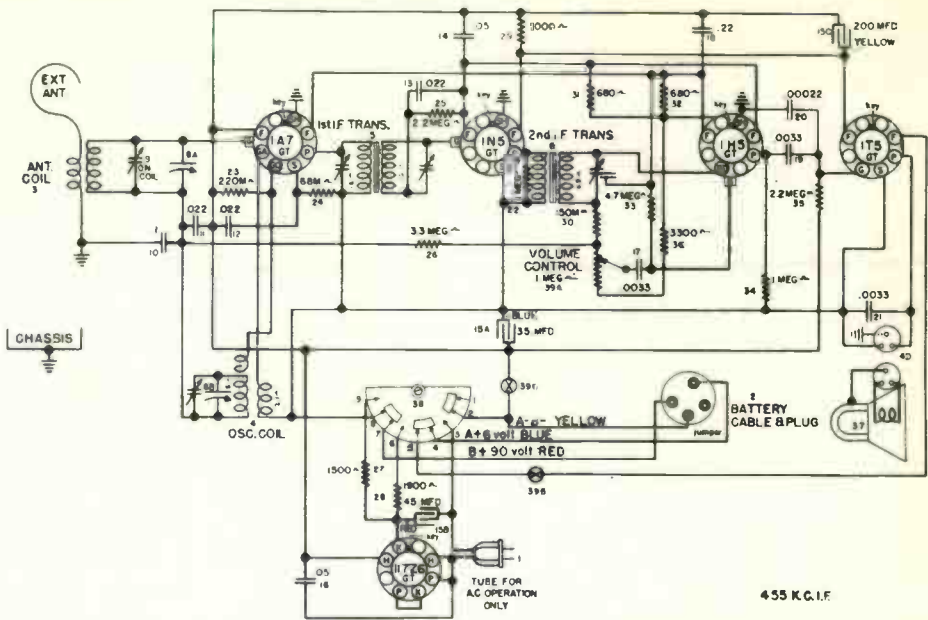
## TUBE LAYOUT



## TRIMMER LOCATIONS



## WIRING DIAGRAM



455 KC. I.F.

Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1A7GT	Osc. Modulator	1.3	80	34	.....	1.7	90	36	.....
1N5GT	I. F. Amplifier	3.8	80	80	.....	4.4	90	90	.....
1H5GT	Det.-A. S. C. 1st A. F	2.6	7	.....	.....	3.0	8	.....	.....
1T5GT	Out Put	5.1	72	80	.....	6.0	88	90	.....
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	115	.....	.....	.....	.....

## ALIGNMENT PROCEDURE

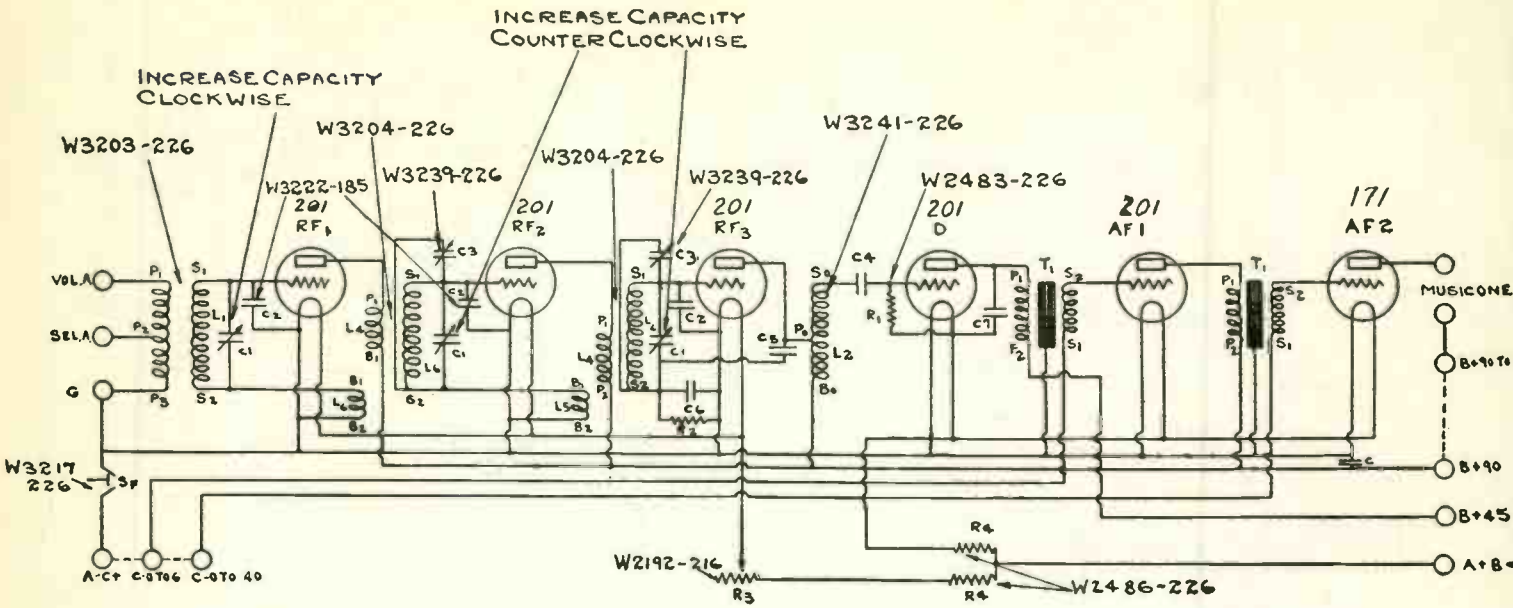
Volume Control on full Output meter connected to Plate and Screen of 1T5GT

### SIGNAL GENERATOR

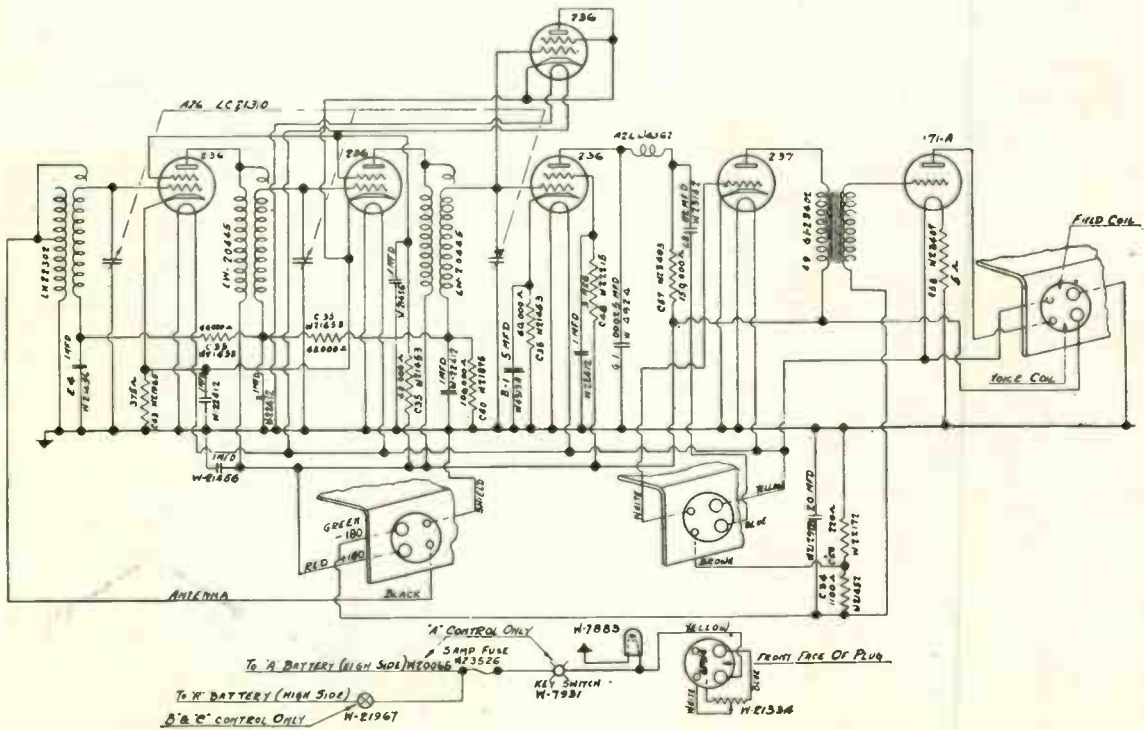
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on loop	Adjust for maximum output.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-1	A. C. Cable and Plug	30	39002-G20	Res. 150000 Ohm. 1/4 W.
2	132503-1	Battery Cable and Plug	31	39002-G6	Res. 680 Ohm. 1/4 W.
3	32000-G242	Ant. Coil	32	39002-G6	Res. 680 Ohm. 1/4 W.
4	32002-G272	Osc. Coil	33	39002-G29	Res. 4.7 Meg. 1/4 W.
5	32004-G268	1st I.F. Trans.	34	39002-G25	Res. 1 Meg. 1/4 W.
6	32004-G276	2nd I.F. Trans.	35	39002-G27	Res. 2.2 Meg. 1/4 W.
7	NO ITEM		36	39002-G10	Res. 3300 Ohm. 1/4 W.
8A	132150-1	Var. Cond. R.F. Sec.	37	132832	Speaker
8B		Var. Cond. Osc. Sec.	38	49772-1	Bat. Switch
9		Trimmer Cond.	39A	130520-2	Vol. Control—1 Meg.
10	39001-G67	Cond. .1 Mfd. 200 V.	39B		S. P. S. T. Switch
11	39001-G63	Cond. .022 Mfd. 200 V.	39C		S. P. S. T. Switch
12	39001-G63	Cond. .022 Mfd. 200 V.	40	W-132822-1	Spr. Cable Assm.
13	39001-G63	Cond. .022 Mfd. 200 V.		133988-2	Cabinet
14	39001-G65	Cond. .05 Mfd. 200 V.		130558	Mtg. Screw
15A	132501-1	Cond. 35 Mfd. Elec.		132127-1	Knob (3)
15B		Cond. 45 Mfd. Elec.		42911	Cabinet Protector (3)
15C		Cond. 200 Mfd. Elec.		G-132231-9	Dial Assem.
16	39001-G65	Cond. .05 Mfd. 200 V.		132258-1	Dial Lens
17	39001-G10	Cond. .0033 Mfd. 600 V.		132097-6	Dial Pointer
18	39001-G69	Cond. .22 Mfd. 200 V.		132167-3	Drive Cord Assem.
19	39001-G10	Cond. .0033 Mfd. 600 V.		132119-3	Drive Shaft
20	39004-G9	Cond. .00022 Mfd.		51071	Retaining Ring
21	39001-G10	Cond. .0033 Mfd. 600 V.		132123	Tube Socket
22	39001-G25	Res. 1 Meg. Ohm 1/4 W.		45580-A	Grommet—Spkr. Mtg. (3)
23	39002-G21	Res. 22000 Ohm. 1/4 W.		46480	Headed Bushing—Spkr. Mtg. (3)
24	39002-G18	Res. 68000 Ohm. 1/4 W.		132546-1	Speaker Brkt.—L.H.
25	39002-G27	Res. 2.2 Meg. Ohm. 1/4 W.		130181	Screw—Spkr. Mtg. (4)
26	39002-G28	Res. 3.3 Meg. Ohm. 1/4 W.		132520-1	Screw—Spkr. Mtg. (3)
27	39002-G8	Res. 1500 Ohm. 1/4 W.		N-5086	Nut—Spkr. Mtg. (3)
28	132502-1	Res. 1900 Ohm. Candohm.		132829-1	Speaker Brkt.—R.H.
29	39002-G7	Res. 1000 Ohm. 1/4 W.			

# Model RFL-90

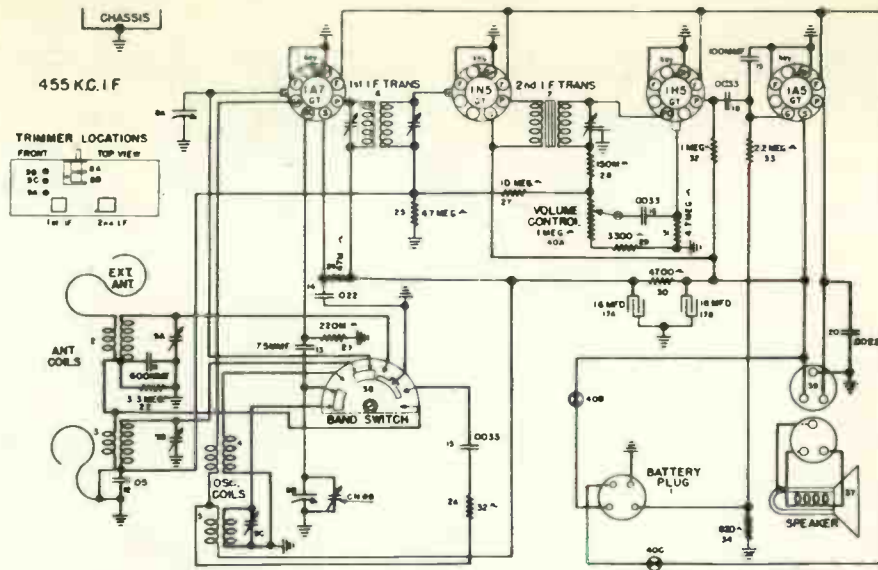


# MODEL 92



# SERVICE INFORMATION — MODEL 91 CHASSIS

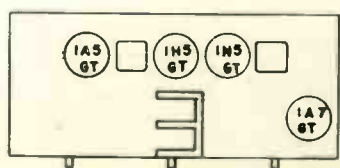
## WIRING DIAGRAM



Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	29	G-39002-10	Res. 3300 ohm 1/4 W.
2	G-32000-245	H. F. Antenna Coil	30	G-39002-11	Res. 4700 ohm
3	G-32000-244	B. C. Antenna Coil	31	G-39002-29	Res. 4.7 megohm
4	G-32002-278	H. F. Oscillator Coil	32	G-39002-25	Res. 1. megohm
5	G-32002-278	B. C. Oscillator Coil	33	G-39002-27	Res. 2.2 megohm
6	G-32004-287	1st I. F. Transformer	34	W-133758-1	Res. 820 ohm
7	G-32004-288	2nd I. F. Transformer	35	None	
8-A	C-133775-1	Var. Cond. Ant. Sec.	36	None	
8-B		Var. Cond. Osc. Sec.	37	C-133786-1	Speaker
9-A	B-132386-5	H. F. Ant. Trimmer	38	W-133712-1	Band Switch
9-B		B. C. Ant. Trimmer	39	W-132822-1	Spk. Plug & Cable
9-C		B. C. Osc. Trimmer	40-A	B-130520-2	Volume Control
10	None		40-B		Power Switch
11	G-34002-21	Cond. 600 Mmf. Mica	40-C		Power Switch
12	G-39001-65	Cond. .05 Mf. 200 V.		B-133720-5	Variable Cond. Brkt. (1)
13	G-39004-6	Cond. 75 Mmf. Mica		G-132231-14	Dial Assem.
14	G-39001-9	Cond. .022 Mf. 600 V.		G-132167-12	Drive Cord Assem.
15	G-39001-10	Cond. .0033 Mf. 600 V.		W-132119-6	Drive Shaft
16	G-39001-10	Cond. .0033 Mf. 600 V.		B-132320-1	Dial Pointer
17-A	W-49664-B	Cond. 16 Mfd. Elect.		G-34403-387	Antenna Grnd. Lead (1)
17-B		Cond. 16 Mfd. Elect.		W-51071	Retaining Ring (1) Drive Shaft
18	G-39001-10	Cond. .0033 Mf. 600 V.		D-133727-1	Cabinet
19	G-39004-7	Cond. 100 Mmf. Mica		133728	Carton
20	G-39001-9	Cond. .0022 Mf. 600 V.		133818	Screw (3) Chassis Mtg.
21	None			W-45579	Washer (3) Chassis Mtg.
22	G-39002-28	Res. 3.3 megohm 1/4 W.		W-130197	Knob (3)
23	G-39002-21	Res. 220,000 ohm		C-132708-2	Dial Lens
24	G-39002-17	Res. 47,000 ohm 1/4 W.		133729	Instructions
25	G-39002-29	Res. 4.7 megohm		W-133731-1	Battery Pack (CR-69)
26	45981	Res. 32 ohm 1/2 W.		132707	Tack point
27	G-39002-31	Res. 10 megohm		W-46447	Tube Shield
28	G-39002-20	Res. 150,000 ohm 1/4 W.			

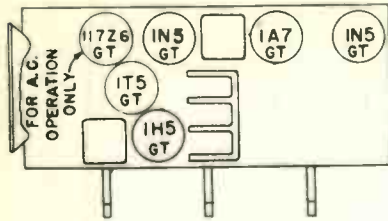
Align. Seq.	Dummy Antenna	Freq'cy Setting	Connec'n to Radio	Band Switch	Tun'g Cond. Setting	Trimmer Adjusted	Remarks
<b>Signal Generator</b>							
1.	.02 MF	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F(1) 1st I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead	S.W.	Fully Open	S. W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0002 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B. C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0002 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B. C. "Ant."	Adjust for maximum output.

Tube		Battery Pack (CR-69)			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Osc. Anode
1A7GT	Osc. Modulator	1.5	72	40	72
1N5GT	I. F. Amplifier	1.5	84	84	....
1H5GT	Det.-A. S. C. 1st A. F.	1.5	17	....	....
1A5GT	Out Put	1.5	81	84	....

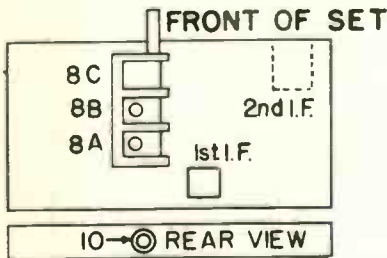


# SERVICE INFORMATION — Model 93 Chassis

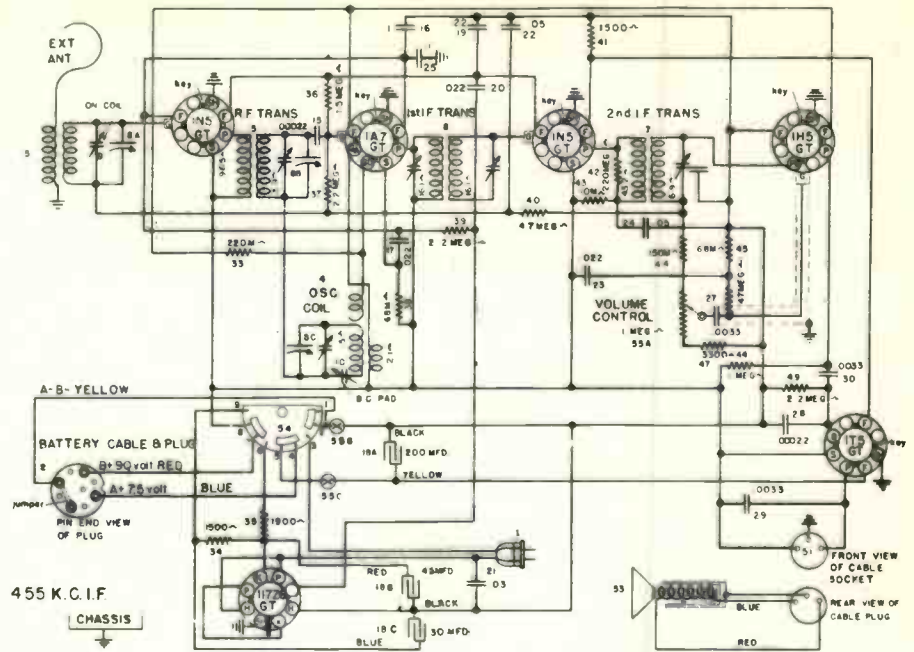
**TUBE LAYOUT**



**TRIMMER LOCATIONS**



**WIRING DIAGRAM**



Item No.	Part No.	Description	Item No.	Part No.	Description
1	132300-1	A. C. Cable & Plug	39	39002-G27	Res. 2,200,000 Ohm, 1/4 W.
2	132809-1	Battery Cable & Plug	40	39002-G29	Res. 4,700,000 Ohm, 1/4 W.
3	G-32,300-244	Ant. Coil	41	39002-G8	Res. 1500 Ohm, 1/4 W.
4	32002-G275	Osc. Coil	42	39002-G23	Res. 220,000 Ohm, 1/4 W.
5	32001-G119	R. F. Trans.	43	39002-G13	Res. 10,000 Ohm, 1/4 W.
6	32004-G285	1st I.F. Trans.	44	39002-G20	Res. 150,000 Ohm, 1/4 W.
7	32004-G286	2nd I.F. Trans.	45	39002-G18	Res. 68,000 Ohm, 1/4 W.
8A	132730-1	Vari. Cond. Ant. Sec.	46	39002-G29	Res. 4,700,000 Ohm, 1/4 W.
8B	132739-1	Vari. Cond. R. F. Sec.	47	39002-G10	Res. 3300 Ohm, 1/4 W.
8C	132739-1	Vari. Cond. Osc. Sec.	49	39002-G27	Res. 2,200,000 Ohm, 1/4 W.
9	132267-1	Trimmer Cond. Ant. Shunt	50	None	None
10	132267-2	Trimmer Cond. Osc. Series	51	132822-2	Speaker Cable & Socket
11	None	None	52	None	None
12	None	None	53	132731	Speaker Assem.
13	None	None		133786-1	Speaker
14	None	None		26000	Screw (Speaker) (2)
15	39004-G9	Cond. .00022 Mf. Mica.		2118	Washer (Speaker) (2)
16	39001-G47	Cond. .1 Mf. 200 V. Paper		X-5062	Hex. Nut (Speaker) (2)
17	39001-G63	Cond. .002 Mf. 200 V. Paper		O-6	Flat Washer (Speaker Mtg.) (8)
18A	132501-1	Cond. 200 Mfd. 30 V. Elect.		33265	Lock Washer (Speaker Mtg.) (2)
18B	132501-1	Cond. 45 Mfd. 200 V. Elect.	54	49772-3	Function Switch
18C	132501-1	Cond. 35 Mfd. 200 V. Elect.	55A	130520-3	Volume Control
19	39001-G69	Cond. 22 Mf. 200 V. Paper	55B	None	Power Switch
20	39001-G63	Cond. .022 Mf. 200 V. Paper	55C	None	Power Switch
21	39001-G65	Cond. .05 Mf. 200 V. Paper		133646-1	Cabinet 63 FB.
22	39001-G65	Cond. .05 Mf. 200 V. Paper		132721-1	Screw—Chassis Mtg. (3)
23	39001-G63	Cond. .002 Mf. 200 V. Paper		45020	Washer—Chassis Mtr. (3)
24	39001-G65	Cond. .05 Mf. 200 V. Paper		132127-1	Knob (3)
25	39001-G67	Cond. .1 Mf. 200 V. Paper		132708-2	Dial Lens
26	None	None		132707-1	Tack Points (14)
27	39001-G10	Cond. .0033 Mf. 600 V. Paper		132231-11	Dial Face Asm.
28	39004-G9	Cond. .00022 Mf. Mica.		132648-1	Screw—Dial Face—(2)
29	39001-G10	Cond. .0033 Mf. 600 V. Paper		132320-1	Dial Pointer
30	39001-G10	Cond. .0033 Mf. 600 V. Paper		CR-134048	4 1/2 V. Battery (2)
31	None	None		CR-134049	45 V. Battery (2)
32	None	None		132641-1	Drive Shaft
33	39002-G23	Res. 220,000 Ohm, 1/4 W.		49829-B	Retaining Spring—Drive Shaft
34	39002-G8	Res. 1500 Ohm, 1/4 W.		None	Cable—Individual Batteries Adapter
35	132502-1	Res. 1900 Ohm, Candohm		132167-13	Drive Cord Assy.
36	39002-G26	Res. 1,500,000 Ohm, 1/4 W.		132490-1	Junction Block (2)
37	39002-G27	Res. 2,200,000 Ohm, 1/4 W.			
38	39002-G18	Res. 68,000 Ohm, 1/4 W.			

**ALIGNMENT PROCEDURE**

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR		DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO				
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	"OSC." Series Pad	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments  
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 7.5 volts, .05 Amp.; "B" Battery drain @ 90 V., 12.5 M. A.;  
Power consumption @ 117.5 volts line — 22 Watts

# Chassis Model No. 95

Preliminary

Output Meter Connections.....Plate to Plate of Adjacent 6K6's  
 Generator Ground Connection.....To Chassis or Ground Lead  
 Dummy Antenna to be in Series with Generator Output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Master Tone Control.....All Buttons Out

## ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02MF.	455Kc.	Stator lug Rear section of Gang Cond.	B.C.	Fully open	2nd 1-F (2) 1st 1-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002MF.	1620Kc.	Antenna Terminal	B.C.	Fully open	B.C. "OSC" 62A	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002MF.	1400Kc.	Antenna Terminal	B.C.	Approx. 140 on dial	B.C. "Ant." <sup>64</sup> B.C. "R-F" 60A	Adjust for max. output. Do not touch B.C. Osc. trimmer. Adjust for maximum output.
4.	.0002MF.	600Kc.	Antenna Terminal	B.C.	Approx. 60 on dial	B.C. "OSC" Series 81	Adjust for max. output while rocking gang thru signal.
5.	400 ohm (Carbon)	6.5Mc.	Antenna Terminal	Police	Fully open	Pol "OSC" 62P	Adjust for peak; gang does not have to tune thru signal. And repeat No. 3
6.	400 ohm (Carbon)	6.0Mc	Antenna Terminal	Police	Approx. 6.0	Pol "ANT." 60B	Adjust for maximum output.
8.	400 ohm (Carbon)	18.3Mc.	Antenna Terminal	S.W.	Fully open	S.W. "OSC" 62C	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (Carbon)	18.0Mc	Antenna Terminal	S.W.	Approx. 18	S.W. "ANT." 60C	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES:** When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

## TUBE VOLTAGE CHART

Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

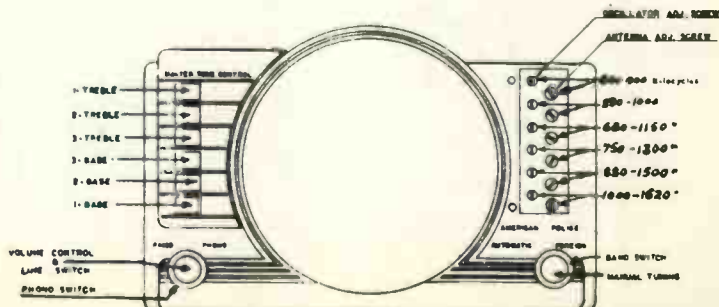
TUBE FUNCTION	1	2	3	4	5	6	7	8
6SK7 R. F. Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SA7 Converter	Gnd	Gnd	175	80	Neg	0	6.3 A.C.	0
6SK7 I.F. Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SQ7 Det. A. V. C. 1st A. F.	Gnd	0	Gnd	Gnd	0	67	6.3 A.C.	Gnd
6J5GT Phase Inverter	Gnd	Gnd	125	...	0	...	6.3 A.C.	Gnd
6K6GT (4) P. P. Parallel Output	Gnd	Gnd	295	175	0	...	6.3 A.C.	...
5Y3G Rectifier	N.C.	300	...	A.C.	...	A.C.	...	300

Max. Power Output... 12.0 Watts  
 Voltages may vary 10% of values given.

Power Consumption... 90 Watts

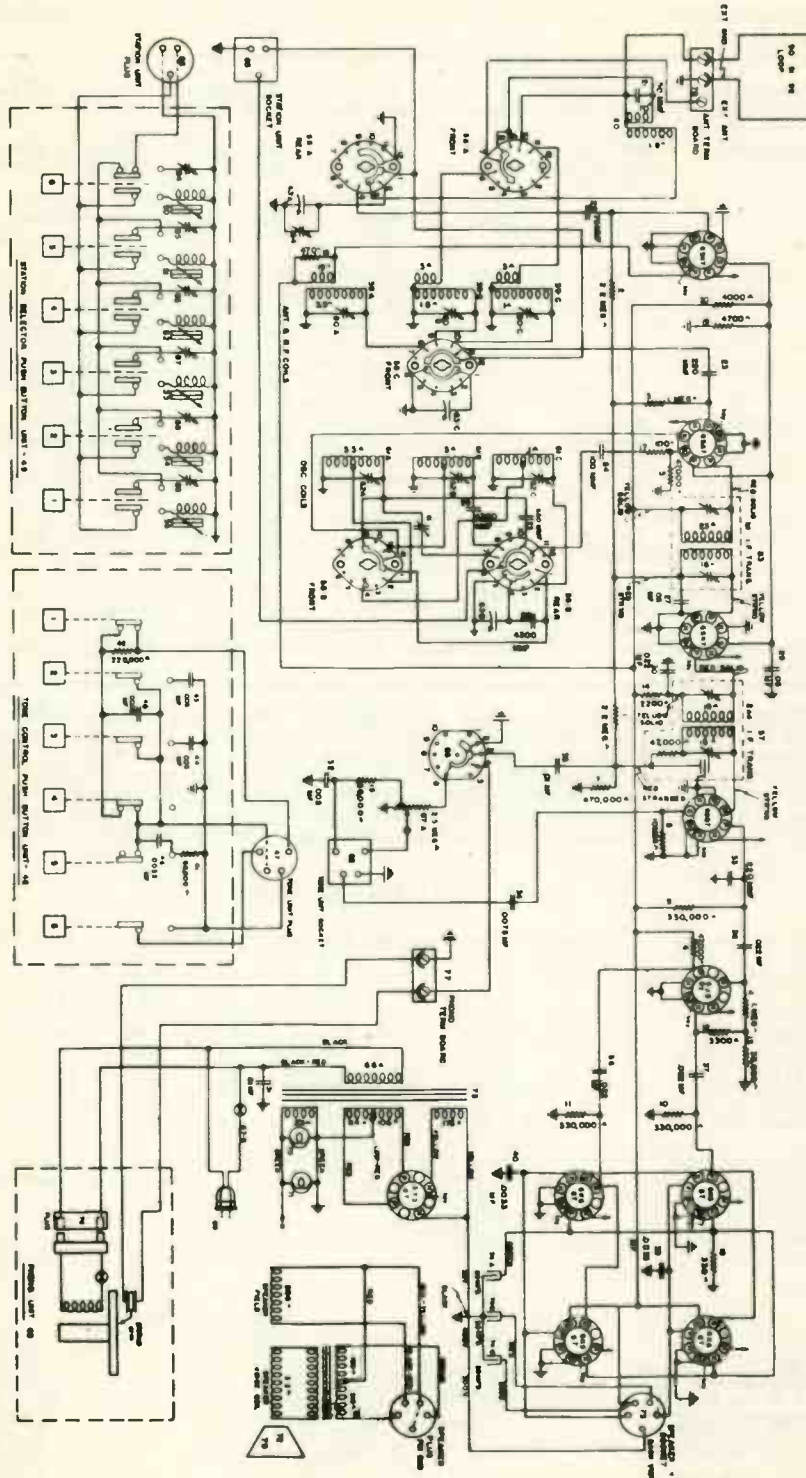
Drop Across Speaker Field... 125 Volts

**GROSLEY**  
*Twice Tested*  
**SERVICE PARTS**





# WIRING DIAGRAM — CHASSIS No. 95





## CHASSIS MODEL No. 96

Output Meter Connections..... Plate to Plate of 6K6  
 Generator Ground Connection..... To Chassis or Ground Lead  
 Dummy Antenna to be in series with generator output..... See Chart Below  
 Position of Volume Control..... Fully On  
 Position of Tone Control..... Treble or Speech

### ALIGNMENT PROCEDURE CHART

Signal Generator							
Align-ment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug front section of Gang Cond.	A	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug front section of Gang Cond.	A	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	F	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
4.	400 ohm	15.0 Mc.	Ant. Terminal	F	Approx. 15	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
5.	.0002 MF.	1630 Kc.	Ant. Terminal	A	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
6.	.0002 MF.	600 Kc.	Ant. Terminal	A	Approx. 60 on dial	B. C. "OSC" Series	Adjust iron core on rear of chassis for maximum output.
7.	.0002 MF.	1400 Kc.	Ant. Terminal	A	Approx. 140 on dial	B. C. "ANT" Trimmer Rear Chassis	Adjust for maximum output. Do not touch B. C. Osc. Trimmer.
8.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

**IMPORTANT ALIGNMENT NOTES**—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

### TUBE VOLTAGE CHART

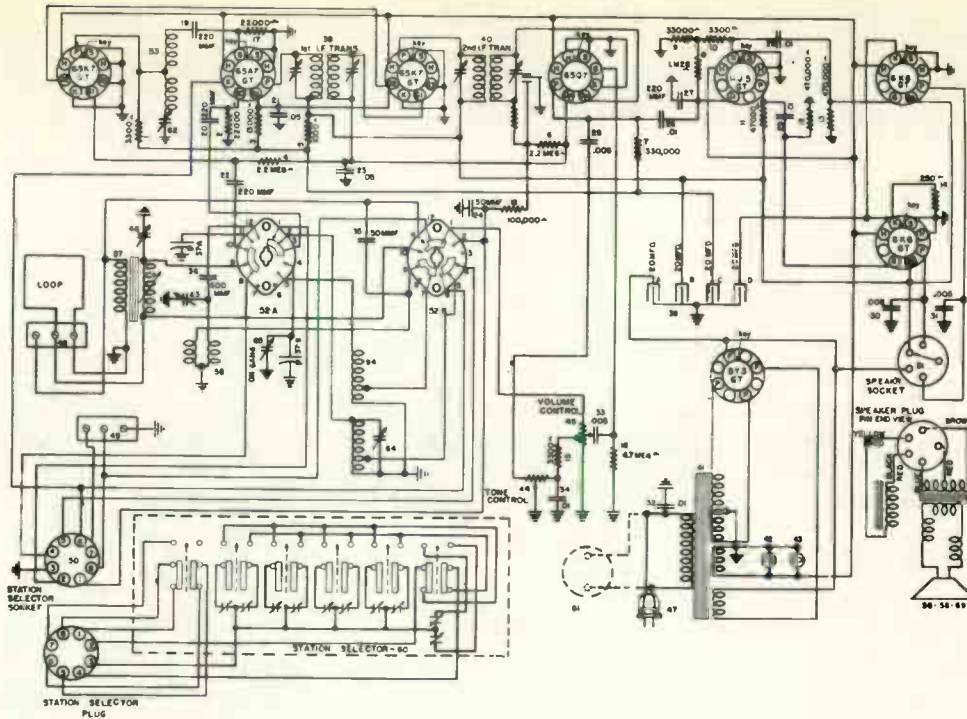
Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
6SK7GT—R. F. Amplifier.....		0	0	0	0	0	70	6.3 A. C.	175
6SA7GT—OSC.—Mod.....		0	0	235	70	0	0	6.3 A. C.	0
6SKFGT—L. F. Amplifier.....		0	0	0	0	0	70	6.3 A. C.	235
6SQ7GT—Det. A. S. C. 1st A. F.....		0	0	0	0	0	40	6.3 A. C.	0
6J5GT—Phase Inverter.....		0	0	155	0	0	0	6.3 A. C.	46
6K6GT—(2)—Output.....		0	0	220	235	0	0	6.3 A. C.	16
5Y3G—Rectifier.....			320		355A.C.		355A.C.	J. B.	320

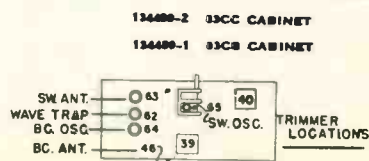
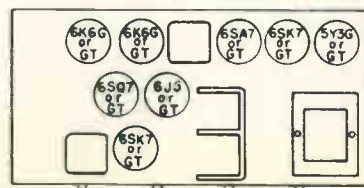
MAX. POWER OUTPUT..... 6.8 WATTS  
 POWER CONSUMPTION..... 85 WATTS  
 DROP ACROSS SPEAKER FIELD..... 95 VOLTS  
 PHONO MOTOR..... 25 WATTS

Voltages may vary 10% of values given.

CHASSIS MODEL No. 96



Item	Part No.	Description	Item	Part No.	Description
1	G39002-10	Res. 3,300 ohm 1/2 W.	62	G132386-7	Trim. Cond.
2	G39002-16	Res. 22,000 ohm 1/2 W.	63	G132386-7	Trim. Cond.
3	134136	Res. 13,000 ohm	64	G132386-7	Trim. Cond.
4	G39002-27	Res. 2.2 megohm 1/2 W.	65	On Gang	Trim. Cond.
5	G39002-69	Res. 1,000 ohm 1/2 W.	83CA		
6	G39002-27	Res. 2.2 megohm 1/2 W.	B133720-6		Var. Cond. Mtg. Bracket
7	G39002-22	Res. 330,000 ohm 1/2 W.	W49817		Trans. Support Bracket
8	G39002-25	Res. 1 megohm 1/2 W.	131930		Drive Shaft Brs.
9	G39002-16	Res. 33,000 ohm 1/2 W.	W132041-1		Drive Shaft
10	G39002-10	Res. 3,300 ohm 1/2 W.	W49820-B		Lock Spring, Drive Shaft
11	G39002-17	Res. 47,000 ohm 1/2 W.	G39204		Tube Socket (8)
12	G39002-23	Res. 470,000 ohm 1/2 W.	G28807-103		Speaker Socket (1)
13	G39002-23	Res. 470,000 ohm 1/2 W.	W134108-1		P. B. Socket (1)
14	49703	Res. 250 ohm 2 W.	W47677		Cable Lock Plate
15	G39002-16	Res. 33,000 ohm 1/2 W.	B132290-1		Dial Pointer
16	G39002-29	Res. 4.7 megohm 1/2 W.	G132231-16		Dial Face Assem.
17	G39002-15	Res. 22,000 ohm 1/2 W.	48900		Screw (2) Dial Face
18	G39002-19	Res. 100,000 ohm 1/2 W.	W134071-10		Junction Block
19	G39004-9	Cond. 220 Mmf. Mica	G132167-14		Drive Cord Assem.
20	G39004-9	Cond. 220 Mmf. Mica	W132366-8		83CA Cabinet
21	G39001-61	Cond. .05 Mf. 400 V.	G39012-8		Iron Core (1) Ant. Coil
22	G39004-9	Cond. 220 Mmf. Mica	W134071-8		Junction Block
23	G39001-65	Cond. .05 Mf. 200 V.	D134039-1		83CA Cabinet
24	G39004-5	Cond. 50 Mmf. Mica	W134046-1		83CA Carton
25	G39001-11	Cond. .005 Mf. 600 V.	W132680-1		Chassis Support Brkt. (2)
26	G39001-37	Cond. .01 Mf. 400 V.	W45056		Grommet Rubber (2) Chas. MTG
27	G39004-9	Cond. 220 Mmf. Mica	48796		Loaded Bushing (2) Chas. MTG
28	G39001-61	Cond. .05 Mf. 200 V.	G31618		Screw (2) Chassis Mtg.
29	G39001-37	Cond. .01 Mf. 400 V.	G132708-2		Dial Lens
30	G39001-11	Cond. .005 Mf. 600 V.	W130223-4		Lock Point (14) Dial Lens
31	W20805	Cond. .05 Mf. 600 V.	130324		Escutcheon (83CA) (Push Button)
32	G39001-11	Cond. .01 Mf. 200 V.	G132478-12		Screw (4) Escutcheon
33	G39001-11	Cond. .005 Mf. 600 V.	G134096-4		Envelope Assem. (83CA)
34	G39001-61	Cond. .01 Mf. 200 V.	W124081		Ant. Loop Assem. (83CA)
35	G39004-5	Cond. 50 Mmf. Mica	W134081		Spacers (19) Ant. Loop 83CA
36	G14002-31	Cond. 600 Mmf. Mica	W134081		Spacers (8) Ant. Loop 83CQ
37A	G134146-4	Var. Cond. Assem.	W33005		Rubber Sleeve (2) Chassis Mtg.
37B	G134146-4	Var. Cond. Assem.	W47285		Flat Washer (2) Chassis Mtg.
38A	B132807-1	Elect. Cond. 20 Mf.	W130197		Knob (4)
38B	B132807-1	Elect. Cond. 20 Mf.	132721-1		Screw (2) Chassis Top
38C	B132807-1	Elect. Cond. 20 Mf.	W45570		Washer (3) Cabt. Mtg.
38D	B132807-1	Elect. Cond. 20 Mf.	W132831-1		Wood Screw Cabt. Mtg.
39	G32004-290	1st I. F. Trans.	D134099-3		83CQ Cabinet
40	G32004-290	2nd I. F. Trans.	W134102-1		83CQ Carton
41	G132312-10	Power Trans. 110 V. 60s.	142478-19		Instr. Envelope Assem. (83CQ)
42	W43547	Dial Light 6.3 V.	G1D133542-2		Record Changer Assem. (83CQ)
43	W43547	Dial Light 6.3 V.	134096-5		Antenna Loop Assem. (83CQ)
44	B131547-1	Volume Control	W130763-2		Escutcheon (83CQ)
45	B49783-1	Trimmer Cond.	130772		Light Assem. (83CQ)
46	W132297-1	Cord & Plug	W134221-1		Dial Lens
47	G38019-3	Term. Board Assem.	132708-3		Dial Lens
48	G38019-3	Term. Board Assem.	D133930-1		83TA Cabinet
49	G38019-3	Term. Board Assem.	W13931-1		83TA Carton
50	W134108-1	Push Button Socket	134128		Instructions
51	G28807-103	Speaker Socket	124151-2		Cabinet Back
52A	B134116	Band Change SW.	890		Wood Screw (Cab. Back)
53	G32001-121	R. F. Coil	W134139-1		Loop Block
54	G32002-284	Ant. Coil	16158		Wood Screw (Cab.)
55	G32000-248	Speaker 83 CP only	134037-1		83CQ Cabinet
56	G130146-3	Ant. Loading Coil	134038-1		Carton 83CQ Cabt.
57	G32000-349	Speaker 83TA only	134128-1		Instructions Receiver
58	G132874-3	Speaker 83CQ, 83CA only	133542-3		Record Changer Assem.
59	G131880-4	P. But. Assem. 83CA, 83CQ only	134096-6		Loop Assem.
60	L134116	Record Changer 83CP, 83CQ	133587		Instructions Photo.
61	133542-2		138556-1		Jewel Needle
			138708-2		Dial Lens

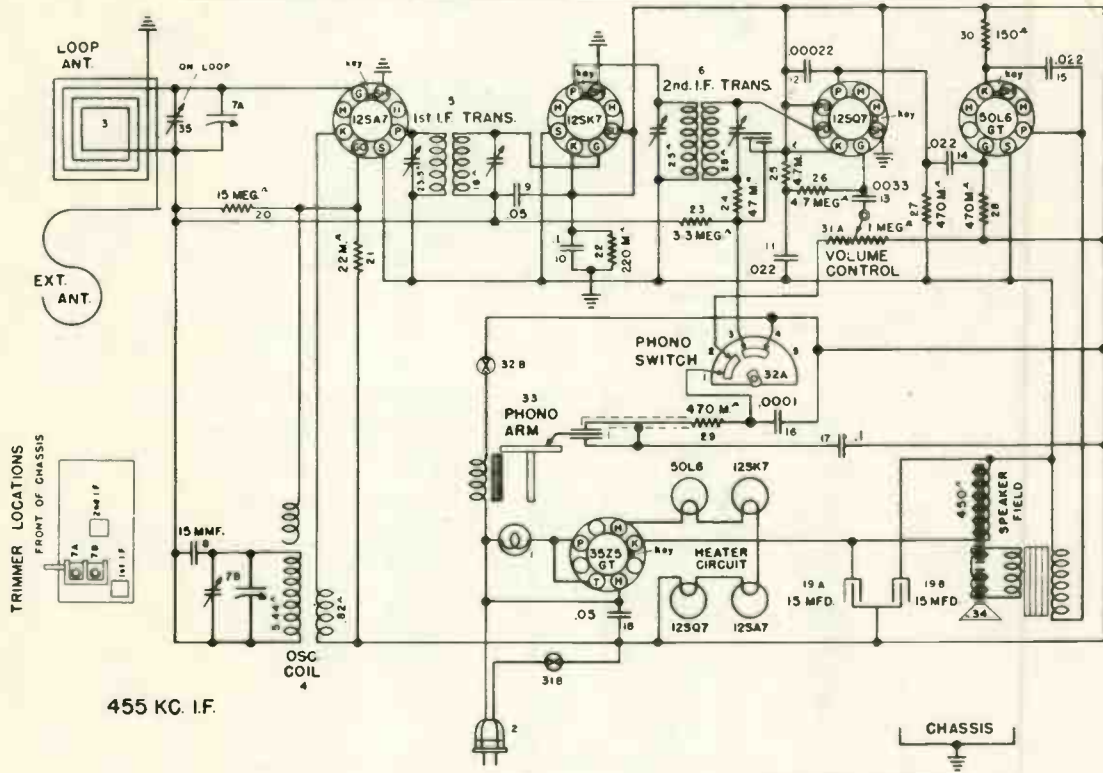


# CHASSIS No. 100

Align-ment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono. Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.0001 MF	455 Kc.	Antenna Lead	Radio	Fully Open	1st I-F (2) 2nd I-F (2)	Adjust for maximum signal. Adjust for maximum signal.
2	.0001 MF.	1620 Kc.	Antenna Lead (red)	Radio	Fully Open	B. C. "Osc."	Adjust for maximum output. Gain does not have to tune through signal.
3	.0001 MF.	1400 Kc.	Antenna Lead (red)	Radio	140 Dial	B. C. "Ant."	Adjust for maximum output.

TUBE	FUNCTION	PIN NUMBER								
		1	2	3	4	5	6	7	8	
12SA7	Osc. Mod.				85	85	Neg.	0		Neg.
12BK7	I. F. Amp.				0	Neg.	0	85		85
12SQ7	Det. Etc.			0	0	0	Neg.	40		0
50L6	B. I. O.				80	85	0			
35Z5	Rect.							117.5A.C.		110

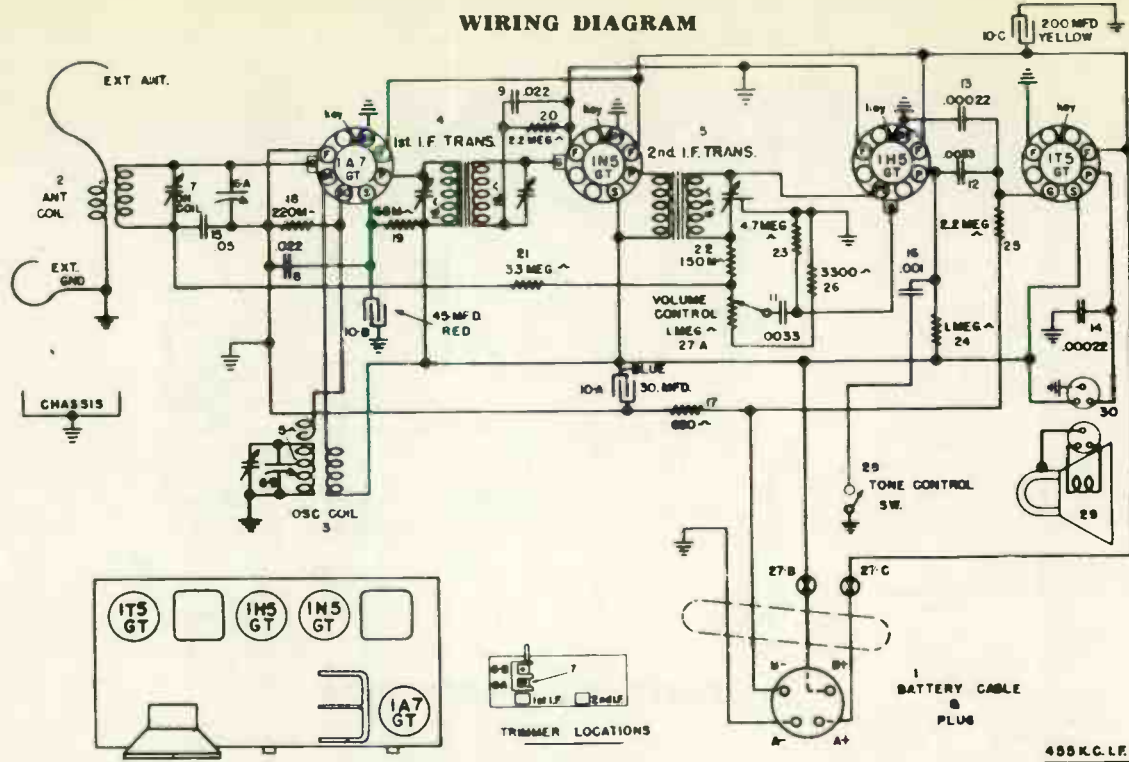


455 KC. I.F.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W4885K	Dial Light	C130129		Bottom
2	B132300 1	Power Cable & Plug	W132119 7		Drive Shaft
3	GB134167 1	Loop Assem.	W51071		Retaining Ring Drive Shaft
4	G32002 285	Osc. Coil	W40770		Tronount Stud (16)
5	G32001 289	1st I. F. Trans.	W40770		Dial & Bottom Mtg.
6	G32001 291	2nd I. F. Trans.	C132099 4		Dial Face
7A	G3002	Var. Cond. Ant. Sec.	W132097 8		Dial Pointer
7B	G3002	Var. Cond. Osc. Sec.	L132131		Drive Cord Assem.
8	G30001 2	Cond. 15 Mfd. 200 V	W134217 1		Var. Cond. Mtg. Brkt.
9	G30001 65	Cond. 05 Mf. 200 V	W5536		Screw (2) Speaker
10	G30001 67	Cond. 1 Mf. 200 V	L8		Lockwasher (2) Speaker
11	G30001 68	Cond. 022 Mf. 200 V	08		Flat Washer (2) Speaker
12	G30001 69	Cond. 00022 Mf.	W134238 1		Speaker Mtg. Brkt.
13	G30001 10	Cond. 0034 Mf. 000 V	4379		Screw (2) Speaker Mtg.
14	G30001 64	Cond. 022 Mf. 200 V	G30204		Socket (5) Tube
15	G30001 63	Cond. 022 Mf. 200 V	W47577		Cable Lock Plate
16	G30001 7	Cond. 0001 Mf.	W134071 4		Junction Block (2)
17	G30001 67	Cond. 1 Mf. 200 V	45808		P. K. Screw (2) Var. Cond. Brkt.
18	G30001 65	Cond. 05 Mf. 200 V	D134041 1		50" Cabinet
19A	W134177 1	Cond. 15 Mf. Elect.	L130490 2		Screw (4) Chassis to Cabinet
19B	W134177 1	Cond. 15 Mf. Elect.	W30109		Washer (3) Chassis to Cabinet
20	50671	Res. 15 megohm 1/2 W.	L8		Lockwasher (3) Chassis to Cabinet
21	G30002 15	Res. 22,000 ohm 1/2 W.	130113 A		Knob
22	G30002 21	Res. 220,000 ohm 1/2 W.	W132117 3		Dial Lens
23	G30002 28	Res. 3.3 megohm 1/2 W.	134185-1		Instructions
24	G30002 17	Res. 47,000 ohm 1/2 W.	130582		Phono. Motor
25	G30002 11	Res. 4700 ohm 1/2 W.	C133439-1		Phono. Motor
26	G30002 29	Res. 4.7 megohm 1/2 W.	B134245-3		Tone Arm
27	G30002 23	Res. 470,000 ohm 1/2 W.	W134246 1		Arm Rest Spacer
28	G30002 23	Res. 470,000 ohm 1/2 W.	GW132659-1		Needle Assem.
29	G30002 23	Res. 470,000 ohm 1/2 W.	20881		Screw (5) Loop Mtg.
30	G30002 33	Res. 150 ohm 1/2 W.	06		Flat Washer (5) Loop Mtg.
31A	41774 1	Volume Control	W131126		Radio Spring (1)
31B	19774 1	S. P. S. T. A. C. Switch	W131126		For 50 Cycle Operation
32A	B132349 2	Phono. Switch	GB134167 1		Loop & Support Assem.
32B	B132349 2	S. P. S. T. A. C. Switch	W134247-1		Tone Arm Rest
33	B134245 1	Phono. Arm	134246-1		Screw (1) Arm Rest Spacer
34	C39875 3	Speaker Assem.	47329		(1) Hex Nut (Tone Arm)
35	W40052 2	Trimmer Cond.	47328		(1) Shakeproof Washer Tone Arm

# SERVICE INFORMATION — MODEL 104 CHASSIS

## WIRING DIAGRAM



## PARTS LIST — MODEL 43FA

Item	Part No.	Description	Item	Part No.	Description
1	130493-A	Battery Cable & Plug	16	39001-7	Cond. .001 Mf. 600 V. Paper
	132167-3	Drive Cord Assem.	17	39002-6	Res. 680 Ohm 1/4 W.
	132119-3	Drive Shaft	18	39002-21	Res. 220,000 Ohm 1/4 W.
	51071	Retaining Ring	19	39002-18	Res. 68,000 Ohm 1/4 W.
	132097-6	Dial Pointer	20	39002-27	Res. 2.2 Meg. Ohm 1/4 W.
	132231-9	Dial Assem.	21	39002-28	Res. 3.3 Meg. Ohm 1/4 W.
	132258	Dial Lens	22	39002-20	Res. 150,000 Ohm 1/4 W.
2	32000-244	Ant. Coil	23	39002-29	Res. 4.7 Meg. Ohm 1/4 W.
3	32002-272	Osc. Coil	24	39002-25	Res. 1 Meg. Ohm 1/4 W.
4	32004-268	1st I. F. Trans.	25	39002-27	Res. 2.2 Meg. Ohm 1/4 W.
5	32004-276	2nd I. F. Trans.	26	29001-10	Res. 3300 Ohm 1/4 W.
6A	132150-1	Vari. Cond. R. F. Sect.	27A	130520-2	Volume Control
	130429	Screw (3)	27B		S. P. S. T. Switch
	45580-A	Grommet (3)	27C		S. P. S. T.
	45620	Headed Bushing (3)	28	49772-1	Tone Control Sv.
6B		Vari. Cond. Osc. Sec.	29	132670-3	Speaker
7	44655	Trimmer Cond.	30	132822-1	Speaker Cable Assem.
8	39001-63	Cond. .022 Mf. 200 V. Paper		133598-2	Cabinet 43 FA
9	39001-63	Cond. .022 Mf. 200 V. Paper		133599-1	Carton
10A	132501-1	Cond. Elect. 35 Mf. 100 V.		130558	Screw—Chassis Mtg. (3)
10B		Cond. Elect. 45 Mf. 120 V.		L-8	Lockwasher—Chassis Mtg. (3)
10C		Cond. Elect. 200 Mf. 8.5 V.		30409	Washer—Chassis Mtg. (3)
11	39001-10	Cond. .0033 Mf. 600 V. Paper		132127-1	Knob (3)
12	39001-10	Cond. .0033 Mf. 600 V. Paper		42911	Cabinet Protector (3)
13	39004-9	Cond. .00033 Mf. Mica.		132750	Hanco Tack (9) Dial Lens Mtg.
14	39004-9	Cond. .00022 Mf. Mica.		134190-1	Instructions
15	39001-65	Cond. .05 Mf. 200 V. Paper		133731-1	Battery Pack

### SIGNAL GENERATOR

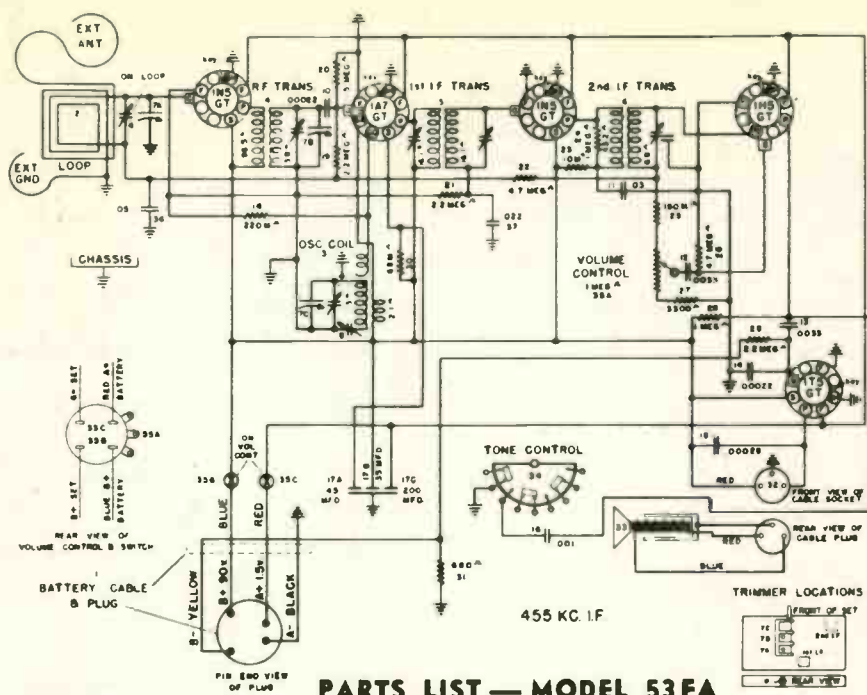
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd I-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st I-F (2)	Adjust for maximum signal. Located top of 1st I-F ass'y.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .20 Amp.; "B" Battery drain at 90 V., 10 M. A.

## WIRING DIAGRAM — MODEL 105 CHASSIS



Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	30	G18-39002	Res. 68,000 ohm 1/4 W.
2	G6-132810-3	Loop Assem.	31	G6-39002	Res. 680 ohm 1/4 W.
3	G-275-32002	Osc. Coil	32	W-132822-2	Speaker Cable & Socket
4	G-119-32001	R. F. Trans.	33	C-132670-3	Speaker Assem.
5	G-285-32004	1st I. F. Trans.	34	G-49772-3	Function Switch
6	G-286-32004	2nd I. F. Trans.	35A	B-130520-3	Volume Control
7A	132759-1	Vari. Cond. Ant. Sec.	35B	B-130520-3	S. P. S. T. Switch
7B	132759-1	Vari. Cond. R. F. Sec.	35C	B-130520-3	S. P. S. T. Switch
7C	132759-1	Vari. Cond. Osc. Sec.	36	G65-39001	Cond. .05 Mf. 200 V.
8	W-132267-1	Trimmer Condenser	37	G63-39001	Cond. .022 Mf. 200 V.
9	W-132267-2	Trimmer Condenser		W-132641-1	Drive Shaft (1)
10	G9-39004	Cond. .00022 Mf. Mica		W-49829-B	Retaining Spring (1) Drive Shaft
11	G65-39001	Cond. .05 Mf. 200 V.		G13-132167	Drive Cord Assem. (1)
12	G10-39001	Cond. .0033 Mf. 600 V.		G18-132231	Dial Face Assem.
13	G10-39001	Cond. .0033 Mf. 600 V.		132648-1	Screw (2) Dial Face
14	G9-39004	Cond. .00022 Mf. Mica		G1-132490	Junction Block (2)
15	G9-39004	Cond. .00022 Mf. Mica		131930	Drive Shaft Bearing (1)
16	G7-39001	Cond. .001 Mf. 600 V.		W-132123	Tube Sockets (5)
17A	W-132501-1	Cond. 45 Mf. 200 V. Elect.		W-131717	Electro Socket (1)
17B	W-132501-1	Cond. 35 Mf. 200 V. Elect.		B-132667-1	Var. Cond. Mtg. Bracket
17C	W-132501-1	Cond. 200 Mf. 30 V. Elect.		G284- 34403	Shielded Lead (16 in.)
18	G21-39002	Res. 220,000 ohm 1/4 W.		D132816-1	Cabinet
19	G27-39002	Res. 2.2 megohm 1/4 W.		132817	Carton
20	G26-39002	Res. 1.6 megohm 1/4 W.		132721-1	Screw (3) Chassis Mtg.
21	G27-39002	Res. 2.2 megohm 1/4 W.		W-45020	Washer (3) Chassis Mtg.
22	G29-39002	Res. 4.7 megohm 1/4 W.		W1-132127	Knob (3)
23	G13-39002	Res. 10,000 ohm 1/4 W.		G2-132708	Dial Lens (1)
24	G20-39002	Res. 1 megohm 1/4 W.		132707	Tack Point (14) Dial Lens
25	G20-39002	Res. 150,000 ohm 1/4 W.		S-80	Wood Screw (9) Back Assem.
26	G29-39002	Res. 4.7 megohm 1/4 W.		W-134209-1	Battery Pack
27	G10-39002	Res. 3300 ohm 1/4 W.		B-132320-1	Dial Pointer
28	G25-39002	Res. 1 megohm 1/4 W.		130845	Tack
29	G27-39002	Res. 2.2 megohm 1/4 W.		134203-1	Instructions

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

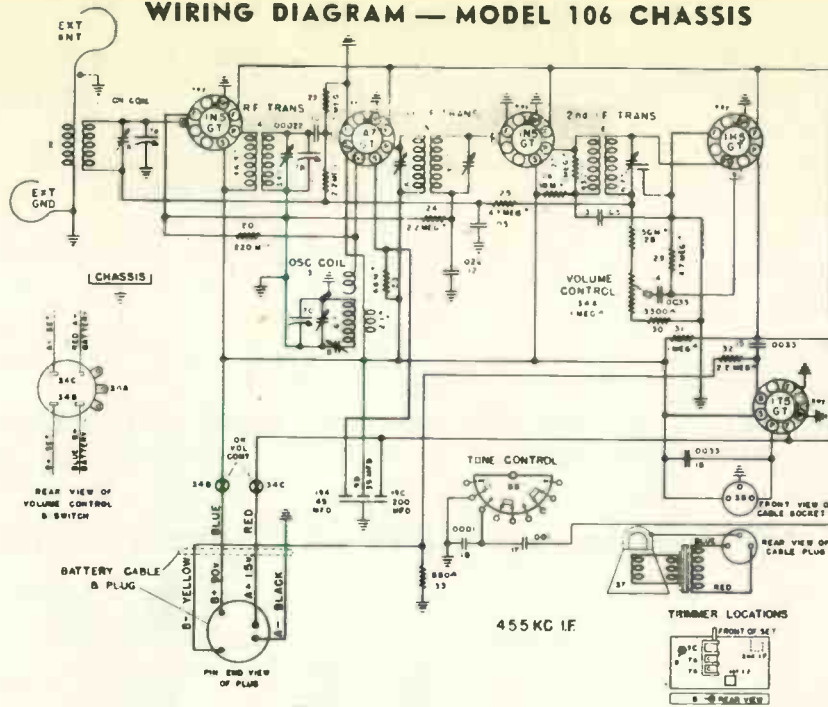
SIGNAL GENERATOR			TRIMMERS TO ADJUST (See Fig. 1)		REMARKS
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING		
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd. 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .25 Amp.; "B" Battery drain at 90 V., 10.5 M. A.

## WIRING DIAGRAM — MODEL 106 CHASSIS



Item	Part No.	Description	Item	Part No.	Description
1	B-130493-A	Battery Cable & Plug	30	G-10-39002	Res. 3300 ohm 1/4 W.
2	G-244-32000	Ant. Coil	31	G-25-39002	Res. 1 megohm 1/4 W.
3	G-277-32002	Osc. Coil	32	G-27-39002	Res. 2.2 megohm 1/4 W.
4	G-120-32001	R. F. Trans.	33	G-6-39002	Res. 680 ohm 1/4 W.
5	G-285-32004	1st I. F. Trans.	34A	130520-3	Volume Control
6	G-286-32004	2nd I. F. Trans.	34B	130520-3	S. P. S. T. Switch
7A	132759-1	Vari. Cond. Ant. Sec.	34C	130520-3	S. P. S. T. Switch
7B	132759-1	Vari. Cond. R. F. Sec.	35	W-49772-3	Function Switch
7C	132759-1	Vari. Cond. Osc. Sec.	36	W-132822-2	Speaker Cable & Socket
8	49938	Trimmer Cond.	37	C-133786-1	Speaker Assem.
9	W-132267-2	Trimmer Cond.		W-132641-1	Drive Shaft
10	G-9-39004	Cond. .00022 Mf.		W-49829-B	Retaining Spring (1) Drive Shaft
11	G65-39001	Cond. .05 Mf. 200 V.		G-13-132167	Drive Cord Assem. (1)
12	G63-39001	Cond. .022 Mf. 200 V.		G-18-132231	Dial Face Assem.
13	G65-39001	Cond. .05 Mf. 200 V.		132648-1	Screw (2) (Dial Face)
14	G-10-39001	Cond. .0033 Mf. 600 V.		G-1-132490	Junction Block (2)
15	G-10-39001	Cond. .0033 Mf. 600 V.		B-132320-1	Dial Pointer
16	G-10-39001	Cond. .0033 Mf. 600 V.		131930	Drive Shaft Bearing
17	G-7-39001	Cond. .001 Mf. 600 V.		W-132123	Tube Sockets (5)
18	G-7-39004	Cond. .0001 Mf.		W-131717	Elect. Socket (1)
19A	W-132501-1	Cond. 45 Mf. 200 V. Elect.		B-132667-1	Var. Cond. Mtg. Bracket
19B	W-132501-1	Cond. 35 Mf. 200 V. Elect.		G-284-34403	Shielded Lead Assem.
19C	W-132501-1	Cond. 200 Mf. 30 V. Elect.		133646-1	Cabinet
20	G-21-39002	Res. 220,000 ohm 1/4 W.		133647	Carton
21	G-27-39002	Res. 2.2 megohm 1/4 W.		132721-1	Screw (3) Chassis Mtg.
22	G-26-39002	Res. 1.5 Megohm 1/4 W.		W-45020	Washer (3) Chassis Mtg.
23	G-18-39002	Res. 68,000 ohm 1/4 W.		W-132127-1	Knob (3)
24	G-27-39002	Res. 2.2 megohm 1/4 W.		C-132708-2	Dial Lens (1)
25	G-29-39002	Res. 4.7 megohm 1/4 W.		132707-1	Tack Point (14) Dial Lens
26	G-13-39002	Res. 10,000 ohm 1/4 W.		130845	Tack (1)
27	G-25-39002	Res. 1 megohm 1/4 W.		W-134209-1	Battery Pack
28	G-20-39002	Res. 150,000 ohm 1/4 W.		134225-1	Instructions
29	G-29-39002	Res. 4.7 megohm 1/4 W.			

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd. 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st I-F assembly.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

Repeat above procedures for more accurate adjustments.

Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .25 Amp.; "B" Battery drain at 90 V., 10.5 M. A.



## CHASSIS No. 110. & 111

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLT-METER (D. C.)

TUBE	FUNCTION	PIN NUMBER							
		1	2	3	4	5	6	7	8
68A7—OSC.—Mod.				180	73				6.3 A. C.
68K7—I. F. Amplifier							73		6.3 A. C. 180
6J5—Detector A. J. C.									6.3 A. C.
68Q7—1st A. F.							68		6.3 A. C.
6K6G or GT—Output				180	180				6.3 A. C. 9
5Y3G—Rectifier		225			270 A.C.		270 A.C.		225

MAX. POWER OUTPUT, 3.0 WATTS. POWER CONSUMPTION, 60 WATTS. DROP ACROSS SPEAKER FIELD, 45 VOLTS. Voltages may vary 10% of values given.

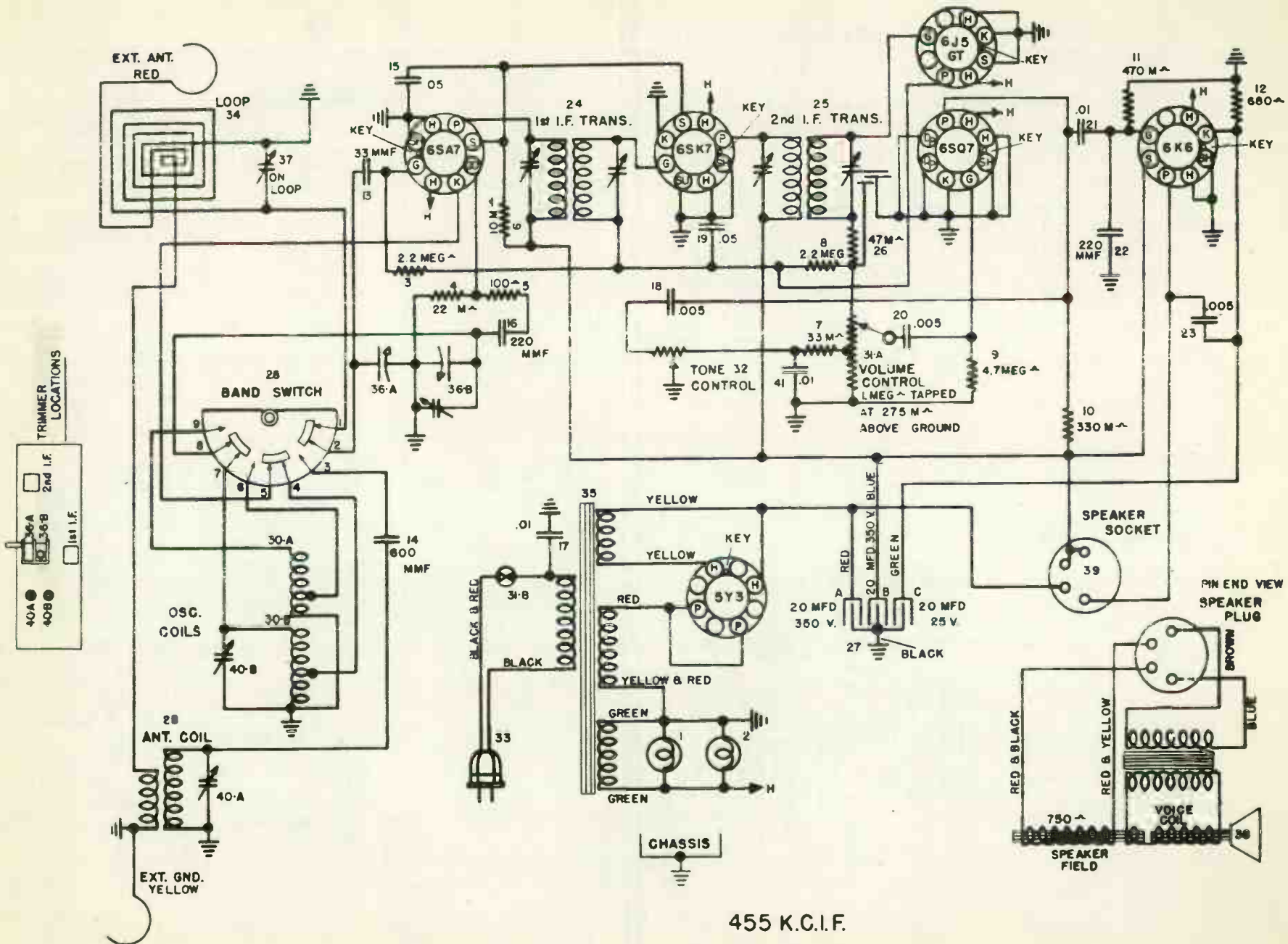
### PARTS LIST, MODEL 63TA - 63CA — CHASSIS MODEL No. 110 & 111

Item	Part No.	Description	Item	Part No.	Description
1	W43567	Dial Light	33	B132300	Cord & Plug
2	W43567	Dial Light.	34	GC134163-1	Loop & Back Assem.
3	G39002-27	Res. 2.2 megohm 1/4 W.	35	49838	Power Trans.
4	G39002-15	Res. 22,000 ohm 1/4 W.	36A	G39202	Vari. Cond. R. F. Sec.
5	G39002-1	Res. 100 ohm 1/4 W.	36B	G39202	Vari. Cond. Osc. Sec.
6	47100	Res. 10,000 ohm W. W.	37	W132267-1	Trimmer Cond.
7	G39002-16	Res. 33,000 ohm 1/4 W.	38	G134235-1	Speaker
8	G39002-27	Res. 2.2 megohm 1/4 W.	39	G28807-103	Speaker Soc.
9	G39002-29	Res. 4.7 megohm 1/4 W.	40A	B132386-8	Trim. Cond.
10	G39002-22	Res. 330,000 ohm 1/4 W.	40B	B132386-8	Trim. Cond.
11	G39002-23	Res. 470,000 ohm 1/4 W.	41	G39001-61	Cond. .01 Mf. 200 V.
12	G39002-6	Res. 690 ohm 1/4 W.		B132668-1	Trans. Screen
13	G39004-4	Cond. 33 Mmf.		B133720-6	Vari. Cond. Mtg. Brkt.
14	G34002-21	Cond. 600 Mmf.		W49817	Trans. Support Strap
15	G39001-41	Cond. .05 Mf. 400 V.		G39204	Socket (6) Tube
16	G39004-9	Cond. 220 Mmf.		G28807-103	Socket (1) Speaker
17	W30805	Cond. .01 Mf. 400 V.		131930	Drive Shaft Brg.
18	G39001-11	Cond. .005 Mf. 600 V.		W132641	Drive Shaft
19	G39001-65	Cond. .05 Mf. 200 V.		W49829-B	Lock Spring (Drive Shaft)
20	G39001-11	Cond. .005 Mf. 600 V.		G132167-14	Drive Cord Assem.
21	G39001-37	Cond. .01 Mf. 400 V.		B132320-1	Dial Pointer
22	G39004-9	Cond. 220 Mmf.		G132231-17	Dial Face Assem.
23	G39001-11	Cond. .005 Mf. 600 V.		48900	Screw (2) Dial Face
24	G32004-289	1st I. F. Trans.		W47577	Cable Lock Plate
25	G32004-291	2nd I. F. Trans.		W134071-8	Junction Block
26	G39002-17	Res. 47,000 ohm 1/4 W.		D133928-2	63TJ Cabinet
27A	W132669-1	Cond. Elect. 20 Mf. 350 V.		W46579	Washer (2) Chassis to Cabt. Mtg.
27B	W132669-1	Cond. Elect. 20 Mf. 350 V.		G39220-39	Screw (2) Chassis to Cabt. Mtg.
27C	W132669-1	Cond. Elect. 20 Mf. 350 V.		C132688-1	Dial Lens
28	W49772-3	Band Switch		32707-1	Tack Point (16) Dial Lens
29	G32000-248	Ant. Coil Assem.		W130197	Knob (4)
30A	G32002-284	S. W. Osc. Coil		134160-1	Instructions
30B	G32002-284	B. C. Osc. Coil		N-8	Nut (4) Spkr. Mtg.
31A	B49793-1	Volume Control		L-8	Lockwasher (4) Spkr. Mtg.
31B	B49793-1	A. C. Switch		8-80	Wood Screw (8) Back Mtg.
32	B131547-1	Tone Control		46460	(4) Headed Bushing Spkr. Mtg.

134494-1 63CA CABINET

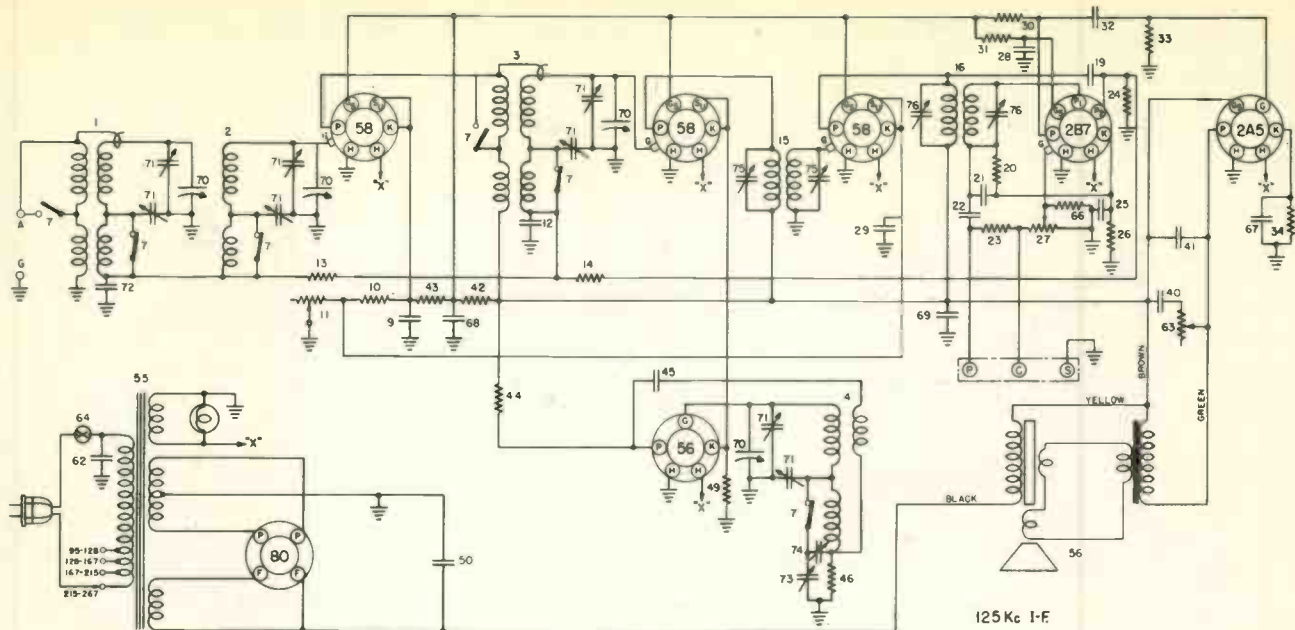
Signal Generator							
Align-ment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Ajdst for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Terminal	S. W.	approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1620 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer	Adjust for maximum output. Do not touch B. C. OSC. Trimmer.
6.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

WIRING DIAGRAM CHASSIS No. 110 & 111



171

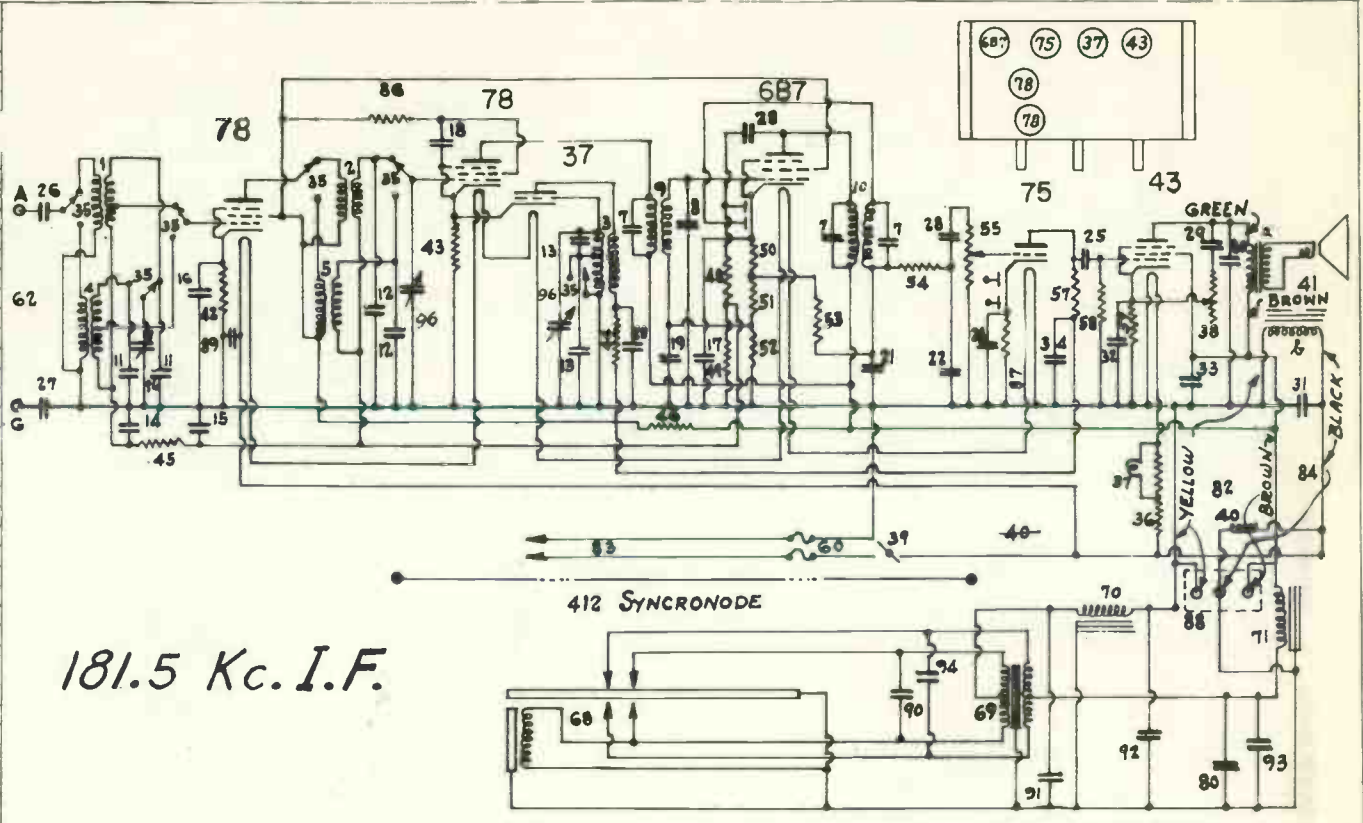
455 K.C.I.F.



PARTS LIST - CHASSIS 115

Item No.	Part No.	Description	Item No.	Part No.	Description
1	LW-30516	Ant. Coil	40-41	W-25517-A	.05 - .008 mfd., 400 v. Cond.
2	LW-28908	Pre Selector Coil	42-43	W-25970-A	10,000 - 15,000 ohms Res.
3	LW-30517	Interstage Coil	44	4923-C	60,000 ohms Res.
4	LW-28892	Osc. Coil	45	W-27540	.0005 mfd. Cond.
7	B-30518-A	Band Selector Switch	46	21875	100,000 ohms Res.
9	W-24049-A	0.1 mfd., 200 v. Cond.	49	W-22514	750 ohms Flex. Res.
10	W-23018-A	40 ohms Flex. Res.	50	W-23701-B	7 mfd., 440 v. Cond.
11	W-26121	Sensitivity Cont.	55	G32-25669	Power Trans.
12	W-24049-A	0.1 mfd., 200 v., Cond.	56	LC-25586	312-4 "M" Speaker
13-14	21454	1.0 megohm Res.	62	W-23191-A	.01 mfd., 200 v. Cond.
15	G3-29167	1st I.F. Trans.	63-64	W-30872	Tone Cont. On-Off Switch
16	G4-29167	2nd I.F. Trans.	66	21454	1 megohm Res.
19	W-26571	.0005 mfd., 200 v. Cond.	67-68-69	W-29150-B	12 mfd., 25 v. Cond.
20	21454	1.0 megohm Res.			6 mfd., 450 v. Cond.
21-22	W-30322-A	.00017 mfd., 200 v. Cond.			8 mfd., 450 v. Cond.
23	21455	300,000 ohms Res.	70-71	G1-33003	Tuning Cond.
24	26577	3 megohms Res.			Padding Conds.
25	W-26870-A	6 mfd., 25 v. Cond.	72	W-28621	.02 mfd., 200 v. Cond.
26	21886	10,000 ohms Res.	73-74	G23-33006	Padding Conds.
27	W-25666-A	Level Cont.	75	G21-33006	1st I.F. Tuning Cond.
28-29	W-25516	.25 mfd., 200 v. Cond.	76	G22-33006	2nd I.F. Tuning Cond.
30	29901	100,000 ohms Res.			
31	23785	500,000 ohms Res.			
32	W-23615	.05 mfd., 400 v. Cond.			
33	21455	300,000 ohms Res.			
34	W-25521	450 ohms Flex. Res.			

1	67-2495	I.F. ANT. TRANS.
2	62-2594	I.F. R.F. TRANS.
3	610-2496	OSCILLATOR COIL
4	614-2498	H.F. ANT. TRANS.
5	63-2596	H.F. R.F. TRANS.
6		
7		
8	W-2500A	I.F. TUNING CONDENSER
9	61-2544	1 <sup>ST</sup> I.F. TRANS.
10	66-2544	2 <sup>ND</sup> I.F. TRANS.
11	61-2469	ANT. TRANS. TRIM. COND.
12	61-2469	R.F. TRANS. TRIM. COND.
13	61-2469	OSC. COIL TRIM. COND.
14	W-27204	0.02 MFD. 200V.
15	W-27204	0.02 MFD. 200V.
16	W-27204	0.02 MFD. 200V.
17	W-27204	0.02 MFD. 200V.
18	W-27203	0.02 MFD. 200V.
19	W-27203	0.02 MFD. 200V.
20	W-27203	0.02 MFD. 200V.
21	W-26152A	0.00015 MFD. 400V.
22	W-26152A	0.0001 MFD. 400V.
23	W-28142	0.02 MFD. 400V.
24	W-24784	0.25 MFD. 200V.
25	W-28618	0.05 MFD. 400V.
26	W-28625	0.015 MFD. 400V.
27	W-27688	0.1 MFD. 400V.
28	W-27840	0.0005 MFD. 400V.
29	W-25517A	0.05 MFD. 400V.
30	W-25517A	0.008 MFD. 400V.
31	W-24049	0.1 MFD. 200V.
32	W-30568A	8 MFD. 25V.
33	W-30568A	18 MFD. 25V.
34	W-30568A	8 MFD. 25V.
35	W-30569	G.P. D.T. SWITCH
36	W-30574	12W 18A
37	W-4099B	6-V. DIAL LIGHT
38	W-25948	TONE CONTROL
39	W-25948	S.P.S.T. SWITCH
40	62-28067	FILTER CHOKES
41	30591A	238-Ω R. SPEAKER
42	W-25927	275 Ω
43	W-20127	450 Ω
44	21876	10,000 Ω
45	23785	500,000 Ω
46	W-23013	2000 Ω
47		
48	26577	3 MEG.
49	26577	3 MEG.
50	W-21964	165 Ω
51	W-21964	165 Ω
52	W-28927	275 Ω
53	21454	1 MEG.
54	23785	500,000 Ω
55	W-25666A	LEVEL CONTROL
56		
57	21455	300,000 Ω
58	23785	500,000 Ω
59	W-23907	750 Ω
60	W-1982A	3 AMP. FUSE
61		
62	67-26719	ANT. GND. TERM.



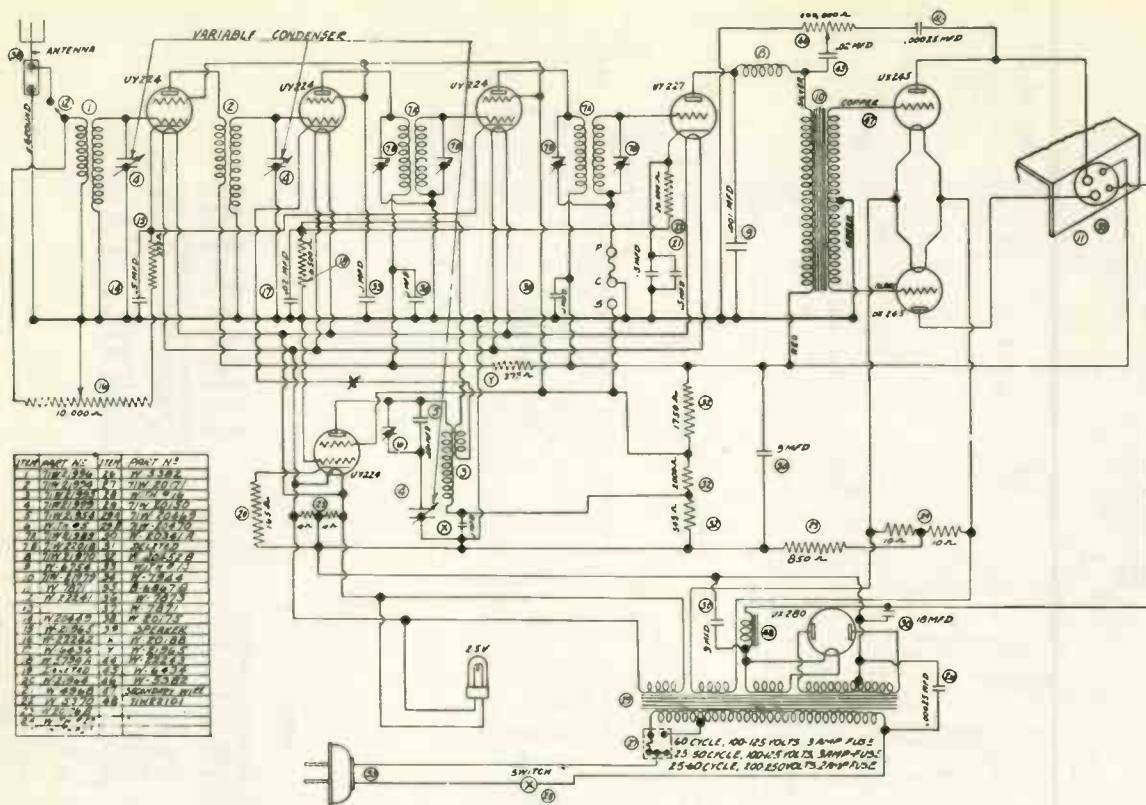
95	620-25948	I.F. TUNING CONDENSER	99
96	610-33002	VARIABLE CONDENSER	100
97			101
98			102
99			79
100			80
101			81
102			82
103			83
104			84
105			85
106			86
107			87
108			88
109			89
110			90
111			91
112			92
113			93
114			94
115			95
116			96
117			97
118			98
119			99
120			100

W-28978-B	12 MFD. 150V.
W-28780	A-B SUPPLY CABLE
W-30275-A	CORD + PLUG
W-21007	SPEAKER CABLE
31094	4500 Ω
31094	4500 Ω
62-31128	SYN. TERM. BOARD
W-20707	.0005 MFD. MICR.
W-21404	5 MFD. 300V.
W-21403-A	.12 MFD. 40V.
W-30366	5 MFD.
W-20366	5 MFD.
W-24810	.01 MFD. 800V. A.C.

WIRING DIAGRAM FOR CROSLLEY MODEL 119

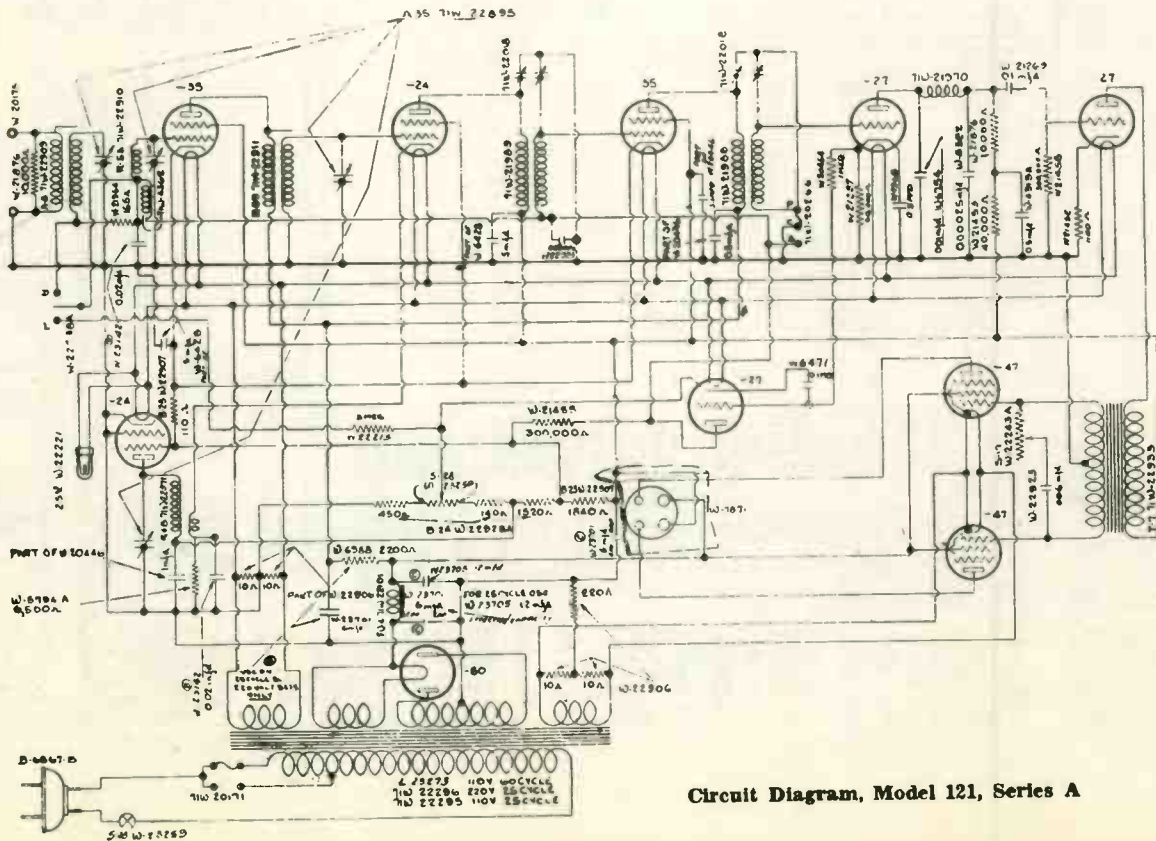
**CROSLLEY**  
Twice Tested  
SERVICE PARTS

# MODELS 120 & 121



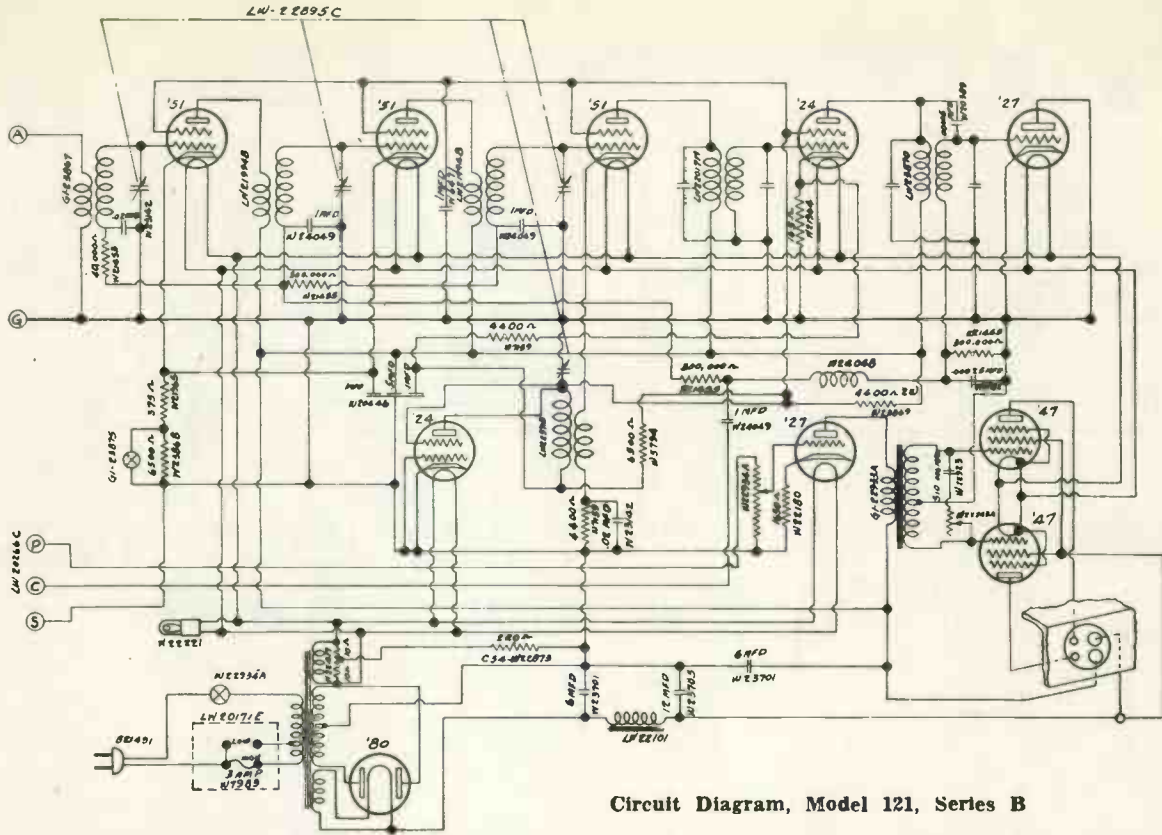
CIRCUIT MODEL 120

TUBE PART NO.	AC	VOLTS	WATT	TYPE
1	100-125	100-125	3	6X4
2	100-125	100-125	3	6A6
3	100-125	100-125	3	6AV6
4	100-125	100-125	3	6BD6
5	100-125	100-125	3	6BE6
6	100-125	100-125	3	6BE7
7	100-125	100-125	3	6BE8
8	100-125	100-125	3	6BE9
9	100-125	100-125	3	6BE10
10	100-125	100-125	3	6BE11
11	100-125	100-125	3	6BE12
12	100-125	100-125	3	6BE13
13	100-125	100-125	3	6BE14
14	100-125	100-125	3	6BE15
15	100-125	100-125	3	6BE16
16	100-125	100-125	3	6BE17
17	100-125	100-125	3	6BE18
18	100-125	100-125	3	6BE19
19	100-125	100-125	3	6BE20
20	100-125	100-125	3	6BE21
21	100-125	100-125	3	6BE22
22	100-125	100-125	3	6BE23
23	100-125	100-125	3	6BE24
24	100-125	100-125	3	6BE25
25	100-125	100-125	3	6BE26
26	100-125	100-125	3	6BE27
27	100-125	100-125	3	6BE28
28	100-125	100-125	3	6BE29
29	100-125	100-125	3	6BE30
30	100-125	100-125	3	6BE31
31	100-125	100-125	3	6BE32
32	100-125	100-125	3	6BE33
33	100-125	100-125	3	6BE34
34	100-125	100-125	3	6BE35
35	100-125	100-125	3	6BE36
36	100-125	100-125	3	6BE37
37	100-125	100-125	3	6BE38
38	100-125	100-125	3	6BE39
39	100-125	100-125	3	6BE40
40	100-125	100-125	3	6BE41
41	100-125	100-125	3	6BE42
42	100-125	100-125	3	6BE43
43	100-125	100-125	3	6BE44
44	100-125	100-125	3	6BE45
45	100-125	100-125	3	6BE46
46	100-125	100-125	3	6BE47
47	100-125	100-125	3	6BE48
48	100-125	100-125	3	6BE49
49	100-125	100-125	3	6BE50
50	100-125	100-125	3	6BE51
51	100-125	100-125	3	6BE52
52	100-125	100-125	3	6BE53
53	100-125	100-125	3	6BE54
54	100-125	100-125	3	6BE55
55	100-125	100-125	3	6BE56
56	100-125	100-125	3	6BE57
57	100-125	100-125	3	6BE58
58	100-125	100-125	3	6BE59
59	100-125	100-125	3	6BE60
60	100-125	100-125	3	6BE61
61	100-125	100-125	3	6BE62
62	100-125	100-125	3	6BE63
63	100-125	100-125	3	6BE64
64	100-125	100-125	3	6BE65
65	100-125	100-125	3	6BE66
66	100-125	100-125	3	6BE67
67	100-125	100-125	3	6BE68
68	100-125	100-125	3	6BE69
69	100-125	100-125	3	6BE70
70	100-125	100-125	3	6BE71
71	100-125	100-125	3	6BE72
72	100-125	100-125	3	6BE73
73	100-125	100-125	3	6BE74
74	100-125	100-125	3	6BE75
75	100-125	100-125	3	6BE76
76	100-125	100-125	3	6BE77
77	100-125	100-125	3	6BE78
78	100-125	100-125	3	6BE79
79	100-125	100-125	3	6BE80
80	100-125	100-125	3	6BE81
81	100-125	100-125	3	6BE82
82	100-125	100-125	3	6BE83
83	100-125	100-125	3	6BE84
84	100-125	100-125	3	6BE85
85	100-125	100-125	3	6BE86
86	100-125	100-125	3	6BE87
87	100-125	100-125	3	6BE88
88	100-125	100-125	3	6BE89
89	100-125	100-125	3	6BE90
90	100-125	100-125	3	6BE91
91	100-125	100-125	3	6BE92
92	100-125	100-125	3	6BE93
93	100-125	100-125	3	6BE94
94	100-125	100-125	3	6BE95
95	100-125	100-125	3	6BE96
96	100-125	100-125	3	6BE97
97	100-125	100-125	3	6BE98
98	100-125	100-125	3	6BE99
99	100-125	100-125	3	6BE100

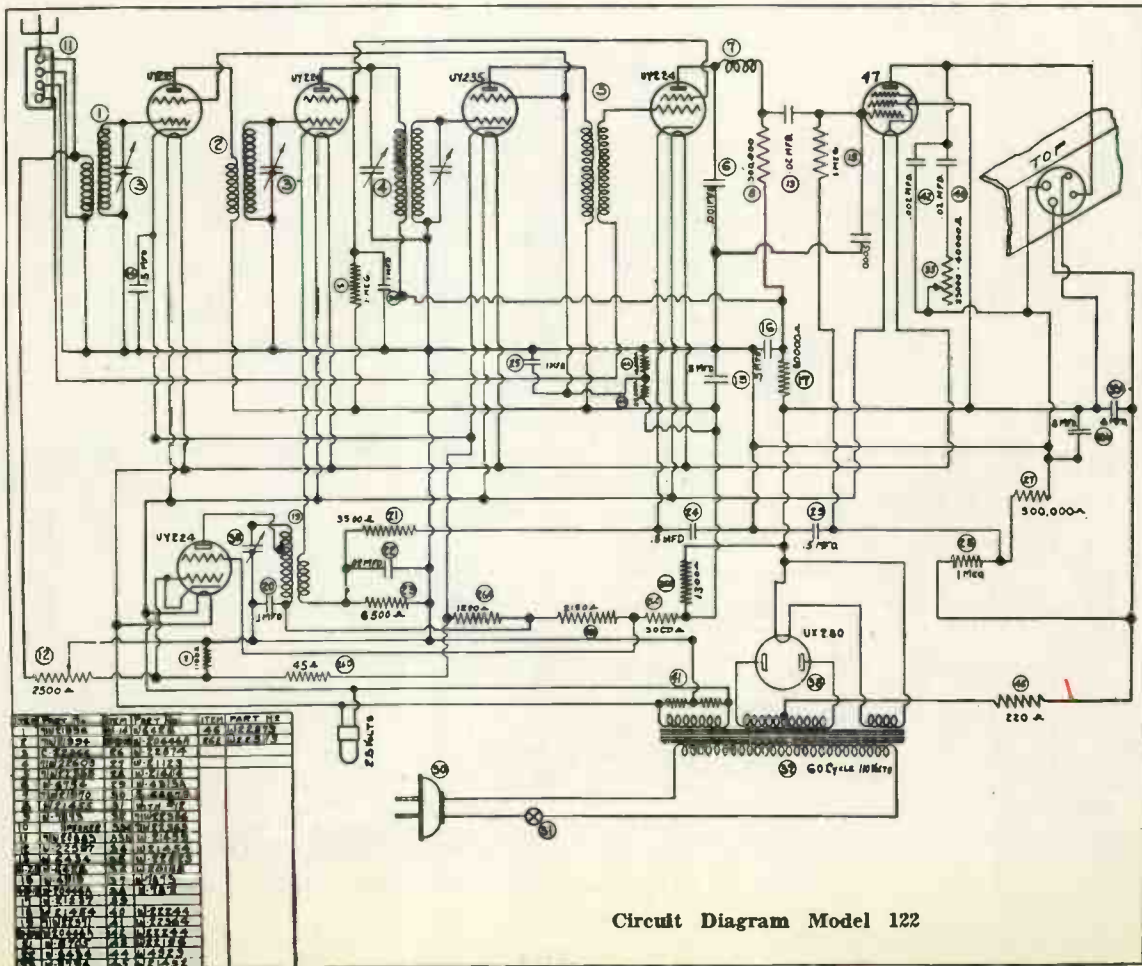


Circuit Diagram, Model 121, Series A

MODELS 121B & 122



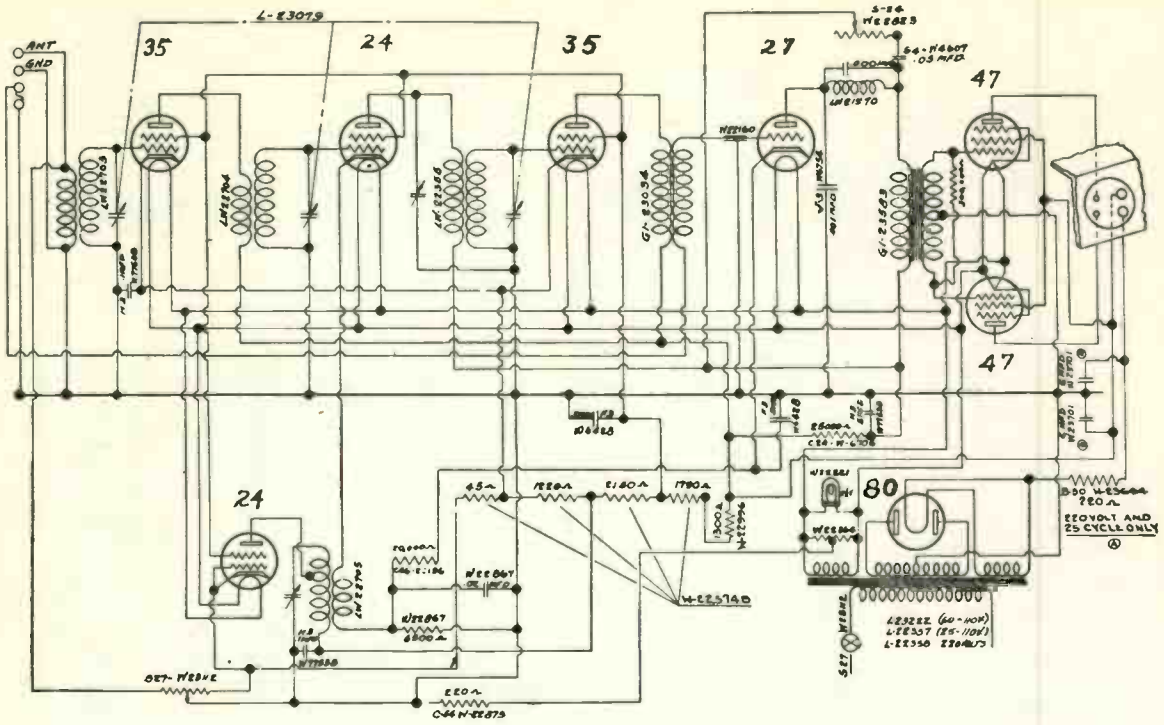
Circuit Diagram, Model 121, Series B



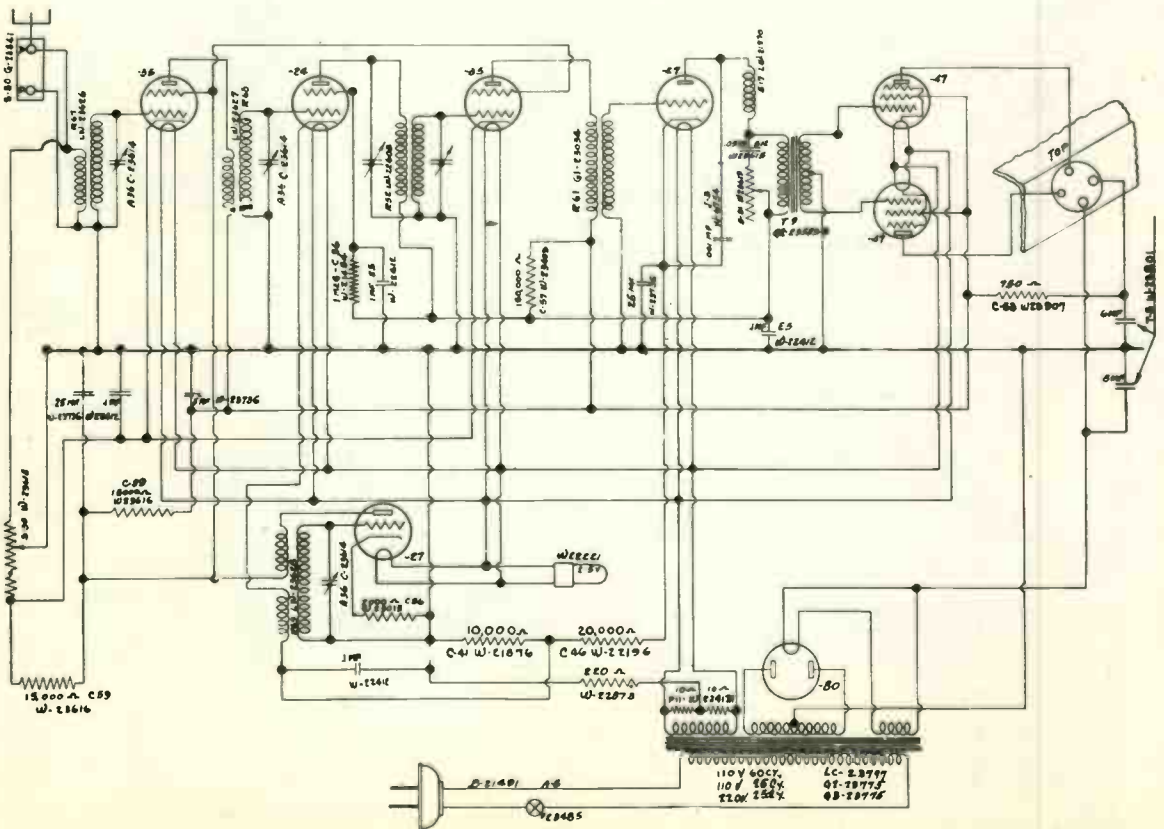
Circuit Diagram Model 122

MODELS 123 & 124

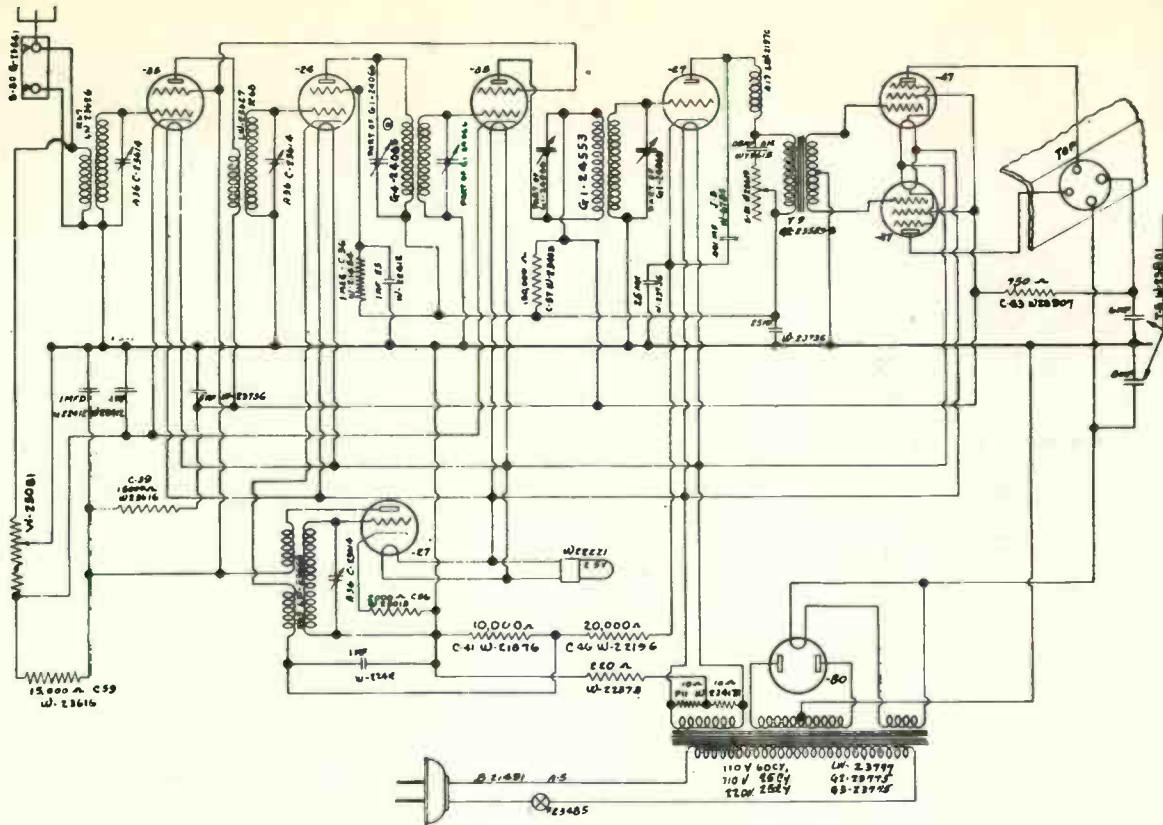
Model 123



Model 124

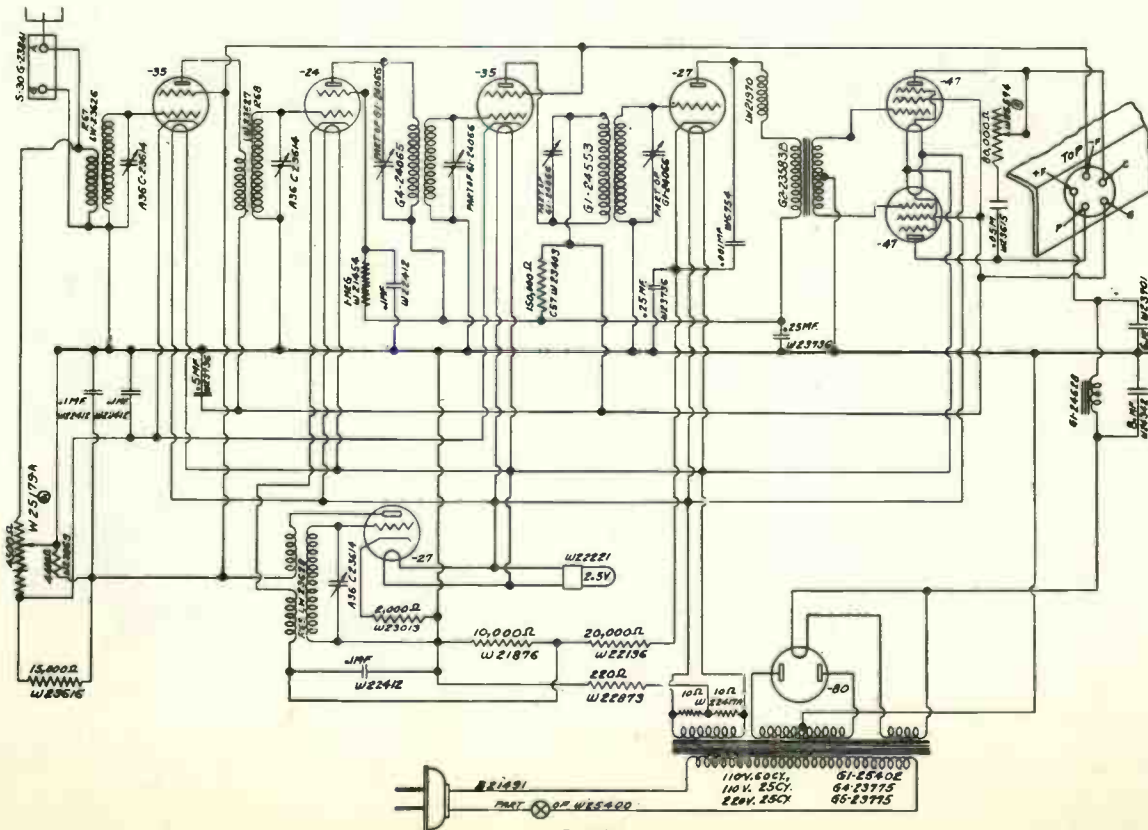


# MODEL 124 (Revised) & 124-1



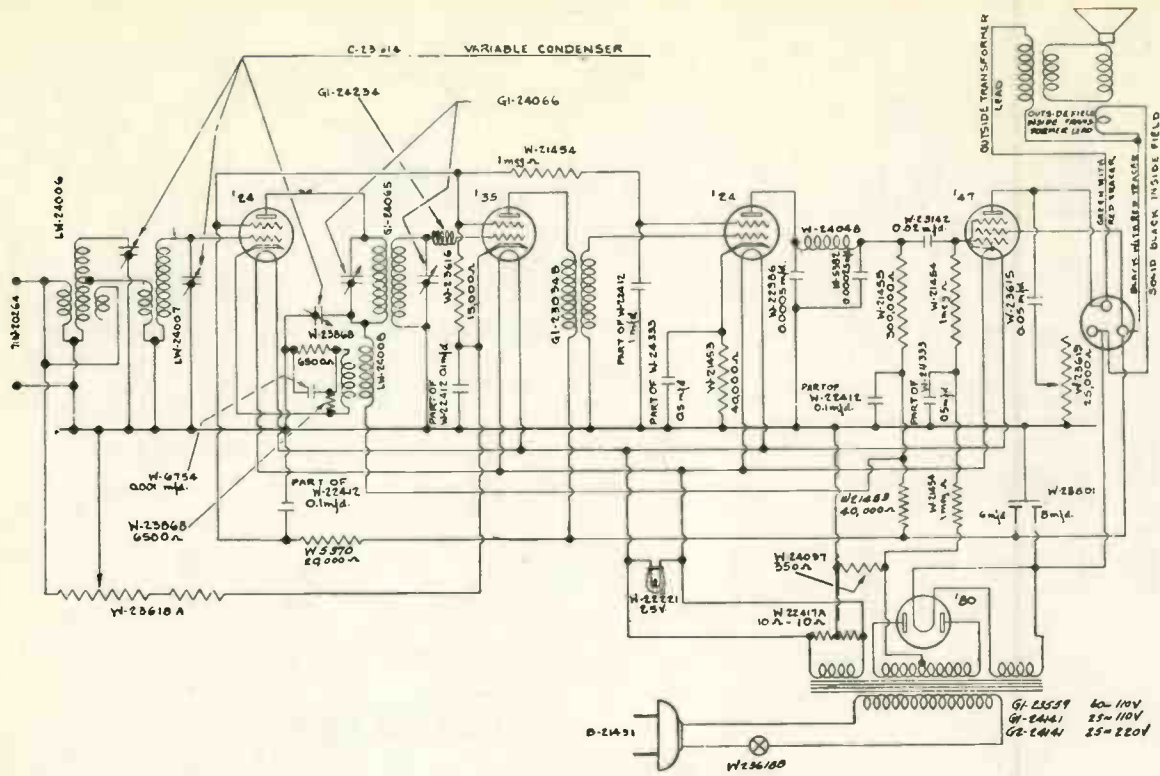
Revised Model 124 Circuit, As Used In Recent Chasses

# Model 124-1

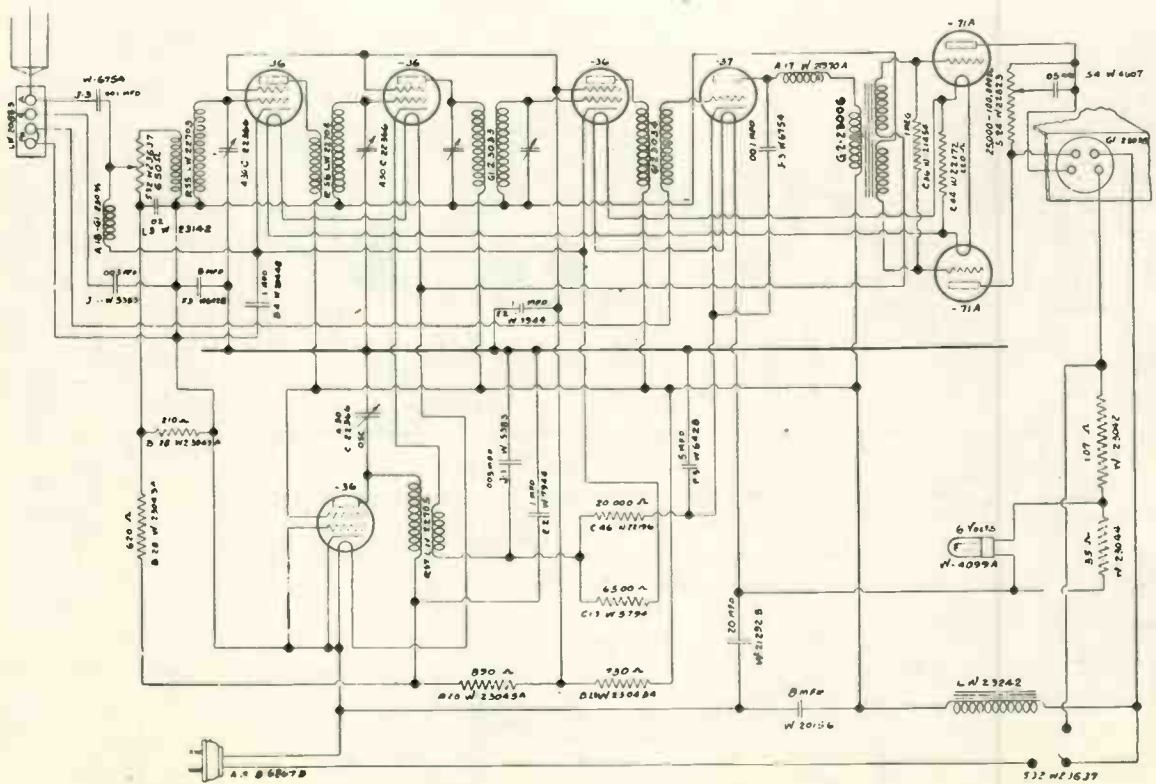




# MODELS 125 & 126

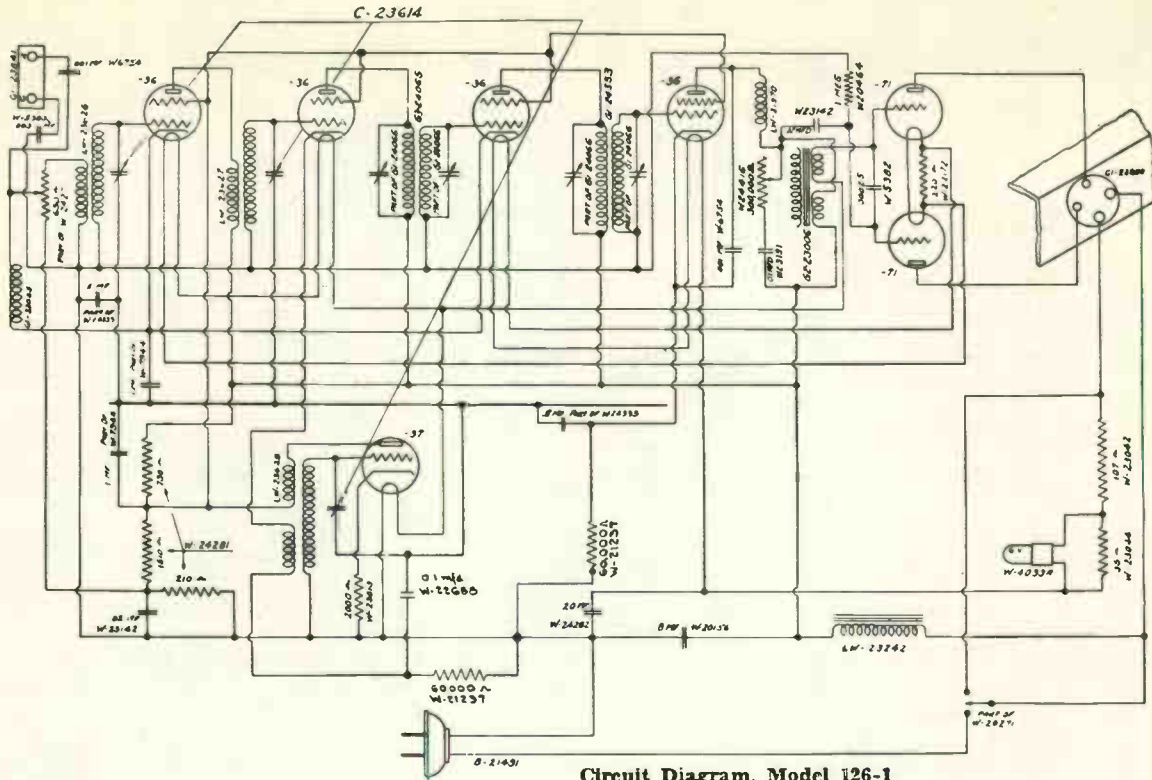


Circuit Diagram, Model 125.

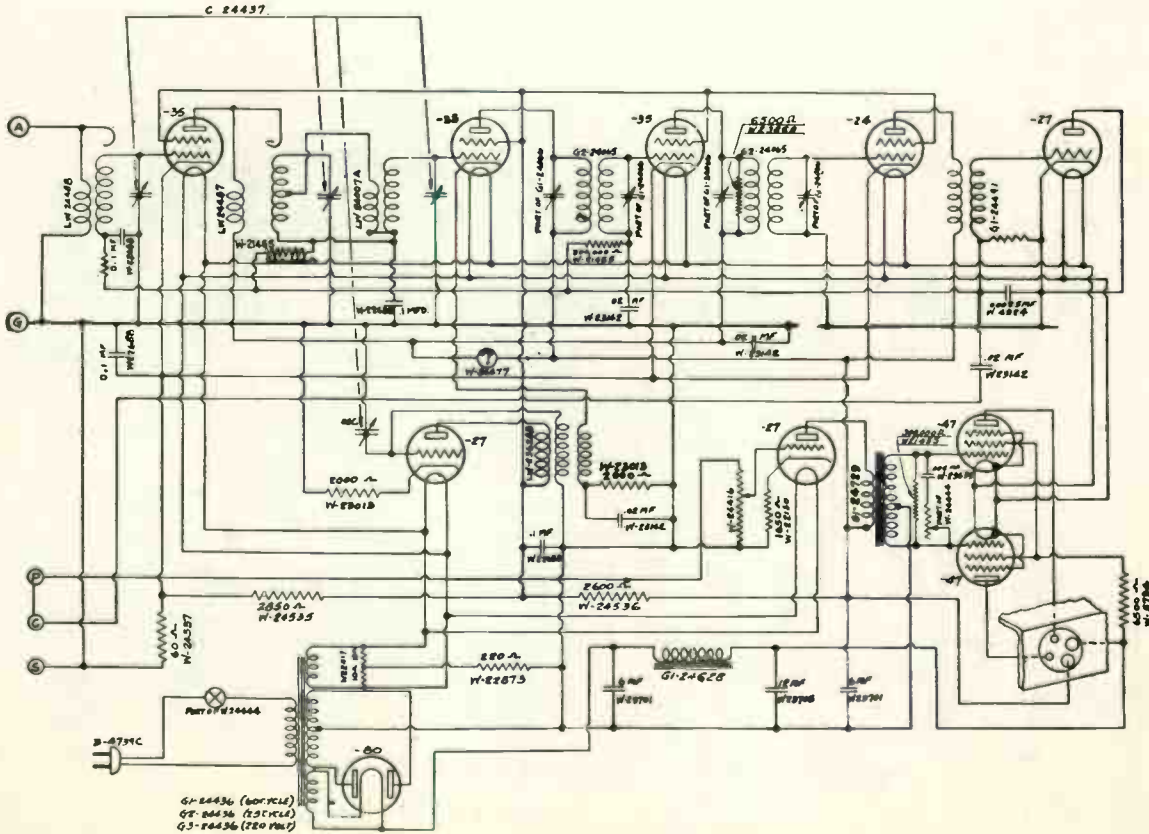


Circuit Diagram, Model 126

MODELS 126-1 & 127



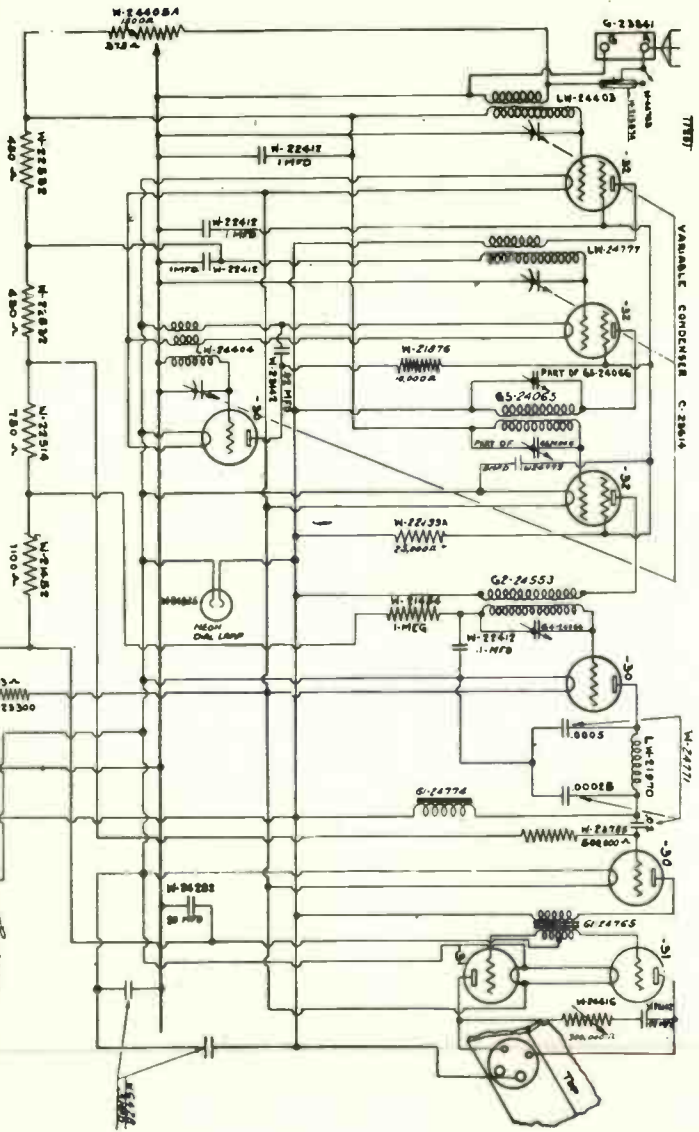
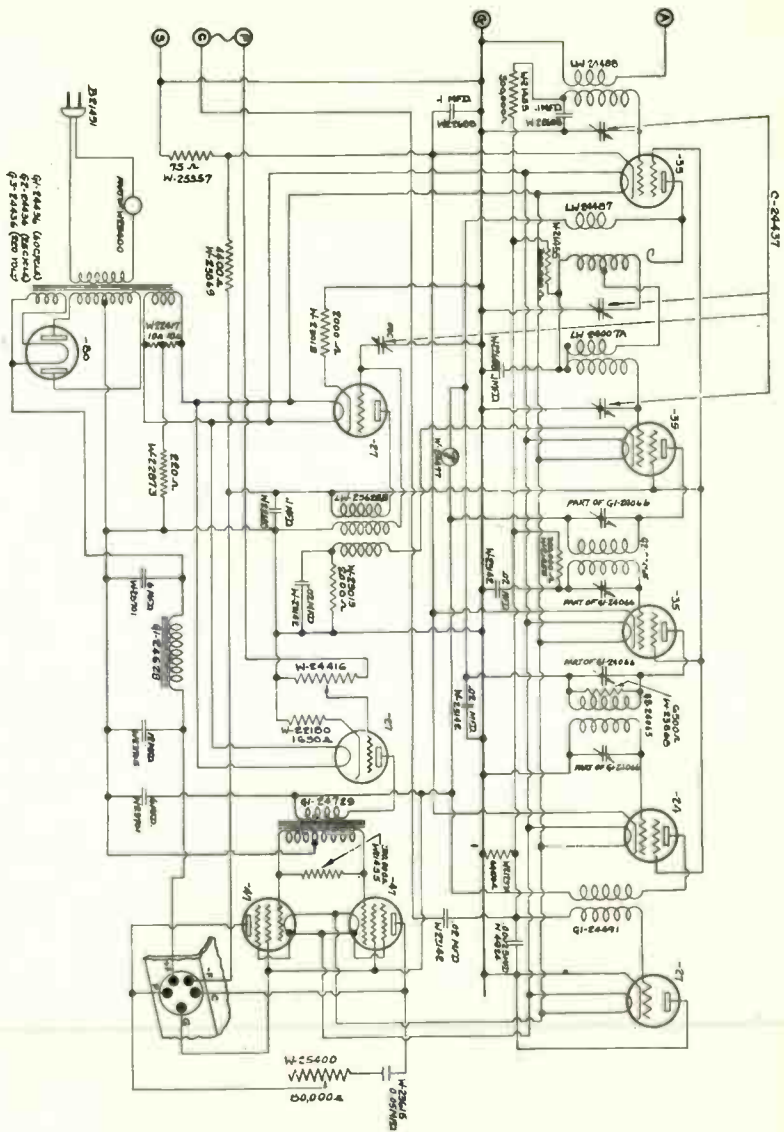
Circuit Diagram, Model 126-1



Circuit Diagram, Model 127.

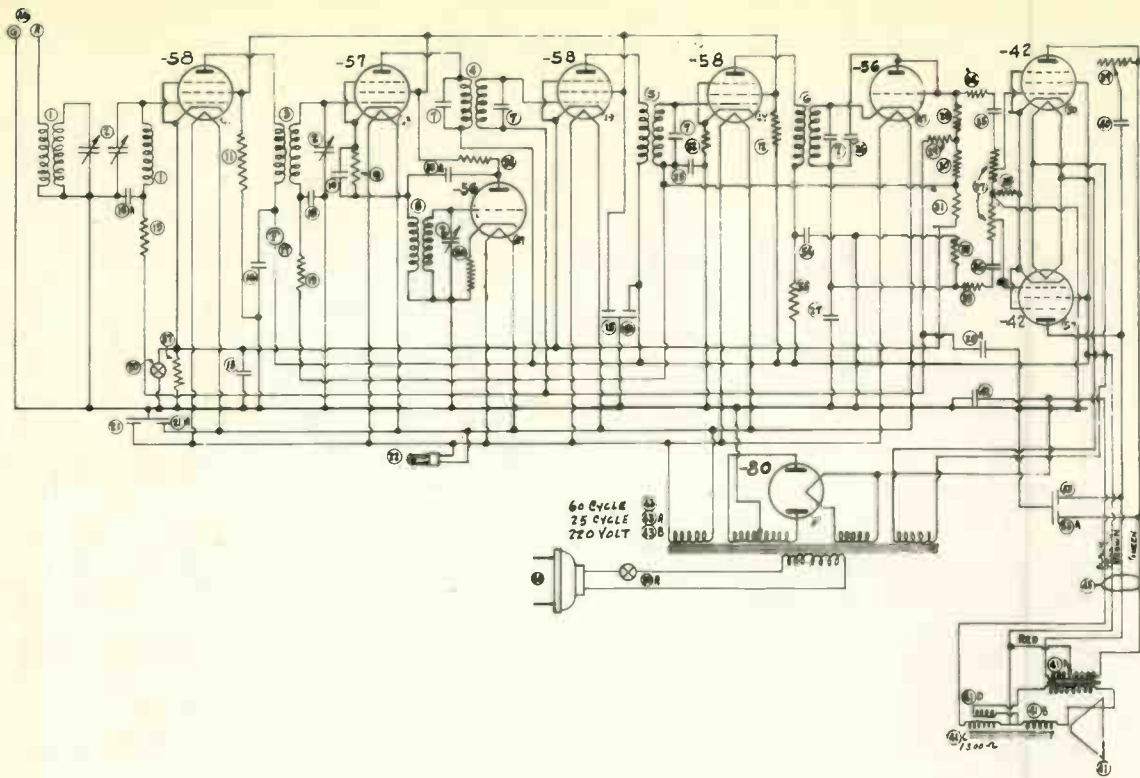
MODELS 127-1 & 128

Model 127-1



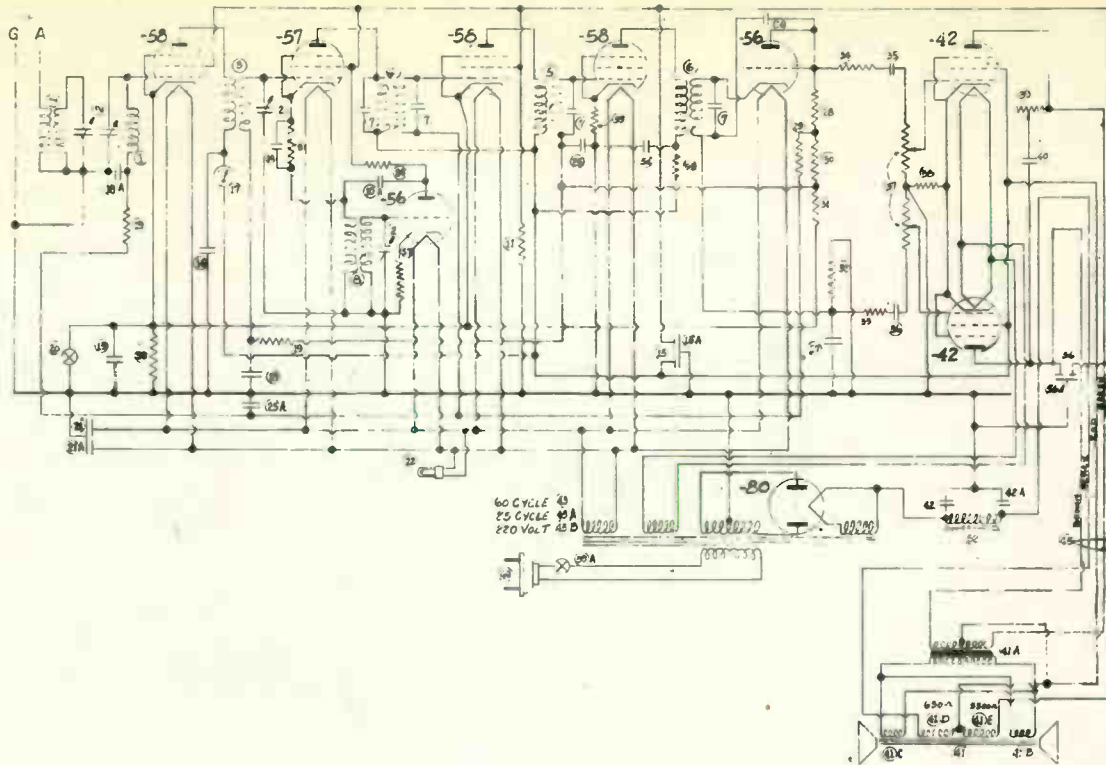
Circuit Diagram, Model 128





PARTS LIST - MODEL 130

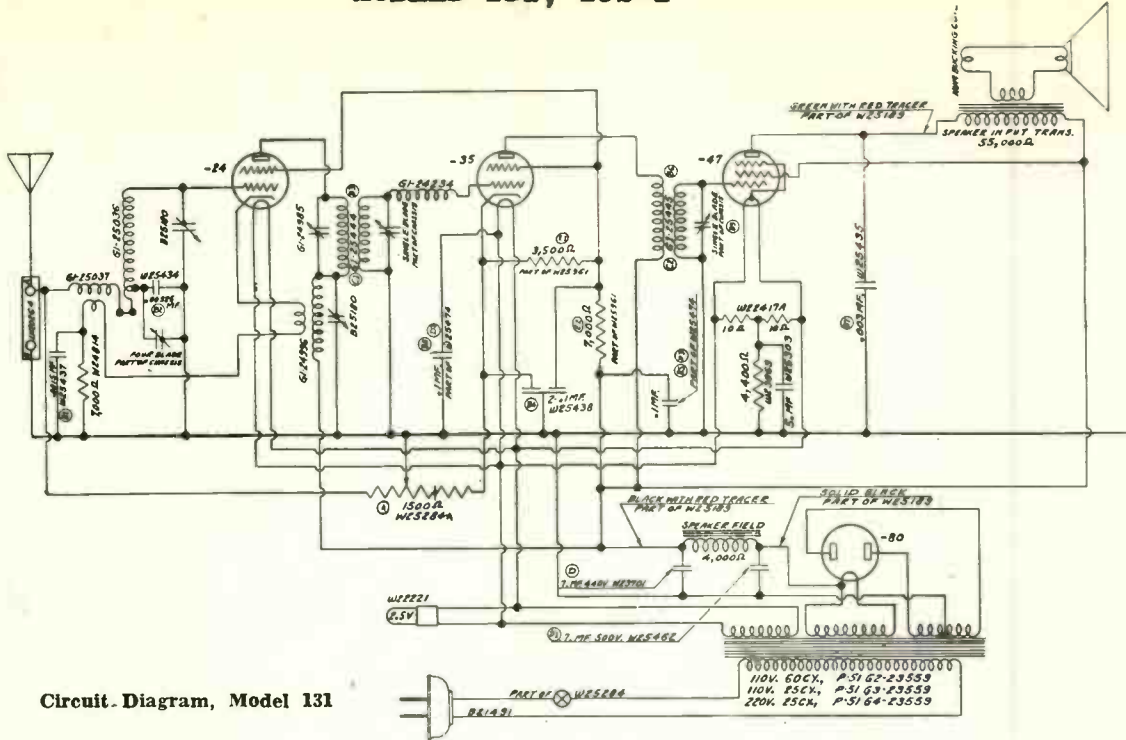
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-25967	Pre-Selector Coil	28	W-21455	300,000 ohms Res.
2	C-26112	Tuning Cond.	29	W-22215	3 megohm Res.
3	G1-25968	R.F. Trans.	30	W-21875	100,000 ohms Res.
4	G8-24065	I.F. Trans.	31	W-21453	40,000 ohms Res.
5	G1-25449	I.F. Trans.	32-33-34	W-23785	500,000 ohms Res.
6	G2-25449	Diode Trans.	35-36	W-25435	.003 mfd. Conds.
7	G4-25948	I.F. Tuning Cond.	37	W-25367	3 megohm Level Cont.
8	G1-24996	Osc. Coil	38	W-26049	450 ohms Res.
9	W-21876	10,000 ohms Res.	39-39A	W-25400	80,000 ohms Tone Cont. & Switch
10-10A	W-25538	.0015 mfd. Conds.	40	W023615	.05 mfd. Cond.
11-12	W-25970	15,000-10,000 ohms Res.	41	LC-26014	309-4 Speaker
13	W-24049	.1 mfd. Cond.	41A		Speaker Trans.
15-15A	W-26119	8-4 mfd. Cond.	41C		Speaker Field 1300 ohms
16	W-22688	.1 mfd. Cond.	41D		Hum Buck Coil
17	W-26091	Tuning Meter	42	W-25462	7 mfd. Cond.
18-18A	W-25438	.1 mfd. Cond.	43	G2-25534	60 Cycle Power Trans.
19	W-21455	300,000 ohms Res.	46	G1-23841	Ant. Gnd. Term.
20	W-26156	S.P.S.T. Switch	52	W-23012-A	40 ohms Res.
21-21A	W-25438	.1 mfd. Cond.	53-53A	W-25538	.0015 mfd. Conds.
24	W-21876	10,000 ohms Res.	54	W-23615	.05 mfd. Cond.
25-25A	W-25438	.1 mfd. Conds.	55	W-22514	750 ohms Res.
26	W-26152-A	.0001 mfd. Cond.	56	W-25937	275 ohms Res.
27	W-26152	.00015 mfd. Cond.	57	W-24097	350 ohms Res.



PARTS LIST - MODEL 130-1

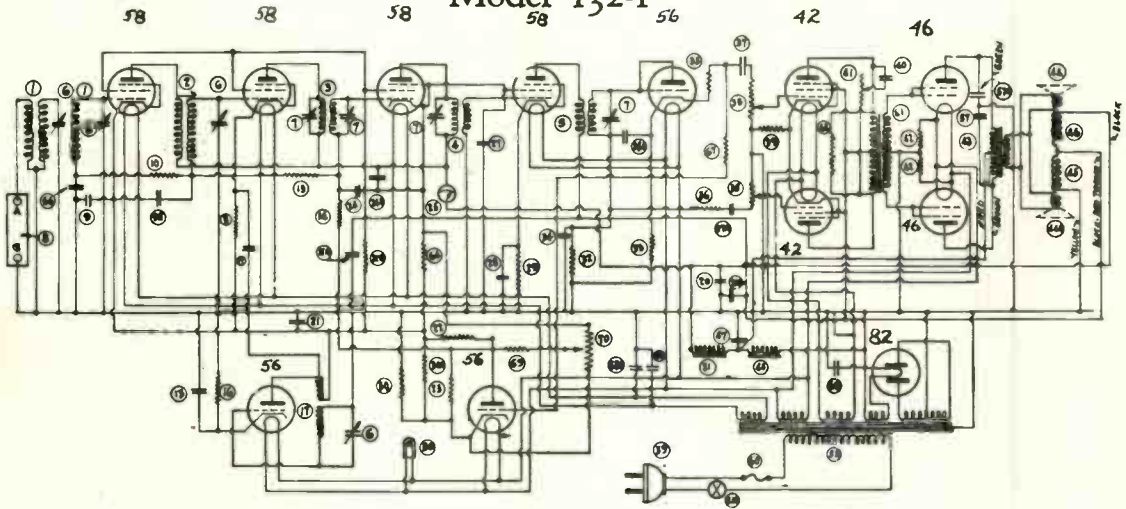
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-25967	Pre-Selector Coil	29	W-22215	3 megohm Res.
2	C-26112	Tuning Cond.	30	W-21875	100,000 ohms Res.
3	G1-25968	R.F. Trans.	31	W-21453	40,000 ohms Res.
4	G8-24065	I.F. Trans.	32-33-34	W-23785	500,000 ohms Res.
5	G1-25449	I.F. Trans.	35-36	W-25435	.003 mfd. Conds.
6	G2-25449	Diode Trans.	37	W-25367	3 megohm Res. Level Cont.
7	G4-25948	I.F. Tuning Cond.	38	W-26049	450 ohms Res.
8	G1-24996	Osc. Coil	39-39A	W-25400	80,000 ohms Tone Cont. & Switch
9	W-21876	10,000 ohms Res.	40	W-23615	.05 mfd. Cond.
10-10A	W-25538	.0015 mfd. Conds.	41	L-26104 & L-26105	320-4 & 326-4 Speakers
11	W-26493	4400 ohms Res.	41A		Speaker Trans.
13	W-24049	.1 mfd. Cond.	41D		Speaker Field 650 ohms
15-15A	W-26119	8-4 mfd. Conds.	41E		Speaker Field 5500 ohms
16	W-22688	.1 mfd. Cond.	42-42A	W-26118	8 mfd. Conds.
17	W-26091	Tuning Meter	43	G10-25669	60 Cycle Power Trans.
18-18A	W-25438	.1 mfd. Conds.	46	G1-23841	Ant. Gnd. Term.
19	W-21455	300,000 ohms Res.	52	G1-24628	Filter Choke
20	W-26156	S.P.S.T. Switch	53	W-22514	750 ohms Res.
21-21A	W-25438	.1 mfd. Conds.	54	W-23615	.05 mfd. Cond.
24	W-21876	10,000 ohms Res.	55	W-23012	40 ohms Res.
25-25A	W-25438	.1 mfd. Conds.	56-56A	W-25538	.0015 mfd. Conds.
26	W-26152-A	.0001 mfd. Cond.	57	W-25937	275 ohms Res.
27	W-26152	.00015 mfd. Cond.	58	W-24097	350 ohms Res.
28	W-81455	300,000 ohms Res.			

# MODELS 131, 132-1



Circuit Diagram, Model 131

## Model 132-1



1	W-28967	PRECISELY COIL	240 W-18438	1 MFD COND 50V	46	MODEL	SPEAKER
2	W-18268	R.F. TRANS.	25 W-16091	TUNING METER	46	324	SPKR FIELD 110V
3	W-18444	I.F. TRANS.	26		46	MODEL	SPKR FIELD 110V
4	W-18444	I.F. TRANS.	27	W-18438	2A	325	SPEAKER
5	W-18444	DRIVE TRANS.	28		47	W-16196-8	18 MFD COND.
6	W-16111	TUN. COND.	29	W-18218	48	W-16268	CHOKER
7	W-18228	I.F. COND.	30	W-6709	6000 Ω RES.	50	
8	W-18084	TUN. COND.	31	W-15992	7000 Ω RES.	51	
9	W-18448	1 MFD COND.	32		80		
10	W-4913	60,000 Ω RES.	33	W-18212-C	FILTER CHOKE	81	
11	W-18018	2000 Ω RES.	34	W-12788	500,000 Ω RES.	82	
12	W-18018	600 MFD COND.	35	W-12785	500,000 Ω RES.	83	W-18268
13	W-4913	50,000 Ω RES.	36	W-18074	DRIVE MFD COND.	84	W-18268
14	W-12484	1 MFD COND.	37	W-18074	DRIVE MFD COND.	85	W-18268
15	W-18432	600 MFD COND.	38	W-12485	300,000 Ω RES.	86	W-16176
16	W-6706	30K Ω RES.	39	W-21485	300,000 Ω RES.	87	W-18430
17	W-24096	OSCL. COIL	40	W-21485	300,000 Ω RES.	88	W-18430
18	W-16118	1 MFD COND.	41	W-18018	1 MFD COND.	89	W-18430
19	W-16119	1 MFD COND.	42	W-18018	1 MFD COND.	90	W-18430
20	W-18409	100,000 Ω RES.	43	W-18018	1 MFD COND.	91	W-18430
21	W-18018	1 MFD COND.	44	W-18018	1 MFD COND.	92	W-18430
22	W-18430	1 MFD COND.	45	W-18018	1 MFD COND.	93	W-18430
23	W-18430	1 MFD COND.	46	W-18018	1 MFD COND.	94	W-18430
24	W-18430	1 MFD COND.	47	W-18018	1 MFD COND.	95	W-18430

### Plate Voltages

R. F., First Detector, and First I. F. tubes	180 to 220
Oscillator tube	150 to 190
Second I. F. tube	200 to 240
A. V. C. tube	60 to 80
A. F. Amplifier tubes	190 to 230
Output tubes	380 to 430
Rectifier tube	390 to 440

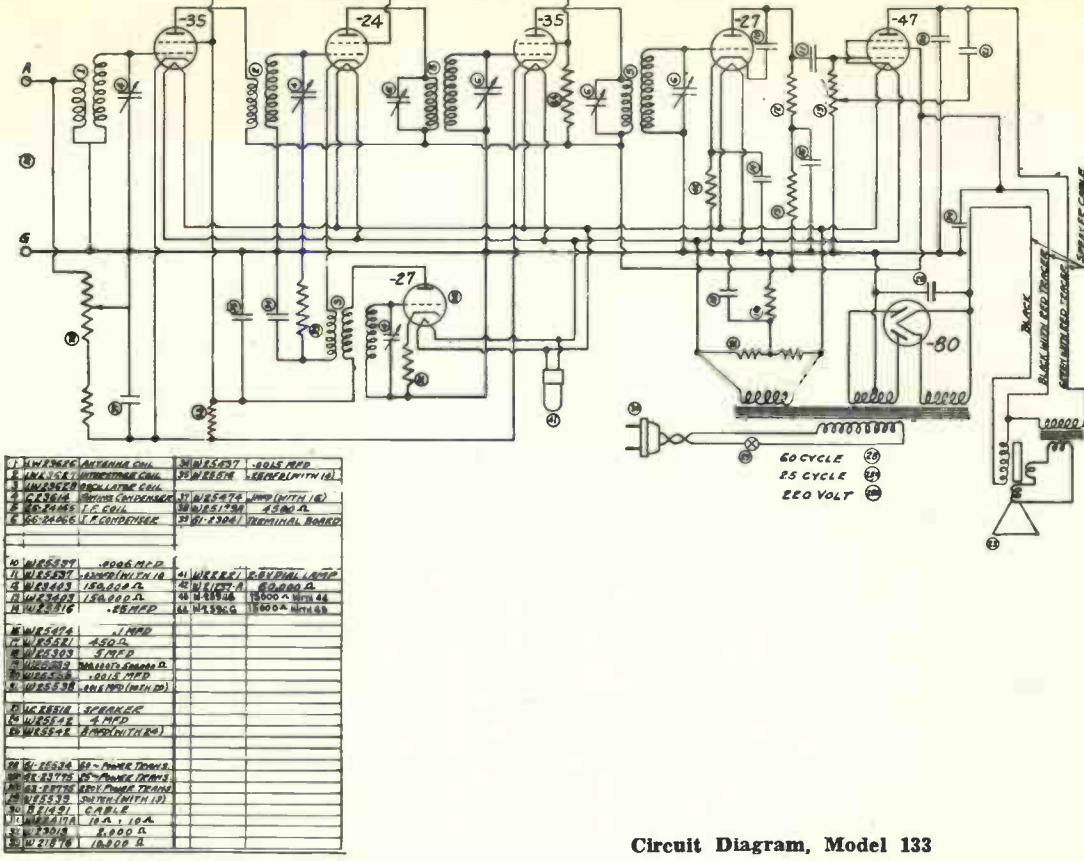
### Screen Grid Voltages

R. F., First Detector, and First I. F. tubes	50 to 70
Second I. F. tube	150 to 180
A. F. tubes	200 to 240

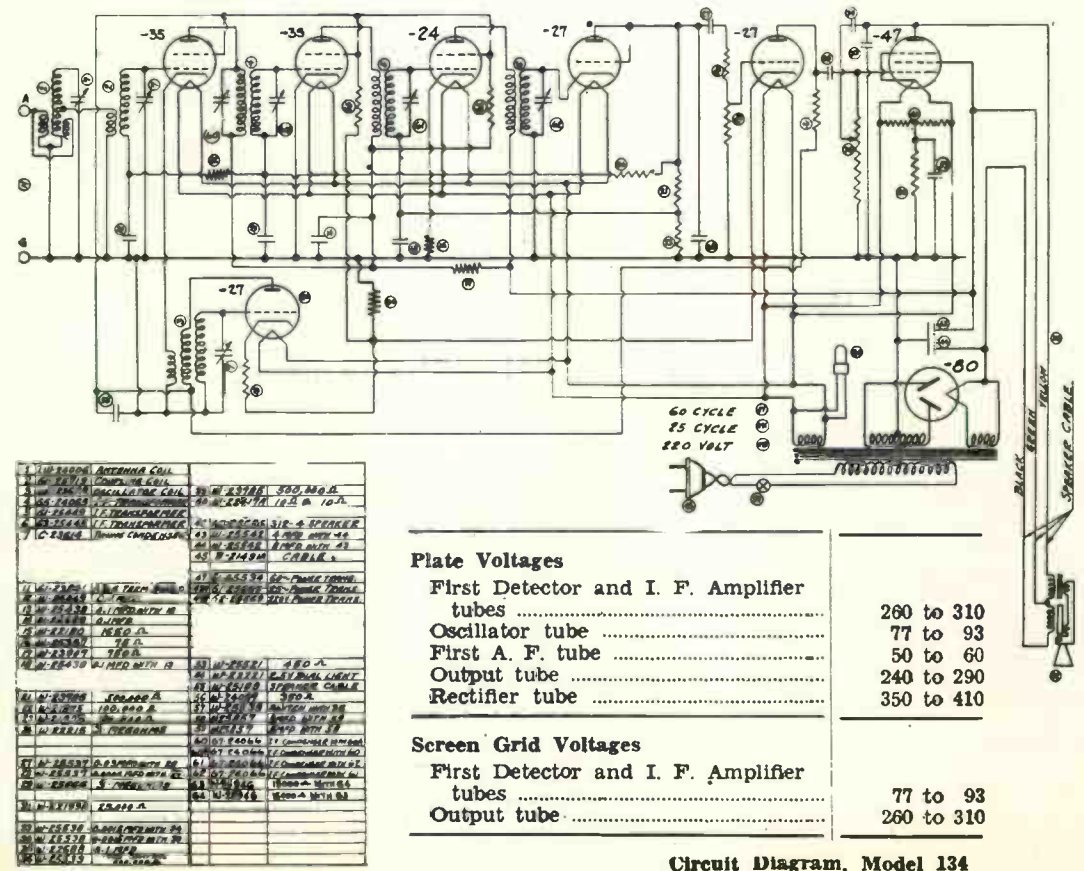
### Bias Voltages

R. F. and First I. F. Tubes (cathode to grid)	.4 to .6
First Detector tube (cathode to grid)	.2 to .3
Oscillator (cathode to chassis)	12 to 15
Second I. F. tube	.7 to .9
A. V. C. tube (cathode to chassis)	.70 to .85
Output tubes (cathode to chassis)	.25 to .32
A. F. Amplifier tubes (cathode to chassis)	.20 to .27

# MODELS 133, 134



Circuit Diagram, Model 133



Circuit Diagram, Model 134

Plate Voltages	
First Detector and I. F. Amplifier tubes .....	260 to 310
Oscillator tube .....	77 to 93
First A. F. tube .....	50 to 60
Output tube .....	240 to 290
Rectifier tube .....	350 to 410

Screen Grid Voltages	
First Detector and I. F. Amplifier tubes .....	77 to 93
Output tube .....	260 to 310



MODELS 134-1, 135

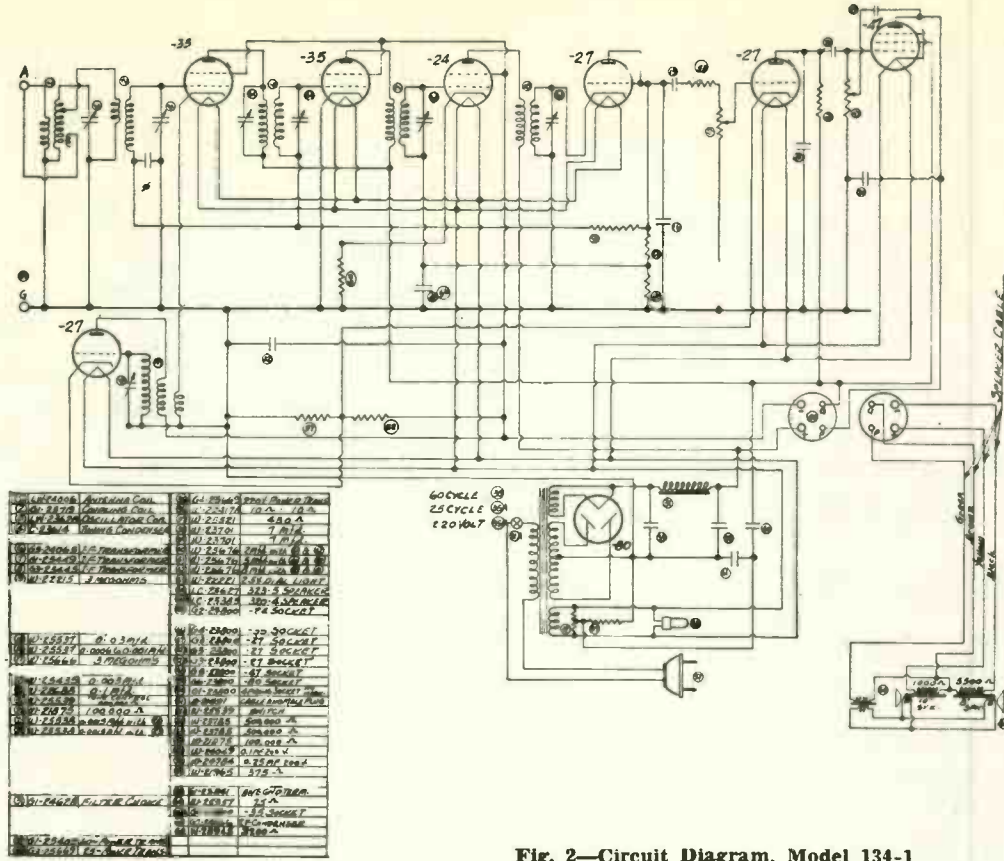
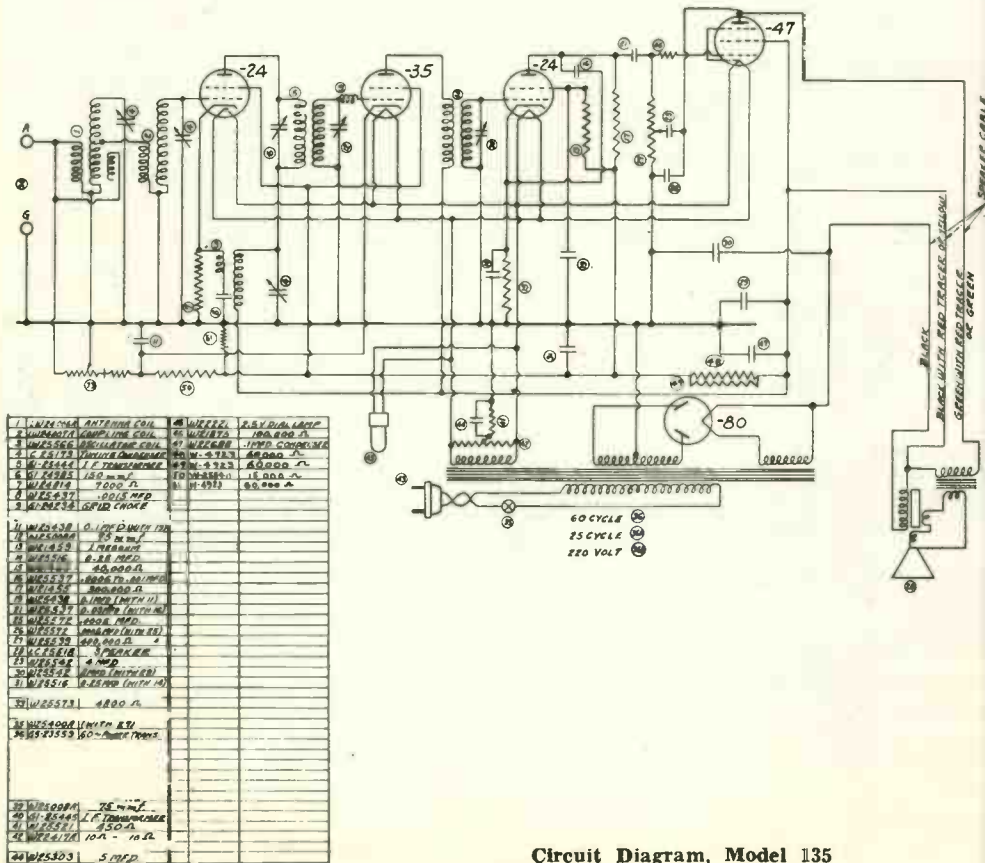


Fig. 2—Circuit Diagram, Model 134-1



Circuit Diagram, Model 135

# Model 136-1

## Specifications

Model 136-1 is a ten tube superheterodyne for operation from A. C. electric circuits. Five sets of coils give the following frequency ranges: 550 to 1500 KC, 1500 to 3500 KC, 3500 to 6500 KC, 6500 to 12000 KC, and 12000 to 20000 KC. The intermediate frequency used is 456 KC.

## Tubes And Voltage Limits

The following are the voltages measured with the receiver in operating condition but with no signal to the antenna circuit. Use a high resistance D. C. volt-

meter (1000 ohms per volt, or more) for all but filament voltages. In measuring filament or heater voltages use a low range A. C. meter. The voltage limits are + or - 10% of values given in the following table.

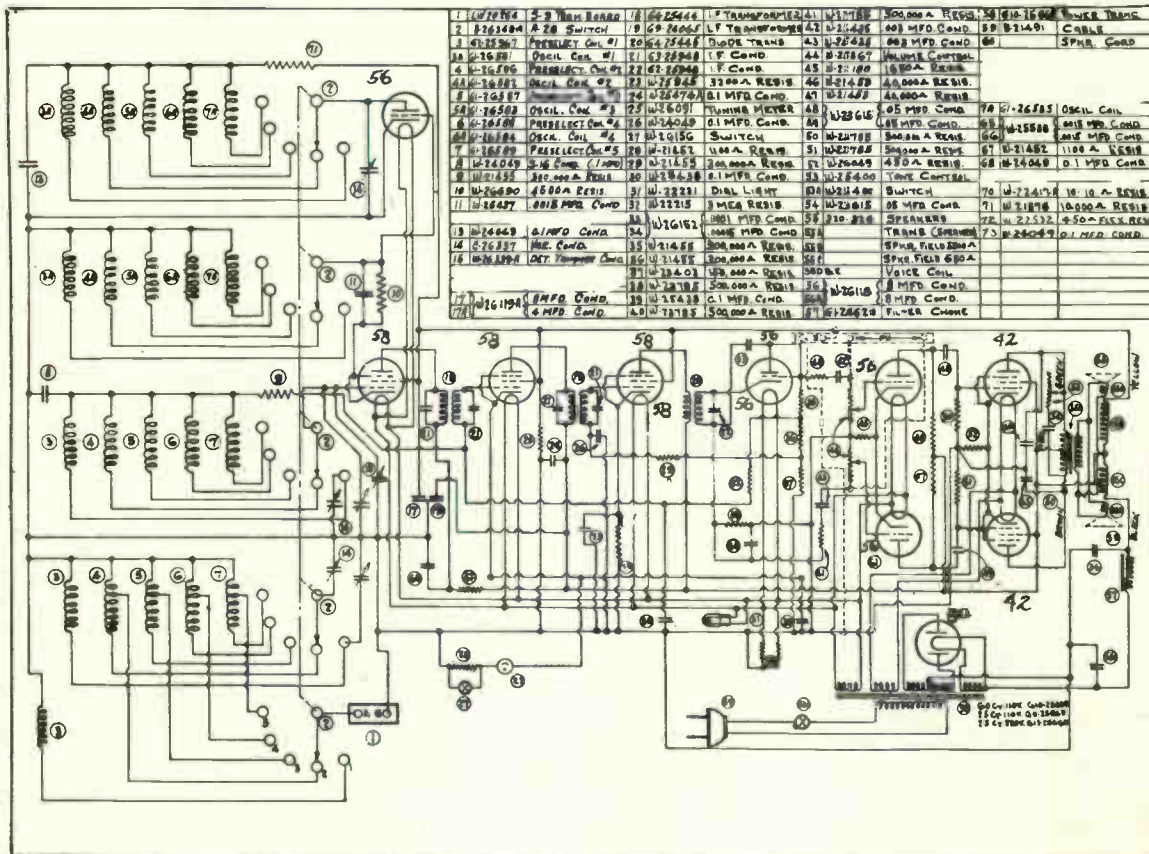
Line voltage—117.5 volts (235 for 220 volt receivers).

Plate voltage measured from plate contact to cathode contact.

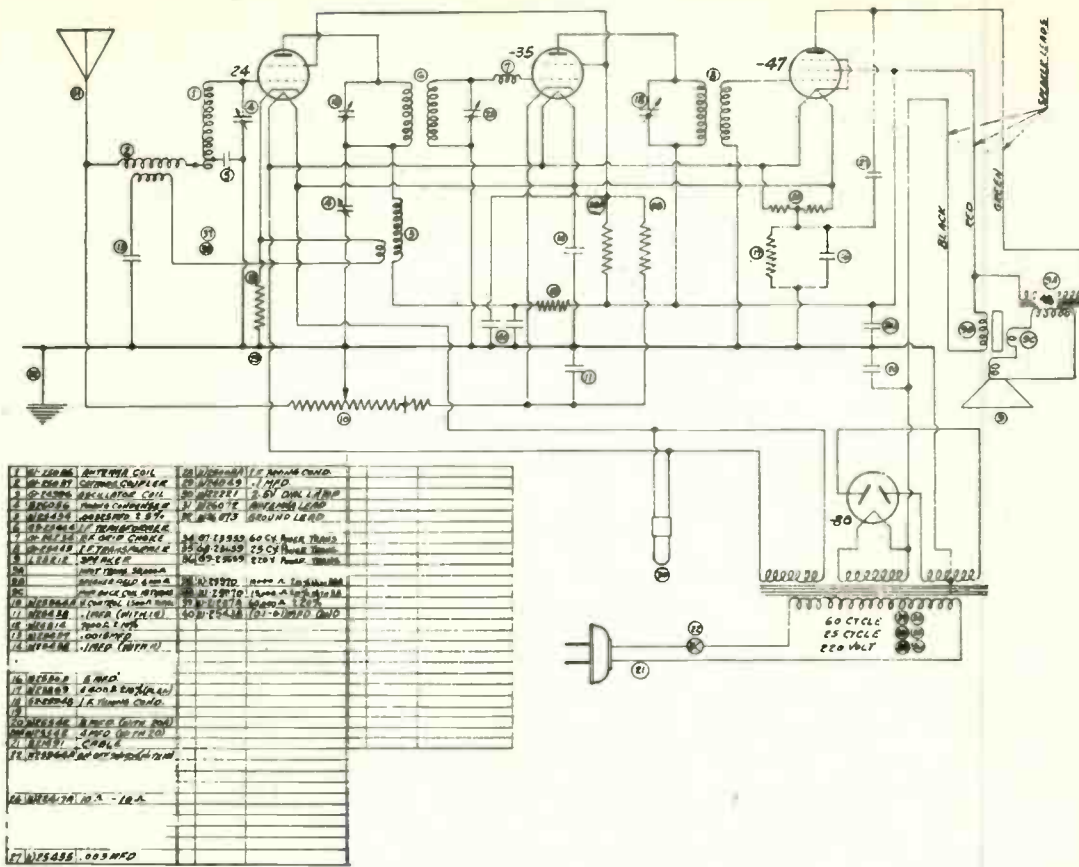
Suppressor grid voltage measured from suppressor grid contact to cathode contact.

Bias voltage measured from cathode contact to chassis.

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	Fil
-56	Oscillator	45			0	2.5
-58	1st Detector	275	100	0	10.0	2.5
-58	1st I. F. Amplifier	275	100	0	2.5	2.5
-58	2nd I. F. Amplifier	275	100	0	4.0	2.5
-56	Diode Detector	0			0	2.5
-56	Push Pull A. F. Amplifier	135		0	7.0	2.5
-56	Push Pull A. F. Amplifier	135		0	7.0	2.5
-42	Output	270	275		20.0	6.3
-42	Output	270	275		20.0	6.3
-80	Rectifier	370				4.8



# Model 137



## Specifications

Model 137 is a four-tube superheterodyne for operation from A.C. electric circuits. The tubes employed are as follows: a -24 type oscillating first detector, a -35 or -51 type I.F. amplifier, a -47 type second detector and output tube, and an -80 type rectifier.

## Voltage Limits

The following are the approximate voltages which should be measured with the tubes in place, speaker connected, and a line voltage of 117½ (235 for 220 volt receivers). Measure plate and screen grid voltages with a high-resistance D.C. voltmeter (1000 ohms per volt) from plate or screen grid tube contact to emitter contact. Measure bias voltages from

cathode to chassis. Use a low-range A.C. voltmeter for filament or heater voltages.

### Heater Or Filament Voltages

All tubes but Rectifier .....	2.2 to 2.6
Rectifier tube .....	4.4 to 5.2

### Plate Voltages

First Detector and I. F. tubes .....	220 to 260
Second Detector tube .....	210 to 250
Rectifier tube .....	380 to 430

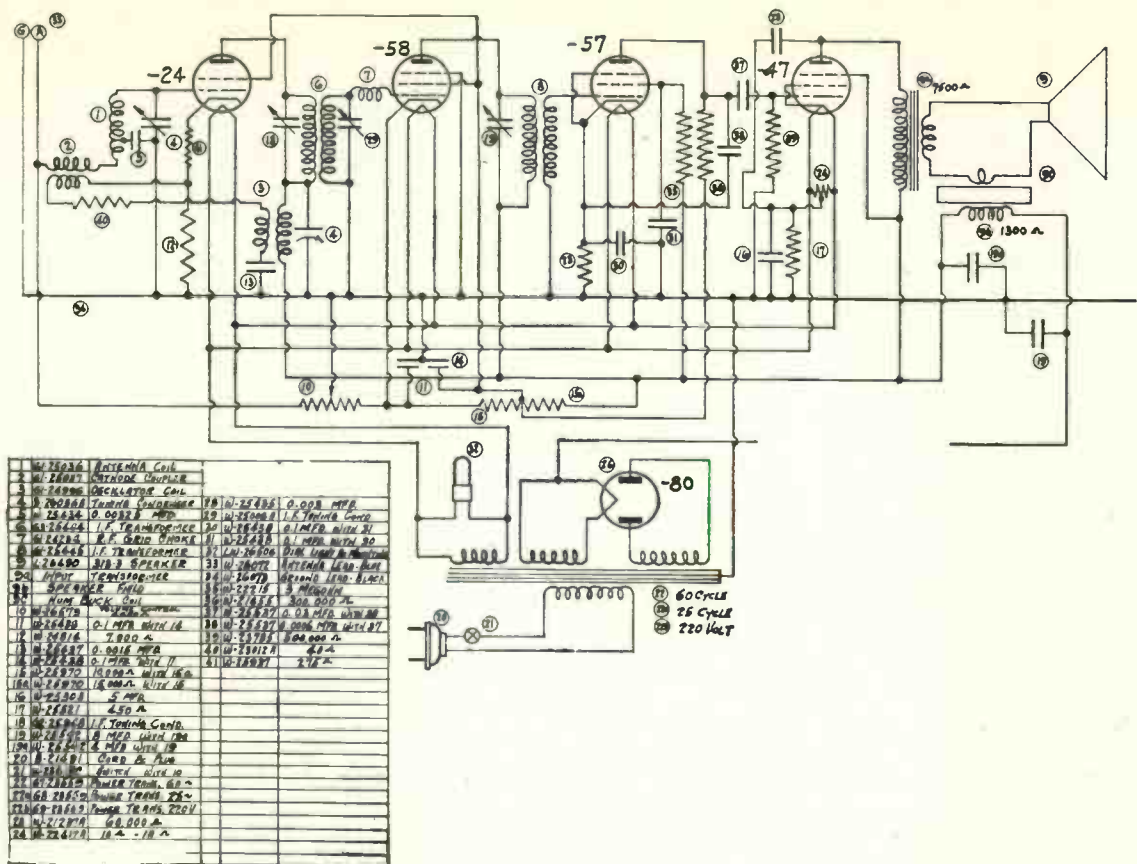
### Screen Grid Voltages

First Detector and I. F. tubes .....	90 to 110
Second Detector tube .....	220 to 260

### Bias Voltages

First Detector tube .....	8 to 10
I. F. tube .....	2.7 to 3.3
Second Detector tube (with no signal) .....	25 to 30

## Model 141



### Specifications

Model 141 is a five-tube superheterodyne for operation from A.C. electric circuits. It employs the following tubes: a -24 type oscillating first detector, a -58 type I.F. amplifier, a -57 type second detector, a -47 type output tube, and a -80 type rectifier.

### Voltage Limits

The following are the approximate voltages which should be measured with the tubes in place, speaker connected, and a line voltage of 117½ (235 for 220 volt receivers). Measure plate and screw grid voltages with a high-resistance D.C. voltmeter (1000 ohms per volt) from plate or screen grid tube contact to emitter contact. Measure bias voltages from

cathode to chassis. Use a low-range A.C. voltmeter for filament or heater voltages.

Heater Or Filament Voltages	
All tubes but Rectifier .....	2.2 to 2.6
Rectifier tube .....	4.3 to 5.3
Plate Voltages	
First Detector and I. F. tubes .....	230 to 270
Second Detector tube .....	30 to 50
Output tube .....	230 to 260
Rectifier tube .....	340 to 380
Screen Grid Voltages	
First Detector and I. F. tubes .....	90 to 110
Second Detector tube .....	30 to 50
Output tube .....	235 to 265
Bias Voltages	
First Detector tube .....	8 to 10
I. F. tube .....	3.1 to 3.9
Second Detector tube .....	9 to 12
Output tube .....	16 to 21

# Model 143

## Specifications

Model 143 is an eight tube superheterodyne designed for operation from a 2 volt "A" battery; 135 volts of "B" battery and 22½ volts of "C" battery. The intermediate frequency is 181.5 Kc.

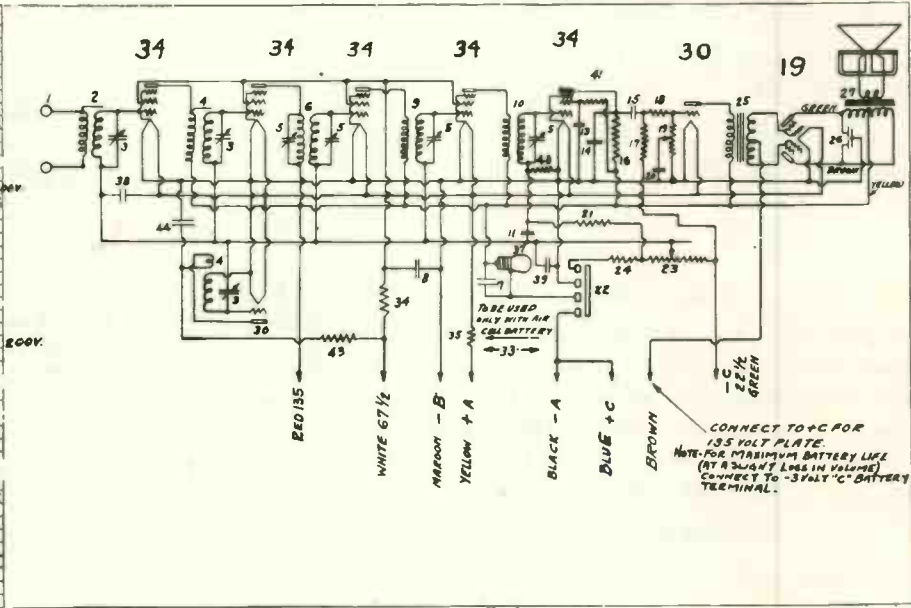
## Tubes and Voltage Limits

The tubes and voltages are given in the following table. All voltages, except bias, are measured with a 250 volt D.C. voltmeter (1000 ohms per volt, from "B-" to tube contact; with the receiver in operating condition, but no signal to the antenna circuit. Bias voltages are measured from negative filament to grid.

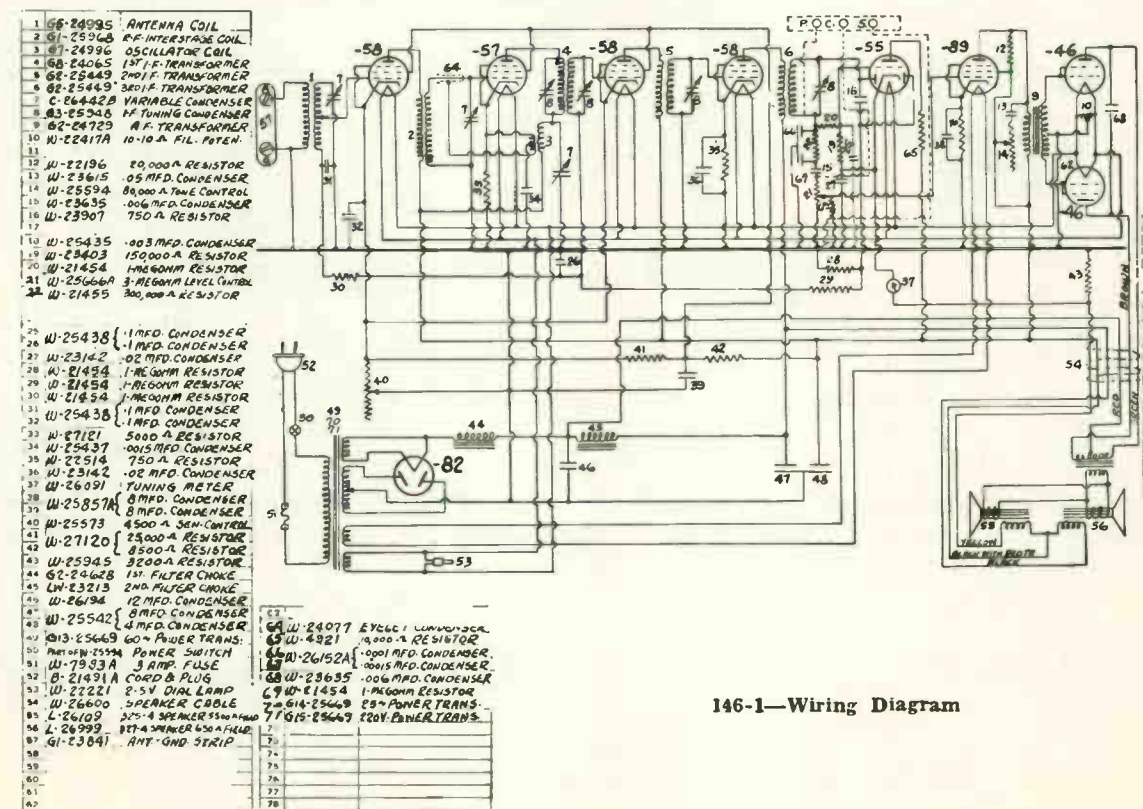
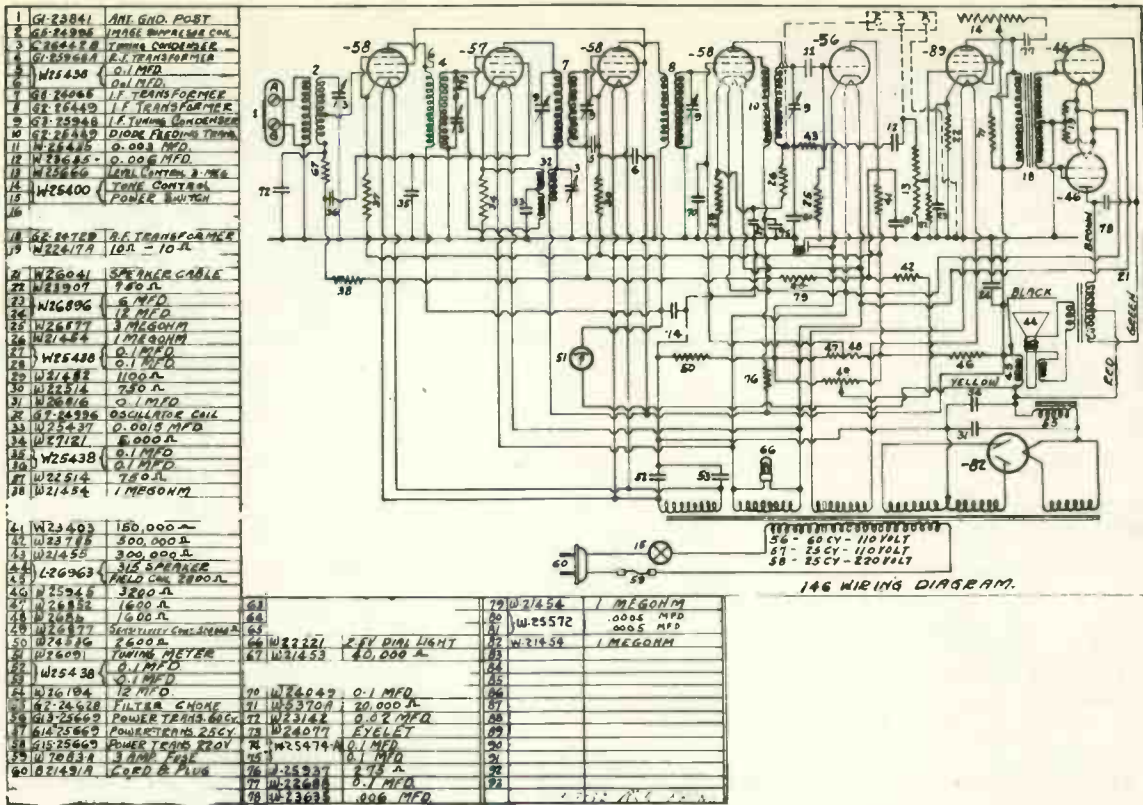
Tube	Position	Plate	Screen Grid	Bias	Filament
34	R. F. Amplifier	135	50	4	2.0
30	Oscillator	15		0	2.0
34	Modulator	135	50	4	2.0
34	I. F. Amplifier	135	50	4	2.0
34	I. F. Amplifier	135	50	4	2.0
34	Detector	80	20	0.5	2.0
30	A. F. Amplifier	135		1.5	2.0
19	Output	135		0	2.0

Voltage limits are plus or minus 10% of values given.

Voltages between "B-" and chassis is 4 volts, used for R. F., I. F., and modulator bias.



Models 146 and 146-1



# Model 147

## Specifications

Model 147 is a four tube tuned radio frequency receiver designed for operation from 110 volt, 25 or 60 cycle A. C. and 110 volt D. C. electric circuits.

## Tubes And Voltage Limits

The following are the voltage limits measured with the receiver in operating condition, but with no signal to the antenna circuit. Use a high resistance D. C. voltmeter (1000 ohms

per volt, or more) for all voltages but filaments on A. C. operation. For heater or filament voltages on A. C. use a low range A. C. meter.

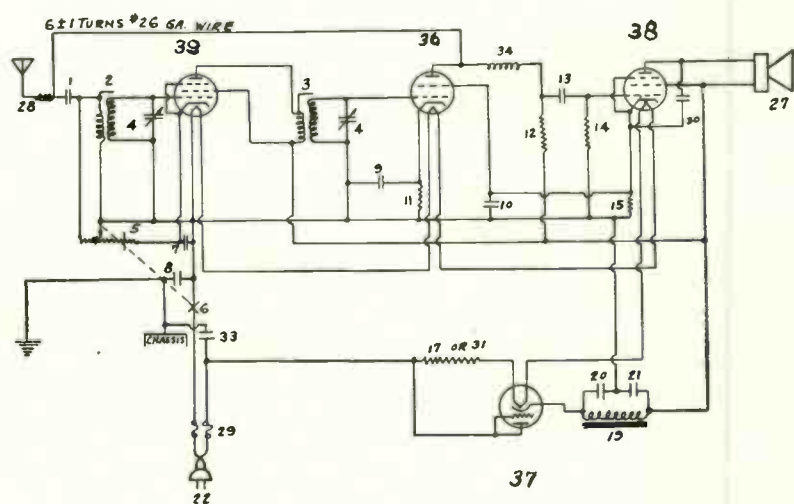
Line voltage—117.5 volts.

Plate voltage measured from plate contact to cathode contact.

Screen grid voltage measured from screen grid contact to cathode contact.

Bias voltage measured from cathode to negative of "B" supply.

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL
<b>Voltages with A. C. Power Supply</b>						
-39	R. F. Amplifier	104	104		1.3	5.6
-36	Detector	5	7		1.2	5.6
-38	Output	92	95		14	5.6
-37	Rectifier				118	5.6
<b>Voltages with D. C. Power Supply</b>						
-39	R. F. Amplifier	100	100		1.2	5.6
-36	Detector	5	7		1.0	5.6
-38	Output	92	95		12.0	5.6
-37	Rectifier	3			102	5.6

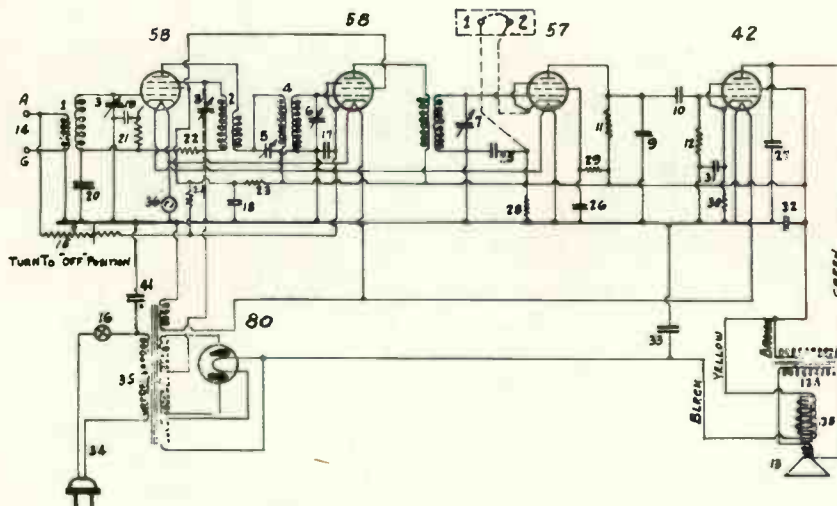


The general replacement volume control line handled by Crosley distributors is complete, of excellent quality and properly priced. The factory will be happy to furnish information regarding this material.

# Model 148

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	Fil
-58	Osc. Detector	230	110	33	2.7*	2.5
-58	I. F. Amplifier	255	140	0	3.0	2.5
-57	Detector	180	40	0	5.8	2.5
-42	Output	240	255	0	17.0	7.0
-0	Rectifier	300				4.8

\*Across 275 ohm resistor in cathode circuit.



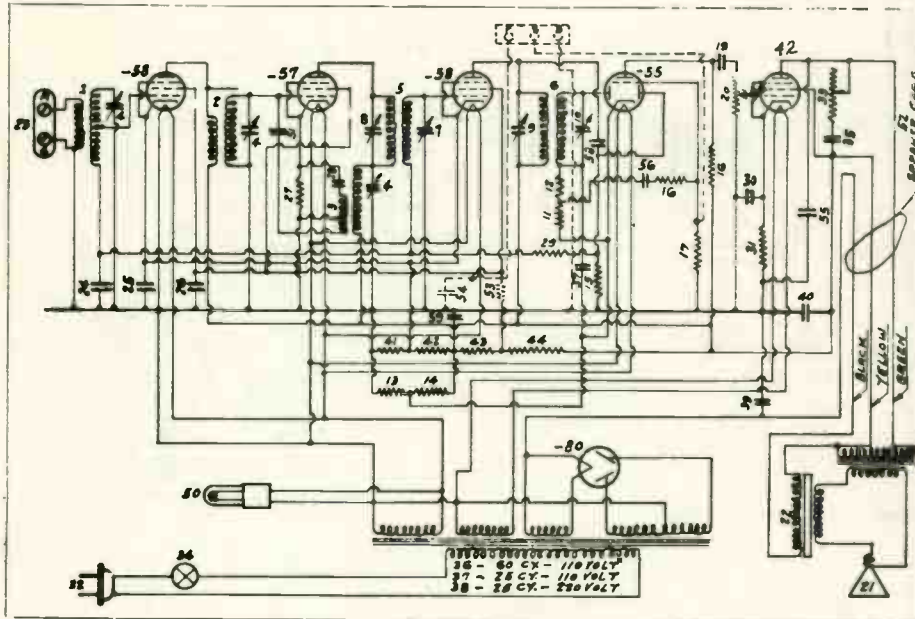
### PARTS LIST, MODEL 148

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-32000	Ant. Coil	21	W-25237	275 ohms Res.
2	W-27475	Osc. Coil	22	W-26690	4500 ohms Res.
3	B-27425	A-56 Var. Cond.	23-24	W-27120	8500-25,000 ohms Res
4	W-24203-D	I.F. Trans. Coil	25	W-24784	.25 mfd. Cond.
5	G2-25948	I.F. Trans. Cond.	26	W-25517	.05 mfd. Cond.
6-7	W-25008-A	I.F. Tuning Conds.	27	W-25517	.008 mfd. Cond.
8	G7-25445	I.F. Trans.	28	W-21453	40,000 ohms Res.
9-10	W-25537	.0006 - .03 mfd. Cond.	29	W-26577	3 meg. Res.
11	W-21455	300,000 ohms Res.	30	W-23907	750 ohms Res.
12	W-23785	500,000 ohms Res.	31-32	W-27488	8 mfd. Conds.
13	27610	Speaker	33	W-23701-A	7 mfd. Cond.
15-16	W-26573	S-55 Vol. Cont. & Sw.	35	G11-23559	Power Trans.
17-20	W-25438	.1 mfd. Conds.	41	W-27540	.0005 mfd. Cond.



# Model 150

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL
-58	R. F. Amplifier	260	90	0	2.5	2.5
-57	Oscillating detector	240	80	0	5.0	2.5
-58	I. F. Amplifier	275	100	0	2.5	2.5
-55	Detector	95			23.0	2.5
-42	Output	255	260	0	22.0	6.3
-80	Rectifier	360				5.0

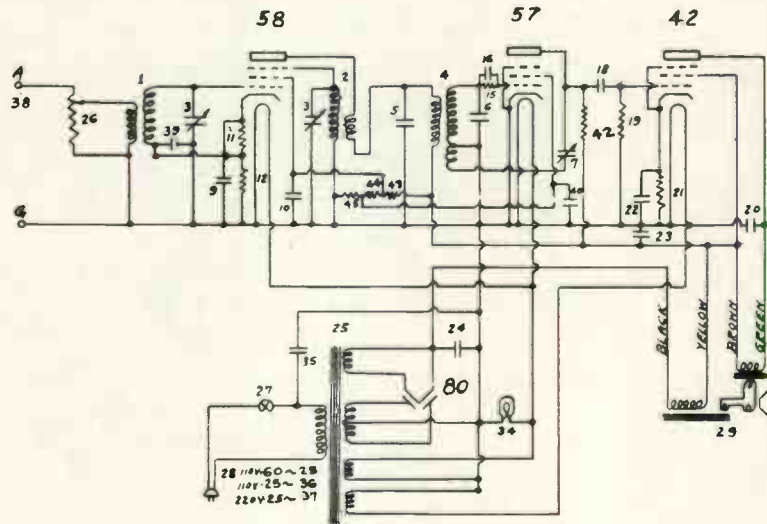


## PARTS LIST, MODEL 150

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Coil	21-22	LC-25518	312-4 Speaker 1300 ohm
2	G2-25969-A	Interstage Coil			Field Coil
3	G9-24996	Osc. Coil	24-25	W-25438	.1 mfd. Cond.
4	C-26442-B	Tuning Cond.	26 & 35	W-24049	.1 mfd. Cond.
5	G1-25444	1st I.F. Trans.	27	W-24814	7,000 ohms Res.
6	G6-25444	2nd I.F. Trans.	28	W-25437	.0015 mfd. Cond.
7	W-25008-A	I.F. Tuning Cond.	29	W-21454	1 meg. Res.
8-9-10	G1-25948	Pri., Sec. I.F., Sec. Cond.	30	W-26870-A	6 mfd. Cond.
11-12	W-21455	300,000 ohms Res.	31	W-23907	750 ohms Res.
13	W-22831	15,000 ohms Res.	33-34	W-25594	Tone Cont. & Power Sw.
14	W-21876	10,000 ohms Res.	36	G14-23559	60 Cy. Power Trans.
15	W-26577	3 meg. Res.	39-40	W-25542-A	8-4 mfd. Conds.
16	W-21455	300,000 ohms Res.	41-44	W-27389	110-2,000-8,000-15,000 ohms Res.
17	W-26577	3 meg. Res.	51	W-24077	2.5 mmf. Cond.
18	W-21875	100,000 ohms Res.	53	W-7159	4400 ohms Res. (Phono only)
19	W-23142	.02 mfd. Cond.	54	W-24049	.1 mfd. Cond. (Phono only)
20	W-26877	Level Cont. 300,000 ohms Res.	55	W-23635	.006 mfd. Cond.
			56	W-23142	.02 mfd. Cond.
			57	W-26571	.0005 mfd. Cond.
			58	W-27540	.0005 mfd. Cond.
			59	W-27652	.003 mfd. Cond.

# Model 154

Tube	Position	Voltages				Fil.
		Plate	Screen Grid	Cathode	Control Grid	
-58	Oscillator modulator	200	100	16	-14	2.5
-57	2nd Detector	25	20	0	0	2.5
-42	Output	190	200	12	0	6.3
-80	Rectifier	310				5.0

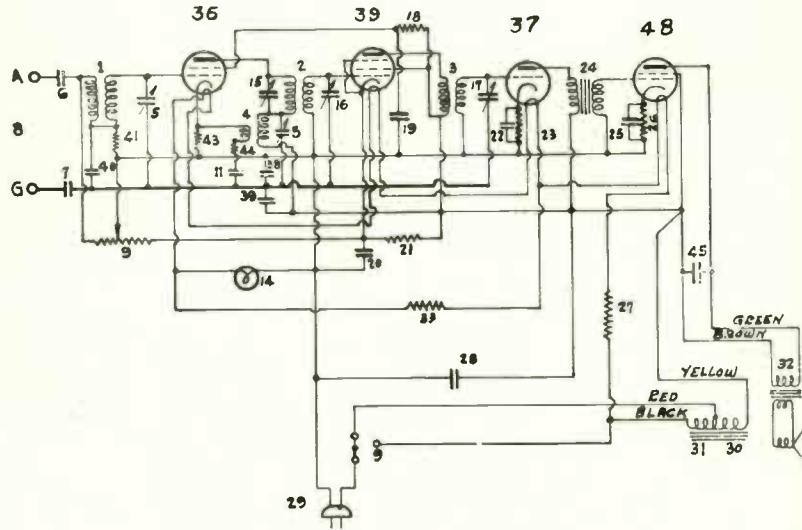


### PARTS LIST, MODEL 154

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	19	W-26577	3 meg. Res.
2	G12-24996	Osc. Coil	20	W-23142	.02 mfd. Cond.
3	L-27426	Tuning Cond.	21	W-23907	750 ohms Res.
4	G10-25444	I.F. Coil	22-23	W-25857-B	8 mfd. 25-200 v. Cond.
5	G2-25948	I.F. Tuning Cond.	24	W-23701-A	7 mfd. 400 v. Cond.
6	W-25748	I.F. Tuning Cond.	25	G1-28500	60 Cy. Power Trans.
7	G2-27912	Regeneration Cond.	26-27	W-28517	10,000 ohms Vol. Cont.
9-10	W-27204	.02 mfd. Cond.			& S.P.S.T. Sw.
11	W-25937	275 ohms Res.	29	L-28499	342-2 Speaker
12	W-26690	4500 ohms Res.	35	W-25435	.003 mfd. Cond.
15	W-26578	5 meg. Res.	39-40	W-27204	.02 mfd. Cond.
16	W-25437	.0015 mfd. Cond.	42	W-23403	150,000 ohms Res.
18	W-27203	.02 mfd. Cond.	43-44-45	W-28767	10,000-10,000-5,000 ohms Res.

# Model 155

Tube	Position	Plate	Screen Grid	Voltages	Bias	Fil.
-33	Oscillating Detector	92	50		5.0	6.3
-39	I. F. Amplifier	96	96		3.6	6.3
-37	2nd Detector	82			9.5	6.3
-48	Output	65	80		15.0	30.0



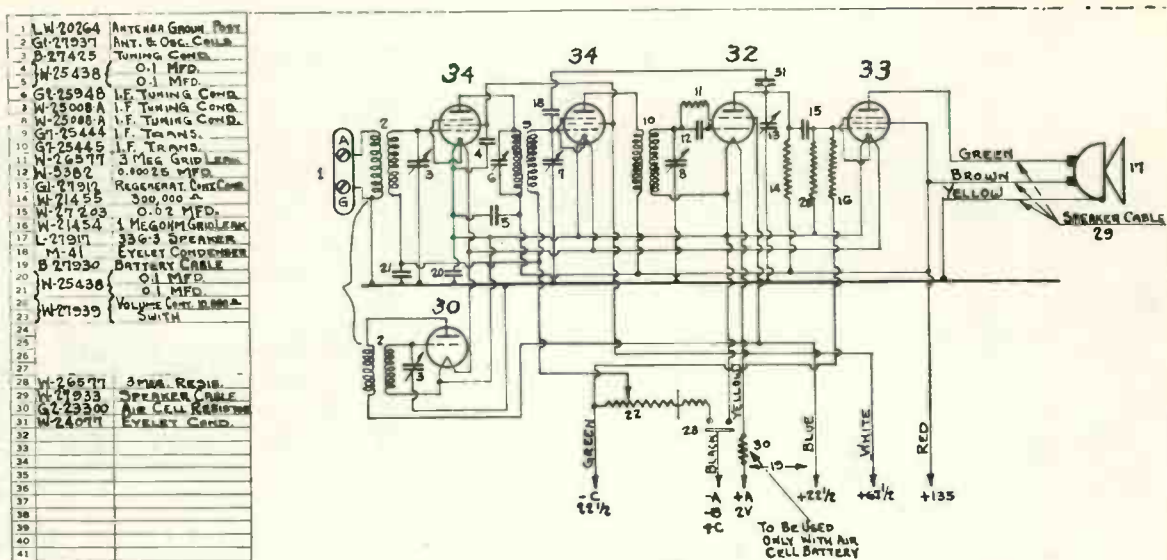
## PARTS LIST, MODEL 155

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	23	W-21875	100,000 ohms Res.
2	G7-25444	I.F. Trans.	24	G2-27062	A.F. Trans.
3	G7-25445	I.F. Trans.	25	W-26870-A	6 mfd. Cond.
4	G13-24996	Osc. Coil	26	W-24097	350 ohms Res.
5	L-27752	Tuning Cond.	27	W-27814	135 ohms Res.
6-7	W-23635	.006 mfd. Cond.	28	W-27789	8 mfd. Cond.
9	W-27755	Vol. Cont. & Sw.	33	W-27813	200 ohms Res.
11	W-27652	.003 mfd. Cond.	38-39	W-25316	.25 mfd. Conds.
15	G2-25948	I.F. Cond.	40	W-27203	.02 mfd. Cond.
16-17	W-25008-A	I.F. Conds.	41	W-21375	100,000 ohms Res.
18	W-21455	300,000 ohms Res.	43	W-24814	7,000 ohms Res.
19-20	W-27204	.02 mfd. Conds.	44	W-25037	275 ohms Res.
21	W-23616	15,000 ohms Res.	45	W-27203	.02 mfd. Cond.
22	W-24784	.25 mfd. Cond.			

# Model 156

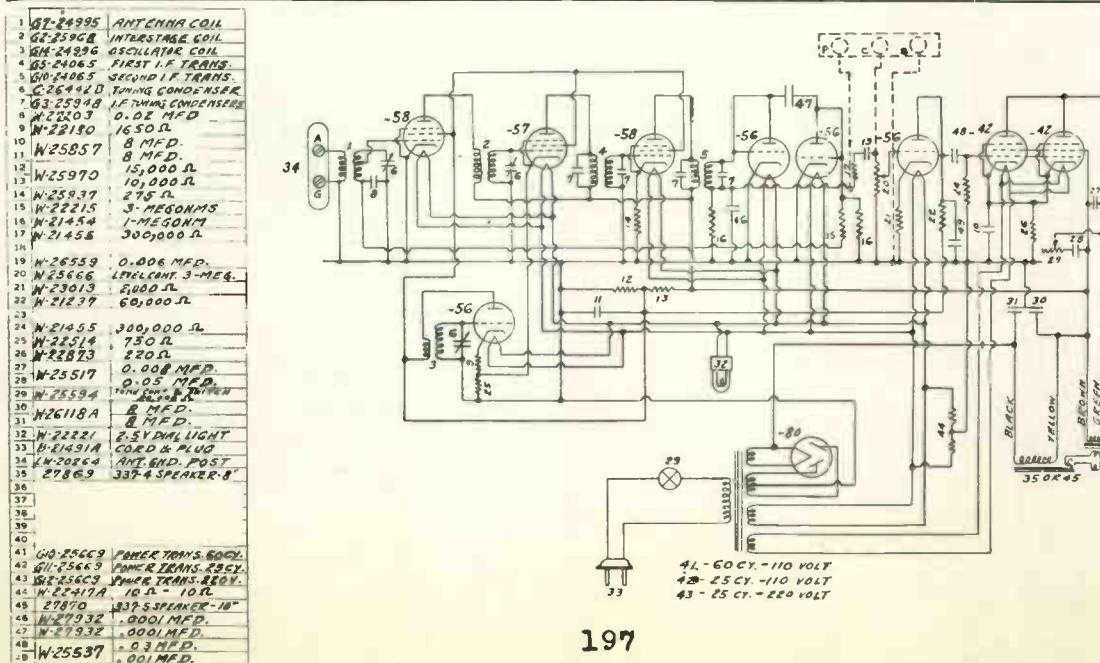
Tube	Position	Voltages				Fil.
		Plate	Screen Grid	Bias		
-34	1st Detector	135	67.5	4.0	2.0	
-30	Oscillator	22.5		0	2.0	
-34	I. F. Amplifier	135	67.5	4.0	2.0	
-32	2nd Detector	135*	22.5	0	2.0	
-33	Output	135	135		2.0	

\* Measured to battery side of 300,000 ohm Plate Resistor.



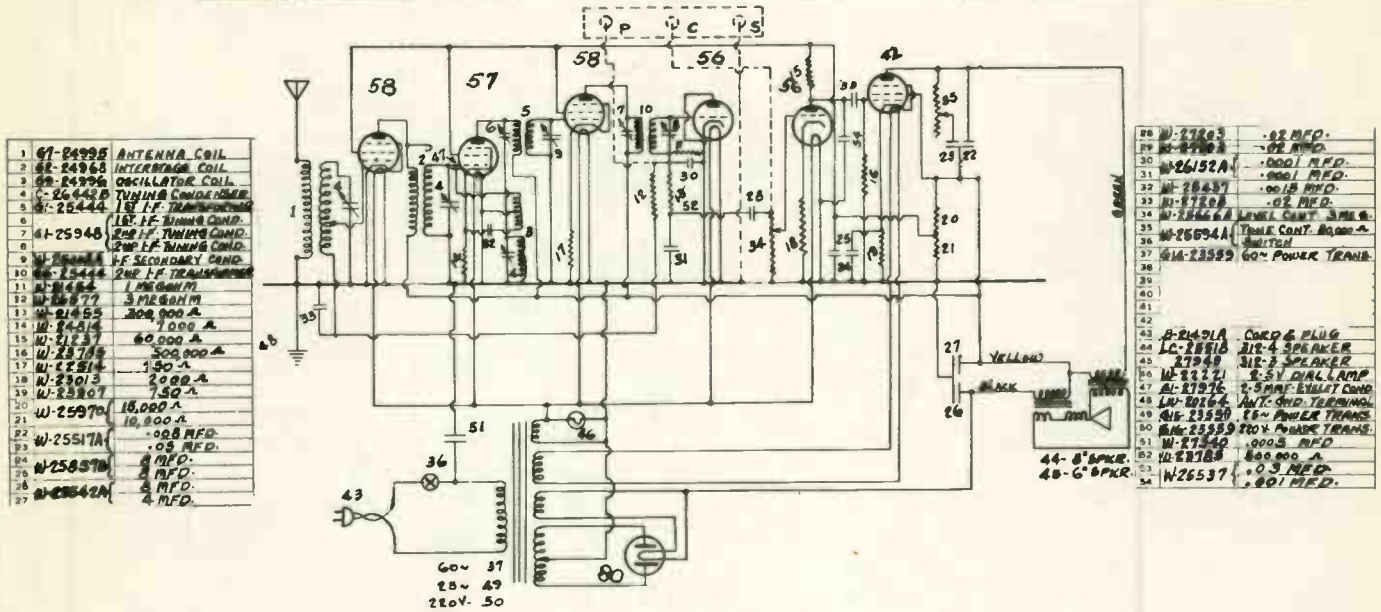
# Model 157

Tube	Position	Voltages				Fil.
		Plate	Screen Grid	Supp. Grid	Bias	
-58	R. F. Amplifier	240	110	0	0	2.5
-57	1st Detector	240	110	0	6.0	2.5
-56	Oscillator	110		0	20.0	2.5
-58	I. F. Amplifier	240	110	0	2.8	2.5
-56	Detector	0				2.5
-56	AVC Rectifier	0				2.5
-56	A. F. Amplifier	40			2.0	2.5
-42	Parallel Output	250	260		17.5	6.3
-42	Parallel Output	250	260		17.5	6.3
-80	Rectifier	350				4.8



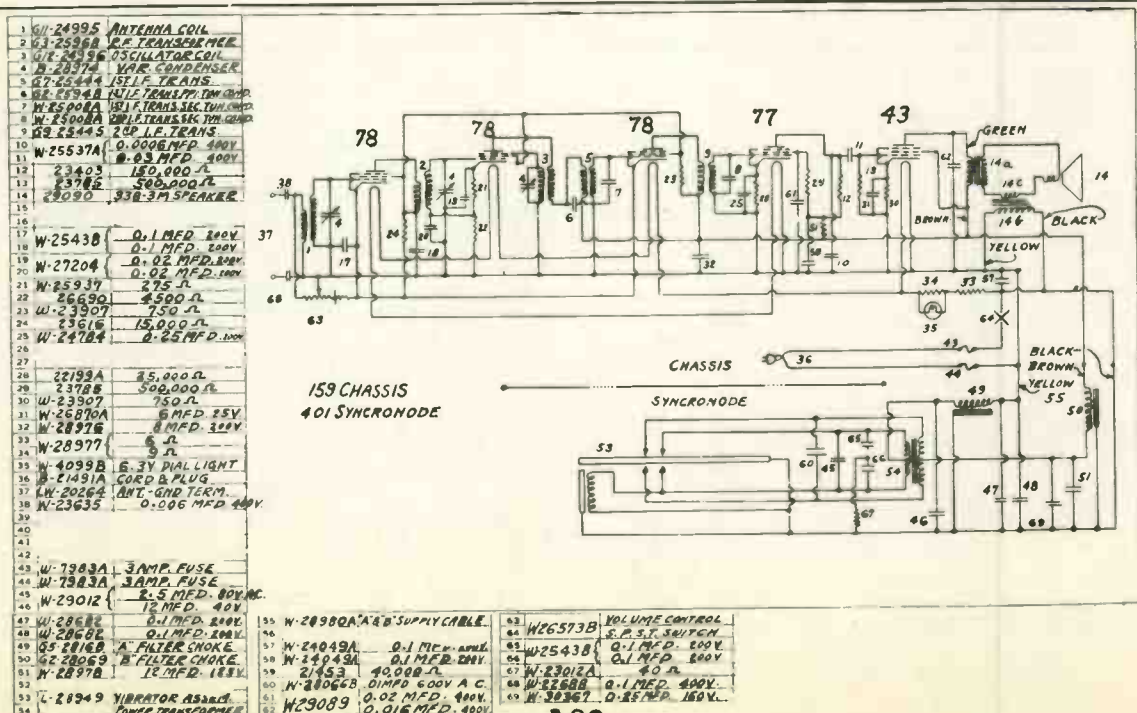
# Model 158

Tube	Position	Plate	Screen Grid	Voltages Supp. Grid	Bias	FIL
-58	R. F. Amplifier	270	85	0	0	2.5
-57	Oscillating Detector	270	80	0	6.0	2.5
-58	I. F. Amplifier	275	80	0	4.0	2.5
-56	Detector	0				2.5
-56	A. F. Amplifier	40			1.6	2.5
-42	Output	245	250		22.0	6.3
-E0	Rectifier	350				4.8

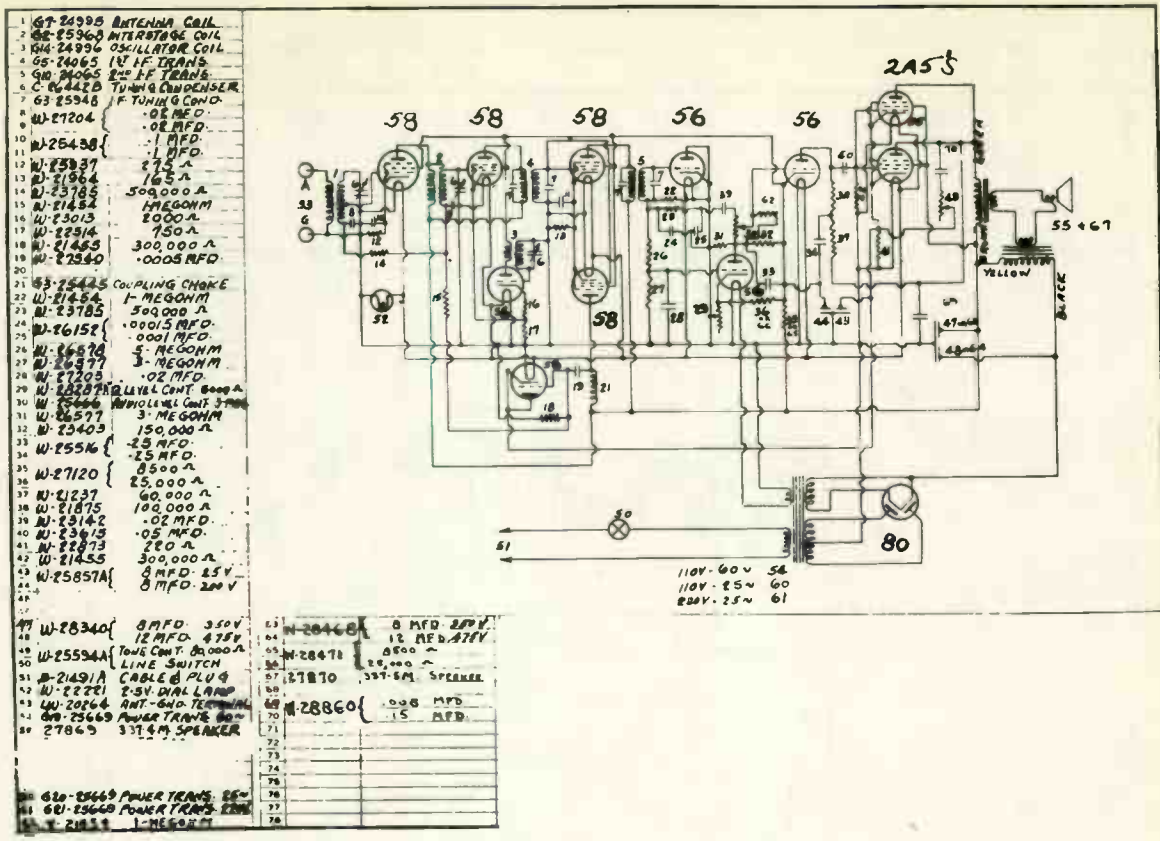


# Model 159

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	130	130	4.5	4.5	6.0
78	Oscillator Modulator	147	130	33.0	0	6.0
78	I. F. Amplifier	147	130	4.5	4.5	6.0
77	Detector	53	26.5	6.0	6.0	6.0
43	Output	146	147	6.0		24.0



# Model 160



- 1 G9-24998 ANTENNA COIL
- 2 G2-25360 INTERMEDIATE COIL
- 3 K44-24996 OSCILLATOR COIL
- 4 G5-24065 12.5KV IF TRANS
- 5 G10-24065 2ND IF TRANS
- 6 C-26422 TUNING CAPACITOR
- 7 G3-25346 IF TUNING COND.
- 8 W-21204 .02 MFD.
- 9 W-21204 .02 MFD.
- 10 W-25458 .1 MFD.
- 11 W-25458 .1 MFD.
- 12 W-25337 .1 MFD.
- 13 W-21964 175 Ω
- 14 W-23785 500,000 Ω
- 15 W-21454 1 MEGOHM
- 16 W-23013 2000 Ω
- 17 W-23914 750 Ω
- 18 W-21485 300,000 Ω
- 19 W-22840 .0005 MFD.
- 20
- 21 G3-25445 COUPLING CHOKE
- 22 W-21454 1 MEGOHM
- 23 W-23785 500,000 Ω
- 24 W-26152 .0001 MFD.
- 25 W-26152 .0001 MFD.
- 26 W-26370 5 MEGOHM
- 27 W-26377 3 MEGOHM
- 28 W-27205 .02 MFD.
- 29 W-25528 PHASE LINE COND. 5000 Ω
- 30 W-25466 PHASE LINE COND. 3 MEG.
- 31 W-26577 3 MEGOHM
- 32 W-23403 150,000 Ω
- 33 W-25516 .25 MFD.
- 34 W-25516 .25 MFD.
- 35 W-27120 25,000 Ω
- 36 W-27120 25,000 Ω
- 37 W-21237 60,000 Ω
- 38 W-21875 100,000 Ω
- 39 W-23142 .02 MFD.
- 40 W-23675 .05 MFD.
- 41 W-22873 220 Ω
- 42 W-21455 300,000 Ω
- 43 W-25857A .3 MFD. 25V
- 44 W-25857A .3 MFD. 250V
- 45
- 46
- 47 W-28340 .8 MFD. 350V
- 48 W-28340 12 MFD. 475V
- 49 W-25534A TONE COND. 20,000 Ω
- 50 LINE SWITCH
- 51 CABLE PLUG
- 52 2.5V CRYSTAL LAMP
- 53 LW-20264 ANT. GND. TERMINAL
- 54 G2-25669 POWER TRANS. 25W
- 55 27865 3 1/4" SPEAKER
- 56
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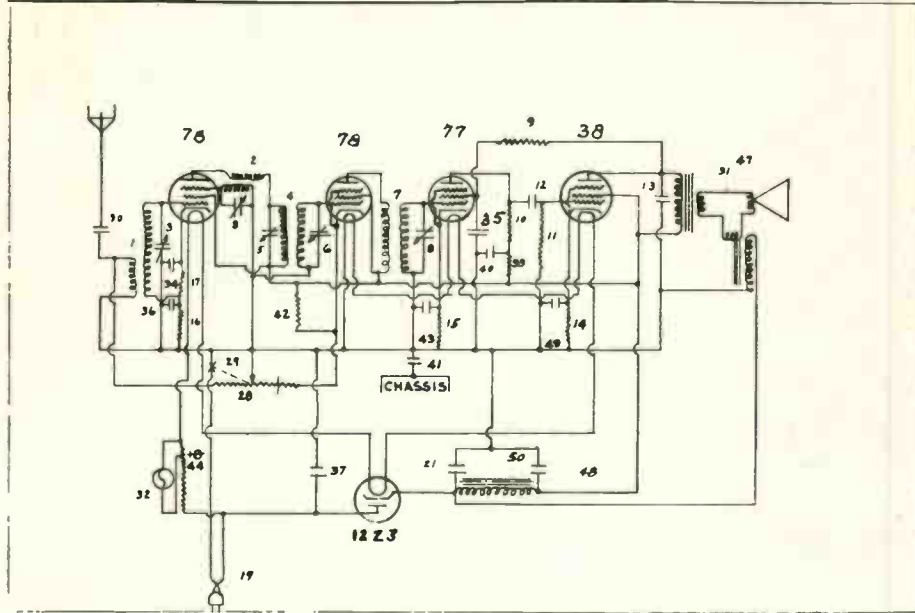
- 81 W-28468 .8 MFD. 200V
- 82 W-28471 12 MFD. 475V
- 83 W-28471 .8500 Ω
- 84 W-28471 25,000 Ω
- 85 W-28471 337-ΩM. SPEAKER
- 86
- 87
- 88
- 89 W-28860 .005 MFD.
- 90 W-28860 15 MFD.
- 91
- 92
- 93
- 94
- 95
- 96
- 97
- 98
- 99
- 100

Due to the age of certain sets shown in the manual, it is necessary for the factory to make substitutions for many parts. The Crosley distributor in your area is up-to-date on all parts substitutions. It will be to your advantage to check with him regarding any Crosley parts that you may require.

# Model 163

Tube	Position	Plate	Voltages for A. C. Operation*			Fil.
			Screen Grid	Cathode	Supp. Grid	
-78	Oscillator modulator	105	105	2.5	20	6.3
-78	I. F. Amplifier	105	105	3.0	3.0	6.3
-77	2nd Detector	5	5	4.0	4.0	6.3
-38	Output	102	105	8.0	8.0	6.3
12Z3	Rectifier	117.5AC		120		12.6

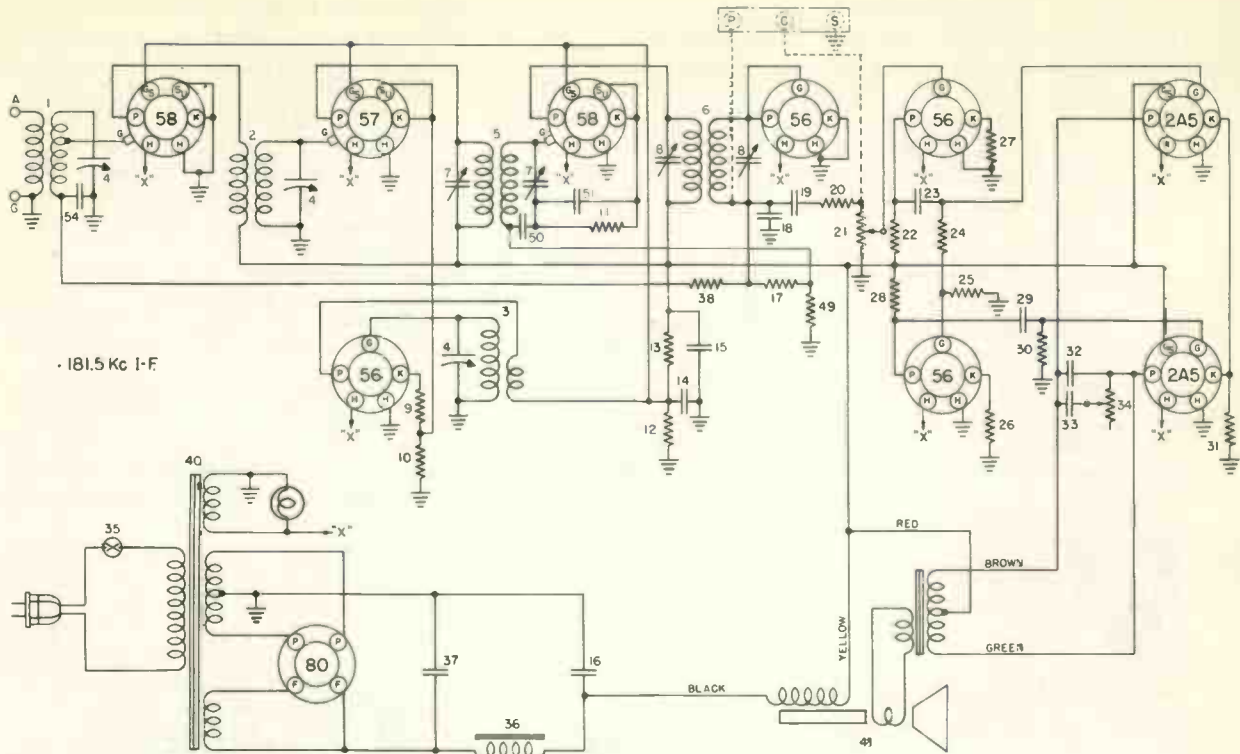
\* Voltages with D. C. operation are about 10% lower than those with A. C. operation.



### PARTS LIST, MODEL 163

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G8-24995	Ant. Coil	17	W-28589	350 ohms Res.
2	G12-24996	Osc. Coil	21	W-28068	12 mfd. 200 v. Cond.
3	B-28592-B	Var. Cond.	28-29	W-28594	4800 ohms Vol. Cont.
4	G7-25444	1st I.F. Coil			160 ohm Fixed Cond. Sec.
5-6-7	G8-25949	I.F. Cond., I.F. Sec. Cond., 2nd I.F. Trans.	30	W-28620	.003 mfd. Cond.
8	G9-25948	Sec. I.F. Cond.	33	W-21455	300,000 ohms Res.
9 & 11	W-26578	5 meg. Res.	34-35	W-28623	.02 mfd. Cond.
10	W-26577	3 meg. Res.	36-37-40-41	W-28622	.1 mfd. Cond.
12	W-28621	.02 mfd. Cond.	42	W-4921-C	10,000 ohms Res.
13	W-28619	.006 mfd. Cond.	43	W-26870-A	6 mfd. 25 v. Cond.
14	W-22514	750 ohms Res.	44	W-28755-A	275 ohms Res.
15	W-23403	150,000 ohms Res.	47		343-2 Speaker
16	W-28588	2700 ohms Res.	48-49	W-25857-B	8-8 mfd. 200-25 v. Cond.
			50	G1-28859	10 Henry Choke

MODEL 164



PARTS LIST, MODEL 164

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Coil	23	W-23615	.05 mfd. 400 v. Cond.
2	G2-25968	Interstage Coil	24	21455	300,000 ohm Res.
3	G14-24996	Osc. Coil	25	21453	40,000 ohm Res.
4	C-26442-C	Tuning Cond.	26-27	W-23013	2,000 ohm Res.
5	G5-24065	1st I.F. Trans.	28	21237-A	60,000 ohm Res.
6	G10-24065	2nd I.F. Trans.	29	W-23615	.05 mfd. 400 v. Cond.
7-8	G3-25948	I.F. Tuning Cond.	30	21455	300,000 ohm Res.
9	W-23013	8,000 ohm Res.	31	W-22873	220 ohm Res.
10	W-24037	350 ohm Res.	32-33	W-25517-A	.008-.05 mfd. 400 v. Cond.
11	W-21964	165 ohm Res.	34-35	W-25594-B	30,000 ohm Tone Cont.
12-13	W-28471	25,000-8500 ohm Res.			S.P.S.T. Switch
14-16	W-29097-A	8-8-8 mfd. 250-350-450 v. Cond.			Filter Choke
17	21454	1 megohm Res.	36	G1-24628	12 mfd. 440 v. Cond.
18-19	W-25969-A	.00017-.03 mfd. 400 v. Cond.	37	W-23705-A	3 megohm Res.
20	21455	300,000 ohm Res.	38	26577	3 megohm Res.
21	W-25666-B	3 meg. Level Cont.	40	G25-25669	60 cy. Power Trans.
22	21237-A	60,000 ohm Res.	41	27622	317-4M Speaker
			49	23403	150,000 ohm Res.
			50-51	W-25438	.1 mfd. 200 v. Cond.
			54	W-27203	.02 mfd. 200 v. Cond.

Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.



# Models 166 and 172

## Specifications

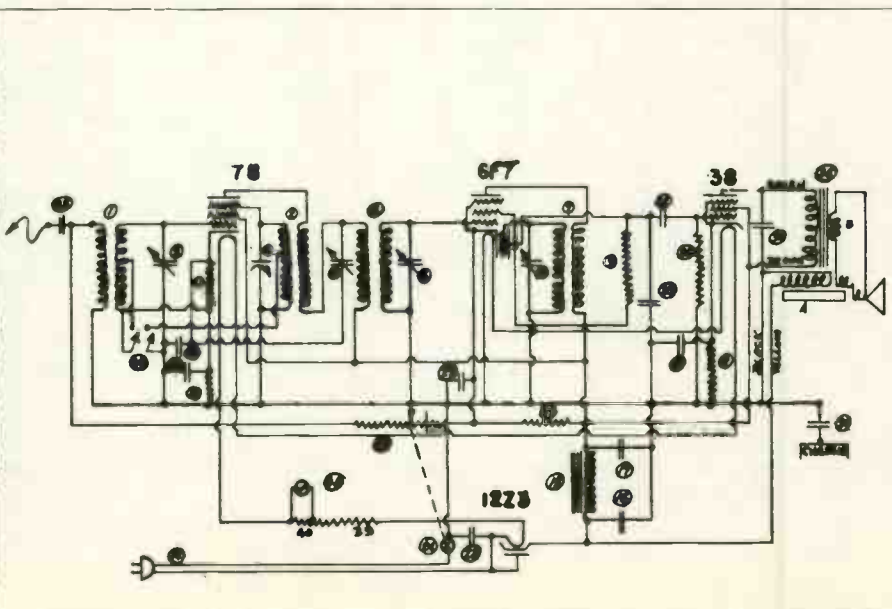
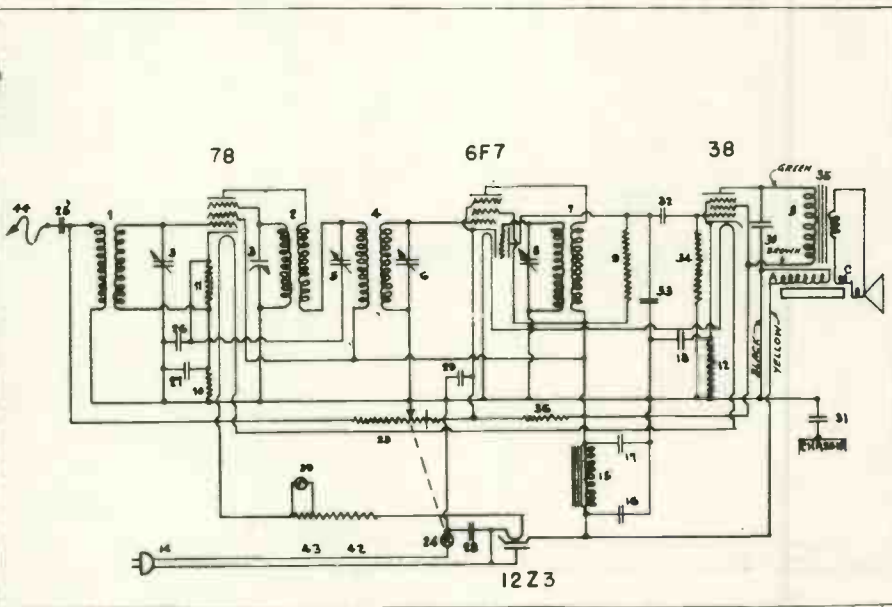
Models 166 and 172 are four tube super-heterodyne receivers designed for operation on 110 volt D.C. or 25 to 60 cycle A.C. The intermediate frequency is 456 Kc. The only difference between these sets is that Model 172 is a dual band receiver and Model 166 is a broadcast band receiver only.

## Tubes and Voltage Limits

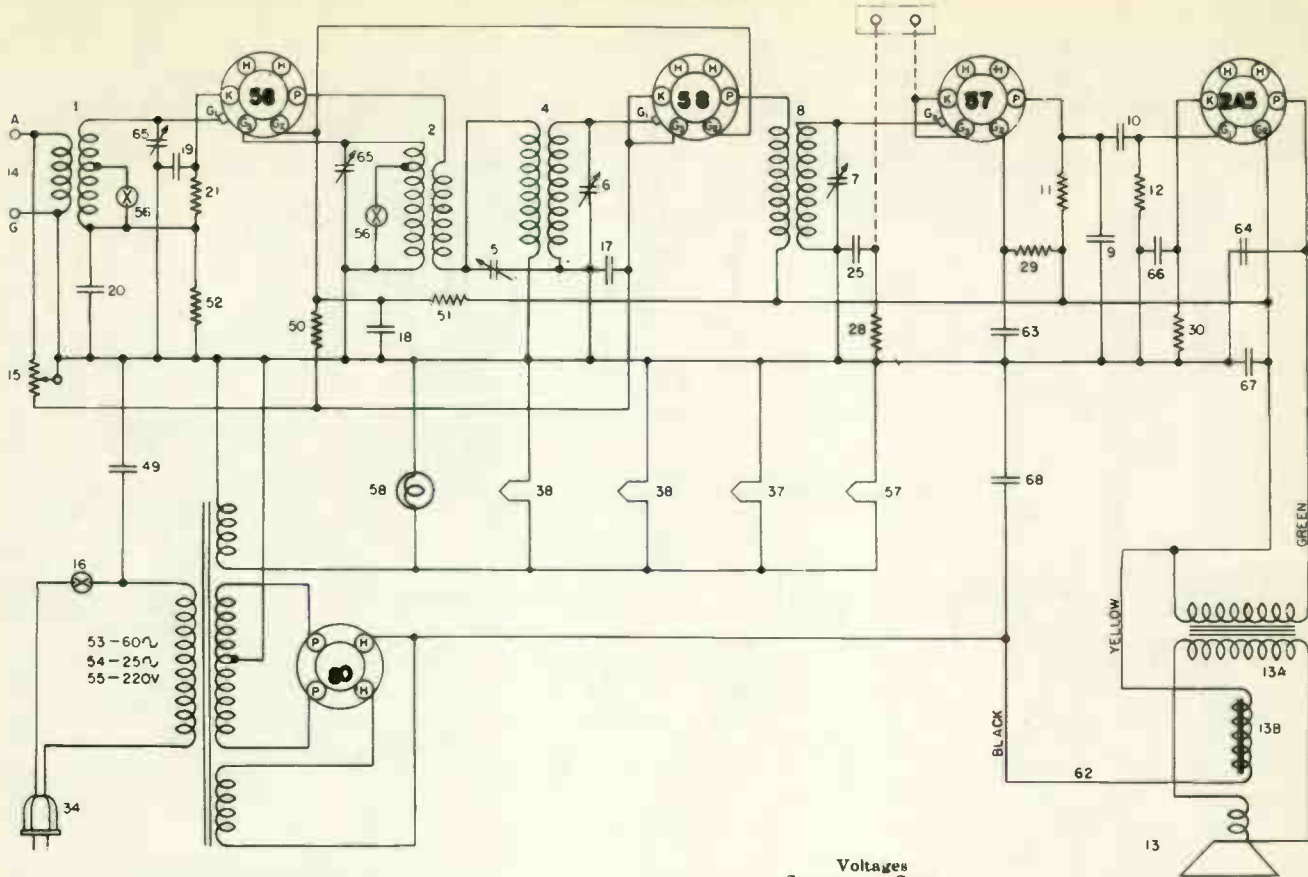
The following are the voltages measured with the receiver in operating condition but with no signal to the antenna circuit. Line voltage is 117.5 volts, 60 cycle A.C. All voltages, except filament, are measured with 300 volt D.C. voltmeter (1000 ohms per volt) from tube contact to gang condenser frame. Filament voltages are measured with a low range A.C. voltmeter.

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	Oscillator Modulator	101	101	20	0	6.0
6F7	I. F. Amplifier and Detector	101	101	4.5		6.0
38	Output	Triode 7.5	101	2.0		6.0
12Z3	Rectifier	98		117.5		12.0

1	60-24000	ANTENNA COIL
2	60-24000	OSCILLATOR COIL
3	60-24000	IF GANG CONDENSER
4	60-24000	IF TRANSFORMER
5	60-24000	IF TRANSFORMER
6	60-24000	IF TRANSFORMER
7	60-24000	IF TRANSFORMER
8	60-24000	IF TRANSFORMER
9	60-24000	IF TRANSFORMER
10	60-24000	IF TRANSFORMER
11	60-24000	IF TRANSFORMER
12	60-24000	IF TRANSFORMER
13		
14	W-27000	CHASSIS ALLOY
15	W-27000	CHASSIS ALLOY
16	W-27000	CHASSIS ALLOY
17	W-27000	CHASSIS ALLOY
18	W-27000	CHASSIS ALLOY
19		
20		
21		
22		
23		
24	W-28000	VOLUME CONTROL
25	W-28000	A.P.S.T. SWITCH
26	W-28000	0.002 MFD. 500V.
27	W-28000	0.002 MFD. 500V.
28	W-28000	0.002 MFD. 500V.
29	W-28000	0.002 MFD. 500V.
30	W-28000	0.002 MFD. 500V.
31	W-28000	0.002 MFD. 500V.
32	W-28000	0.002 MFD. 500V.
33	W-28000	0.002 MFD. 500V.
34	W-28000	0.002 MFD. 500V.
35	W-28000	0.002 MFD. 500V.
36	W-28000	0.002 MFD. 500V.
37	W-28000	0.002 MFD. 500V.
38	W-28000	0.002 MFD. 500V.
39	W-28000	0.002 MFD. 500V.
40	W-28000	0.002 MFD. 500V.
41	W-28000	0.002 MFD. 500V.
42	W-28000	0.002 MFD. 500V.
43	W-28000	0.002 MFD. 500V.
44	W-28000	0.002 MFD. 500V.
45	W-28000	0.002 MFD. 500V.
46	W-28000	0.002 MFD. 500V.



# MODEL 167



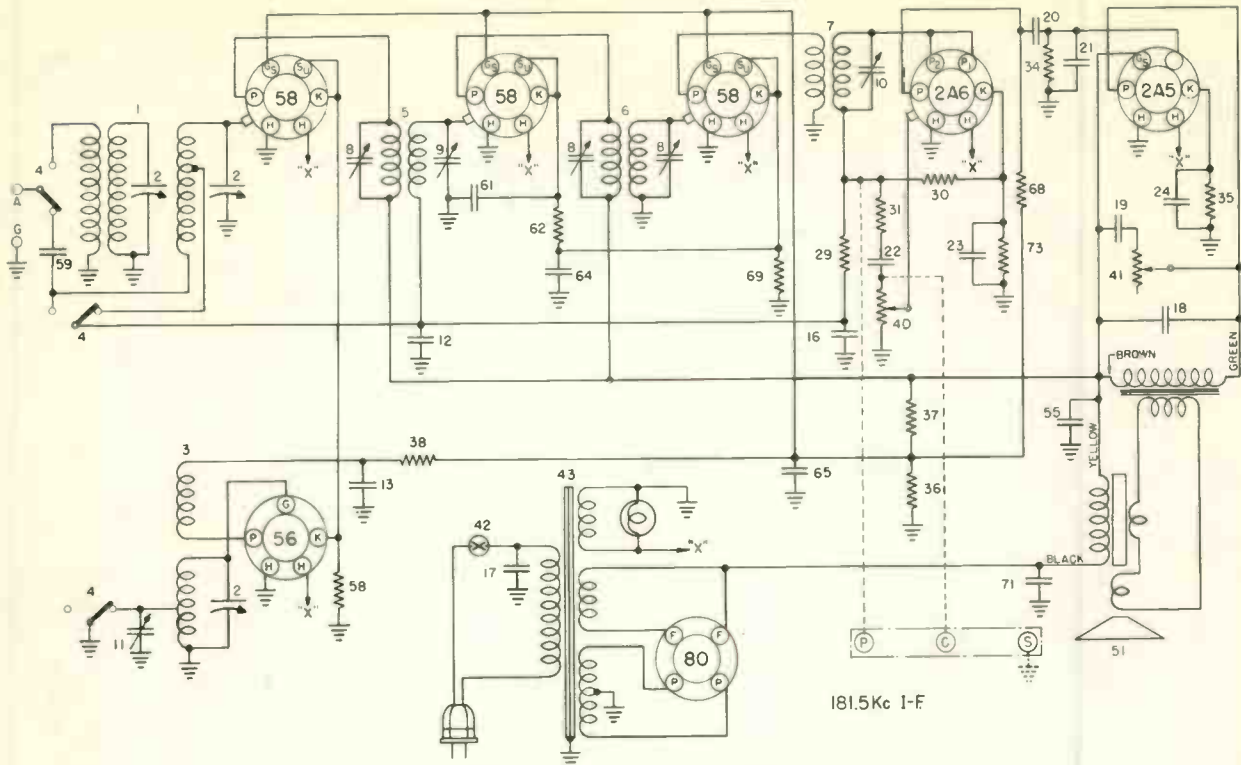
Tube	Position	Plate	Voltages			Cathode	Filament
			Screen	Grid	Supp. Grid		
58	Oscillator Modulator	267	150	0	35	2.4	
58	I. F. Amplifier	267	150	3.5	3.5	2.4	
57	Detector	150	48	6.5	6.5	2.4	
2A5	Output	250	267		21.5	2.4	
80	Rectifier	340				4.7	

Voltage limits are plus or minus ten percent of the values given.

## PARTS LIST

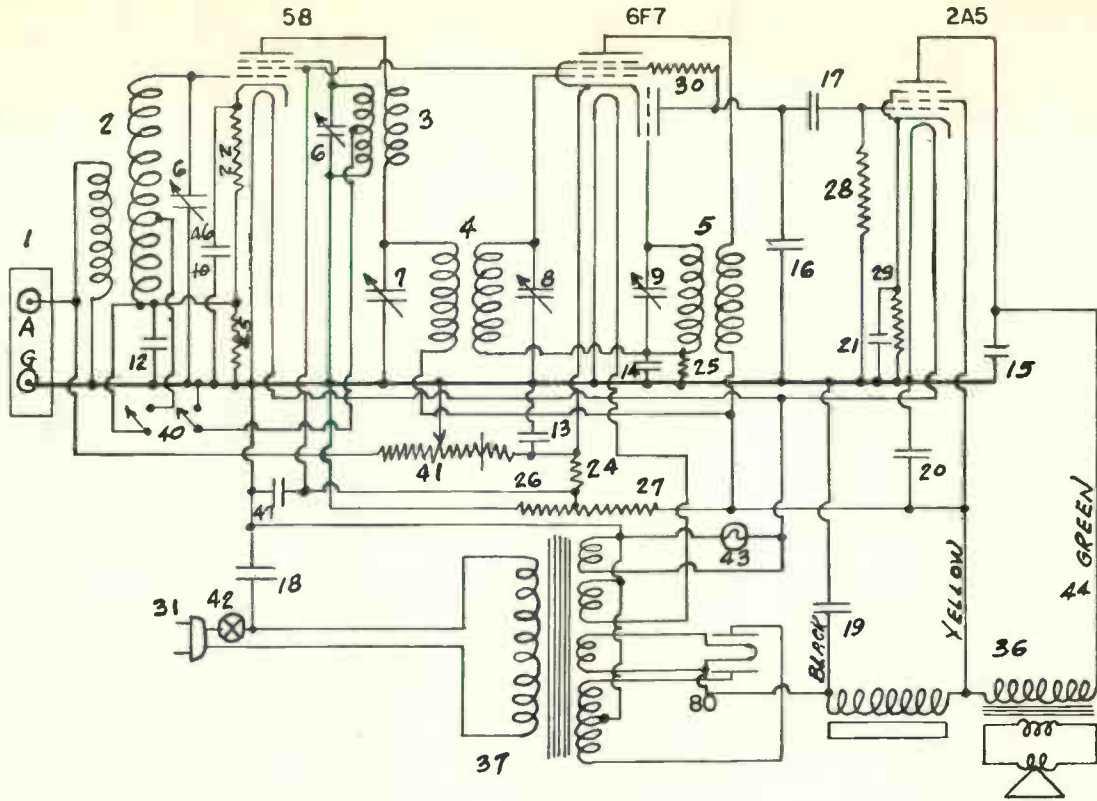
Symbol	Part No.	Description
1	G20-24905	ANTENNA COIL
2	G17-24996	OSCILLATOR COIL
4	G7-25444	1ST I.F. TRANSFORMER
5	G2-25948	1ST I.F. TRANS. PRI. TUN. COND.
6	W-27008A	1ST I.F. TRANS. SEC. TUN. COND.
7	W-27548	2ND I.F. TRANS. SEC. TUN. COND.
8	G7-25445	2ND I.F. TRANSFORMER
9	W-255375	COND. .0005 MF. 400V. } TWO SECT.
10		COND. .03MF. 400V. } COND.
11	W-21455	RESISTOR 300,000 OHMS
12	W-23785	RESISTOR 500,000 OHMS
13	27610A	335-3 SPEAKER
14	LW-20264	ANT.-GND. TERM.
15	W-25537A	VOLUME CONTROL
16		LINE SWITCH (ON CONTROL)
17	W-25438	COND. .1MF. 200V.
18	W-25438	COND. .1MF. 200V.
19	W-25438	COND. .1MF. 200V.
20	W-25438	COND. .1MF. 200V.
21	W-25937	RESISTOR 275 OHMS
25	W-24784	COND. .25MF. 200V.
28	W-21453	RESISTOR 40,000 OHMS
29	W-26577	RESISTOR 3 MEGOHMS
30	W-23907	RESISTOR 750 OHMS
34	B-21491A	CORD AND PLUG
49	W-29591A	COND. .0005MF. 400V.
50	W-27120	RESISTOR 25,000 OHMS } TAPPED
51		RESISTOR 8,500 OHMS } RESISTOR
52	30137	RESISTOR 3,500 OHMS
53	G20-23559	POWER TRANS. (60 cycle)
54	G21-23559	POWER TRANS. (25 cycle)
55	G22-23559	POWER TRANS. (220V.)
56	W-30414	WAVE CHANGE SWITCH
58	W-22221	2.5V DIAL. LIGHT
62	W-31009	SPEAKER CABLE
63	W-31551	COND. .02MF. 400V.
64	W-31551	COND. .02MF. 400V.
65	L-31784	VARIABLE CONDENSER
66	W-29150B	COND. 12MF. 25V. } THREE SECT.
67		COND. 6MF. 450V. } FILTER
68		COND. 8MF. 450V. }

MODEL 168



PARTS LIST, MODEL 168

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-25967	R.F. Pre-Selector	34	23785	500,000 ohm Res.
2	C-29026	Variable Cond.	35	W-25521	450 ohm Res.
3	G18-24996	Osc. Coil	36-37	W-28471	25,000-8500 ohm Res.
4	W-29019-B	Band Change Switch	38	23868	6500 ohm Res.
5-6	G1-25444	1st & 2nd I.F. Trans.	40	W-2566-B	Level Cont.
7	G3-25445	3rd I.F. Trans.	41-42	W-25594-A	Tone Cont. S.P.S.T. Switch
8 & 10	G1-25948	I.F. Tuning Cond.	43	G17-23559	60 Cy. Power Trans.
9	W-25008-A	I.F. Tuning Cond.	51	LC-25586	312-4M Speaker
11	C-29026	Osc. Trimmer Cond.	55-56	W-23701-B	7 mfd. 440 v. Cond.
12-13	W-25438	.1 mfd. 200 v. Cond.	57	W-25937	275 ohm Res.
16-17	W-27540	.0005 mfd. 400 v. Cond.	58	W-28589	350 ohm Res.
18-19	W-25517-A	.008-.05 mfd. 400 v. Cond.	59	W-27540	.0005 mfd. 400 v. Cond.
20-21	W-26537-A	.03-.001 mfd. 400 v. Cond.	61	W-24049-A	.1 mfd. 200 v. Cond.
22	W-27203	.02 mfd. 200 v. Cond.	62	W-21964	165 ohm Res.
23-24	W-27677-A	8 mfd. 25 v. Cond.	63	29780	450 ohm Res.
29	21454	1 megohm Res.	64-65	W-25516	.250 mfd. 200 v. Cond.
30-31	21455	300,000 ohm Res.	67	28588	2700 ohm Res.
			67	21237-A	60,000 ohm Res.



Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid	Filament
58	Oscillator-modulator	165	82	22	0	2.5
6F7	I. F. Detector	165	82	2	0	2.5
2A5	Output	158	165	10		2.5
80	Rectifier	295				4.9

Voltage limits are plus or minus 10% of values given.

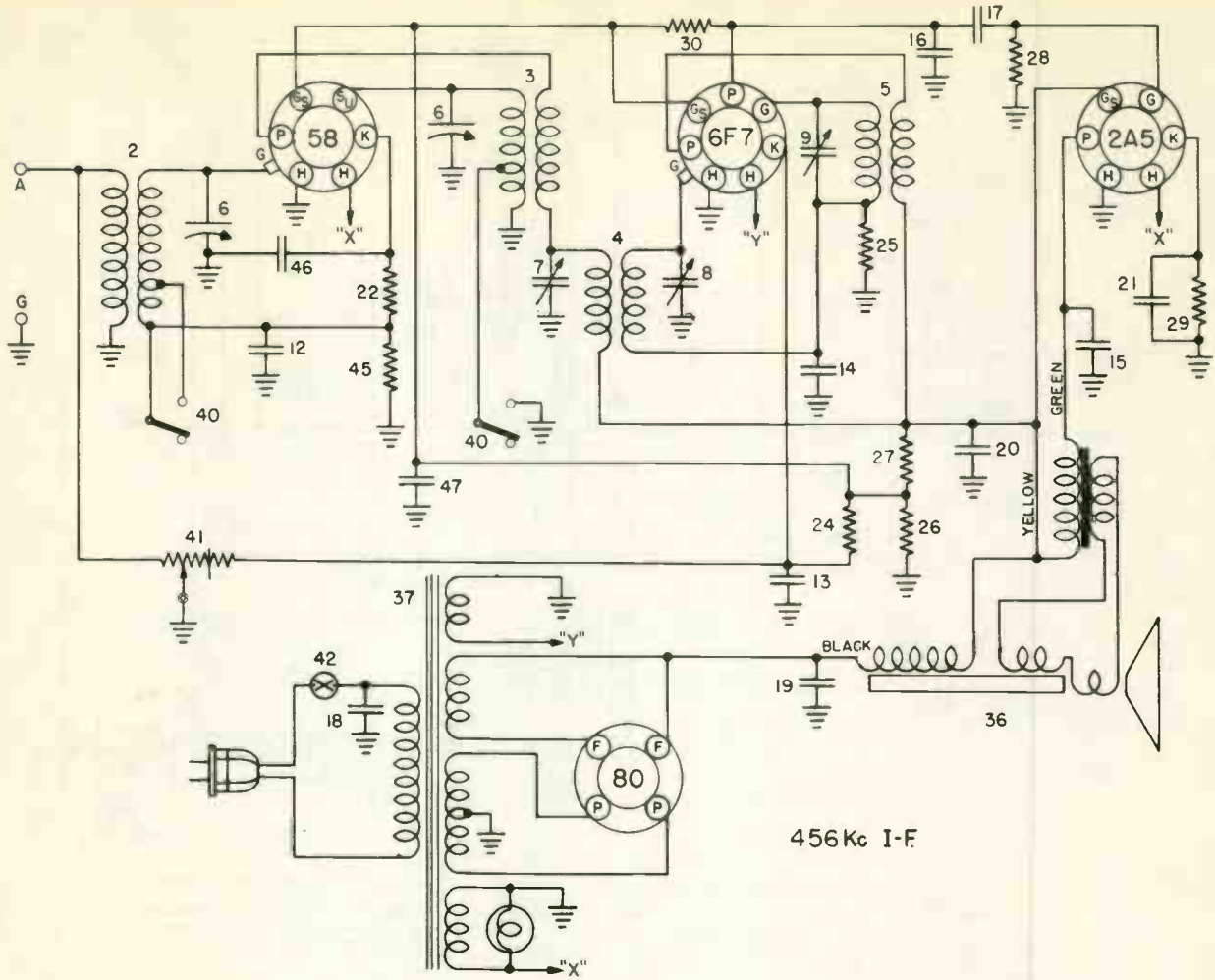
PARTS LIST, MODEL 169

Qty.	Part No.	Description	Qty.	Part No.	Description
1	G20-24995	Ant. Coil	1	G1-28500	Power Trans. 110 v. 60 cy.
1	G17-24996	Osc. Coil	1	W-27204	.02-.02 mfd. Cond.
1	G7-25444	1st I.F. Trans.	1	W-24049	.1 mfd. Cond.
1	G9-25445	2nd I.F. Trans.	1	W-23191	.01 mfd. Cond.
1	W-28959	Wave Change Switch	1	W-25537	.001-.03 mfd. Cond.
1	W-27425	Variable Cond. Gang	1	W-29592	.003 mfd. Cond.
1	G1-27812	Dial Light Assy.	2	W-27203	.02 mfd. Cond.
1	G5-25050	Dial Assy.	1	W-29150	6-7-8 mfd. Cond.
1	G2-25948	Variable I.F. Cond. (1st I.F. Pri.)	1	W-25937	275 ohm Res.
1	G10-25948	Variable I.F. Cond. (2nd I.F. Sec.)	1	24990	25,000 ohm Res.
1	W-27548	Adjustable I.F. Cond. Blade (1st I.F. Sec.)	1	21454	1 megohm Res.
1	W-26573-B	Vol. Cont. & Switch	1	W-28471	25,000-8500 ohm Res.
			2	23785	500,000 ohm Res.
			1	W-25521	450 ohm Res.
			1	31094	4500 ohm Res.

SPEAKER PARTS

	Magnavox 342-2M Spec. 1300	Jensen 342-2J Spec. 2617	
1	28761	29434	Cone & Voice Coil Assembly
1	28763	29436	Field Coil
1	28764	29437	Transformer

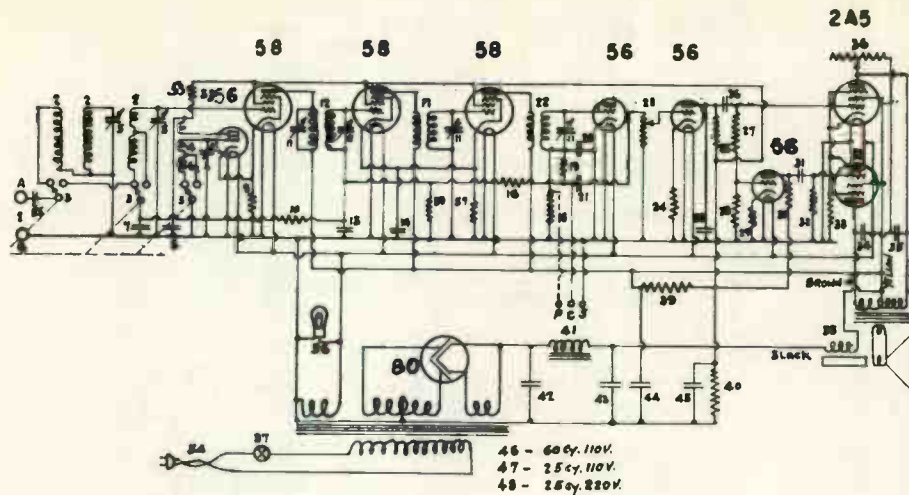
MODEL 169 REVISED



PARTS LIST, MODEL 169 REVISED

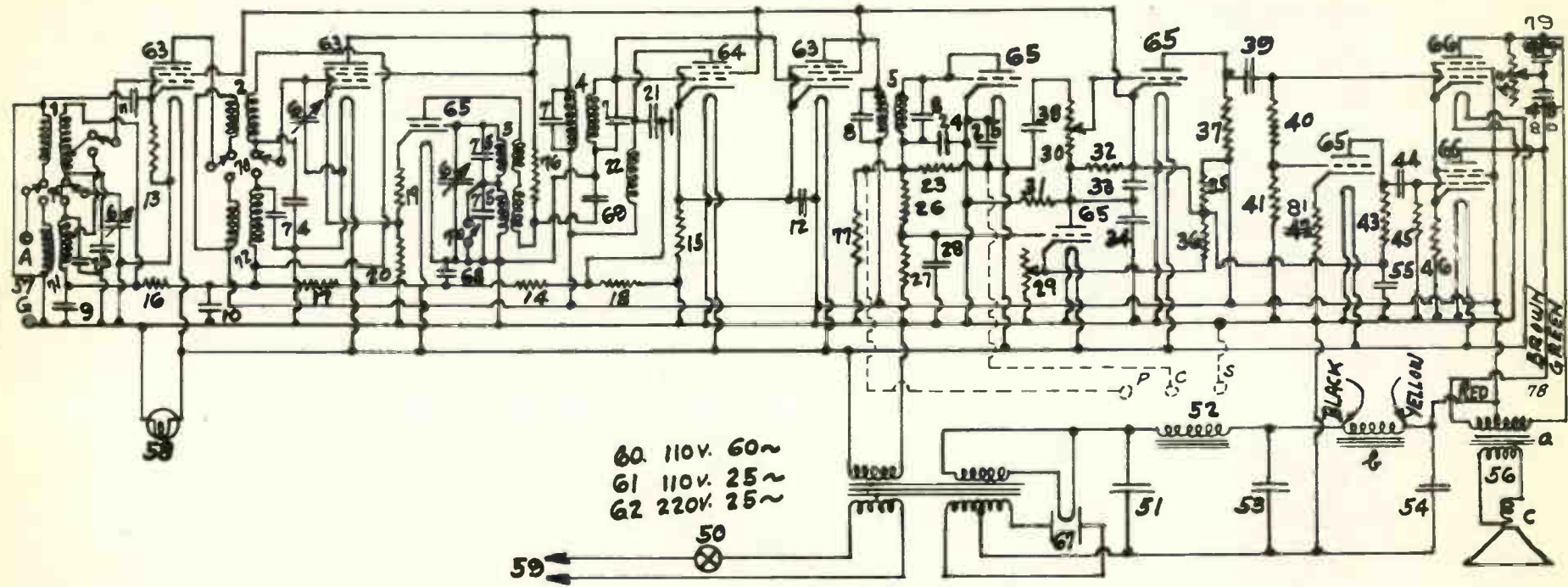
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G12-24995	Ant. Coil	25	21454	1 megohm Res.
2	G17-24996	Osc. Coil	26	W-23907	750 ohm Res.
3	L-28527	Tuning Cond.	27-28	W-25857-B	8-8 mfd. 25-200 v. Cond.
5	G2-25948	1st I.F. Tuning Cond.	29	W-23701-B	7 mfd. 440 v. Cond.
6	G9-25948	3rd I.F. Tuning Cond.	31	W-23191-A	.01 mfd. 400 v. Cond.
7	G10-25445	2nd I.F. Trans.	32	28489	342-2M Speaker
9	W-28959-A	D.P.S.T. Switch	38-39	W-25964-C	On-Off Sw. Vol. Cont.
10-11	W-27204	.02 mfd. 200 v. Cond.	40	4085	Eyelet Cond.
12	21454	1 megohm Res.	41	W-27548	2nd I.F. Tuning Cond.
14-15	W-27204	.02 mfd. 200 v. Cond.	42	W-27203	.02 mfd. 200 v. Cond.
17-18	W-26970	10,000-15,000 ohm Res.	43	26690	4500 ohm Res.
19	G1-28500	60 Cy. Power Trans.	44-46	W-29150-A	6-7-8 mfd. 400-450-25 v. Cond.
22	W-21454	1 megohm Res.	47	W-29592-A	.003 mfd. 400 v. Cond.
23-24	W-25969-A	.00017-.03 mfd. 400 v. Cond.			

# MODEL 170



## PARTS LIST, MODEL 170

Item No.	Part No.	Description	Item No.	Part No.	Description
2	G9-25967	Pre-Selector	27	21455	300,000 ohms Res.
3	W-29362	Band Change Sw.	28	21453	40,000 ohms Res.
4	G18-24996	Osc. Coil	29	28588	2700 ohms Res.
5-6	C-29026	Var. Tuning Cond.	30	21237	60,000 ohms Res.
		Osc. Trimmer Cond.	31	W-23615	.05 mfd. Cond.
7-8	W-27204	.02 mfd. Cond.	32	21455	300,000 ohms Res.
9	W-21965	375 ohms Flex. Res.	33	W-22873	220 ohms Flex. Res.
10	21455	300,000 ohms Res.	34-35	W-25517	.05-.008 mfd. Cond.
11	G3-25948	I.F. Tuning Cond.	36-37	W-25594-A	80,000 ohms Tone Cont.
12	G8-24065	1st I.F. Trans.			S.P.S.T. Sw.
13-14	W-25438	.1 mfd. Cond.	38	27622-A	317-4 Speaker
16	26577	3 meg. Res.	39-40	W-28471	8500-25,000 ohms Res.
17	G2-25449	2nd I.F. Trans.	41	G1-24628	Filter Choke
18	23785	500,000 ohms Res.	42	W-23705-A	12 mfd. 440 v. Cond.
19	21455	300,000 ohms Res.	43-45	W-29097-A	8-8-8 mfd. 450-350-250 v. Cond.
20	W-27532	.0001 mfd. Cond.	46	G25-25669	60 Cy. Power Trans.
21	W-26559	.006 mfd. Cond.	53	4921	10,000 ohms 1 w. Res.
22	G2-25449	Diode Coupling Trans.	55	W-26571	.0005 mfd. Cond.
23	W-25666-A	3 meg. Vol. Cont.	57	W-29585	600 ohms Flex. Res.
24	28588	2700 ohms Res.	58	W-26571	.0005 mfd. Cond.
25	21237	60,000 ohms Res.	59	26577	3 meg. Res.
26	W-23615	.05 mfd. Cond.			



## PARTS LIST, MODEL 171

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G7-24995	Ant. Low F. Coil	39	W-23615	.05 mfd. 400 v. Cond.
2	G2-25968	R.F. Low F. Coil	40	21455	300,000 ohms Res.
3	G18-24996	Osc. Coil	41	21453	40,000 ohms Res.
4	G5-24065	1st I.F. Coil	42	28588	2700 ohms Res.
5	G10-24065	2nd I.F. Coil	43	21237	60,000 ohms Res.
6	C-29656	Var. Cond.	44	W-23615	.05 mfd. 400 v. Cond.
7-8	G3-25948	1st & 2nd I.F. Tuning Conds.	45	21455	300,000 ohms Res.
9-10	W-27204	.02 mfd. 200 v. Cond.	46	W22873	220 ohms Res.
11-12	W-25438	.1 mfd. 200 v. Cond.	47-48	W-25517	.008-.05 mfd. 400 v. Cond.
13	W-25937	275 ohms Res.	49-50	W-25594-B	Tone Cont. S.P.S.T. Sw.
14	23785	500,000 ohms Res.	51	W-23705-A	12 mfd. 440 v. Cond.
15	W-25937	275 ohms Res.	52	G1-24628	Filter Choke
16-18	23785	500,000 ohms Res.	53-55	W-29097	8-8-8 mfd. 450-350- 250 v. Cond.
19	W-25937	275 ohms Res.	56	27622	317-4M Speaker
20	W-28539	350 ohms Res.	60	G25-25669	60 Cy. Power Trans.
21	W-27540	.0005 mfd. 400 v. Cond.	68-69	W-27204	.02 mfd. 200 v. Cond.
22	G3-25445	Plate Choke Coil	70	B-29681-A	6 P.D.T. Sw.
23	23785	500,000 ohms Res.	71	G14-24995	Ant. High F. Coil
24-25	W-26152	.00015-.0001 mfd. 400 v. Cond.	72	G5-25968	R.F. High F. Coil
26	26578	5 meg. Res.	73	G1-29699	Ant. Trans. Trimmer Cond.
27	26577	3 meg. Res.	74	G1-29699	R.F. Trans. Trimmer Cond.
28	W-27203	.02 mfd. 200 v. Cond.	75	G1-29699	Osc. Trimmer Cond.
29	W-29657-B	"Q" Level Control	76	21876	10,000 ohms Res.
30	W-25666-B	Audio Level Cont.	77	21454	1 meg. Res.
31	26577	3 meg. Res.			
32	28403	150,000 ohms Res.			
33-34	W-25516	.25 mfd. 200 v. Cond.			
35-36	W-28471	8500-25,000 ohms. Res.			
37	28403	150,000 ohms Res.			
38	W-23142	.02 mfd. 400 v. Cond.			

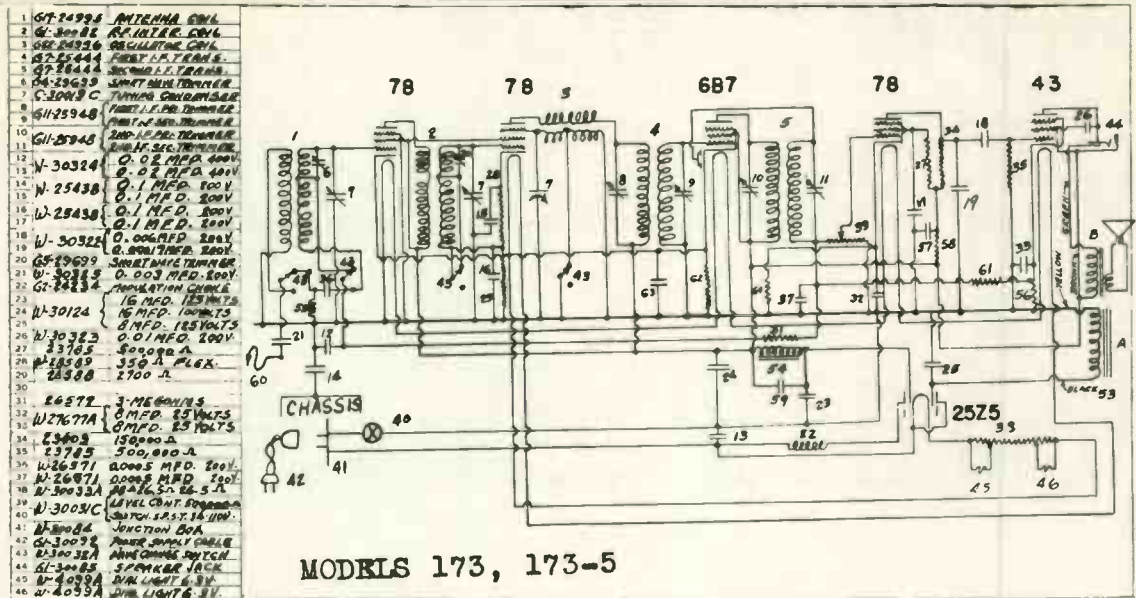
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PARTS LIST, MODEL 171



MODELS 173, 173-5, 174

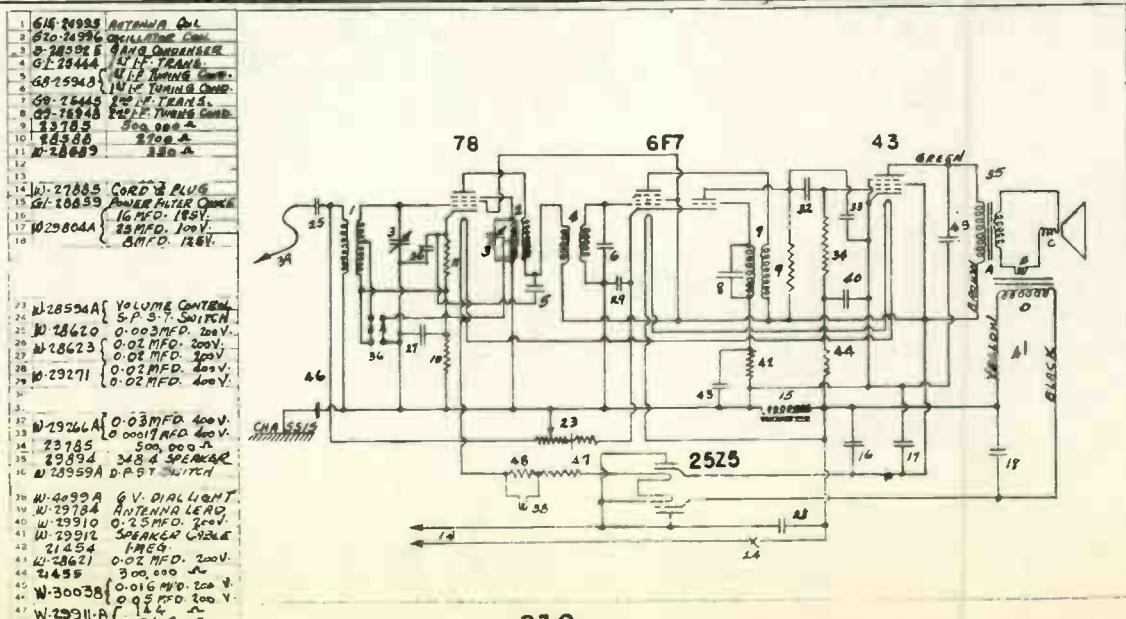
Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	112	112	4	0	6.3
78	Oscillator Modulator	112	112	20	0	6.3
6B7	I. F. Amplifier and Detector	112	112	4		6.3
78	A. F. Amplifier	7.5	12.5	4	4	6.3
43	Output	101	112	16.5		25
25Z5	Rectifier			125		25



- 1 GT-2499S ANTENNA COIL
- 2 W-3002E OSCILLATOR COIL
- 3 G-2592E I.F. TRANSFORMER
- 4 G-2544A I.F. TRANS.
- 5 G-2844A I.F. TRANS.
- 6 G-2594S I.F. TRANSFORMER
- 7 G-2093C TUNING CONDENSER
- 8 G-12594S I.F. TRANSFORMER
- 9 G-12594S I.F. TRANSFORMER
- 10 G-12594S I.F. TRANSFORMER
- 11 G-12594S I.F. TRANSFORMER
- 12 W-30324 0.02 MFD. 400V.
- 13 W-2543B 0.1 MFD. 500V.
- 14 W-2543B 0.1 MFD. 500V.
- 15 W-2543B 0.1 MFD. 500V.
- 16 W-30322 0.001 MFD. 200V.
- 17 W-30322 0.001 MFD. 200V.
- 18 G-2592E I.F. TRANSFORMER
- 19 W-30322 0.001 MFD. 200V.
- 20 G-2592E I.F. TRANSFORMER
- 21 W-30322 0.001 MFD. 200V.
- 22 G-2592E I.F. TRANSFORMER
- 23 W-30124 16 MFD. 100 VOLTS
- 24 W-30124 16 MFD. 100 VOLTS
- 25 W-30323 0.01 MFD. 200V.
- 26 W-30323 0.01 MFD. 200V.
- 27 W-30323 0.01 MFD. 200V.
- 28 W-30323 0.01 MFD. 200V.
- 29 W-30323 0.01 MFD. 200V.
- 30 W-30323 0.01 MFD. 200V.
- 31 E-6572 3-MEGOHMS
- 32 W-27677A 0.1 MFD. 25 VOLTS
- 33 E-3403 15000 Ω
- 34 E-3785 500,000 Ω
- 35 W-26571 0.0005 MFD. 200V.
- 36 W-26571 0.0005 MFD. 200V.
- 37 W-30032A 10 MFD. 50 VOLTS
- 38 W-30032A 10 MFD. 50 VOLTS
- 39 W-30032C 10 MFD. 50 VOLTS
- 40 W-30032C 10 MFD. 50 VOLTS
- 41 W-30032C 10 MFD. 50 VOLTS
- 42 W-30032C 10 MFD. 50 VOLTS
- 43 W-30032C 10 MFD. 50 VOLTS
- 44 W-30032C 10 MFD. 50 VOLTS
- 45 W-30032C 10 MFD. 50 VOLTS
- 46 W-30032C 10 MFD. 50 VOLTS
- 47 W-30032C 10 MFD. 50 VOLTS
- 48 W-30032C 10 MFD. 50 VOLTS
- 49 W-30032C 10 MFD. 50 VOLTS
- 50 W-30032C 10 MFD. 50 VOLTS
- 51 W-30032C 10 MFD. 50 VOLTS
- 52 W-30032C 10 MFD. 50 VOLTS
- 53 W-30032C 10 MFD. 50 VOLTS
- 54 W-30032C 10 MFD. 50 VOLTS
- 55 W-30032C 10 MFD. 50 VOLTS
- 56 W-30032C 10 MFD. 50 VOLTS
- 57 W-30032C 10 MFD. 50 VOLTS
- 58 W-30032C 10 MFD. 50 VOLTS
- 59 W-30032C 10 MFD. 50 VOLTS
- 60 W-30032C 10 MFD. 50 VOLTS
- 61 W-30032C 10 MFD. 50 VOLTS
- 62 W-30032C 10 MFD. 50 VOLTS
- 63 W-30032C 10 MFD. 50 VOLTS
- 64 W-30032C 10 MFD. 50 VOLTS
- 65 W-30032C 10 MFD. 50 VOLTS
- 66 W-30032C 10 MFD. 50 VOLTS
- 67 W-30032C 10 MFD. 50 VOLTS
- 68 W-30032C 10 MFD. 50 VOLTS
- 69 W-30032C 10 MFD. 50 VOLTS
- 70 W-30032C 10 MFD. 50 VOLTS
- 71 W-30032C 10 MFD. 50 VOLTS
- 72 W-30032C 10 MFD. 50 VOLTS
- 73 W-30032C 10 MFD. 50 VOLTS
- 74 W-30032C 10 MFD. 50 VOLTS
- 75 W-30032C 10 MFD. 50 VOLTS
- 76 W-30032C 10 MFD. 50 VOLTS
- 77 W-30032C 10 MFD. 50 VOLTS
- 78 W-30032C 10 MFD. 50 VOLTS

MODEL 174

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	Oscillator-Modulator	108	108	21	0	6.0
6F7	I. F. Amplifier and Detector	20	108	3.5		6.0
43	Output	104	110	0		25.
25Z5	Rectifier				110	25.



- 1 G-2499S ANTENNA COIL
- 2 G-2499S ANTENNA COIL
- 3 G-2499S ANTENNA COIL
- 4 G-2499S ANTENNA COIL
- 5 G-2499S ANTENNA COIL
- 6 G-2499S ANTENNA COIL
- 7 G-2499S ANTENNA COIL
- 8 G-2499S ANTENNA COIL
- 9 G-2499S ANTENNA COIL
- 10 G-2499S ANTENNA COIL
- 11 G-2499S ANTENNA COIL
- 12 W-27885 CORD & PLUG
- 13 G-10639 POWER FILTER CHOK
- 14 W-29804A 25 MFD. 100V.
- 15 W-29804A 25 MFD. 100V.
- 16 W-29804A 25 MFD. 100V.
- 17 W-29804A 25 MFD. 100V.
- 18 W-29804A 25 MFD. 100V.
- 19 W-29804A 25 MFD. 100V.
- 20 W-29804A 25 MFD. 100V.
- 21 W-29804A 25 MFD. 100V.
- 22 W-29804A 25 MFD. 100V.
- 23 W-29804A 25 MFD. 100V.
- 24 W-29804A 25 MFD. 100V.
- 25 W-29804A 25 MFD. 100V.
- 26 W-29804A 25 MFD. 100V.
- 27 W-29804A 25 MFD. 100V.
- 28 W-29804A 25 MFD. 100V.
- 29 W-29804A 25 MFD. 100V.
- 30 W-29804A 25 MFD. 100V.
- 31 W-29804A 25 MFD. 100V.
- 32 W-29804A 25 MFD. 100V.
- 33 W-29804A 25 MFD. 100V.
- 34 W-29804A 25 MFD. 100V.
- 35 W-29804A 25 MFD. 100V.
- 36 W-29804A 25 MFD. 100V.
- 37 W-29804A 25 MFD. 100V.
- 38 W-29804A 25 MFD. 100V.
- 39 W-29804A 25 MFD. 100V.
- 40 W-29804A 25 MFD. 100V.
- 41 W-29804A 25 MFD. 100V.
- 42 W-29804A 25 MFD. 100V.
- 43 W-29804A 25 MFD. 100V.
- 44 W-29804A 25 MFD. 100V.
- 45 W-29804A 25 MFD. 100V.
- 46 W-29804A 25 MFD. 100V.
- 47 W-29804A 25 MFD. 100V.
- 48 W-29804A 25 MFD. 100V.
- 49 W-29804A 25 MFD. 100V.
- 50 W-29804A 25 MFD. 100V.
- 51 W-29804A 25 MFD. 100V.
- 52 W-29804A 25 MFD. 100V.
- 53 W-29804A 25 MFD. 100V.
- 54 W-29804A 25 MFD. 100V.
- 55 W-29804A 25 MFD. 100V.
- 56 W-29804A 25 MFD. 100V.
- 57 W-29804A 25 MFD. 100V.
- 58 W-29804A 25 MFD. 100V.
- 59 W-29804A 25 MFD. 100V.
- 60 W-29804A 25 MFD. 100V.
- 61 W-29804A 25 MFD. 100V.
- 62 W-29804A 25 MFD. 100V.
- 63 W-29804A 25 MFD. 100V.
- 64 W-29804A 25 MFD. 100V.
- 65 W-29804A 25 MFD. 100V.
- 66 W-29804A 25 MFD. 100V.
- 67 W-29804A 25 MFD. 100V.
- 68 W-29804A 25 MFD. 100V.
- 69 W-29804A 25 MFD. 100V.
- 70 W-29804A 25 MFD. 100V.
- 71 W-29804A 25 MFD. 100V.
- 72 W-29804A 25 MFD. 100V.
- 73 W-29804A 25 MFD. 100V.
- 74 W-29804A 25 MFD. 100V.
- 75 W-29804A 25 MFD. 100V.
- 76 W-29804A 25 MFD. 100V.
- 77 W-29804A 25 MFD. 100V.
- 78 W-29804A 25 MFD. 100V.

# Model 175

## Specifications

Model 175 is a fourteen tube dual band superheterodyne designed for operation from A.C. electric circuits. The intermediate frequency is 181.5 Kc.

## Tubes and Voltage Limits

The following are the tubes and voltages measured with the receiver in operating con-

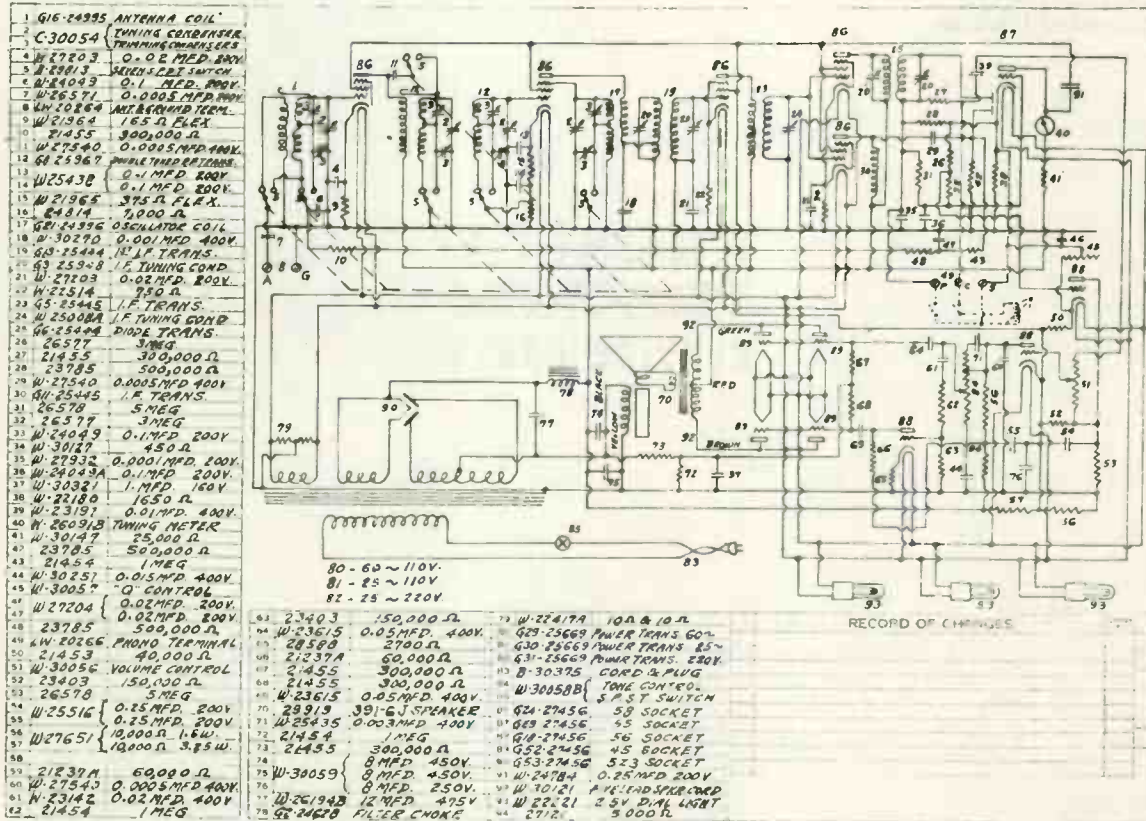
dition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 for 220 volt receivers). All voltages, except filament, are measured with 300 volt D.C. voltmeters (1000 ohms per volt) from tube contact to chassis. Filament voltages are measured with a low range A.C. voltmeter.

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
58	R. F. Amplifier	280	90	2.5	2.5	2.5
58	Oscillator Modulator	280	90	32.0	0	2.5
58	I. F. Amplifier	280	90	5.0	5.0	2.5
58	I. F. Amplifier	280	90	4.5	4.5	2.5
58	A. V. C.	280	90	4.5	4.5	2.5
55	Detector	80		15.5		2.5
56	"Q" Control Tube	70		0-22.0*		2.5
56	A. F. Amplifier	165		90.0		2.5
56	Phase Shifter	125		6.0		2.5
4-45	Output	280		0		2.5
5Z3	Rectifier	295				5.0

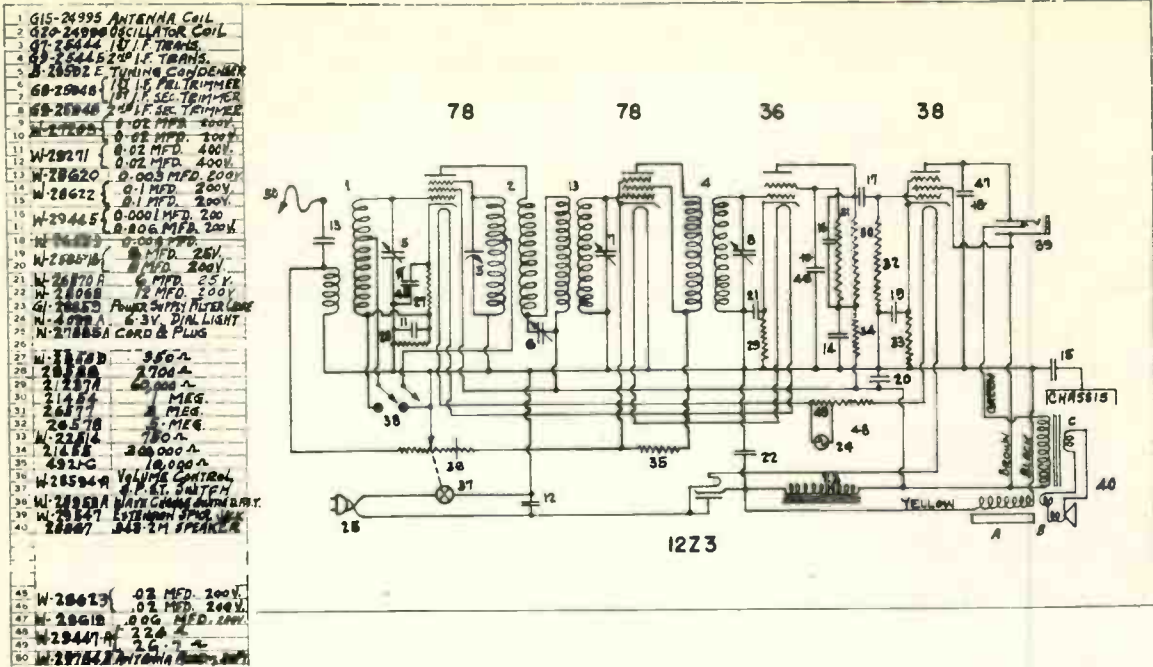
Voltage limits are plus or minus 10% of values given.

\*Voltage depends on position of "Q" control.

Chassis to "B-" 75 volts of which 55 volts is used for biasing output tubes.



# Model 176



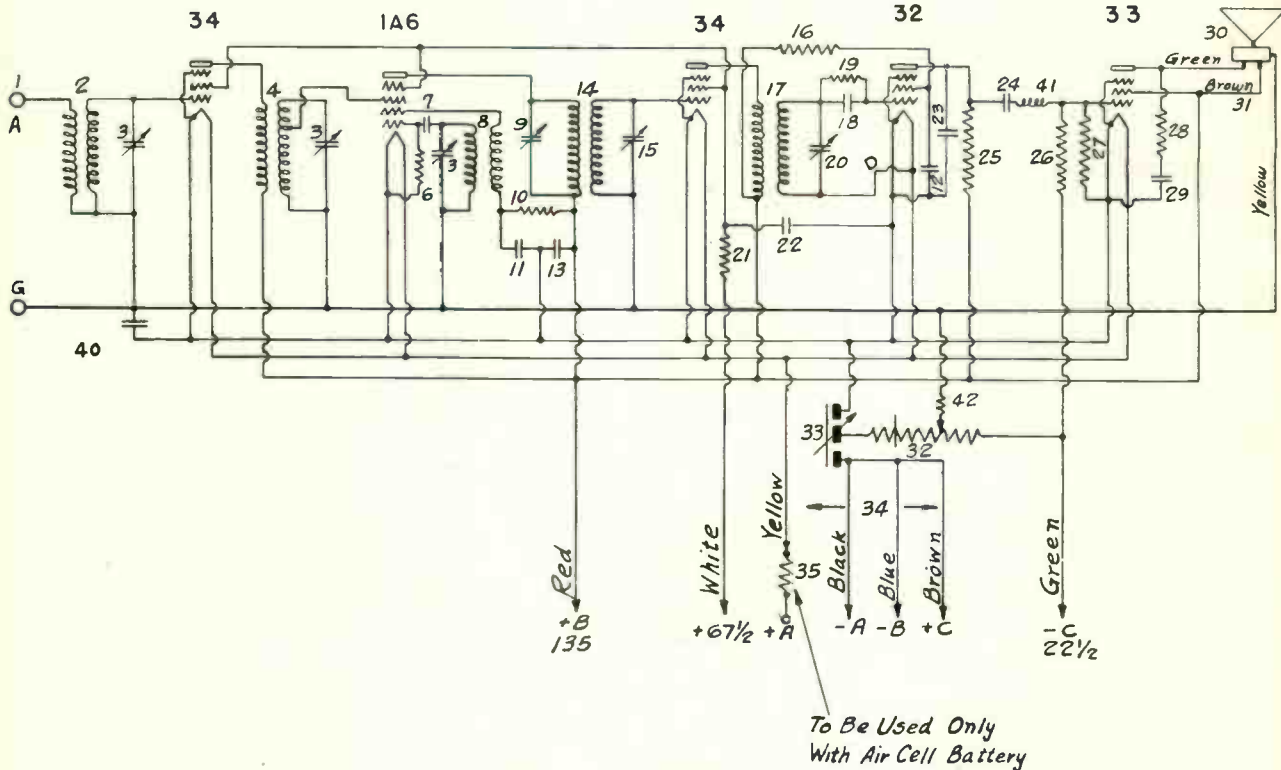
**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**

Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.

# Model 178

Tube	Position and Use	Plate	Screen Grid	Voltages Grid	Filament
34	RF Amplifier	135	67.5	4.0	2.0
1A6	Oscillator	95	5		
	Modulator	135	67.5	4.0	2.0
34	IF Amplifier	135	67.5	4.0	2.0
32	Detector	50	15	0	2.0
33	Output	135	135	8.0	2.0

Voltage limits are plus or minus 10% of values given.



MODEL 178 WIRING DIAGRAM

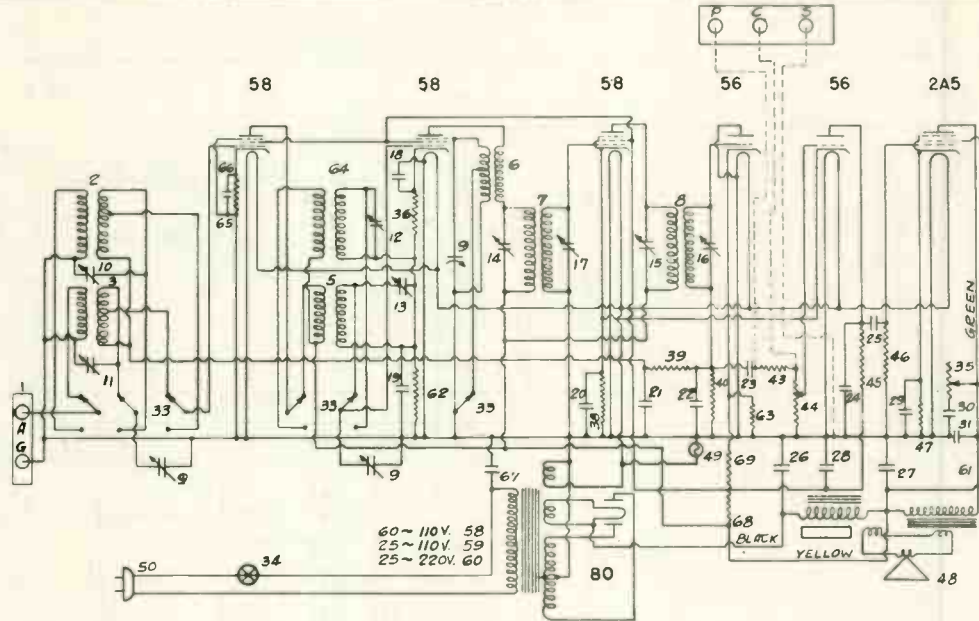
\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	LW20264	Ant. & Gr. Terminal .....	1	1	W26974B	Tube Shield .....	
1	G10-24995	Antenna Coil .....	2	1	B30542A	Battery Cable .....	34
1	G8-25968	R. F. Transformer Coil ...	4	1	W27933	Speaker Cable .....	31
1	G13-24996	Oscillator Coil .....	8	1	W27939B	Vol. Control & Switch.....	32-33
1	G7-25444	1st I. F. Transformer .....	14	1	G1-24234	R. F. Choke .....	41
1	G9-25445	2nd I. F. Transformer .....	17	2	G1-23472	Knobs .....	
4	W25025A	Coil Shield (1 1/2" high) ...		1	B27818	Bottom .....	
1	W25024A	Coil Shield (1" high) ....					
5	W25200	Coil Socket .....					
5	W24380	Insulating Washer .....					
5	W21541B	Coil Ret'ng Ring (.25 doz.)					
1	B28974	Tuning Condenser gang .....	3	2	W5382	0.00025 Mfd. Cond. ....	7-18
1	G11-25050	Dial Drive Assembly .....		1	W25438	0.1-0.1 Mfd. 200 V. Cond.	11-12
1	G2-25948	I. F. Tuning Condenser ...	9	1	W24784	0.25 Mfd. 200 V. Cond. ....	13
1	W27548	I. F. Tuning Cond. Blade ..	15	1	W30321	1.0 Mfd. 160 V. Cond. ....	22
1	W25584	Mica Insulator .....		1	W25537	0.001-0.03 Mfd. 400 V. Cond.	23-24
1	R80	Screw .....		1	W26559	0.006 Mfd. 200 V. Cond. ....	29
1	W26069B	Adjusting Nut .....		1	W30366	0.5 Mfd. 160 V. Cond. ....	40
1	W24965	Metal Washer (Round) .....					
1	W25450B	Insulating Washer (Small) ...					
1	W25007B	Insulating Washer (Small) ...					
1	W25446	Bakelite Washer (Large) ..		2	W21875	100,000 Ohm Resistor .....	6-42
1	O4	Washer .....		1	W22196	20,000 Ohm Resistor .....	10
1	M20	Rivet .....		2	W21454	1 Megohm Resistor .....	16-26
1	G13-25948	I. F. Tuning Condenser ...	20	2	W26577	3 Megohm Resistor .....	19-27
				1	W21452	1,100 Ohm Resistor .....	21
				1	W23403	150,000 Ohm Resistor .....	25
				1	W24814	7,000 Ohm Resistor .....	28
1	W26973A	Tube Shield Base .....		1	G2-2330*	53 Ohm (Air Cell) Resistor	35
				1	336-3B	Speaker .....	

# Model 179

Tube	Position and Use	Plate	Screen Grid	Cathode	Voltages	Supp. Grid	Filament
58	RF Amplifier	260	125	3		3	2.5
58	Oscillator-modulator	260	125	34		0	2.5
58	IF Amplifier	260	125	4		4	2.5
56	Diode detector	0		0			2.5
56	AF Amplifier	50		4			2.5
2A5	Output	250	260	16.5			2.5
80	Rectifier	355					

Voltage limits are plus or minus 10% of values given.



MODEL 179 WIRING DIAGRAM

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G7-24905	Low F Antenna Coil.....	2	1	B31335A	Tube & Cond. Shield.....	50
1	G14-24905	Hi F Antenna Coil.....	3	1	B21491A	Cable & Plug.....	34-35
2	G1-29099	Ant. R. F. Coil Trimmer Cond.....	10-11 12-13	1	W25504B	Tone Control & Switch.....	44
1	G9-25068	Low F. R. F. Coil.....	64	1	W25666B	Level Control (volume).....	
1	G5-25068	Hi F. R. F. Coil.....	5	4	G1-23472	Knob.....	
1	G21-24990	Oscillator Coil.....	6	1	W31157A	Knob (Moderne).....	
1	G1-25444	1st I. F. Trans. Coil.....	7	3	W31585A	Knob (Moderne).....	
1	G1-25048	1st I. F. Prim. 2nd I. F. Prim. 2nd I. F. Sec. Trimmer Cond. Assem.....	14-15 16	1	W31463	Escutcheon.....	
1	W25008A	1st I. F. Sec. Trimmer Cond. Blade.....	17	3	S27	Escutch. Screws.....(25 doz.)	
1	R80	Screw.....		1	W31000	Speaker Cord.....	61
1	W26069B	Adjusting Nut.....		1	G17-23550	<b>POWER TRANSFORMERS</b> Power Trans. 60 Cy. 110 V.	58
1	W24865	Metal Washer (round).....		1	G18-23559	Power Trans. 25 Cy. 110 V.	59
1	W25446	Bakelite Washer (large).....		1	G19-23559	Power Trans. 25-60 Cy. 220 V.....	60
1	W25450B	Insulating Washer (small).....					
1	W25007	Insulating Washer (small).....					
1	N20	Rivet.....					
1	W25584	Mica Insulator.....		2	W27204	<b>FILTER &amp; BYPASS CONDENSERS</b> .02-.02 Mfd. 200 Volt.....	18-19 20-21
1	G6-25444	2nd I. F. Trans. Coil.....	8	1	W25069A	.00017-.03 Mfd. 400 Volt.....	22-23
1	W25200	Coil Sockets.....		1	W25337A	.001-.03 Mfd. 400 Volt.....	24 25
5	W25024A	Coil Shield (1 1/2" high).....		1	W26194B	12. Mfd. 475 Volt.....	26
3	W25025A	Coil Shield (1 1/8" high).....		1	W29150A	7-.6-.8. Mfd. 450-400-25 Volt.....	27-28 29
7	W21541B	Retainer Ring.....(25 doz.)		1	W25517A	.05-.008 Mfd. 400 Volt.....	30-31
4	W24360	Square Hole Ins. Washer		1	W27203	.02 Mfd. 200 Volt.....	68
3	W26891	Semi-Cr. Hole Ins. Wash.		1	W30806	.01 Mfd. 400 Volt.....	67
1	C30704	Var. Tun. Cond Gang.....	9				
1	G3-27134	Dial Light Socket Assem.					
1	G25-25751	Dial Assembly.....		3	W25037	<b>Resistors</b> 275 Ohms.....	36-38
1	B29787	Dial Cover (celluloid).....		1	W29577	3 Megohm.....	65
1	B30569R	6 P. D. T. Switch.....	33	1	W21454	1 Megohm.....	39
1	LW-20264	Ant.-Gnd. Terminal.....	1	2	W23785	500000 Ohm.....	43-46
3	W26010	Tube Shield Base.....		1	W23403	150000 Ohm.....	45
3	B26009C	Tube Shield.....		1	W25521	450 Ohm.....	47
				1	W31094	4500 Ohm.....	62
				1	W30127	450 Ohm.....	63
				1	W28471	8500-2500 Ohms (Canddem)	68-69
				1	C30719A	Chassis Bottom.....	
1	27307	Cone & Voice Coil Assem.		1	29190	Transformer.....	
1	29197	Field Coil.....					

312-4 MAGNAVOX SPEAKER SPEC. 939

# Model 180

## Specifications

Model 180 is a ten tube superheterodyne designed for operation from AC electric circuits. It uses an intermediate frequency of 181.5 kc.

## Tubes and Voltage Limits

The following are the tubes and voltages meas-

ured from tube contact to chassis with the receiver in operating condition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 for 220 volt receivers). All voltages, except filament, are measured with a 500 volt (1000 ohms per volt) d. c. voltmeter. Filament voltages are measured with a low range a. c. voltmeter.

Tube	Position and Use	Plate	Voltages			Filament
			Screen Grid	Cathode		
58	Modulator	270	112	5.5		2.5
58	RF Amplifier	270	112	3.5		2.5
56	Oscillator	50		5.5		2.5
58	IF Amplifier	270	112	3.7		2.5
56	Diode	0		0		2.5
56	AF Amplifier	50		3.0		2.5
56	Phase Inverter	50		3.0		2.5
Two 2A5	Output	260	270	17.5		2.5
80	Rectifier	360				4.8

All voltage limits are plus or minus 10% of values given.

## PARTS LIST—MODEL 180

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

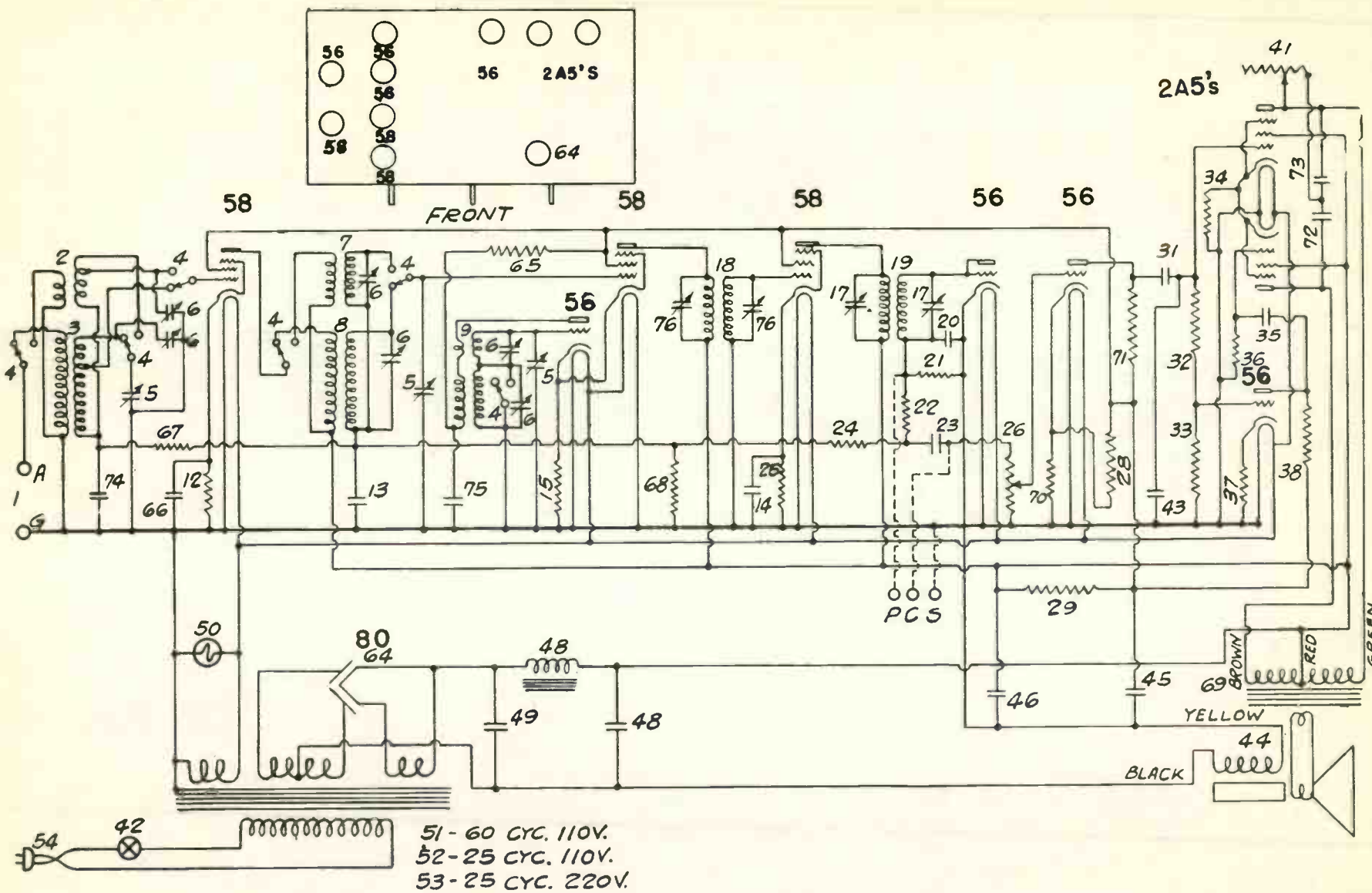
* Figures in 2nd last column refer to parts shown in diagram on page 18.							
Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	LW20284	Antenna & Ground Terminal	1	3	W31585B	Knob (Moderne)	
1	G14-24995	Antenna Coil (High Freq.)	2	1	W31157B	Knob (Moderne)	
1	G7-24995	Antenna Coil (Low Freq. Broadcast)	3	1	C23613B	Bottom	
1	G5-25968	Interstage Coil (H. F.)	7	1	C28477D	Back	
1	G9-25968	Interstage Coil (Low F. Broad.)	8	1	C26200G	Tube & Condenser Shield	
1	G18-24996	Oscillator Coil	9	1	W31942	Speaker Cabbs.	69
1	G5-24985	1st I. F. Transformer	18			<b>POWER TRANSFORMER</b>	
1	G10-24985	Diode Feeding Transformer	19		G23-25669	Power Trans. 110 V. 60 Cy.	51
1	G3-31267	Coil Shield Assembly			G34-25669	Power Trans. 110 V. 25 Cy.	52
3	W25200	Coil Sockets			G35-25669	Power Trans. 220 V. 25 to 60 Cy.	53
2	W25024A	Coil Shield (1 1/4" high)				<b>FILTER &amp; BY PASS CONDENSERS</b>	
1	W25025A	Coil Shield (1 1/4" high)		1	W25438	0.1-0.1 Mfd. 200 Volt	13-14
5	W21541B	Retainer Rings (25 doz.)		1	W27932	0.0001 Mfd. 200 Volt	20
3	W26891	Insulating Washer (Semi-Cir. Hole)		1	W26550	0.005 Mfd. 200 Volt	23
2	W24360	Insulating Washer (Square Hole)		2	W23615	0.05 Mfd. 400 Volt	31-35
1	B30569C	6 P. D. T. Switch	4	1	W20571	0.005 Mfd. 200 Volt	43
1	C31356	Var. Cond. Gang	5-6	3	W27203	0.02 Mfd. 200 Volt	66
1	G25-25751	Dial Drive Assembly		1	W31052	0.05-0.004 Mfd. 400 Volt	74-75
1	G3-27134	Dial Light Bracket		1	B30059A	8-8-8. Mfd. 250, 450, 450 V.	72-73
1	W28878A	Condenser Shield Assembly		1	W26194B	12. Mfd. 475 Volt	47
1	G15-25948	I. F. Tuning Condenser	76			<b>RESISTORS</b>	49
1	G3-25948	I. F. Tuning Condenser	17	1	W23403	150000 Ohm	71
5	W26010	Tube Shield Base		2	W25937	275 Ohm	12-70
3	B26009C	Tube Shield (58 tube)		1	W21965	375 Ohm	15
2	W20231B	Tube Shield (58 tube)		1	W21454	1 Megohm	21
1	B21491B	Cord & Plug	54	4	W21455	300000 Ohm	22-23
1	W25666B	Volume Control	26	1	W26577	3 Megohm	38-37
1	W25584B	Tone Control & Switch	41-42	1	W28589	350 Ohm	24
1	G1-24628	Filter Choke	48	1	W31361	11000-7000 Ohm	28-29
3	W22300	Knob		1	W21453	40000 Ohm	33
1	W24656	Knob		1	W22873	220 Ohm	34
				1	W31093	2700 Ohm	37
				1	W21237A	60000 Ohm	38
				1	W4921C	10000 Ohm	65
				1	W26578	5 Megohm	68

SPEAKER PARTS (8" Speaker)			
	Magnavox 317-4M Spec. 1104	Rola 317-4R	
1	27307	31090	Cone & Voice Coil Assembly
1	27797	31091	Field Coil
1	27798	31092	Transformer

SPEAKER PARTS (10" Speaker)			
	Magnavox 317-5M Spec. 985	Rola 317-5R	
1	27661	31086	Cone & Voice Coil Assembly
1	27797	31087	Field Coil
1	29658	31088	Transformer



MODEL 180 WIRING DIAGRAM

# Model 181

## Specifications

Model 181 is a six tube superheterodyne designed for operation from AC electric circuits. The intermediate frequency used is 456 kc.

## Tubes and Voltage Limits

The following are the tubes and voltages meas-

ured from tube contact to chassis with the receiver in operating condition but with no signal to the antenna circuit, and with a line voltage of 117.5 volts (235 volts for 220 volt receivers). All voltages, except filament, are measured with a 500 volt (1000 ohms per volt) DC voltmeter. Filament voltages are measured with a low range AC voltmeter.

Tube	Position and Use	Plate	Screen Grid	Voltages		
				Cathode	Supp. Grid	Filament
2A7	Oscillator	165		-9.5		
	Modulator	240	110	2.5		2.45
58	IF Amplifier	236	110	0		2.45
56	Diode Detector and AVC					2.45
58	AF Amplifier	52	27	0		2.45
2A5	Output	222	240	0		2.45
80	Rectifier	330				4.8

Chassis to B- 93 volts.

Bias voltages are obtained by a resistor divider shunting the speaker field which is in B- circuit, from rectifier to chassis.

IF Amplifier bias (Grid to B-) 28 volts.

AF Amplifier bias (Grid to B-) 12 volts.

Output bias (Grid to B-) 18 volts.

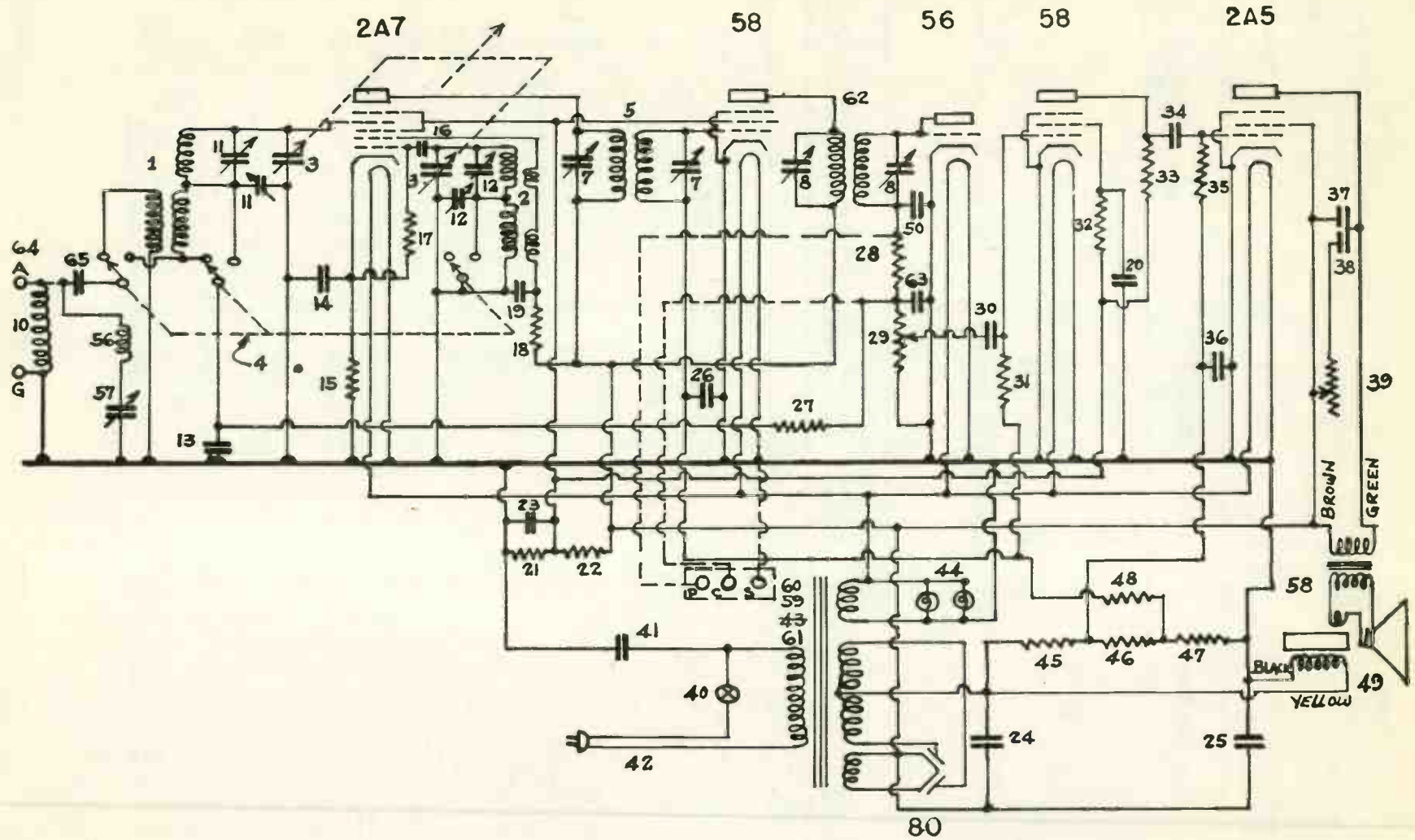
## PARTS LIST—MODEL 181

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G23-24905	Antenna Coil.....	1	2	W31225	Knobs (large).....	
1	G28-24096	Oscillator Coil.....	2	2	W31224	Knobs (small).....	
2	G7-29609	Ant. and Oscillator Coil, Trimmer Condenser.....	11, 12	2	W30463	Escutcheons.....	
1	G2-30795	First I. F. Transformer.....	5	6	S-27	Escutcheon Screws.....	
1	G2-30795	Second I. F. Transformer.....	62	1	W31007	4 Lead Speaker Cord.....	58
2	W30027	Coil Shield.....		<b>POWER TRANSFORMERS</b>			
2	W30802	Coil Shield.....		1	G4-30745	Power Trans. 110 V. 60 Cy.	61
4	W25200	Coil Socket.....		1	G2-30745	Power Trans. 110 V. 25 Cy.	59
4	W30026	Retainer Ring.....		1	G3-30745	Power Trans. 220 V.....	60
2	W30845	Insulating Washer.....		<b>FILTER &amp; BY PASS CONDENSERS</b>			
2	W30877	Insulating Washer.....		1	W30325	0.003 Mfd. 200 Volt.....	9
1	W30744A	No. 3 P. D. T. Change Sw.	4	1	W27204	.02-.02 Mfd. 200 Volt.....	18, 14
1	B30769A	Variable Tuning Condenser Assm.....	3	1	W30741	.00025 Mfd. 1000 Volt.....	18
1	G4-27812	Dial Light Socket.....		1	W23474	.1-1 Mfd. 400 Volt.....	19, 20
1	G9-25050	Dial Assembly.....		1	W30059A	8-.8-.8, Mfd. 250 V.-450 V.-450 V.....	23, 24
1	G1-30070	V. C. Dial Assembly.....		1	W24049	.1 Mfd. 200 Volt.....	25
2	G14-25948	I. F. Condenser.....	7, 8	2	W27203	.02 Mfd. 200 Volt.....	30, 34
1	W25008	Condenser Blade.....	57	1	W30321	1. Mfd. 100 Volt.....	36
1	R80	Screw.....		1	W25517	.008-.05 Mfd. 400 Volt.....	37, 38
1	W20069B	Adjusting Nut.....		1	W30805	.01 Mfd. 400 Volt.....	41
1	W24845	Metal Washer.....		2	W27932	.0001 Mfd. 200 Volt.....	50, 63
1	W25450B	Insulating Washer.....		1	W26571	.05 Mfd. 200 Volt.....	65
1	W25007	Insulating Washer.....		<b>RESISTORS</b>			
1	W25446	Bakelite Washer.....		1	W23937	275 Ohms.....	15
1	O-4	Flat Washer.....		3	W21875	100000 Ohms.....	17, 33
1	M-20	Rivet.....		1	W5370A	20000 Ohms.....	46
1	G1-26719	A. G. Terminal.....	10	1	W25970	15000-10000 Ohms.....	18
2	G5-24234	R. F. Choke Assm.....	56, 64	1	W26577	3 Megohm.....	21, 22
4	W27981	Tube Shield Base.....		1	W21237A	60000 Ohms.....	27
1	W26231B	Tube Shield.....		1	W21454	1 Megohm.....	28
1	W27328A	Tube Shield.....		4	W23785	500000 Ohms.....	31
2	B26009C	Tube Shield.....		1	W22196	20000 Ohms.....	32, 35
1	B30375	AC Cord and Plug.....	42	<b>SPEAKER PARTS</b>			
1	W30836	Tone Control and Switch.....	39, 40	Magnavox 354-4M		Crosley 354-4C	
1	W30610C	Level Control (volume).....	29	Spec. 952		G1-31184	
				27307		W31445	
				27455		Cone Assem.....	
				27461		Field Coll.....	
						Transformer.....	
						G8-24628	



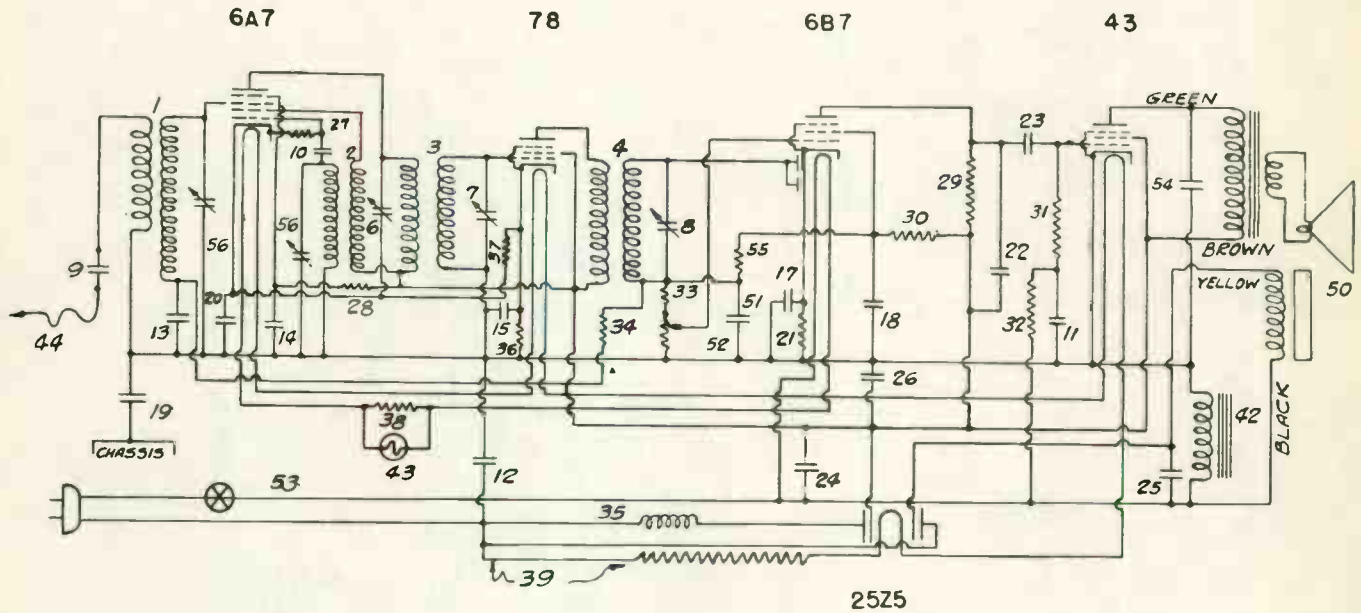


MODEL 181

MODEL 181 WIRING DIAGRAM

# Model 182

Tube	Position and Use	Plate	Screen Grid	Voltages			Filament
				Control Grid	Cathode	Supp. Grid	
6A7	Oscillator Modulator	120		-8	3		6.5
78	IF Amplifier	120	120		2.5	2.5	6.5
6B7	Diode and AF Amplifier	20	30		3	3	6.5
43	Output	115	120	*-20	0		25.1
25Z5	Rectifier				120		25.1



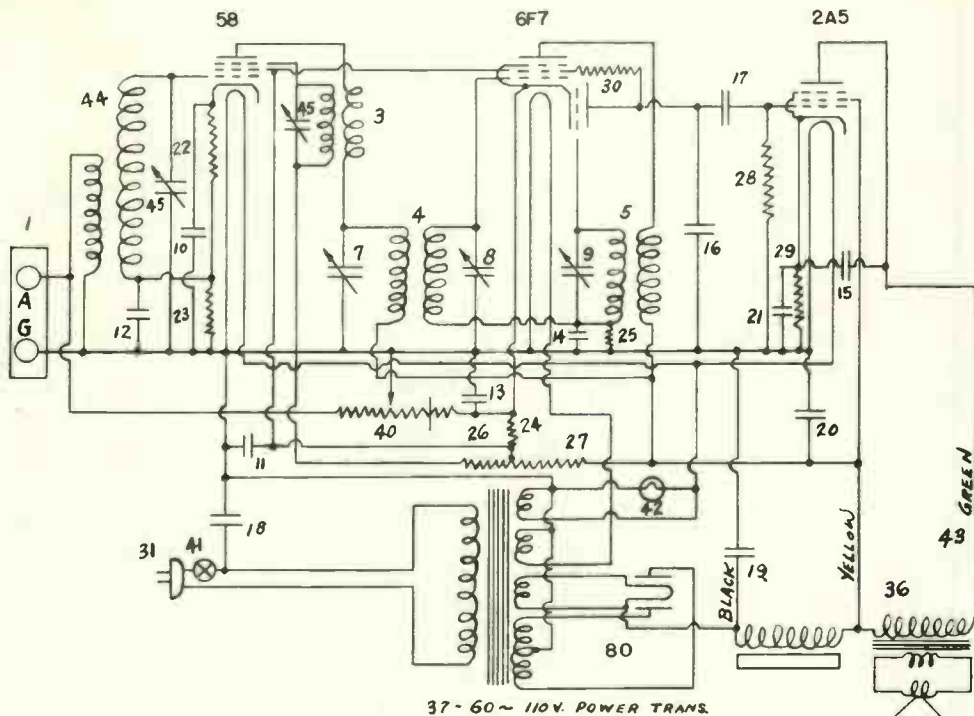
MODEL 182 WIRING DIAGRAM

\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	Item	Qty.	Part No.	Description	Item
1	G24-24995	Antenna Coil	1	1	W24784	0.25 Mfd. 200 Volt	11
1	G29-24996	Oscillator Coil	2	1	W30324	0.02-0.02 Mfd. 400 Volt	12-13
1	B31582A	Tuning Condenser Gang	56	1	W27204	0.02-0.02 Mfd. 200 Volt	14-15
1	W20537B	Condenser Cover		1	W25438	0.1-0.1 Mfd. 200 Volt	18-19
1	G2-30795	1st I. F. Transformer	3	1	W27203	0.02 Mfd. 200 Volt	20
1	G14-25948	1. F. Trimmer Condensers	6-7	1	W30322	0.00017-0.006 Mfd. 200 Volt	22-23
1	G10-25445	2nd I. F. Transformer	4	1	W7847A	0.0001 Mfd.	51
1	G9-25048	Trimmer Condenser	8	1	W31219	0.023 Mfd. 200 Volt	54
3	W25025A	Coil Shield		1	W26870A	6. Mfd. 25 Volt	17
1	W30802	Coil Shield		1	W30942	25-.8. Mfd. 125 Volt	24-25
4	W23200A	Coil Socket		1	W30963	16. Mfd. 110 Volt	26
1	W30026	Retainer Ring					
3	W21541B	Retainer Ring					
1	W30677A	Insulating Washer					
3	W24360	Insulating Washer					
1	W31204	Level Control & Switch	52-53				
1	G2-27812	Dial Light Bracket Assem.					
						<b>RESISTORS</b>	
				1	W27503	1400 Ohms	21
				2	W21237A	60000 Ohms	27-33
				1	W21453	40000 Ohms	28
				1	W23403	150000 Ohms	29
				2	W23785	500000 Ohms	30-31
				1	W21455	300000 Ohms	32
				1	W21454	1 Megohm	34
2	W31210	Tube Shield Ring		1	W21964	165 Ohm	36
2	W31212	Tube Shield Half		1	W25357	75 Ohm	37
2	W31213	Tube Shield Half (with slot)		1	W30539	26.7 Ohm	38
4	W31211	Tube Shield Clip		1	W26577	3 Megohm	56
1	B30957B	120 Ohm Resistance Cable (A. C. Cord & Plug)	39				
1	W29784B	Antenna Roll	44	1	G1-29529	Cone & Voice Coil Assem.	
1	G1-28859	Filter Choke	42	1	31214	Field Coil	
1	G1-24234	A. F. Choke	35	1	G6-29535	Transformer	
					W28735	Black Knob	
					W28736	Green Knob	
					W30028	Brown Knob	
					W31500	Wooden Knob	
					W31812	Dial Pointer	
					W28606	Bottom	
		<b>FILTER &amp; BY-PASS CONDENSERS</b>					
1	W30325	0.003 Mfd. 200 Volt	9				
1	W26571	0.0005 Mfd. 400 Volt	10				

# Model 184

Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid.	Filament
58	Oscillator-modulator	165	82	22	0	2.5
6F7	I. F. & Detector	165	82	2	0	2.5
2A5	Output	158	165	10		2.5
80	Rectifier	295				4.9



37- 60~ 110V. POWER TRANS.  
38- 25~ 110V. POWER TRANS.  
39- 25~ 220V. POWER TRANS.

MODEL 184 WIRING DIAGRAM

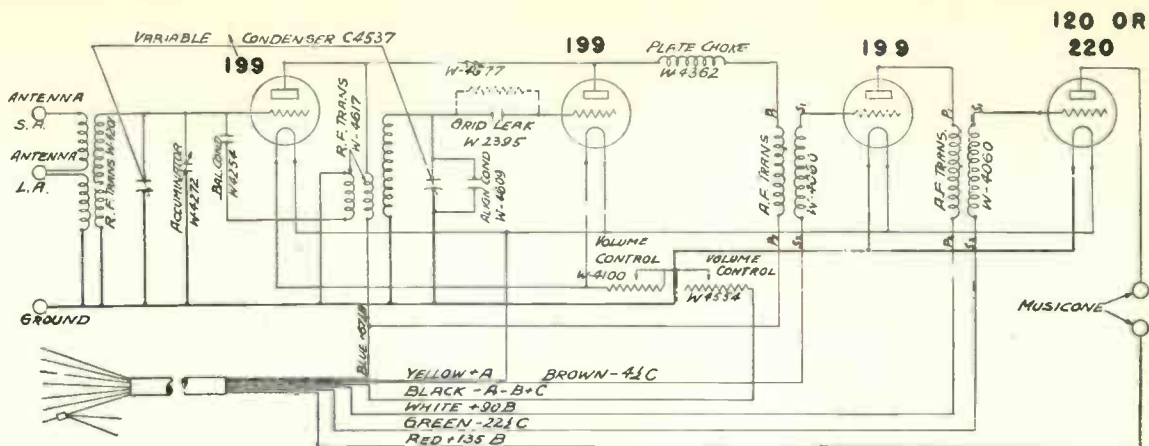
\* Figures in 2nd last column refer to parts shown in diagram on page 18.

Qty.	Part No.	Description	•	Qty.	Part No.	Description	•
1	W20264	Ant.-Grd. Terminal .....	1	1	W27328A	Tube Shield (6F7) .....	•
1	G28-24905	Antenna Coil .....	44	1	B23009C	Tube Shield (58) .....	14
1	G12-24996	Oscillator Coil .....	3	1	B21401B	A. C. Cable & Plug .....	31
1	G7-25444	1st I. F. Transformer .....	4	1	W31009	Speaker Cable .....	43
1	G9-25445	2nd I. F. Transformer .....	5	1	W25573B	Volume Control & Switch..	40-41
1	W25024	Coil Shield (Large) .....	4	2	G1-23472	Knobs .....	37
3	W25025	Coil Shield (Small) .....	4	1	G1-28500	Power Trans. 110 V. 60 Cy.	37
4	W25200	Coil Socket .....	4	1	G2-28500	Power Trans. 110 V. 25 Cy.	38
4	W26801	Insulating Washer .....	4	1	G3-28500	Power Transformer 220 V.	39
4	W21541B	Coil Retaining Ring .....	4	<b>FILTER &amp; BY PASS CONDENSERS</b>			
1	B31784	Variable Condenser Gang...	7	1	W27204	.02-.02 Mfd. 200 V. Cond.	12-13
1	G15-25050	Dial Assem. .....	9	1	W24049A	.1 Mfd. 200 V. Condenser...	14
1	G2-25048	1st I. F. Prim. Trim. Cond.	8	1	W23191A	.01 Mfd. 400 V. Condenser...	15
1	G10-25948	2nd I. F. Prim. Trim. Cond.	8	1	W25537A	.001-.03 Mfd. 400 V. Cond.	16-17
1	W27548	1st I. F. Sec. Trim. Cond. (Adjustable Blade Only)	8	1	W25592A	.003 Mfd. 400 V. Condenser..	18
1	W25584	Mica .....	2	1	W27203	.02 Mfd. 200 V. Condenser	10-11
1	R80	Screw .....	1	1	W29150A	7-.6-.8. Mfd. 450-400-25 V. Filter Condenser .....	21
1	W20099B	Adjusting Nut .....	1	<b>RESISTORS</b>			
1	W24865	Metal Washer .....	1	1	W25937	275 Ohm Resistor .....	22
1	W25450B	Insulating Washer .....	1	1	W31094	4500 Ohm Resistor .....	23
1	W25007B	Insulating Washer .....	1	1	W24990	25000 Ohm Resistor .....	24
1	W25446	Bakelite Washer (Large) ..	1	1	W21454	1 Megohm .....	25
1	O4	Washer .....	1	1	W28471	25000-8500 Ohm Resistor.....	26-27
1	M20	Rivet .....	2	2	W23785	500000 Ohm Resistor .....	28-30
2	W26010	Tube Shield Base .....	1	1	W25521	450 Ohm Resistor .....	29

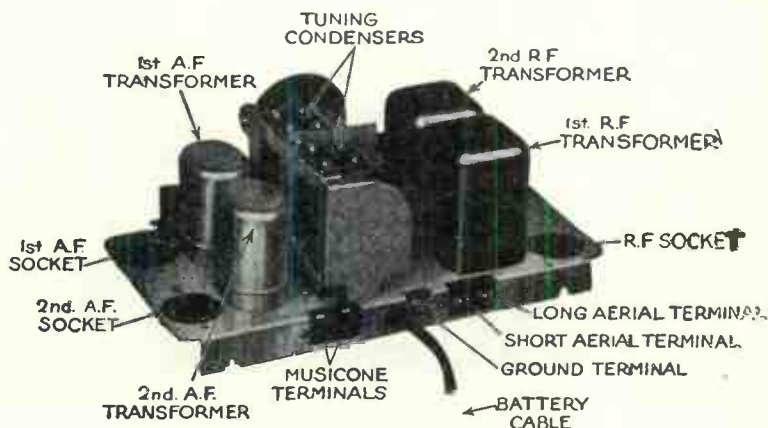
### SPEAKER PARTS \* 36

1	Magnavox 824-2M Spec. 1300	1	Jensen 142-2J Spec. 2617	1	Cone & Voice Coil Assem.
1	28761	1	29434	1	Field Coil
1	28763	1	29436	1	Transformer
1	28764	1	29437		

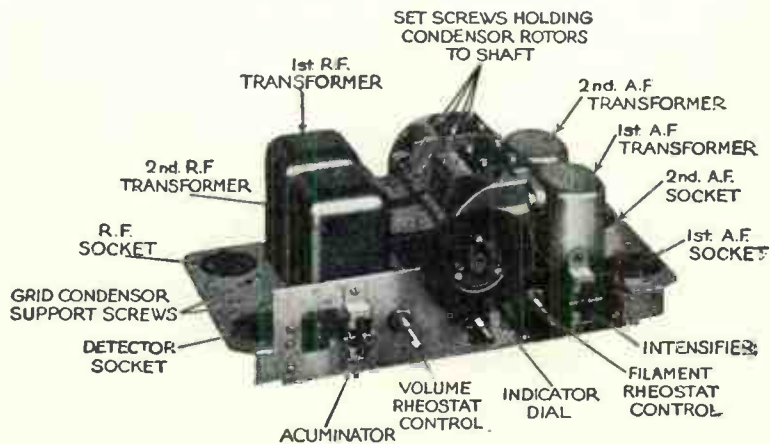
# MODEL 401



CIRCUIT, MODEL 401

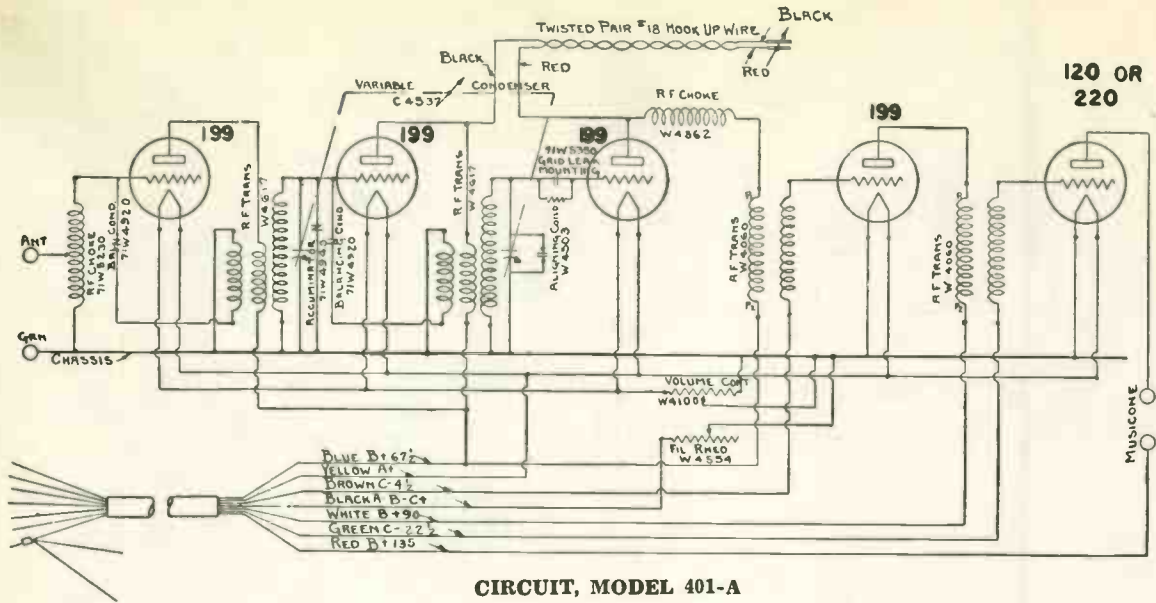


REAR VIEW, MODEL 401 CHASSIS

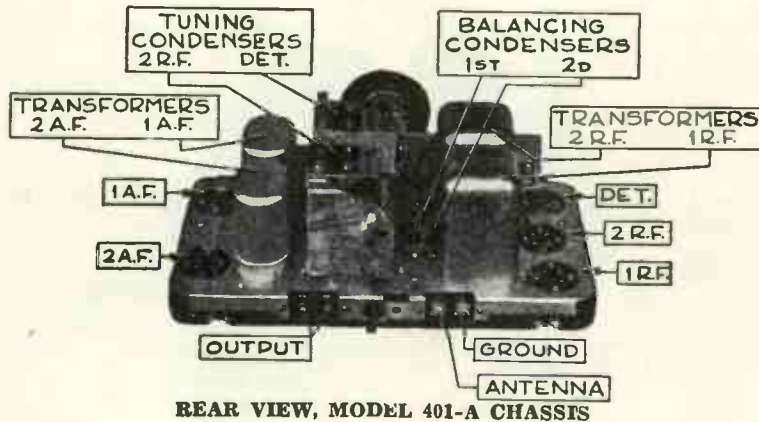


FRONT VIEW, MODEL 401 CHASSIS

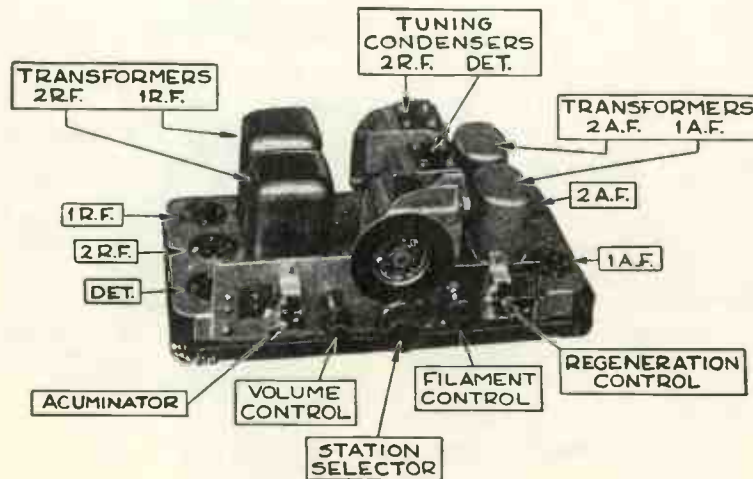
# MODEL 401A



CIRCUIT, MODEL 401-A



REAR VIEW, MODEL 401-A CHASSIS



FRONT VIEW, MODEL 401-A CHASSIS

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G
1A6	Oscillator-Modulator	2.0	135	63	0
34	I-F Amplifier	2.0	135	63	0
1A6	Detector & A-F Amp.	2.0	40	25	0
33	Output	2.0	130	135	0

"A" Battery Drain Approximately .44 Ampere.

"B" Battery Drain Approximately 20 Mils.

Power Output Approximately .7 Watt.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground wire (BLACK) at the rear of the chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the tuning condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condenser for the 2nd I-F transformer, for maximum output.

(e) Adjust both trimmer condensers, located on top of the 1st I-F transformer, for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna wire (BLUE) at the rear of the chassis.

(b) Set the signal generator to 1400 kilocycles.

(c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.

(d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, 12Y, located on the tuning condenser, for maximum output.

(e) Adjust the "ANT" trimmer, 12Z, located on the tuning condenser, for maximum output.

(f) Tune-in the generator signal with the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G27-32000	Ant Coil	13	C -36726C	Battery Cable Assem.
	W -30802A	Coil Shield	14	-21875	Resistor 100,000 Ohm ¼ W.
	W -30026A	Retaining Ring	15	-21454	Resistor 1.0 Megohm ¼ W.
2	G9 -32004	1st I-F Coil—only	16	-26577	Resistor 3.0 Megohm ¼ W.
	W -25025B	Coil Shield	17	G5 -23300	Resistor 0.6 Ohm
	W -26891	Insulating Washer	18	-23785	Resistor 500,000 Ohm ¼ W.
	W -21541C	Retaining Ring	19	-21455	Resistor 300,000 Ohm ¼ W.
	W -25200A	Coil Socket	20	-24814	Resistor 7,000 Ohm ¼ W.
3	G13-32004	2nd I-F Coil Asem.	21	-24990	Resistor 25,000 Ohm ¼ W.
4	G9 -32002	Osc. Coil	22	-27121	Resistor 5,000 Ohm ¼ W.
	W -25025B	Coil Shield	23	W -23013	Resistor 2,000 Ohm ½ W. Flex.
	W -26891	Insulating Washer	24	W -21452	Resistor 1,100 Ohm ½ W. Flex.
	W -21541C	Retaining Ring	25A	G55-27975	Socket 1A6
	W -25200A	Coil Socket		W -33072	Socket Cushion
5A	W -28621	Condenser 0.02 Mfd. 200 V.	25B	G55-33070	Socket 1A6
5B	W -28621	Condenser 0.02 Mfd. 200 V.	26	G31-27975	Socket 34
5C	W -28621	Condenser 0.02 Mfd. 200 V.	27	G36-27975	Socket 33
5D	W -28621	Condenser 0.02 Mfd. 200 V.	28	-21M	Speaker
6	W -29910A	Condenser 0.25 Mfd. 200 V.	29	W 33922A	Volume Control
7	W -28619	Condenser 0.006 Mfd. 200 V.	30		On-Off Switch
8	W -5382	Condenser 0.00025 Mfd.	31	G5 -33005	Condenser 1st I-F Trimmer
9	W -30321A	Condenser 1.0 Mfd. 160 V.		D -33938	Cabinet
10A	W -28622	Condenser 0.1 Mfd. 200 V.		W -31140	Escutcheon (V. C.)
10B	W -28622	Condenser 0.1 Mfd. 200 V.		W -34050	Escutcheon (Dial)
11A	W -25572	Condenser 0.0005 Mfd. 400 V.		W -28760B	Escutcheon Pin (6)
11B	W -25572	Condenser 0.0005 Mfd. 400 V.		W -33939	Knob (2)
12Z	G6 -33001	2 Section Tuning Condenser Gang			
12Y					

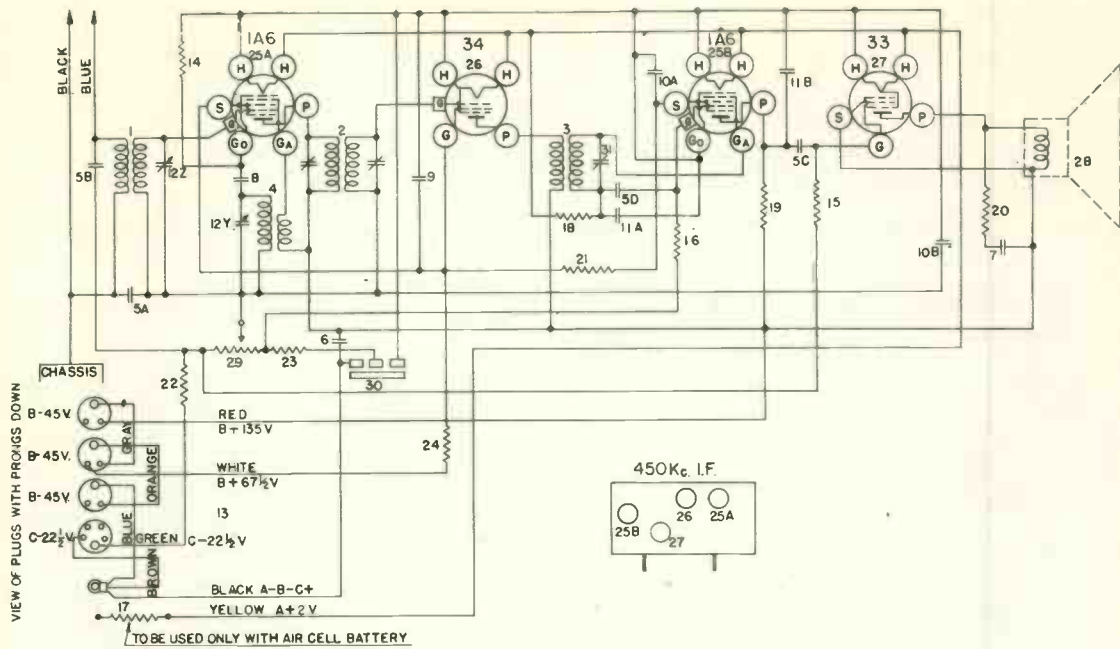


FIG. 1—WIRING DIAGRAM—MODEL 415

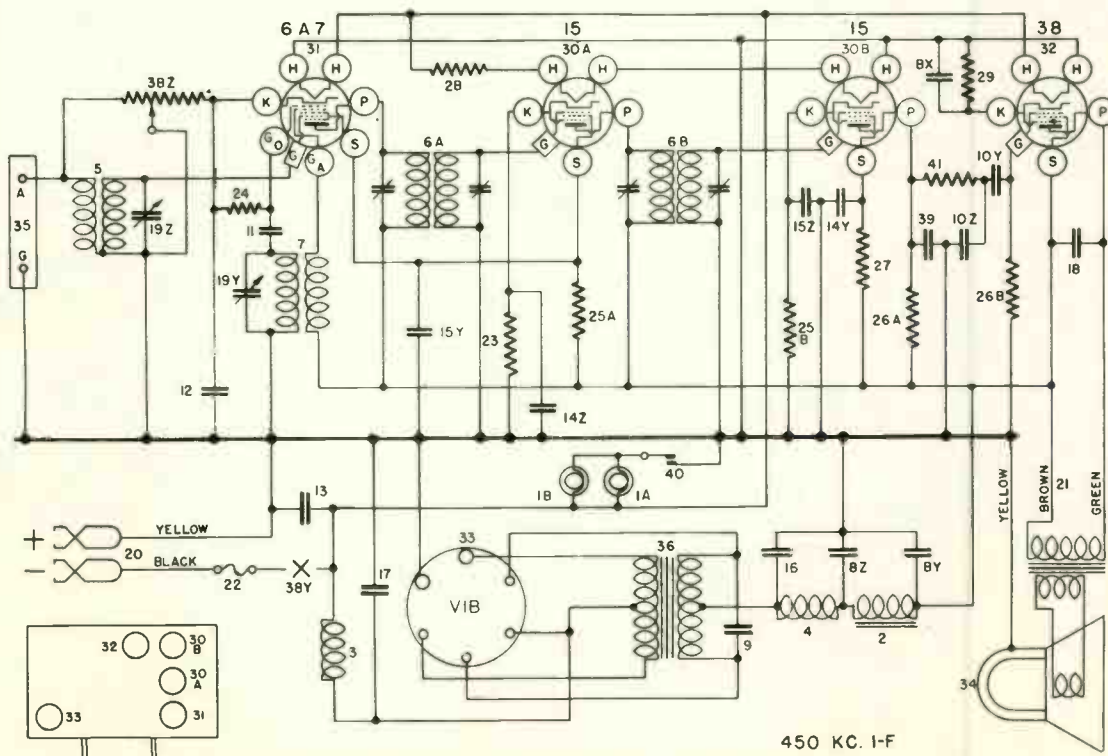


FIG. 1—WIRING DIAGRAM—MODEL 416

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd. I-F Transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st. I-F Transformer for maximum output.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer on the "ANT" section of the condenser gang for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	S	G	S	G	K	Ga	Go
6A7	Osc.-Mod.	6.3	185	70	0	2.5	185	-10 to -20
15	I-F Amplifier	2.1	185	70	0	2.5	---	---
15	Detector	2.1	20	4	0	4.5	---	---
38	Output	6.3	170	185	0	11.0	---	---

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W -37922	Bulb Dial Light	23	W -22514	Resistor 750 Ohm. 1/2W. I-F Cathode
	G3 -37965	Socket Assembly Dial Light	24	-21453	Resistor 40,000 Ohm. 1/4W. Osc. Grid Leak
2	G10 -29535	Choke 2.4H. Hum Filter	25A	-21237A	Resistor 60,000 Ohm. 1/4W. Screen Series
3	G13 -28067	Choke Vib. "A" Filter	25B	-21237A	Resistor 60,000 Ohm. Det. Cathode Bypass
4	G1 -24234	Choke R-F Filter	26A	-35602	Resistor 1 Megohm 1/4W. Det. Plate
5	G55 -32000	Coil 540-1725 Kc. Antenna	26B	-35602	Resistor 1 Megohm 1/4W. Output Grid
6A	G119 -32004	Coil 450 Kc. 1st I-F Assembly	27	-33490	Resistor 10 Megohm 1/4W. Det. Screen
6B	G119 -32004	Coil 450 Kc. 2nd I-F Assembly	28	W -41786	Resistor 9 Ohm. Filament Series
7	G9 -32002	Coil 540-1725 Kc. Oscillator	29	W -21452	Resistor 1100 Ohm. 3/4W. Output Cathode
8Z		Cond. 12 MF. 250V. Filter Bypass	30A	G88 -28807	Type 15 I-F Amp.
8Y	W -34896	Cond. 8 MF. 250V. Plate Bypass	30B	G88 -28807	Type 15 A-F Amp.
8X		Cond. 8 MF. 25V. Output Bias Bypass	31	G47 -28807	Type 6A7 Osc.-Mod.
9	W -37214	Cond. .001 MF. 1000V. Synchronizing	32	G15 -28807	Type 38 Output
10Z	W -30322A	Cond. .00017 MF. Det. Plate Bypass	33	G92 -28807	Type V1B Full Wave Vibrator
10Y		Cond. .006 MF. A-F Coupling	W	-35772	Tube Shield (Half) (6)
11	G1 -34002	Cond. .00025 MF. Osc. Grid Coupling	W	-35774	Tube Shield Base
12	W -28621	Cond. .02 MF. 200V. Osc.-Mod. Cathode Bypass	W	-35773	Tube Shield Cap
13	W -37190	Cond. .02 MF. 160V. Filament Bypass (Metal Clad H-F)	34	-41316	Speaker Type 33PJ3, "A"
14Z	W -28623	Cond. .02MF. 200V. I-F Cathode Bypass		-41434	Cone Assembly Used on 41316
14Y		Cond. .02MF. 200V. Det. Screen Bypass		-41458	Mtg. Ring Used on 41316
15Z	W -28622	Cond. .1MF. 200V. Det. Cath. Bypass		-41454	Output Trans. Used on 41316
15Y		Cond. .1MF. 200V. Common Scr. Bypass	35	G26 -26719	Terminal Board Assy. Ant. & Gnd.
16	W -37173	Cond. .25 MF. 300V. V1B. "B" Bypass (Metal Clad H-F Type)	36	G5 -31618	Transformer Power
17	W -37174	Cond. .5MF. 160V. V1B. "A" Bypass (Metal Clad H-F Type)	37	W -37216	Vibrator
18	W -34647	Cond. .006MF. 400V. Output Plate to Screen	W	-37195	Vibrator Shield
19Z		Cond. Var. Tuning Antenna Section	W	-37217	Vibrator Side Packing
19Y	G25 -33001	Cond. Var. Tuning Osc. Section	W	-37218	Vibrator Top Packing
	C -41755	Glass Dial—Calibrated	W	-26973B	Shield Base
	W -41739	Dial Drive Unit	38Z		Volume Control 4800 Ohm.
	W -41751	Dial Support Brkt. (R. H.)	38Y	-41754	Battery Switch
	W -41752	Dial Support Brkt. (L. H.)	39	G2 -34002	Cond. .0001 MF. Det. Plate Bypass
	W -41753	Dial Mtg. Brkt. (R. H.)	40	W -41068A	Switch Momentary Dial Light
	W -40797	Dial Mtg. Brkt. (L. H.)	41	-35600	Resistor 100,000 Ohm. 1/4W. I-F Filter
	W -40795B	Hand Shaft			
	W -40907	Shaft Bearing Brkt.			
	W -40909	Spring Washer (Shaft)			
	W -41611	Shaft Retaining Ring			
	B -40818C	Pointer Disc			
	W -40486	Disc. Mtg. Screw			
	W -41578	Gear Spring			
20	MG25 -37103	Cable (Assembly) Battery Supply	B	-37172A	Cover V1B. Compartment
21	G6 -35696	Cable 3 Lead Speaker	B	-41886	Escutcheon
22	W -7983A	Fuse 3 Amp. "A" Supply	D	-28	Escutcheon Mtg. Screw
	G2 -33339	Panel (Assembly) Fuse	W	-40840A	Crosley Shield
			W	-41221	Knob (Upper) Volume Control
			W	-41222	Knob (Lower) Dial Light Switch
			W	-41605	Knob Station Selector

**Misc. Parts**



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K
25A6G	Oscillator and Det.	25	—	—	0
6J7G	Audio Driver	5.8	7	5	1.3
25A7G	Rectifier	25	105	—	—
	Modulator		90	95	11
	Output		90	95	11
W43357	Ballast				

Rc—R 48 Volts, Tl—R 43 Volts

ALIGNMENT PROCEDURE

(a) Feed a 100 cycle modulated signal into the receiver and tune the receiver to this signal.

(b) Place one of the good Chattaboxes in front of the speaker of the radio. Turn the Chattabox "ON" and lock the switch in the "TALK" position.

(c) Place the unit to be aligned in an adjacent room and connect to the same electric circuit as the good unit in the other room is connected.

(d) The second good unit should be set up in the same room as the unit to be aligned. Its switch should remain in the "LISTEN" position.

(e) Connect the output meter from the plate of the 25A7G tube to chassis of the unit being aligned. A .1 mfd., or larger, condenser should be connected in series with one of the leads.

(f) Turn the unit "ON" and with the switch in the "LISTEN" position, adjust all three trimmers on the triple-tuned transformer for maximum reading on the output meter.

(g) Lock the switch in the "TALK" position. The signal produced in the good unit will be the beat note produced by the interaction of the unit being aligned and the good unit in the other room. CAUTION: The volume level of the good unit receiving the beat note should be kept low enough to prevent a microphonic howl.

(h) Adjust the top trimmer on the triple-tuned transformer until the note in the good unit is reduced almost to zero beat.

(i) Throw the switch lever back and forth several times between the "LISTEN" and "TALK" positions, listening each time to the tone of the beat note. If the note changes in pitch or disappears altogether, readjust the top trimmer. Repeat this operation until the note is stable and as close as possible to zero beat.

Item No.	Part No.	Description	Item No.	Part No.	Description
		Figures in first column refer to parts in Diagrams.			
1	W —44337	Bulb—Dial Light	22	—36322	Resistor, 500,000 Ohm 1/4 W. Ins.
2	G151—32002	Osc. and Coupling Coil Assy.	23A	—35602	Resistor, 1. Megohm 1/4 W. Ins.
3A	G1 —32007	R-F. Filter Choke	23B	—35602	Resistor, 1. Megohm 1/4 W. Ins.
3B	G1 —32007	R-F. Filter Choke	24	269BL6"U"	Speaker—Succ. No. 5-B-103
4	G2 —32007	R-F. Filter Choke		—45172	V. C. and Cone Assy.
5	G18 —29535	Audio Choke		—45292	Output Transformer
6	G17 —29535	Rectifier Filter Choke	25	G161—36400	Socket, Type 25A6
7A	W —43280	Condenser, 25 Mf. 150 V.	26	G157—36400	Socket, Type 6J7
7B	W —43280	Condenser, 25 Mf. 150 V.	27	G181—36400	Socket, Type 25A7
8A	W —44434	Condenser, 50 Mf. 25 V.	28	G170—36400	Socket Ballast—W-43357
8B	W —44434	Condenser, 50 Mf. 25 V.	29	B —44333	Switch—Listen, Talk and Signal
9		None	30	G40 —26719	Direct Line Term. Board
10A	G3 —34002	Condenser, .0005 Mf. 200 V.	31		None
10B	G3 —34002	Condenser, .0005 Mf. 200 V.	32	—44612	Vol. Cont. (5,000-Ohm) and Line Switch
11A	W —30270	Condenser, .001 Mf. 400 V.			
11B	W —30270	Condenser, .001 Mf. 400 V.	33	W —28619	Condenser, .006 Mf. 200 V.
11C	W —30270	Condenser, .001 Mf. 400 V.	34	—35927	Resistor, 2 Megohm 1/4 W. Ins.
12A	W —23191A	Condenser, .01 Mf. 400 V.	35	—38623	Resistor, 750,000 Ohm 1/4 W. Ins.
12B	W —23191A	Condenser, .01 Mf. 400 V.	36	W —45418	Resistor, 50 Ohm 6W. Flex.
13	W —27216	Condenser, .05 Mf. 200 V.		7DF	Cabinet
14A	W —23615	Condenser, .05 Mf. 400 V.	W	—43320	Knob (Vol. Cont.)
14B	W —23615	Condenser, .05 Mf. 400 V.	W	—44616B	Switch Lever
15A	W —24019C	Condenser, .1 Mf. 200 V.	W	—44617A	Switch Lock
15B	W —24019C	Condenser, .1 Mf. 200 V.	W	—29023	Bezel (Jewel)
15C	W —24019C	Condenser, .1 Mf. 200 V.	W	—28723B	Jewel
16A	W —22688	Condenser, .1 Mf. 400 V.	W	—44460	Cabinet Back
16B	W —22688	Condenser, .1 Mf. 400 V.	W	—23012	Resistor (40 Ohm) Direct Line
17	B —33906B	Power Cord and Plug			
18	W —29585	Resistor, 600 Ohm 1/2 W. Flex.			
19	—35934	Resistor, 6,500 Ohm 1/4 W. Ins.			
20	—36760	Resistor, 20,000 Ohm 1/4 W. Ins.			
21A	—35601	Resistor, 300,000 Ohm 1/4 W. Ins.			
21B	—35601	Resistor, 300,000 Ohm 1/4 W. Ins.			

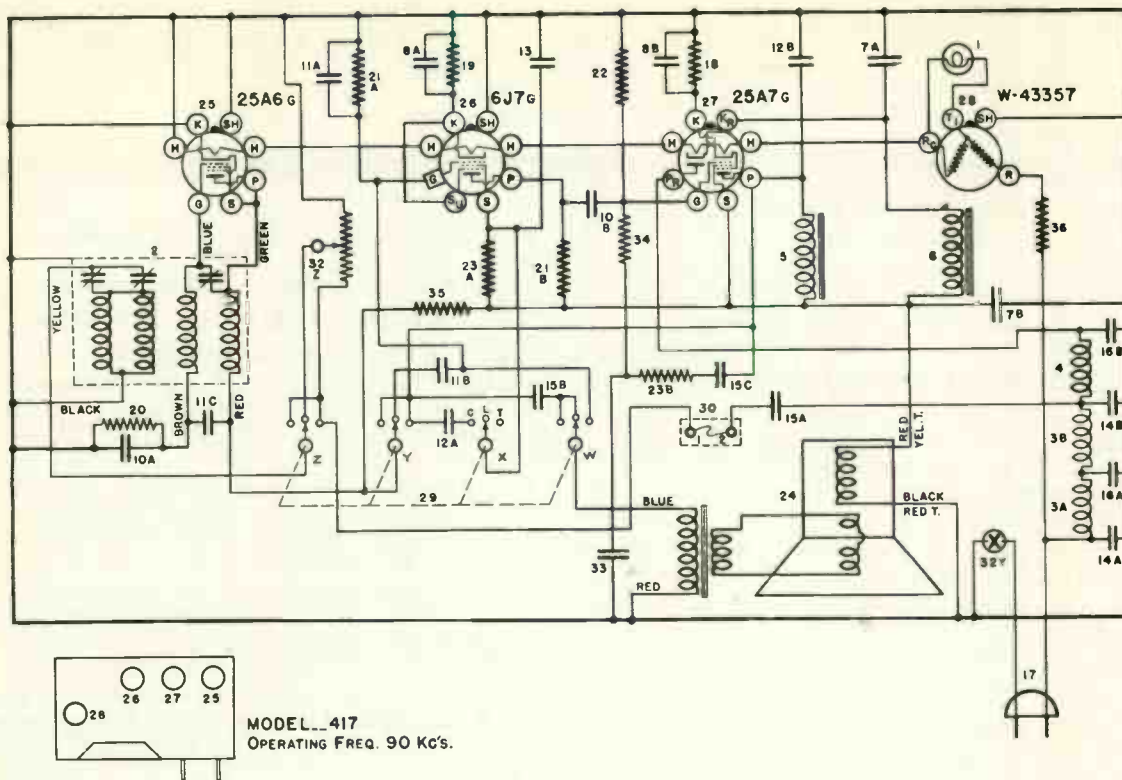


FIG. 1—WIRING DIAGRAM—MODEL 417

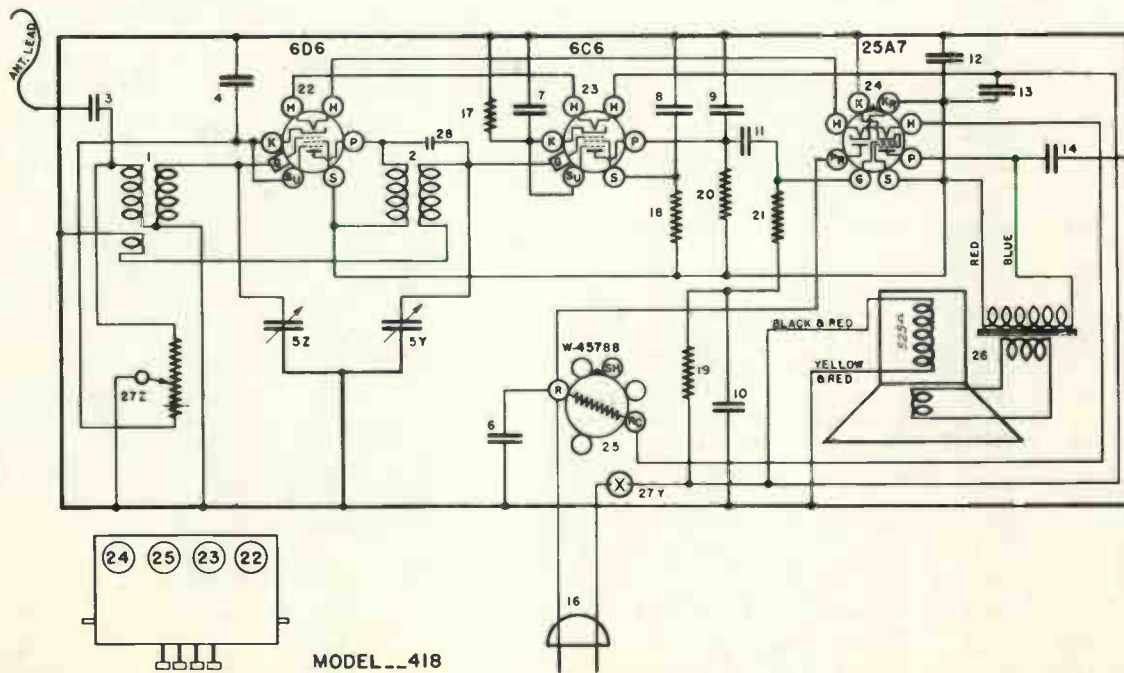


FIG. 1—WIRING DIAGRAM—MODEL 418

## MODEL 418 (VANITY)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R. F. Amplifier	6.3	103	104	2.5-25	2.5-25	—
6C6	Detector	6.3	24	8	10	10	—
25A7-G	Output	25	95	104	—	—	-10
	Rectifier	25	—	—	124	—	—
W-45788	Ballast	80 A. C.	—	—	—	—	—

### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A7G output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd., or larger—not electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected through the speaker field to one side of the power line and should be isolated in order that the power supply will not be short-circuited while the receiver is being aligned.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the set and the other lead through a .001 mf. condenser to the chassis (if your signal generator is A.C. operated).

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kc.

(d) Adjust the trimmers on the gang until the 1725 Kc. signal is heard. Gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

(f) Tune set to 1400 signal, then alternately adjust trimmers on gang until no further improvement can be noted.

**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the out-

put meter.

Keep the two grid leads as far as possible from each other.

Check Push Buttons to see if they need resetting.

### SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. Insert a small screw driver in the hole in the front of each push button to be set and loosen (DO NOT REMOVE) the set screw at the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency (kilocycles), that is the one nearest the 150 marking on the knob. Completely depress and hold the right hand push button in that position, while you SECURELY TIGHTEN THE SET SCREW.

The push button system is now set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles).

Cut the call letters of the stations selected, from the list supplied with your receiver and press them into the openings in the front of the push buttons. Four pieces of clear celluloid are supplied in a small envelope and should be snapped into place over the call letters to protect and hold them in place.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G173-32000	Antenna Coil			
2	G102-32001	Oscillator Coil			
3	W -45780B	Condenser, .02 Mf. 160 Volt	27Z	W -46045	Output Transformer
4	W -45780B	Condenser, .02 Mf. 160 Volt		W -45900A	Speaker Mtg. Brkt.
5Z				-45786	Volume Control (40,000 Ohm)
	G53 -33001	2 Section Gang Condenser	27Y		
5Y				W -45789A	Line Switch
6	W -45782B	Condenser, .05 Mf. 400 Volt	28	G3 -50640	V. C. Mtg. Brkt.
7	W -45781B	Condenser, .25 Mf. 160 Volt		G6 -45683	Condenser, 7-10 Mmf.
8	W -45780B	Condenser, .02 Mf. 160 Volt		G27 -45683	Push Button Unit
9	G2 -34002	Condenser, .0001 Mf. Molded		G26 -45683	Rocker Plate Assy.
10	W -45781B	Condenser, .25 Mf. 160 Volt		W -50542C	Key Assy.
11	W -45780B	Condenser, .02 Mf. 160 Volt		W -45717	Key Clip (Lock Clamp)
12	W -45783	Condenser, 16 Mf. 150 Volt		W -50607B	Adjusting Screw
13	W -45783	Condenser, 16 Mf. 150 Volt		W -50561	Spring (Key Return)
14	W -45780B	Condenser, .02 Mf. 160 Volt		W -50547	Bearing Screw (Rocker Plate)
15	None			W -50547	Key Plate (Rear Guide)
16	B -45784	Power Cord & Plug		W -45788	Ballast Tube
	W -45902	Clamp—Power Cord		W -46259	Cabinet Assy. 8BB (Brown)
17	-24990	Resistor, 25,000 Ohm 1/3 W.		W -45828B	Back Cabinet 8BB (Brown)
18	-37583	Resistor, 2.5 Megohm 1/3 W.		W -45930C	Rubber Foot (Bottom)
19	-34018	Resistor, 200,000 Ohm 1/3 W.		W -45931	Rubber Foot (Screw Type)
20	-23785	Resistor, 500,000 Ohm 1/3 W.			(Back)
21	-21455	Resistor, 300,000 Ohm 1/3 W.		W -45852	Baffle Board
22	G21 -28807	Socket, 6 Prong		W -45853	Grille Cloth
23	G21 -28807	Socket, 6 Prong		-45553B	Push Button (Brown)
24	G178-36400	Socket, 8 Prong (Octal)		-45822	Dial Knob (Brown)
25	G178-36400	Socket, 8 Prong (Octal)		-45825A	Vol. Cont. Knob (Brown)
	W -34175	Tube Shield Half (Slotted)		-50549	Station Call Letter List
	W -34174	Tube Shield Half		W -50551A	Celluloid Protector (Cover)
	W -31210	Ring—Tube Shield			
26	282-BL-4	Speaker Mfg. Spec. No. 5-B-129			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	G	Pt	Gt
78	Osc.-Mod.	6.5	105	105	17	20	—	—
6F7	I-F Amp. & Det.	6.5	105	105	0	3	35	0
43	Output	28.0	195	105	-20	0	—	—
25Z5	Rectifier	26.5	117.5	—	—	—	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 78 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE 6F7 TUBE.

(b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condenser for the 2nd I-F transformer for maximum output.

(e) Adjust both trimmer condensers for the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.

(d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, located on the station selector condenser, for maximum output.

(e) Adjust the "ANT" trimmer, located on the station selector condenser, for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784-3	Antenna Roll	16Z	G11—33006	2 Section 1st I. F. Trimmer
2	G2 —27812	Dial Light Socket Assem.	16Y		
3	G1 —28859	Choke Assembly (filter)	17	G5 —33005	1 Section 2nd I. F. Trimmer
4	G75—32000	Antenna Coil	18Z	G16—33001	2 Section Tuning Condenser Gang
5	G3 —32004	First I. F. Coil Only	18Y		
	W —25024B	Coil Shield	19	W —36786A	Gang Insulator Cover
	W —25200	Coil Socket	20	B —35350	Power Cord and Plug
	W —26891	Insulating Washer	21	—31093	Resistor 2700 Ohm ¼ W.
	W —21541	Retaining Ring	22	—24990	Resistor 25,000 Ohm ¼ W.
6	G11—32004	Second I. F. Coil Only	23A	—21455	Resistor 300,000 Ohm ¼ W.
	W —25025B	Coil Shield	23B	—23785	Resistor 500,000 Ohm ¼ W.
	W —25200	Coil Socket	24	W —23785	Resistor 500,000 Ohm ¼ W.
	W —26891	Insulating Washer	25	W —28589	Resistor 350 Ohm ½ W Flex.
	W —21541	Retaining Ring	26	W —30539	Resistor 26.7 Ohm 3. W Flex.
7	G6 —32002	Oscillating Coil Only	27	G30—28807	Socket 43
	W —25025B	Coil Shield	28	G39—28807	Socket 78
	W —25200	Coil Socket	29	G51—28807	Socket 25Z5
	W —26891	Insulating Washer	30	G49—28807	Socket 6F7
	W —21541	Retaining Ring	31Z	—214BL9	Speaker
8Z	W —29804A	Condenser 16 Mfd. 125 V.	31Y	—36793	Volume Control
8Y		Condenser 8 Mfd. 125 V.			On-Off Switch
8X	W —30322A	Condenser 25 Mfd. 100 V.	D —36919A		Cabinet -5H
9Z		Condenser 0.00017 Mfd. 200 V.	W —36920A		Dial Plate
9Y	W —30325	Condenser 0.005 Mfd. 200V.	W —36921A		V. C. Plate
10		Condenser 0.003 Mfd. 200 V.	W —28760		Plate Pins (6)
11Z	W —29265	Condenser 0.008 Mfd. 200 V.	W —36922		Pointer (2)
11Y		Condenser 0.05 Mfd. 200 V.	W —35252A		Knob (2)
12	W —30488	Condenser 0.02 Mfd. 400 V.	W —28723A		Bulls Eye
13	W —28621	Condenser 0.02 Mfd. 200V.	W —29023		Bulls Eye Bezel
14Z	W —28623	Condenser 0.02 Mfd. 200V.	W —33924		Chassis Foot (2) Spreader
14Y		Condenser 0.02 Mfd. 200V.	B —36806C		Mounting Plate (Back)
15	W —29910A	Condenser 0.25 Mfd. 200 V.			



## MODEL 428 VANITY DE LUXE

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6C6	Detector	6.3	20	10	7	—	—
25L6-G	Output	25	85	98	6	—	—
25Z6-G	Rectifier	25	—	—	126	—	—

### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver (after the antenna has been completely unrolled. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

If the receiver has been re-aligned it may be necessary to readjust the setting of the push buttons.

### SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. Insert a small screw driver in the hole in the front of each push button to be set and loosen (DO NOT REMOVE) the set screw at the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency (kilocycles), that is the one nearest the 150 marking on the knob. Completely depress and hold the right hand push button in that position, while you **SECURELY TIGHTEN THE SET SCREW.**

The push button system is now set for the first station. Follow through with this same procedure, setting the other stations in the order of their frequency (kilocycles).

Cut the call letters of the stations selected, from the list supplied with your receiver and press them into the openings in the front of the push buttons. Four pieces of clear celluloid are supplied in a small envelope and should be snapped into place over the call letters to protect and hold them in place.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —45577	Antenna Roll	27	G3 —50640	Condenser Assembly
2	G180—32000	Antenna Coil	28	W —44337	Dial Light, 6-8 Volt
3	G104—32001	R. F. Coil		W —40570	Dial Light Shield
4	W —45780B	{ Condenser, .02 Mf. 160 V.		G6 —27134	Dial Light Socket
5		{ Condenser, .02 Mf. 160 V.	29	W —44396	Resistor, 40 Ohms 3½W. Flex.
6Z 6Y	G53 —33001	2 Section Gang Condenser			<b>PUSH BUTTON PARTS</b>
7	W —45782B	Condenser, .05 Mf. 400 V.	G6 —45683	Push Button Unit Assembly	
8	W —45781B	Condenser, .25 Mf. 160 V.	G26 —45683	Key and Toggle Assembly	
9	W —45780B	Condenser, .02 Mf. 160 V.	W —50542C	Key Clip (Lock Clamp)	
10	G2 —34002	Condenser, .0001 Molded		—45717	Adjusting Screw
11	W —45780B	Condenser, .02 Mf. 160 V.	G27 —45683	Rocker Plate Assembly	
12	W —45783	Condenser, 16 Mf. 150 V. Elect.	W —50561	½"—No. 6 x 40 Screw (Rocker Plate Bearing)	
13	W —45783	Condenser, 16 Mf. 150 V. Elect.		W —50547	Key Plate (Rear Guide)
14	W —45817A	Condenser, .05 Mf. 160 V.	W —50607B	Spring (Push Button Slide)	
15	B —46114	Power Cord (165 Ohm 15W Lead)		—45832	Push Button
	W —45902	Cord Clamp		—45830	Dial Knob
16	—24990	Resistor, 25,000 Ohms ½W.		—45831A	Knob, V. C.
17	—37583	Resistor, 2.5 Meg Ohms ½W.		—50549	Call Letter Sheet
18	—23785	Resistor, 500,000 Ohms ½W.		W —50551A	Celluloid Cover
19	—23785	Resistor, 500,000 Ohms ½W.		W —46260	Cabinet Assy. Complete
20	W —45965	Resistor, 110 Ohms ½W. Flex.		—45814C	Cabinet
21	G21 —28807	6 Prong Socket		—45829B	Cabinet Back
22	G21 —28807	6 Prong Socket		W —45853	Grille Cloth
23	G178—36400	8 Prong Socket		W —45930C	Rubber Mounting Foot
24	G178—36400	8 Prong Socket		W —45931	Mounting Screw and Foot
	W —34175	Tube Shield Half (Slotted)		W —45852	Baffle Board
	W —34174	Tube Shield Half (Plain)		—46260	Cabinet Assembly
	W —31210	Tube Shield Ring			
25	281-BL-5-U	Speaker Spec. 5-B-130			
	W —45900A	Speaker Mtg. Bracket			
26Z 26Y	—45786	{ Volume Control, 40,000 Ohms			
		{ On-Off Switch			
	W —45789A	V. C. Mtg. Bracket			

MODEL 429—PORTABLE (Battery)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1A7-G	Oscillator-Modulator	1.5	82	48	0	82	—
1N5-G	1-F Amplifier	1.5	82	82	0	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	17	—	0	—	—
1C5-G	Output	1.5	78	82	6*	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1C5G output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers for maximum

reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1600 kilocycles

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description.
1	G1 —47697	Antenna Loop	22	—21454	Resistor, 1 Megohm $\frac{1}{3}$ W. Carb.
2	C —47061B	Battery Cable	23	392-PL-8-"B"	Speaker, Spec. 503-PRW-1
3	G196—32002	Oscillator Coil		—48335	V. C. and Cone Assembly
4	G194—32004	1st I. F. Transformer Assembly		—48336	Output Transformer
5	G195—32004	2nd I. F. Transformer Assembly		—47286	Cardboard Ring
	W —45513	No. 6—32 Pal Nut (I. F. Transformer Fastening)	24	G1 —26719	Terminal Board "A" "G"
6A } 6B }	G75 —33001	Condenser, Var. Tuning (Ant. Section / Osc. Section)	25	—47667	Volume Control, 1 Megohm
	D —47692A	Dial Face		G178—36400	"A" Supply Switch
	W —47679A	Dial Support Bracket		—9DA	"B" Supply Switch
	W —47816	Dial Pointer		W —47683B	8 Prong Socket, No Marking
	W —47677	Drive Shaft		W —47682A	Cabinet
	W —47678	Drive Shaft Bracket		—47846A	Speaker Screen
	W —43549	Retaining Ring (Drive Shaft)		—47847	Dial Lens
	—6876	No. 6—32 x $\frac{1}{4}$ " W. Hd. Screw (Drive Shaft Bracket)		W —47848A	Knob (With Notch)
	G19 —41982	Drive Cord (17" Long)		G1 —26719	Knob
	W —46290	Drive Cord Clamp		—43885	Knob Escutcheon (2 Req.)
	W —44989	Drive Spring		W —30409	Antenna Connection Terminal
7	G2 —34002	Condenser, .0001 Mf. Molded		G64 —35954	No. 8 x $\frac{5}{8}$ " P. K. Screw (Chassis Fastening)
8	W —28621	Condenser, .02 Mf. 200 V. Paper		W —47696	Flat Washer (Chassis Fastening)
9	W —28621	Condenser, .02 Mf. 200 V. Paper		—7668	Antenna Junction Block
10	W —46128	Condenser, 16 Mf. 250 V. Elect.			Battery Support Rail
11	G2 —34002	Condenser, .0001 Mf. Molded			No. 8 x $\frac{3}{4}$ " Rd. Hd. Wood Screws (Support Rail)
12	W —30323	Condenser, .01 Mf. 200 V. Paper		—47694	Instructions
13	W —30323	Condenser, .02 Mf. 200 V. Paper		—23840	No. 6 x $\frac{5}{8}$ " Rd. Hd. Wood Screw
14	G1 —34002	Condenser, .00025 Mf. Molded		—47689	Carton
15	W —28619	Condenser, .006 Mf. 200 V. Paper		W —32807	No. 8 x $\frac{1}{2}$ " Rd. Hd. Wood Screw (Antenna Frame)
16	—34018	Resistor, 200,000 Ohms $\frac{1}{3}$ W. Carb.			
17	—21453	Resistor, 400,000 Ohms $\frac{1}{3}$ W. Carb.			
18	W —22514	Resistor, 750 Ohms $\frac{1}{2}$ W. Flex.			
19	—21455	Resistor, 300,000 Ohms $\frac{1}{3}$ W. Carb.			
20	—21875	Resistor, 100,000 Ohms $\frac{1}{3}$ W. Carb.			
21	—21454	Resistor, 1 Megohm $\frac{1}{3}$ W. Carb.			

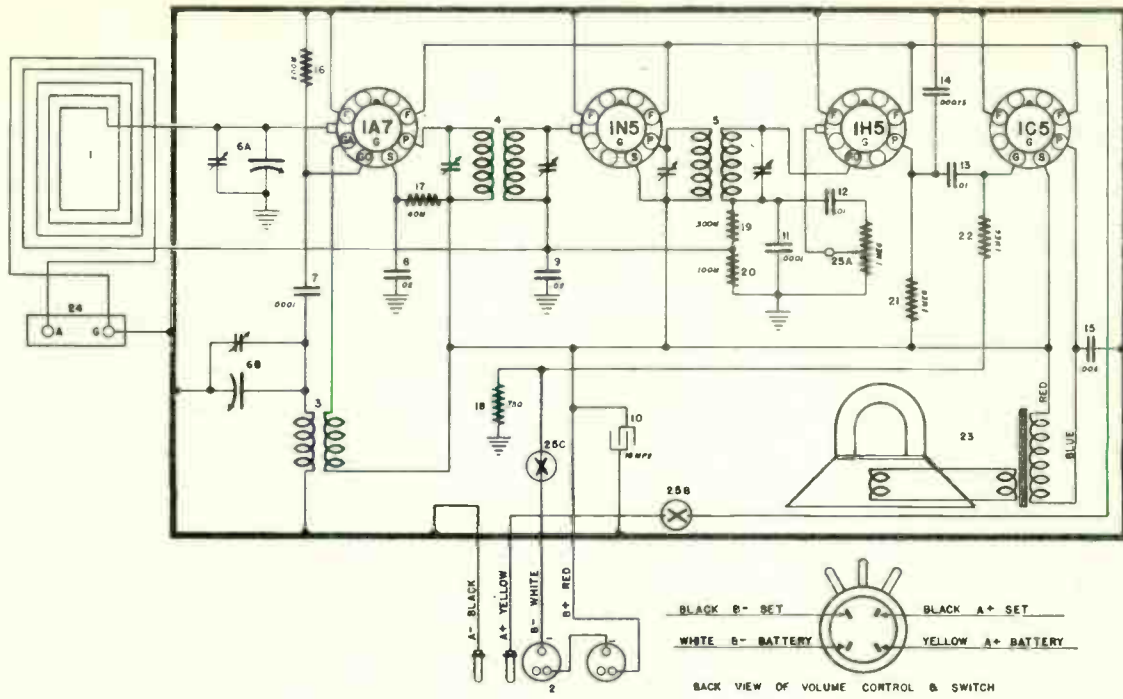


FIG. 1—WIRING DIAGRAM—MODEL 429

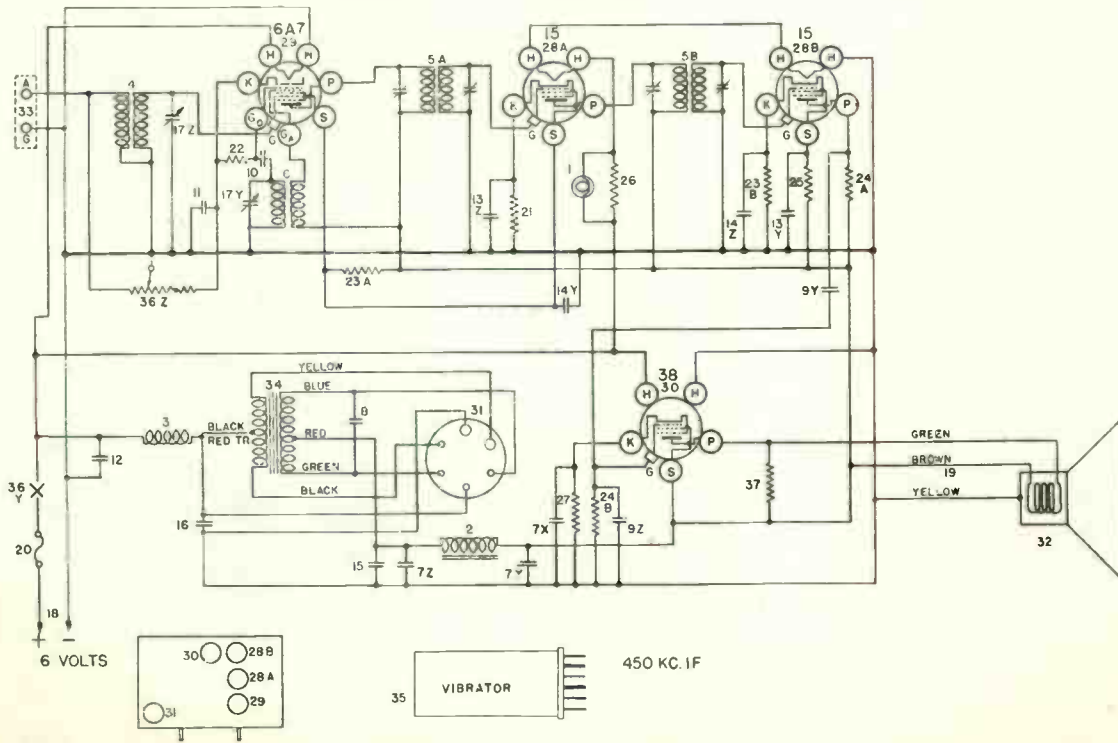


FIG. 1—WIRING DIAGRAM—MODEL 435



TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	S	G	S	G	K	Ga	Go
6A7	Osc.-Mod.	6.3	185	70	0	2.5	185	-10 to -20
15	I-F Amplifier	2.1	185	70	0	2.5	—	—
15	Detector	2.1	20	4	0	4.5	—	—
38	Output	6.3	170	185	0	11.0	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "Gnd" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the plates of

the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd. I-F Transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st. I-F Transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer on the "ANT" section of the condenser gang for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G6 —27134	Dial Light Brkt. Assm.	19	W —35111	Speaker Cable
2	G10—29535	Filter Choke 2.4 H.	20	G2 —33339	Fuse Panel
3	G13—28067	"A" Filter Choke	21	W —22514	Resistor 750 Ohm ½ W., Flex
4	G55—32000	Ant. Coil (only)	22	—21453	Resistor 40,000 Ohm ¼ W.
	W —30802A	Coil Shield	23A	—21237A	Resistor 60,000 Ohm ¼ W.
	W —30026A	Retaining Ring	23B	—21237A	Resistor 60,000 Ohm ¼ W.
5A	G70—32004	1st I. F. Coil Assm.	23C	—21237A	Resistor 60,000 Ohm ¼ W.
5B	G70—32004	2nd I. F. Coil Assm.	24A	—35602	Resistor 1.0 Megohm ¼ W.
6	G9 —32002	Osc. Coil (only)	24B	—35602	Resistor 1.0 Megohm ¼ W.
	W —25025B	Coil Shield	25	—33490	Resistor 10.0 Megohm ¼ W.
	W —26891	Insulating Washer	26	W —37189	Resistor 12.75 Ohm ½ W., Flex.
	W —21541C	Retaining Ring	27	W —21452	Resistor 1100. Ohm ¾ W., Flex.
	W —25200	Coil Socket	28A	G88—28807	Socket 15
7Z		Condenser 12.0 Mfd. 250 V.	28B	G88—28807	Socket 15
7Y	W —34896	Condenser 8.0 Mfd. 250 V.	29	G47—28807	Socket 6A7
8		Condenser 8.0 Mfd. 25 V.	30	G15—28807	Socket 38
8X	W —37214	Condenser 0.001 Mfd. 1,000 V.	31	G92—28807	Socket Vib.
9Z	W —30322A	Condenser 0.00017 Mfd. 200 V.		W —35772	Tube Shield (Half) (6)
9Y		Condenser 0.006 Mfd. 200 V.		W —35773	Tube Shield Cap (3)
10	G1 —34002	Condenser 0.00025 Mfd. (Mica)		W —35774	Shield Base (3)
11	W —28621	Condenser 0.02 Mfd. 200 V.	32	33—MS—3U	Speaker
12	W —37190	Condenser 0.02 Mfd. 160 V.	33	G1 —26719	Terminal Board Ant. & Grd.
13Z	W —28623	Condenser 0.02 Mfd. 200 V.	34	G4 —31618	Power Transformer
13Y		Condenser 0.02 Mfd. 200 V.	35	W —37216	Vibrator
14Z	W —28622	Condenser 0.1 Mfd. 200 V.		W —37195	Vibrator Shield
14Y		Condenser 0.1 Mfd. 200 V.		W —37217	Vibrator Side Packing
15	W —37173	Condenser 0.25 Mfd. 300 V.		W —37218	Vibrator Top Packing
16	W —37174	Condenser 0.5 Mfd. 160 V.		W —26973B	Shield Base
17Z	G14—33001	2 Section Tuning Cond. Gang.	36Z		Volume Control
17Y			36Y	—37187	On-Off Switch
	—36147B	Dial Drive Unit Assm.	37	—21453	Resistor 40,000 Ohm ¼ W.
MG16	—35757	Drive Mounting Brkt.	38	—35600	Resistor 100,000 Ohm ¼ W.
	W —36150A	Dial Face only	39	G2 —34002	Condenser 0.0001 Mfd.
	—37158	Dial Glass	40	G1 —24234	R. F. Choke
	—37156	Pointer		B —37172A	Synchrone Cover
	—37157	Pointer Screw		B —35917	Escutcheon
13	B —34902	Battery Cable		D —28	Escutcheon Screws (3)
	—34903	Battery Clip +		W —31585B	Knob (2)
	—34904	Battery Clip —		W —7983A	Fuse, 3 Amp.

**MODEL 438-M**  
**Chassis 438 — Phono Assy. 486**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Su	
6U7G	Amplifier	6.7	175	100	—	-3	—	
6Q7G	Det., A. V. C., 1st. A-F	6.7	78	—	-3	-1.5	—	
6V6G	Output	6.7	172	178	—	-10.	—	
5Y3G	Rectifier	4.1	negative end of spk. field to No. 8 pin 225 volts					—

Voltage drop across speaker field 40 volts.  
 Maximum power output approximately 3. Watts  
 Power consumption at 117.5 line approx. 36 watts    Phono—15 watts additional.

**ALIGNMENT PROCEDURE**

The signal generator high side should be connected to the antenna through a .0001 Mf. condenser, after the antenna has been completely uncoiled. The low side of the signal generator is connected to chassis.

- (a) First check to see that the pointer makes a complete trip both ways.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Set the pointer of receiver to 140 on the dial.

(d) Adjust trimmer condensers on the gang for maximum output.

(e) Check to see that set will tune to 1725 kilocycles, it does not have to tune through a peak at this frequency.

Any large discrepancy in tracking may be compensated for by slight adjustments of the split end plates of the condenser gang.

Check Push Buttons to see if they need resetting.

**PARTS LIST — MODEL 438**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —46237A	Antenna Roll (40 Ft.)	30	G178 —36400	Socket 8 Prong Octal
2	W —37922	Dial Light, 6-8 Volt	31	G178 —36400	Socket 8 Prong Octal
	G12 —45398	Dial Light Socket Assy.	32	G103 —28807	Socket 5 Prong (Speaker)
3	G177 —32600	Antenna Coil	33	380BP12"B"	Speaker Spec. No. 55WA30
4	G103 —32001	R-F Coil		—46693	Field Coil 700 Ohms
5	W —45780B	Condenser, .02 Mf., 160 V.		—46694	Output Transformer
6	G58 —33001	2 Section Gang Condenser		380BP12"H"	Speaker Spec. No. S55330MA
	C —46136A	Dial Face		—46901	Field Coil 700 Ohms
	W —45742B	Rubber Dial Cushion		—46902	Output Transformer
	W —45984	L. H. Face Mtg. Clip	34	—46133	Power Trans. 60 Cycle, 110 Volt
	W —45985	R. H. Face Mtg. Clip	35	G41 —26719	Phono Terminal Board
	B —45743B	Dial Support Bracket (Mask)	36	—41624	Line Sw. & Vol. Control (1 Meg)
	MG14—45894	R. H. Pulley & Dial Support Brkt. Assy.		G7 —45683	Push Button Unit Assy.
	MG15—45894	L. H. Pulley & Dial Support Brkt. Assy.		G23 —45683	Key & Toggle Assy.
	G12 —43564	Pulley & Hub. Assy. (Gang)		G22 —45683	Gear & Rocker Plate Assy.
	W —46397	Pointer		W —50561	Screw, Rocker Plate Assy.
	W —46037A	Pointer Guide		W —50542C	Lock Clamp
	—46056	Manual Drive Shaft		—45717	Screw, Station Setting
	W —43542B	Bracket, Drive Shaft Mtg.		W —50607C	Spring, Key Return
	G2 —41582	Drive Cord (44")		—46194	Push Button
	W —46087	Tension Spring		—50841	Station Call List
	W —46290	Cord Clamp (Drive Cord)		W —50541A	Celluloid Cover
	—46118A	Escutcheon, Dial		—8N	Cabinet
	D —30	Screws, Escutcheon Mtg.		D —46180A	Back, Cardboard
7	W —45780B	Condenser, .02 Mf., 160 V.		W —46464	Thumb Screw, Back Mtg.
8	W —45780B	Condenser, .02 Mf., 160 V.		—47009	Lid, Support Bracket
9	W —30805	Condenser, .01 Mf., 400 V.		D —46145C	Board, Panel
10	Deleted	Was Capacity Coupling (Twisted Leads)		W —33502	Needle Cup
				W —33503	Lid, Needle Cup
11	G2 —34002	Condenser, .0001 Mf., Molded		W —46169B	Motor
12	W —45780B	Condenser, .02 Mf., 160 V.		W —46144	Shield, Motor (Metal)
13	W —46128	Condenser, 15 Mf., 250 V. Elect.		W —46368	Shield, Insulating Cover
14	W —46128	Condenser, 15 Mf., 250 V. Elect.		—46200	Friction Drive (on Motor Shaft) 60 Cycle
15	W —45780B	Condenser, .02 Mf., 160 V.		W —46991	Friction Drive (on Motor Shaft) 50 Cycle
16	W —28621	Condenser, .02 Mf., 200 V.		—46162A	Magnetic Pick-up & Arm
17	W —22688	Condenser, .1 Mf., 400 V.		—46946	Magnet & Coil Assy.
18	B —45769	Power Cord & Plug		—46947	Arm & Pivot Only
19	—21453	Resistor, 40,000 Ohm 1/3 W.		—46161	Nut, Army Mounting
20	—26577	Resistor, 3 Megohm 1/3 W.		—46821	Needle Screw
21	—21237A	Resistor, 60,000 Ohm 1/3 W.		W —46364	Needles, Chrome Tipped
22	W —24537	Resistor, 60 Ohm 1/2 W.		W —46172	Turn Table, Plate
23	W —37631	Resistor, 32 Ohm 1/2 W.		—46118	Escutcheon
24	—26577	Resistor, 3 Megohm 1/3 W.		W —20754A	Cup Washer (Panel Mtg.)
25	—34020	Resistor, 250,000 Ohm 1/3 W.		D —165	Screw (Panel Mtg.)
26	W —41759	Resistor, 140 Ohm 1/2 W.		—46148	Phono-Radio Switch
27	—21455	Resistor, 300,000 Ohm 1/3 W.		W —46367	Insulating Shield, Switch
28	G178 —36400	Socket 8 Prong Octal		—46143	Instruction Booklet.
29	G178 —36400	Socket 8 Prong Octal			

MODELS 438, 439

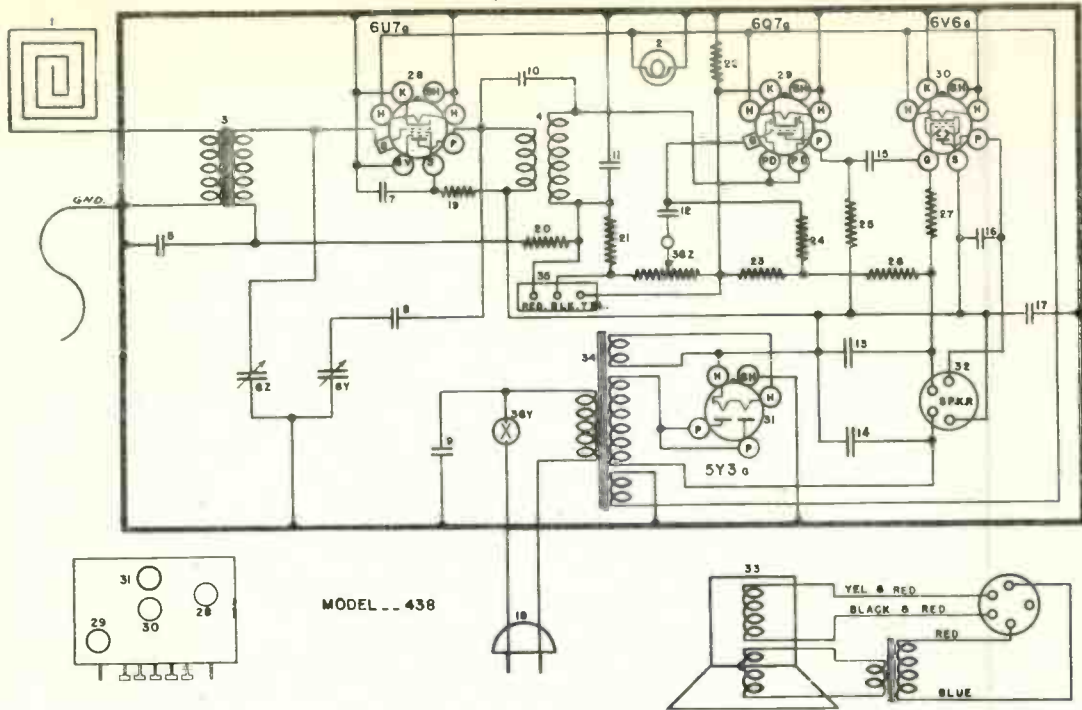
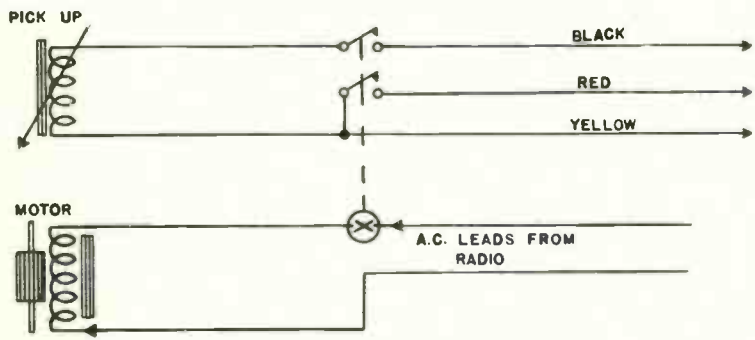
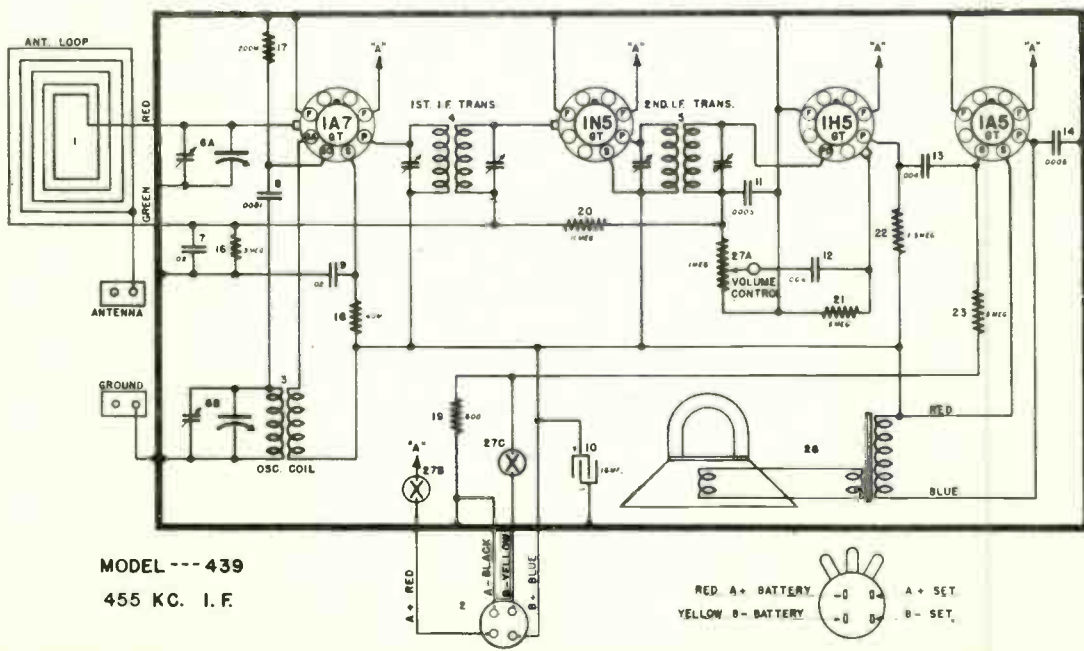


FIG. 1—WIRING DIAGRAM—MODEL 438



Phono Wiring Diagram



MODEL --- 439  
455 KC. I. F.

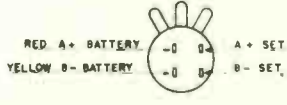


FIG. 1—WIRING DIAGRAM—MODEL 439

MODEL 439—PORTABLE (Battery)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7-GT	Oscillator-Modulator	—	1.5	58	34	Neg.	58	—	—
1N5-GT	I-F Amplifier	—	1.5	58	58	—	J.B.	—	—
1H5-GT	Detector & 1st A-F Amp.	—	1.5	10	—	—	—	—	—
1A5-GT	Output	—	1.5	58	59	3*	—	—	J.B.

Power Output approximately 100 milliwatts.

"A" Battery Drain approximately .20 Ampere at 1.5 Volts.

"B" Battery Drain approximately 5.2 Milliampere at 61.5 Volts.

\*Measured across item 19.

J.B. = Junction Block.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1A5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers for maximum reading on

the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" terminal (right-hand bracket used to fasten back) of the receiver. Check dial pointer to see that it covers complete range.

(a) Set the signal generator to 1500 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

PARTS LIST—MODEL 439

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —48732A	Loop Antenna	16	—36688	Resistor, 3 Megohms 1/4 Watt Ins.
2	B —48697	Battery Cable	17	—35930	Resistor, 200,000 Ohms 1/4 Watt Ins.
3	G215—32002	Oscillator Coil	18	—36761	Resistor, 40,000 Ohms 1/4 Watt Ins.
4	G194—32004	1st I-F. Transformer Assembly	19	W —29585	Resistor, 600 Ohms 1/2 Watt Flex.
5	G195—32004	2nd I-F. Transformer Assembly	20	—48693	Resistor, 11 Megohms 1/4 Watt Ins.
6A	W —45513	No. 6—32 Pal Nut (I-F. Trans.) (4 Req.)	21	—47131	Resistor, 5 Megohms 1/4 Watt Ins.
			22	—48692	Resistor, 1 1/2 Megohms 1/4 Watt Ins.
6B	G88 —33001	2 Sect. Var. Cond. { Antenna Section Oscillator Section	23	—47131	Resistor, 5 Megohms 1/4 Watt Ins.
			26	392-PL-5-"W"	Speaker, Spec.
	—48695	Drive Shaft		—48801	Output Transformer
	W —44808B	Drive Shaft Bracket	27A	—48800	V. C. and Cone Assembly
	—6876	No. 6—32 x 1/4" W. Hd. Mach. Screw (Drive Shaft Bracket)	27B	}	Volume Control, 1 Megohm
	N —5062	No. 6—32 Hex. Nut (Drive Shaft Bracket)	27C		Battery Switch, A+
	G19 —41582	Drive Cord, 17"			Battery Switch, B—
	W —44989	Drive Cord Spring	W —46662	1/4" Pal Nut (Volume Control)	
	W —46290	Drive Cord Clamp	W —51108A	8 Prong Socket (No Marking)	
	W —43549	Retaining Ring (Drive Shaft)	G199 —34403	Antenna Lead (Red) (1 Req.)	
	D —48923	Dial Face	G200 —34403	Ground Lead (Green) (2 Req.)	
	—6415	No. 8—32 x 1/4" W. Hd. Mach. Screw (Dial Face) (2 Req.)		9DB	
	O —8	No. 8 Flat Washer (Dial Face) (2 Req.)		—48061	Carton
	U —49113	Dial Pointer	B —48068	Instructions	
	—49111	No. 6—32 x 1/4" Gulmite Screw (Dial Pointer)	B —48605	Speaker Screen	
	W —20800	No. 6 Shakeproof Washer (Dial Pointer)	W —48691	Dial Lens	
7	W —28621	Condenser, .02 Mf. 200 Volts Paper	W —44827	No. 8 x 1/4" H. H. P. K. Screw (Chassis Mtg.)	
8	G2 —34002	Condenser, .001 Mf. Molded	W —37953	Flat Washer (Chassis Mtg.)	
9	W —28621	Condenser, .02 Mf. 200 Volts Paper	—48705A	Knob	
10	W —45783	Condenser, 16 Mf. 125 Volts Elect.	—48719A	Knob	
11	G3 —34002	Condenser, .0005 Mf. Molded	—48720A	Indicator Tack	
12	W —28904	Condenser, .004 Mf. 200 Volts Paper	W —49071	CR-49 Battery Pack and Carton	
13	W —28904	Condenser, .004 Mf. 200 Volts Paper			
14	G3 —34002	Condenser, .0005 Mf. Molded			

## MODEL 448 COMBINATION

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6D6	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6C6	Detector	6.3	20	10	7	—	—
25L6-G	Output	25	85	98	6	—	—
25Z6-G	Rectifier	25	—	—	126	—	—

**NOTE:** The RED and BLACK terminals on the phono terminal board supply the current for the phono motor, therefore HAVE 110 VOLTS ACROSS THEM WHEN THE RECEIVER IS IN OPERATING POSITION. BE CAREFUL NOT TO TOUCH OR SHORT CIRCUIT THEM WHILE WORKING ON THE CHASSIS.

#### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

#### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver (after the antenna has been completely unrolled. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

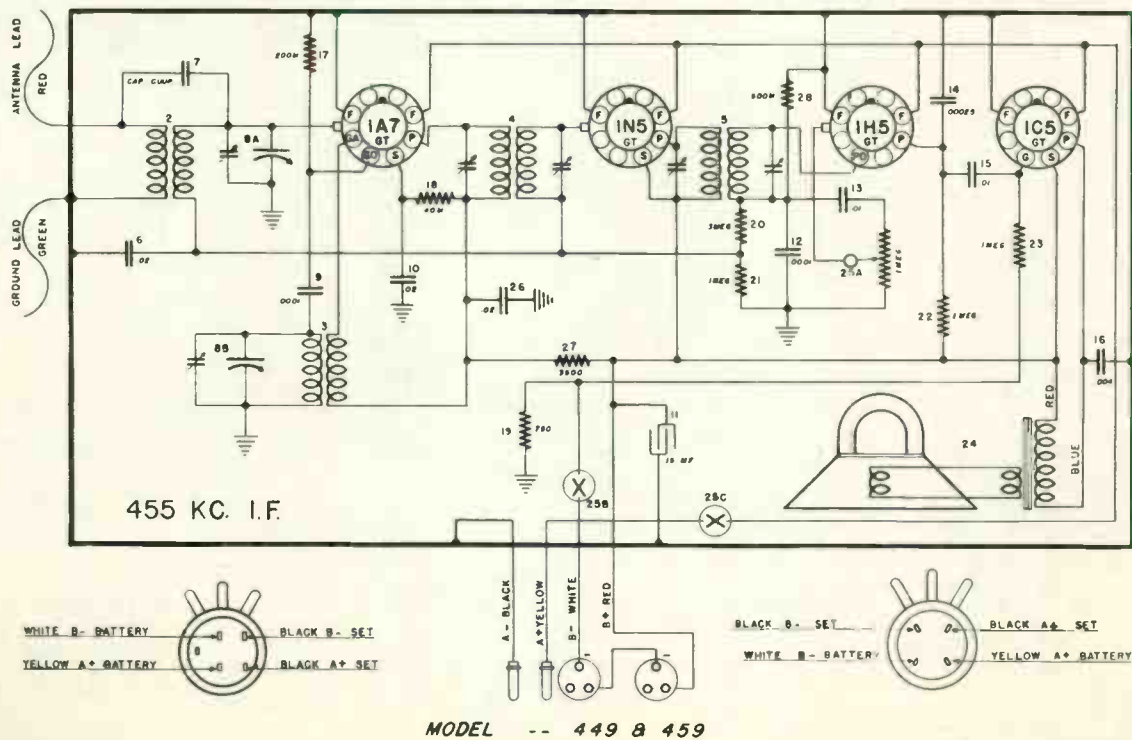
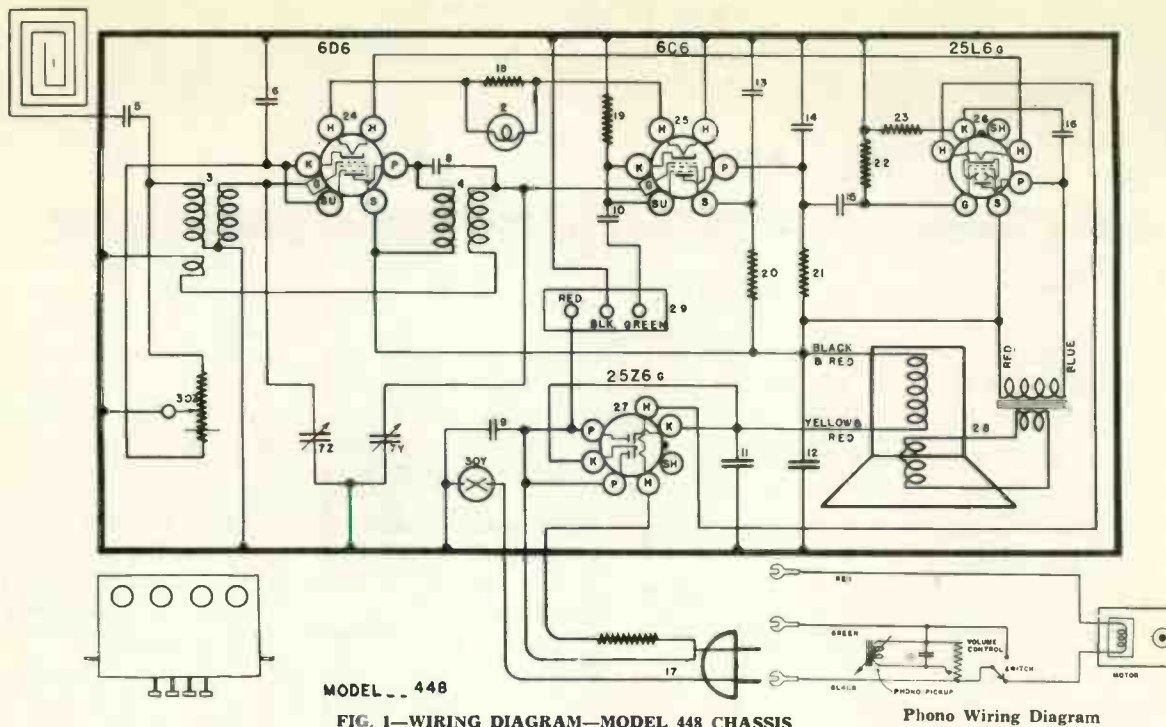
(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

Item No.			Part No.			Description			
Figures in first column refer to parts in Diagrams.									
1	W	—45577B	Roll Antenna			29	W	—45900B	Speaker Mounting Bracket
	W	—40570	Dial Light Shield				G42	—26719	Phono. Terminal Board
2	W	—44337	Dial Light 6-8 Volt			30	—45786	Line SW. & Vol. Cont. (40,000 Ohm)	
	G6	—27134	Dial Light Socket				W	—45789A	V. C. Mtg. Bracket
3	G180	—32000	Antenna Coil				G9	—45683	Push Button Tuning Unit
4	G104	—32001	R-F Coil				G27	—45683	Rocker Plate Assy.
5	W	—45780B	Condenser, .02 Mf., 160 V.				G20	—45683	Key & Toggle Assy.
6	W	—45780B	Condenser, .02 Mf., 160 V.				W	—50542C	Lock Clamp
7	G53	—33001	2 Section Gang Condenser				W	—45717	Screw, Lock Clamp
8	G3	—50640	Condenser, .000004 Mf., (Twisted Leads)				W	—50607C	Spring, Key Return
9	W	—45782B	Condenser, .05 Mf., 400 V.				W	—50561	Screw, Rocker Plate Bearing
10	W	—45781B	Condenser, .25 Mf., 160 V.				—46177	Tuning Knob	
11	W	—45783	Condenser, 16 Mf., 150 V. Electr.				—46178	Vol. Control Knob	
12	W	—45783	Condenser, 16 Mf., 150 V. Electr.				—46182	Push Button	
13	W	—45780B	Condenser, .02 Mf., 160 V.				—50841	Station Call Letter List	
14	G2	—34002	Condenser, .0001 Mf., Molded				W	—50551A	Celluloid Cover
15	W	—45780B	Condenser, .02 Mf., 160 V.				—8E	Cabinet	
16	W	—45871A	Condenser, .05 Mf., 160 V.				B	—46166A	Back, Cabinet
17	B	—46114	Power Cord & Plug (165 Ohms 20 W)				—46656	Lid Assy.	
	W	—45902	Cord Clamp				MG40	—46153	Motor Board Assy. (487)
18	W	—44396	Resistor, 40 Ohm, 3½ W.				MG42	—46153	Motor Unit
19	—24990	Resistor, 25,000 Ohm, 1/3 W.				W	—46172	Turn Table (10")	
20	—37583	Resistor, 2.5 Meg., 1/3 W.				W	—46159	Phono.-Radio Switch	
21	—23785	Resistor, 500,000 Ohm, 1/3 W.				MG41	—46153	Motor Mtg. Bracket & Spindle	
22	—23785	Resistor, 500,000 Ohm, 1/3 W.				—46200	Friction Drive (Rubber Bushing)		
23	W	—45965	Resistor, 110 Ohm, ½ W.				—46160	Phono. Volume Control	
24	G21	—28807	Socket 6 Prong				—35252A	Vol. Cont. Knob	
25	G21	—28807	Socket 6 Prong				W	—30323	Condenser, .01 Mf., 200 V.
26	G178	—36400	Socket, 8 Prong Octal				W	—46171	Phono. Cable Assy.
27	W	—34175	Tube Shield (Slotted Half)				—46821	Needle Screw	
	W	—34174	Tube Shield (Plain Half)				W	—46364	Chrome Needle
	W	—31210	Tube Shield Ring				—46162A	Magnetic Pickup	
28	281-BL-5"U"	—46047	Speaker Mfg. Spec. No. 5-B-130 Output Trans.				—46946	Coil & Magnet Assy. (Pickup)	
	281-BL-5"B"	—46687	Speaker Mfg. Spec. No. 55WA24 Output Trans.				—46947	Cast. Arm & Pivot Assy.	
	281-BL-5"H"	—46797	Speaker Mfg. Spec. No. S-5252-J5 Output Trans.				—46161	Nut, Arm Mounting	
	W	—46915	Felt Gasket, Spk. Baffle				—46168	Instructions.	



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1A7-G	Oscillator-Modulator	1.5	72	30	—	72	—
1N5-G	I-F Amplifier	1.5	82	82	—	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	10	—	—	—	—
1C5-G	Output	1.5	80	82	8*	—	—

1. Tuning I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GREEN lead of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers for maximum reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the RED lead of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	C —46433A	Battery Cable (449)		W —46447	Tube Shield
1	C —47061	Battery Cable (459)		G178 —36400	8 Prong Socket, No Marking
2	G185—32002	Antenna Coil			<b>PUSH BUTTON PARTS</b>
3	G201—32002	Oscillator Coil		G33 —45683	Push Button Unit Assembly
4	G194—32004	1st I. F. Transformer		G26 —45683	Riveted Key Assembly
5	G195—32004	2nd I. F. Transformer		G62 —45683	Rocker Plate Assembly
6	W —28621	Condenser, .02 Mf. 200 V. Paper		W —50542E	Key Clip (4 Req.)
7	G6 —50640	Condenser Capacity Coupling		W —45646B	Adjusting Clip (1 Req.)
8A	G66 —33001	2 Gang Var. Cond. (Antenna Section)		W —50547	Key Plate
8B		(Oscillator Section)		W —50561	No. 6—40 x 1/8" Fil. Hd. Screw (Rocker Plate Bearing)
	MG12—46750	Riveted Back Plate		W —50588B	Adjusting Clip (3 Req.)
	G15 —43564	Pulley and Hub Assembly		W —50607C	Key Return Spring (4 Req.)
	B —46830	Dial Face Back		—31388	No. 8—32 x 3/16" W. Hd. Mach. Screw (Key Plate)
	—45808	No. 8 x 5/16" H. H. P. K. Screw (Dial Face Back) (Drive Shaft Brkt.)		—2046	No. 8 Shakeproof Washer (Key Plate)
	W —46831A	Dial Pointer		—45717	Adjusting Screw (4 Req.)
	—48160	Drive Shaft			<b>MODEL 449 ONLY</b>
	W —43542B	Drive Shaft Bracket		—8AK	Cabinet
	G13 —41582	Drive Cord (30")		—8A11	Cabinet, Ivory
	W —46087	Drive Spring		—8AG	Cabinet, Red
	W —46290	Drive Cord Clamp		—9FA	Cabinet
	W —23877	No. 8—32 x 5/16" Set Screw (Pulley and Hub Assembly)		—46838	Carton (8AK, 8AH, 8AG Cabinet)
	G4 —41582	Guide Cord (9")		—46841A	Push Buttons (4 Req.) (8AK and 9FA)
	W —46848	Guide Cord Spring		—46879A	Push Buttons (4 Req.) (8AH and 8AG)
	C —46815A	Dial Glass		—46816	Rubber Bottom Machine Screw (8AK, 8AH, 8AG) (Chassis Mounting)
	W —46321	Speed Nut (2 Req.) (8AK, 8AH and 8AG) (849 Only)		R —159	No. 8—32 x 5/8" R. H. Mach. Screw (Chassis Mounting) (9FA)
9	G2 —34002	Condenser, .0001 Mf. Molded		W —30409	Flat Washer (Chassis Mounting) (9FA)
10	W —28621	Condenser, .02 Mf. 200 V. Paper		—46953	Knob (2 Req.) (8AK)
11	W —48122	Condenser, 16 Mf. 250 V. Elect.		—44552	Knob (2 Req.) (8AH and 8AG)
12	G2 —34002	Condenser, .0001 Mf. Molded		W —47483	Knob (2 Req.) (9FA)
13	W —30323	Condenser, .01 Mf. 200 V. Paper		MG31—47899	Instruction, Env. Assy. (B-449-A and B-449-D)
14	G1 —34002	Condenser, .00025 Mf. Molded		MG32—47899	Instruction, Env. Assy. (B-449-B and B-449-C)
15	W —30323	Condenser, .01 Mf. 200 V. Paper			<b>MODEL 459 ONLY</b>
16	W —28904	Condenser, .004 Mf. 200 V. Paper		—9DC	Cabinet
17	—34018	Resistor, 200,000 Ohms 1/2 W. Carb.		—48151A	Carton (9DC)
18	—21453	Resistor, 40,000 Ohms 1/2 W. Carb.		—46953	Knob (2 Req.)
19	W —22514	Resistor, 750 Ohms 1/2 W. Flex.		—46841A	Push Button (4 Req.)
20	—26577	Resistor, 3 Megohms 1/2 W. Carb.		R —159	No. 8—32 x 5/8" Rd. Hd. Mach. Screw (4 Req.) (Chassis Mtg.)
21	—21454	Resistor, 1 Megohm 1/2 W. Carb.		W —30409	Flat Washer (4 Req.) (Chassis Mtg.)
22	—21454	Resistor, 1 Megohm 1/2 W. Carb.		MG26—47926	Instruction, Env. Assy.
23	—21454	Resistor, 1 Megohm 1/2 W. Carb.		CR28	Crosley "A" and "B" Battery Pack (459 or 449)
24	274-PL-8-"B"	Speaker, Spec. (Model 449)			
	—47292	Output Transformer			
24	274-PLS-8-"B"	Speaker, Spec. (Model 459)			
	—47292	Output Transformer			
25A		Volume Control			
25B	—48327	Switch "B" Supply			
25C		Switch "A" Supply			
25A		Volume Control			
25B	—48155	Switch "B" Supply			
25C		Switch "A" Supply			
	W —46662	3/8" Pal Nut (Volume Control)			
26	W —28621	Condenser, .02 Mf. 200 V. Paper			
27	—30137	Resistor, 3,500 Ohms 1/2 W. Carb.			
28	—23785	Resistor, 500,000 Ohms 1/2 W. Carb.			

## MODEL 458 (Battery Vanity)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ca	Co
1A7-G	Oscillator-Modulator	1.5	82	13	0	82	-6
1N5-G	I-F Amplifier	1.5	82	82	0	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	17	—	0	—	—
1C5-G	Output	1.5	78	82	8*	—	—

Power Output approximately .5 Watt.

\*"A" Battery Drain approximately .25 Ampere at 1.5 Volts.

"B" Battery Drain approximately 9 Milliamperes at 90 Volts.

\*Measured at No. 8 Socket Lug and Chassis.

### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers (located through rear of chassis flange) for maximum reading on the output meter.

(e) Adjust both trimmers located on the 1st I-F transformer (right end) for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

### 2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	C —46433A	Battery Cable	28A	—46135	Volume Control, 1 Megohm
2	G176—32000	Antenna Coil	28B		"A" Supply Switch
3	G177—32002	Oscillator Coil	28C		"B" Supply Switch
4	G194—32004	1st I.F. Transformer		—46259	Cabinet 8BB
5	G201—32004	2nd I.F. Transformer		—15825A	Knob, Volume Control
6	G6 —50640	Condenser Capacity Coupling		—45822	Knob, Dial
7	W —28621	Condenser, .02 Mf. 200 V. Paper		W —45931A	Rubber Foot and Screw
8A	G65 —33001	Var. Condenser, Antenna Section		—15553B	Push Button
8B			Var. Condenser, Oscillator Section	W —45852A	Baffle Board
9	G2 —34002	Condenser, .0001 Mf. Molded	W —45852	Grille Cloth	
10	W —28621	Condenser, .02 Mf. 200 V. Paper	W —50841	Call Letter Sheet	
11	G3 —50640	Capacity Condenser Coupling	W —50551A	Call Letter Cover	
12	W —45783	Condenser, 16 Mf. 125 V. Elect.	W —45930C	Rubber Foot	
13A	W —44882	Trimmer Condenser		—16450	Instructions
13B			Trimmer Condenser	G26 —45683	Riveted Key Assy.
14	G1 —34002	Condenser, .00025 Mf. Molded	G27 —45683	Rocker Plate Assy.	
15	W —28621	Condenser, .02 Mf. 200 V. Paper	W —50542C	Key Clip (Lock Clamp)	
16	G5 —34002	Condenser, .00005 Mf. Molded	W —50561	No. 6 x 40 x 1 1/8" Fil. Hld. Screw	
17	W —28621	Condenser, .02 Mf. 200 V. Paper		Rocker Plate Bearing	
18	W —28904	Condenser, .004 Mf. 200 V. Paper	W —50547	Key Plate	
19	—21454	Resistor, 1 Megohm 1/2 W. Carbon	W —50607C	Push Button Spring	
20	—31018	Resistor, 200,000 Ohm 1/2 W. Carbon	—45717	No. 6 x 32 x 1 1/8" Fil. Hld. Screw	
21	—36761	Resistor, 40,000 Ohm 1/2 W. Carbon		Clamp Adjusting	
22	—36688	Resistor, 3 Megohm 1/2 W. Carbon	—31388	No. 8 x 32 x 1/8" H. H. Mach. Screw	
23	W —35581	Resistor, 1,000 Ohm 3/4 W. Flexible		Key Plate Mounting Screw	
24	—36322	Resistor, 500,000 Ohm 1/2 W. Carbon	—2046	No. 8 Shakeproof Washer, Key Plate	
25	—36322	Resistor, 500,000 Ohm 1/2 W. Carbon		Screw	
26	—36322	Resistor, 500,000 Ohm 1/2 W. Carbon			
27	274-PL-5-"B"	Speaker, Spec. 35PWS1 (P. M.)			
	—47083	Cone and V. C. Assy.			
	—47084	Output Transformer			
	—46085	Cardboard Ring			



MODELS 458, 468

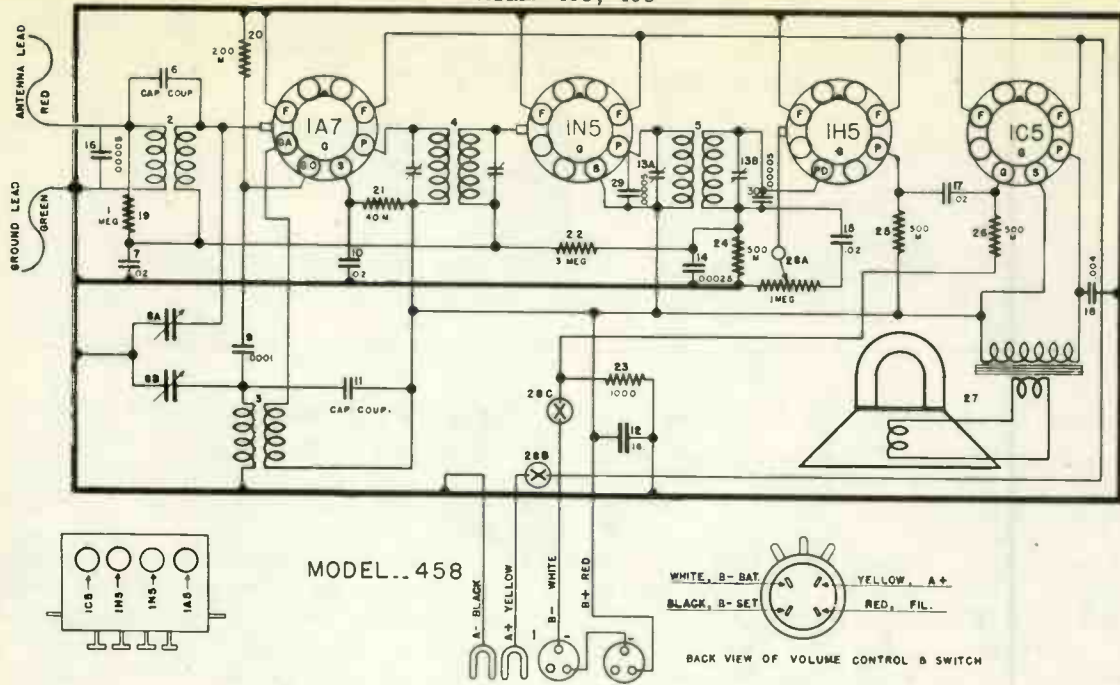


FIG. 1—WIRING DIAGRAM—MODEL 458

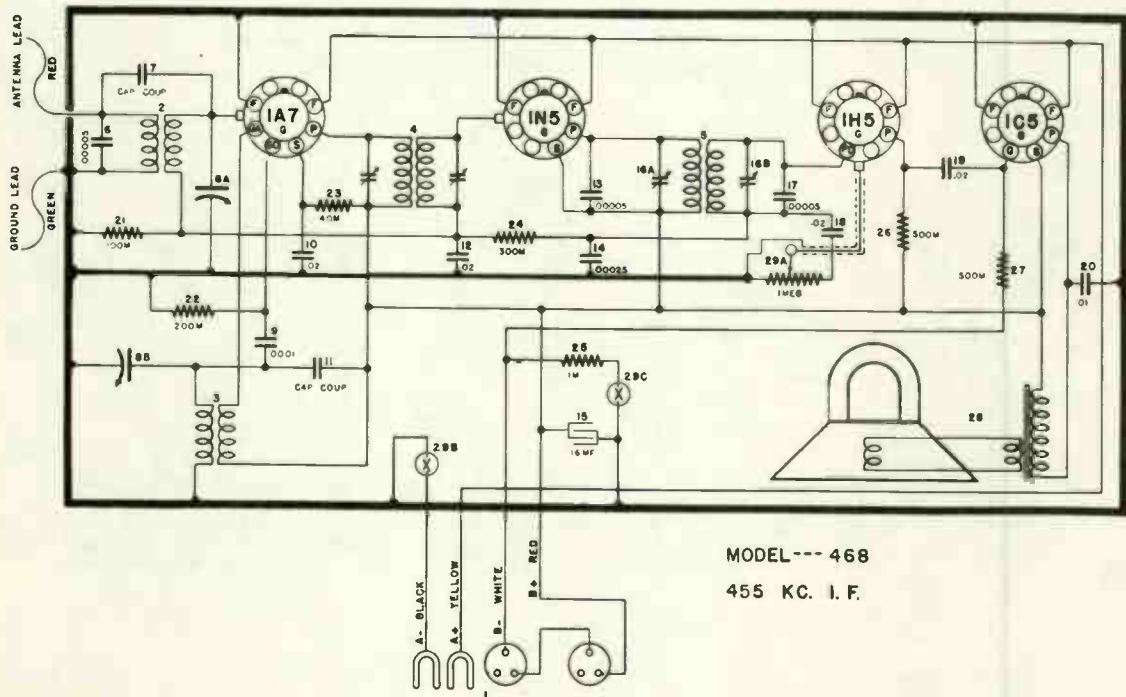


FIG. 1—WIRING DIAGRAM MODEL 468

## CHASSIS MODEL 468

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1A7-G	Oscillator-Modulator	1.5	82	43	0	82	-6
1N5-G	I-F Amplifier	1.5	82	82	0	—	—
1H5-G	Detector & 1st A-F Amp.	1.5	17	—	0	—	—
1C5-G	Output	1.5	78	82	8*	—	—

Power Output approximately .5 Watt.

"A" Battery Drain approximately .25 Ampere at 1.5 Volts.

"B" Battery Drain approximately 9 Milliampere at 90 Volts.

\*Measured at No. 8 Socket Lug and Chassis.

### 1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmers (located through rear of chassis flange) for maximum reading on the output meter.

(e) Adjust both trimmers located on the 1st I-F transformer (right end) for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

### 2. Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on gang for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	C —47061	Battery Cable	29A		Volume Control, 1 Megohm
	W —45092	Cable Clamp	29B	—46435	Switch "A" Supply
2	G177 —32000	Antenna Coil	29C		Switch "B" Supply
3	G177 —32002	Oscillator Coil		G178 —36400	8 Prong Socket (No Marking)
4	G194 —32004	1st I. F. Transformer		G34 —45683	Push Button Unit Assembly
5	G204 —32004	2nd I. F. Transformer (Coil only)		G29 —45683	Riveted Key Assembly
6	G5 —34002	Condenser, .00005 Mf. Molded		G27 —45683	Rocker Plate Assembly
7	G6 —50640	Condenser (Capacity Coupling) Ant.	W	—50547	Key Plate
8A				—31388	Key Plate Mounting Screw (2 Req.)
8B	G69 —33001	Variable Condenser (Antenna Sect. Oscillator Sect.)		—45717	Clamp Screw (4 Req.)
9	G2 —34002	Condenser, .0001 Mf. Molded	W	—50607C	Key Return Spring (4 Req.)
10	W —28621	Condenser, .02 Mf. 200 V. Paper		—2046	No. 8 Shakeproof Washer (2 Req.)
11	G3 —50640	Condenser (Capacity Coupling) Osc.	W	—50561	Rocker Plate Bearing Screw (2 Req.)
12	W —28621	Condenser, .02 Mf. 200 V. Paper		—8DB	Cabinet
13	G5 —34002	Condenser, .00005 Mf. Molded		—47048	Cabinet Carton (Shipping)
14	G1 —34002	Condenser, .00025 Mf. Molded		—43886	Chassis Screws (3 Req.)
15	W —45783	Condenser, 16 Mf. 125 V. Elect.		—2118	Shakeproof Washer (Speaker)
16A			N	—6	Hex. Nut (Speaker)
16B	W —44882	Condenser Trimmer, 2nd I. F.		—45553B	Push Button (4 Req.)
17	G5 —34002	Condenser, .00005 Mf. Molded		—45822	Dial Knob
18	W —28621	Condenser, .02 Mf. 200 V. Paper		—45825A	Volume Control Knob
19	W —28621	Condenser, .02 Mf. 200 V. Paper		—47053	Instructions
20	W —30323	Condenser, .01 Mf. 200 V. Paper		—47863	Call Letter Sheets
21	—21875	Resistor, 100,000 Ohms $\frac{1}{2}$ W. Carb.	W	—50551B	Call Letter Cover
22	—34018	Resistor, 200,000 Ohms $\frac{1}{2}$ W. Carb.	W	—32116A	Chassis Washer, Extruded (3 Req.)
23	—36761	Resistor, 40,000 Ohms $\frac{1}{2}$ W. Carb.	W	—45579	Chassis Washer, Flat (3 Req.)
24	—21455	Resistor, 300,000 Ohms $\frac{1}{2}$ W. Carb.		—47065	No. 6 —32 x 1" F. H. Mach. Screw
25	W —35581	Resistor, 1,000 Ohms $\frac{3}{4}$ W. Flex.			
26	—36322	Resistor, 500,000 Ohms $\frac{1}{4}$ W. Ins.			
27	—36322	Resistor, 500,000 Ohms $\frac{1}{4}$ W. Ins.			
28	271PL7"B"	Speaker, Spec. 51PRW2 (P. M.)			
	—47292	Speaker Cone and V. C. Assembly			
	—47293	Output Transformer			
	—46685	Cardboard Ring			

MODELS 525 AND 505

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	G	K	S	Su	Ga	Go
6A7	Osc-Mod	6.3	215	0	3	105	0	105	-4
6D6	I. F. Amp.	6.3	215	0	3	105	3	—	—
75	Detector & A. F. Amp.	6.3	80	0	.75	—	—	—	—
41	Output	6.3	205	0	16	215	—	—	—
80	Rectifier	4.9	280	—	—	—	—	—	—

1. Peaking I. F. Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6A7 Osc-Mod tube, leaving the tube's grid clip in place. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the I. F. transformers. for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

2. Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output. (Fig. 3).

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1A	G4—27134	Dial Light Bracket Assembly	16	B—3390A	Cord, Power Supply	
1B	G4—27134	Dial Light Bracket Assembly	17	—21876	Resistor, 10,000 Ohms	
2	G42—32000	Coil, Ant. Trans.	18	—21453	Resistor, 40,000 Ohms	
	W—30802A	Coil Shield	19	—21455	Resistor, 300,000 Ohms	
	W—30026A	Coil Retaining Ring	20	—23785	Resistor, 500,000 Ohms	
	W—36178	Coil Insulator	21	—21454	Resistor, 1 Megohm	
3	G50—32004	Coil, 1st. I. F.	22	—26577	Resistor, 3 Megohm	
	G3—31927	Coil Shield	23A	—25937	Resistor, 275 Ohms, 1½ Watt Flex.	
	W—35037A	Coil Insulator	23B	—25937	Resistor, 275 Ohms, 1½ Watt Flex.	
4	G49—32004	Coil, 2nd. I. F.	24	W—23907	Resistor, 750 Ohms, 1½ Watt Flex.	
	G3—31927	Coil Shield	25Z	W—35963	Resistor, 8,500 Ohms, 3 Watt	
	W—35037A	Coil Insulator	25Y			Resistor, 25,000 Ohms, 3 Watt
5	G43—32002	Coil Oscillator	26	G6—28807	Socket 80	
	W—25025B	Coil Shield	27	G41—28807	Socket 75	
	W—21541C	Coil Retaining Ring		W—35774	Tube Shield Base	
	W—26891	Coil Insulator		W—35772	Tube Shield Half (2 used)	
6Z	W—35750	Condenser, 8 Mfd. 450 Volt		W—35773	Tube Shield Cap	
6Y		Condenser, 6 Mfd. 450 Volt	28	G22—28807	Socket 41	
6X		Condenser, 12 Mfd. 25 Volt	29	G75—28807	Socket 6D6	
7Z	W—28623	Condenser, .02 Mfd. 200 Volt		W—35774	Tube Shield Base	
7Y		Condenser, .02 Mfd. 200 Volt		W—35772	Tube Shield half (2 used)	
8Z	W—28622	Condenser, 0.1 Mfd. 200 Volt		W—35773	Tube Shield Cap	
8Y		Condenser, 0.1 Mfd. 200 Volt	30	G47—28807	Socket 6A7	
9	W—30805	Condenser, .01 Mfd. 400 Volt		W—35774	Tube Shield Base	
10Z	W—35011	Condenser, .006 Mfd. 400 Volt		W—35772	Tube Shield half (2 used)	
10Y		Condenser, .03 Mfd. 400 Volt		W—35773	Tube Shield Cap	
11Z	W—25537A	Condenser, .001 Mfd. 400 Volt	31	—36278	Speaker, 318 BL9	
11Y		Condenser, .03 Mfd. 400 Volt	32Z	W—35753A	Switch, Ant.	
12Z	W—30322A	Condenser, .00017 Mfd.	32Y			Switch, Osc.
12Y		Condenser, .006 Mfd.	33	W—36184A	Switch, Tone Control	
13	G1—34002	Condenser, .00025 Mfd.	34	G10—26719	Terminal, Ant. Gnd.	
14	W—28621	Condenser, .02 Mfd.	35	G5—28500	Transformer, Power, 60 Cy., 110 Volt	
15Z	—35751A	Condenser, 2 Gang Var. R.F. 360		G6—28500	Transformer, Power, 25 Cy., 110 Volt	
15Y		Condenser, 2 Gang Var. 450		G7—28500	Transformer, Power, 25 Cy., 220 Volt	
		—36148	Dial Drive Unit, complete	36Z	W—36227	Volume Control, 4,800 Ohm, 160 Ohm fixed.
		—36156	Dial Pointer	36Y		
		—36157	Dial Pointer Screw		W—31585B	Knobs
	—36158	Dial Lens		B—35917	Escutcheon	
	G16—35757	Dial Drive Mounting Bracket Assem.				

NOTE:—Part numbers with A, B, etc., following, mean duplicate parts. Part numbers with Z, Y, X, etc., following, mean parts having multiple sections.



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	Ga	Go	G
6A7	Oscillator-Mod.	6.5	100	40	1	100	-20	—
75	Det. & A-F Amp.	6.5	11	—	1	—	—	—
43	Output	25.0	95	100	0	—	—	-20
25Z5	Rectifier	25.0	—	—	100	—	—	—
W-43357	Ballast Tube.							

Power output approximately 1 watt.  
 Power consumption approximately 50 watts.  
 Voltage drop across speaker field 112 volts.  
 All readings taken on 117.5 volt A. C. power supply.  
 All readings except filaments will be approximately 15% lower on 117.5 volts D. C.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected through a resistor to one side of the power supply and for this reason all test equipment should be thoroughly isolated in order that the power supply will not be short circuited while attempting to align the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A7 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator direct to the receiver chassis **but do not run a wire direct to ground. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the

condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the I-F trimmer condensers for maximum reading on the output meter.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead of the signal generator through a .00005 mf. condenser to the **junction of the antenna and antenna blocking condenser** (Items 34 and 29).

(b) Set the signal generator to 1725 kilocycles.

(c) Open gang all the way (minimum capacity).

(d) Adjust the trimmer located on the "Osc" section of the gang for maximum output.

(e) Set signal generator to 1400 Kc.

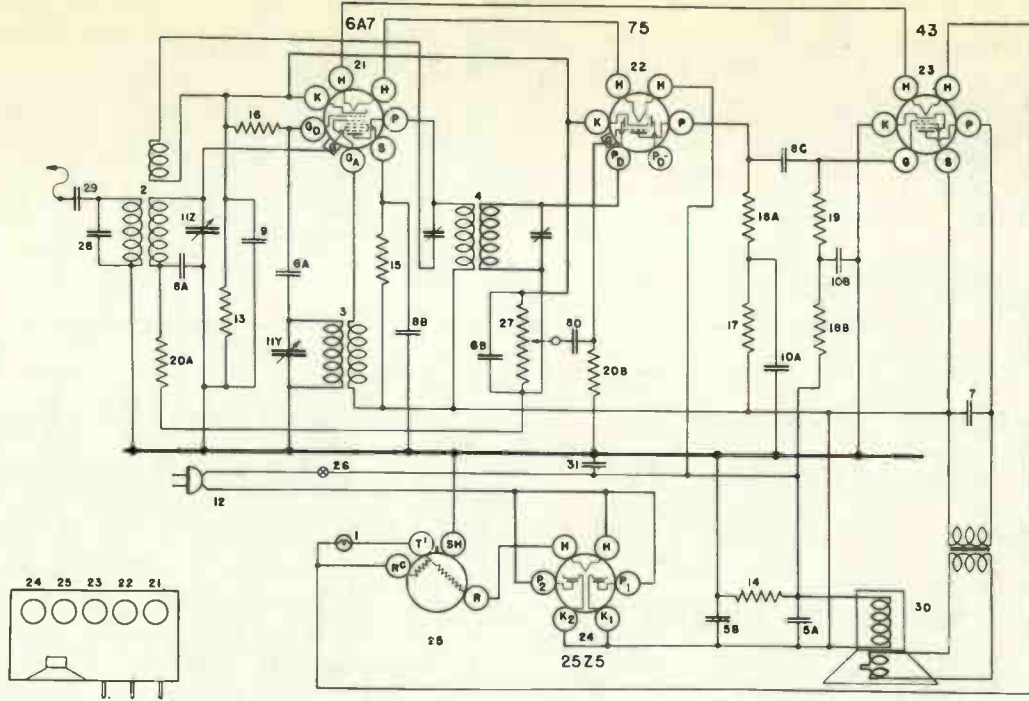
(f) Tune station selector to 1400 kc. signal.

(g) Adjust the trimmer located on the "Ant" section of the gang for maximum output.

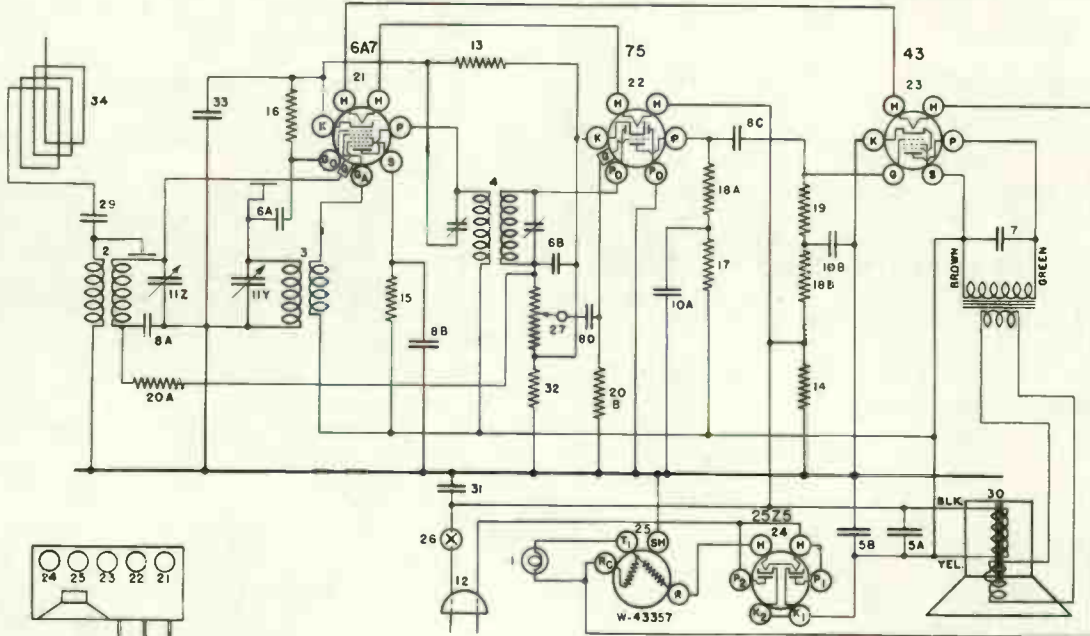
(h) Repeat e, f, and g for more accurate adjustment.

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —4099B	Dial Light Bulb	20AB	—35927	Resistor, 2 Megohm ¼W.
	G6 —27134	Socket Assy. Dial Light	21	G47 —28807	Socket Type 6A7
2	G129—32000	Ant. Coil	22	G41 —28807	Socket Type 75
3	G129—32002	Osc. Coil	23	G30 —28807	Socket Type 43
4	G137—32004	I-F. Assy.	24	G51 —28807	Socket Type 25Z5
	W —36140	I-F. Trimmer Cond. (only)	25	G170—34600	Socket Type W-43357
	LW —43337	I-F. Coil (only)		W —28632	Tube Shield
5AB	W —43280	Condenser, 25 Mf. 150 V.	26	—43339	Line Switch
6AB	G1 —34002	Condenser, .00025 Mf. 200 V.	27	—43340	Volume Control, 1 Meg.
7	W —34647	Condenser, .006 Mf. 400 V.	28	G5 —34002	Condenser, .00005 Mf. 200 V.
8ABCD	W —28621	Condenser, .02 Mf. 200 V.	29	W —30325A	Condenser, .003 Mf. 200 V.
9	W —37988	Condenser, .017 Mf. 200 V.	30	255BL6Q	Speaker - Spec. 23393
10AB	W —29910A	Condenser, .25 Mf. 200 V.		—43464	Cone Assy. (above Spk.)
11	G28 —33001	2 Gang Var. Tuning Cond.		—43465	Output Trans. (above Spk.)
12	B —27885A	Power Cord and Plug		—43466	Mtg. Ring, Cone (above Spk.)
13	W —35467	Resistor, 275 Ohm ½W. Flex.		—6DD	Cabinet
14	W —23907	Resistor, 750 Ohm 1¼W. Flex.		D —43302	Dial
15	—36761	Resistor, 40,000 Ohm ¼W.		W —43321	Pointer Knob
16	—35928	Resistor, 60,000 Ohm ¼W.		W —43320	Knob—V. C. & Sw.
17	—35600	Resistor, 100,000 Ohm ¼W.	31	W —23615	Condenser, .05 Mfd. 400 V.
18AB	—35601	Resistor, 300,000 Ohm ¼W.			
19	—36322	Resistor, 500,000 Ohm ¼W.			

MODEL 506



MODEL 506 450 KC. 1-F



MODEL 506 450 K.C. 1-F

WIRING DIAGRAM—MODEL 506

For Serial Numbers Above 1,308,741

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-4099B	Dial Light Bulb	21	G47-28807	Socket Type 6A7
2	G6-27134	Socket Assembly Dial Light	22	G41-28807	Socket Type 75
3	G135-33000	Ant. Coil	23	G30-28807	Socket Type 43
4	G135-33002	Osc. Coil	24	G51-28807	Socket Type 25Z5
5	W-36140	I-F Assembly	25	G170-34600	Socket Type W-43357
5AB	W-43280	Condenser, 25 Mf. 150 V.	26	W-28632	Tube Shield
6AB	G1-34002	Condenser, .00925 Mf. 200 V.	27	W-43339	Line Switch
7	W-34647	Condenser, .006 Mf. 400 V.	28	W-43340	Volume Control, 1 Meg.
8ABCD	W-28621	Condenser, .02 Mf. 200 V.	29	W-30325A	NONE
9	NONE	NONE	30	253BL6Q	Condenser, .003 Mf. 200 V.
10AB	W-28910A	Condenser, 25 Mf. 200 V.			Speaker - Spec. 23393
11	G32-33001	2 Gang Var. Tuning Cond.			Cone Assembly (above Speaker)
12	B-27885A	Power Cord and Plug			Output Trans. (above Speaker)
13	W-35467	Resistor, 275 Ohm 1/2 W. Flex.			Mtg. Ring, Cone (above Speaker)
14	W-23907	Resistor, 750 Ohm 1/2 W. Flex.			Cabinet
15	W-36761	Resistor, 40,000 Ohm 1/2 W.			Dial
16	W-35928	Resistor, 60,000 Ohm 1/2 W.			Pointer Knob
17	W-35600	Resistor, 100,000 Ohm 1/2 W.			Knob - V. C. and Sw.
18AB	W-35601	Resistor, 300,000 Ohm 1/2 W.	31	W-23615	Condenser, .05 Mfd. 400 V.
19	W-36322	Resistor, 500,000 Ohm 1/2 W.	32	W-21964	Resistor, 185 Ohm 1/2 W. Flex.
20AB	W-35927	Resistor, 2 Megohm 1/2 W.	33	W-43627	Condenser, .009 Mfd. 160 V.
			34	W-31765	Antenna Wire Roll

## REFRIGERATOR RADIO, CHASSIS NO. 507

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ca
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Det & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
 Power consumption approximately 40 watts at 117.5 volts.  
 Voltage drop across speaker field 36 volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 6K6G output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the

2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

#### 2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0002 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (appx. 140 on the dial).

(f) Adjust the "ANT" trimmer condenser for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G132-32000	Ant. Coil	20	W -25937	Resistor, 275 Ohm 1/2W. Flex.
2	G132-32002	Osc. Coil	21	W -23012A	Resistor, 40 Ohm 3/4W. Flex.
3	G177-32004	1st I-F.	22	W -24357	Resistor, 75 Ohm 3/4W. Flex.
4	G178-32004	2nd I-F.	23	—36761	Resistor, 40,000 Ohm 1/4W. Insu.
5	G48 -33001	2 Section Gang Cond.	24	G156-36400	Socket, Type 6A8
	W -45368B	Pointer Shaft	25	G171-36400	Socket, Type 6U7
	W -45367	Pointer Shaft Bracket	26	G160-36400	Socket, Type 6Q7
	—41582	Drive Cord (9-inch)	27	G172-36400	Socket, Type 6K6
	W -44635	Tension Spring		W -40911	Tube Shield (6U7-G)
	W -45155B	Pointer	28	275BL7"B"	Speaker
6	W -36541	Condenser, .02 Mf. 160 V.		—45467	V. C. and Cone Assy.
7A	W -28621	Condenser, .02 Mf. 200 V.	29	G1 -26719	Ant. and Gnd. Terminal Assy.
7B	W -28621	Condenser, .02 Mf. 200 V.	30	—45149	Power Trans., 50-60 Cy.—110 V.
7C	W -28621	Condenser, .02 Mf. 200 V.		—45148	Power Trans., 25 Cy.—110 V.
8	W -34647	Condenser, .006 Mf. 400 V.		—45162	Vol. Cont. (1 Meg.) and Line Switch
9	W -30805	Condenser, .01 Mf. 400 V.	31	—45162	Wave Trap
10A	G1 -34002	Condenser, .00025 Mf. Molded	32	G165-32004	Speaker Screen
10B	G1 -34002	Condenser, .00025 Mf. Molded		W -45198A	Escutcheon
11	W -44012	Condenser, 16 Mf. 250 V.		C -45173A	Knob (2 Req.)
12	W -43450	Condenser, 16 Mf. 200 V.		W -45380	Chassis Mtg. Brkt.
13	B -44867	Power Cord and Plug		W -45157	Chassis Bottom Cover
14	—21237A	Resistor, 60,000 Ohm 1/2W. Carb.		C -45158B	Support Angle—to Brkt. on Spkr.
15	—24990	Resistor, 25,000 Ohm 1/2W. Carb.		W -45401	Support Brkt.—to Spkr. Stud
16A	—26577	Resistor, 3 Megohm 1/2W. Carb.		W -45402B	Thumb Screw—Sup. Angle Mtg.
16B	—26577	Resistor, 3 Megohm 1/2W. Carb.		W -23880	
17	—22196	Resistor, 20,000 Ohm 1/2W. Carb.			
18	—35601	Resistor, 300,000 Ohm 1/4W. Insu.			
19	—23785	Resistor, 500,000 Ohm 1/2W. Carb.			





MODELS 515 AND 5515

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	P2	K
6D6	Osc-Mod	6.3	210	120	0	28	—	31
6D6	I. F. Amp	6.3	210	120	3	0	—	3
76	Detector	6.3	86	—	—	0	—	8.5
6B5	Output	6.3	200	—	—	0	210	0
80	Rectifier	4.9	280	—	—	—	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

Connecting Output Meter.

Connect one terminal of the output meter to P1 and the other terminal to P2 of the 6B5 output tube. Looking at the bottom of the tube with the filament prongs toward you P1 will be the first prong to the left of the filaments and P2 will be next to P1. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Peaking I. F. Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 Osc.-Mod. tube, leaving the tube's grid clip in place. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable

output level adjust the I. F. trimmer condensers located on top of the I. F. transformers, for maximum output.

NOTE: Make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency. An insulated screw driver should be used to insure accurate adjustments.

2. Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output.

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

NOTE: There are no adjustments on this receiver for the Police Band.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G4—27134	Dial Light Socket Assembly.	23	G80—28807	Socket, 76.
2	G42—32000	Coil Ant.	24	G90—28807	Socket, 6B5.
3	G48—32004	1st. I. F. Trans.	25A	G75—28807	Socket, 6D6.
4	G49—32004	2nd. I. F. Trans.	25B	G75—28807	Socket, 6D6.
5	G47—32002	Osc. Coil.	W	—35772	Tube Shield, Half.
6Z	W —36719	Condenser, 8 Mfd., 450 Volts.	W	—35773	Tube Shield Cap.
6Y	W —28623	Condenser, 6 Mfd., 450 Volt.	W	—35774	Tube Shield Base.
7Z	W —28623	Condenser, 0.02 Mfd. 200 Volt.	26	—219-BL9	Speaker.
7Y	W —28623	Condenser, 0.02 Mfd. 200 Volt.	27Z	W —35753A	Band Change Switch.
7X	W —28623	Condenser, 0.02 Mfd. 200 Volt.	27Y	W —36184A	Tone Control Switch.
7W	W —28622	Condenser, 0.02 Mfd. 200 Volt.	28	G1 —26719	Ant. Gnd. Terminal.
8Z	W —28622	Condenser, 0.1 Mfd. 200 Volt.	29	G5 —28500	Power Transformer, 60 Cy., 110 V.
8Y	W —30805	Condenser, 0.1 Mfd. 200 Volt.	30	G6 —28500	Power Transformer 25 Cy., 110 V.
9	W —35011	Condenser, 0.01 Mfd. 400 Volt.	G7	—28500	Power Transformer, 25 Cy., 220 V.
10Z	W —25537A	Condenser, 0.006 Mfd. 400 Volt.	31Z	—37343	Volume Control.
10Y	W —25537A	Condenser, 0.03 Mfd. 400 Volt.	31Y	—37343	On-Off Switch.
11Z	W —25537A	Condenser, 0.001 Mfd. 400 Volt.	B	—35917	Escutcheon.
11Y	W —25537A	Condenser, 0.03 Mfd. 400 Volt.	—	—37158	Dial Glass.
12Z	G14—33001	Variable Tuning Condenser Gang.	—	—37156	Dial Pointer.
12Y	—36148	Dial Assembly complete.	—	—37157	Pointer Screw.
13	B —33906A	Cord—Power Supply.	W	—31585B	Knob (2) large.
14	G3 —35696	Speaker Cable (5515 only).	W	—36355	Knob (2) small.—Tone control.
15	—31094	Resistor, 4,500 Ohms.	—	—4099	Dial Bulb.
16	—21237A	Resistor, 60,000 Ohms.	—	—37514	Name Plate or Emblem.
17	—21455	Resistor, 300,000 Ohms.	—	—35253	Spring for 36355—Knob.
18	—23785	Resistor, 500,000 Ohms.	—	—35863	Grille Cloth.
19	—21454	Resistor, 1 Megohm.	—	—40625	New Magna—Ceramic Dial
20	W—25937	Resistor, 275 Ohms Flex.	—	—40626	Dial Drive Assembly.
21Z	W —35963	Resistor, 8,500 Ohms.			Dial face.
21Y	W —35963	Resistor, 25 000 Ohms.			
22	G6 —28807	Socket, 80.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	P2	K
6D6	Osc.-Mod	6.3	210	120	0	28	—	31
6D6	I. F. Amp.	6.3	210	120	3	0	—	3
76	Detector	6.3	86	—	—	0	—	8.5
6B5	Output	6.3	200	—	—	0	210	0
80	Rectifier	4.9	280	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 I. F. tube, leaving the tube's grid clip in place.

KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.

(b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

(c) Set the signal generator to 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.

(e) Turn the band selector switch to the right hand position. (Short Wave Band).

(f) Turn the volume control of the receiver on full.

(g) With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the 2nd I. F. transformer, for maximum output.

(h) Remove the signal generator lead from the 6D6 I. F. tube and connect it to the top cap of the 6D6 Osc.-Mod. tube, leaving the tube's grid clip in place.

(i) Adjust the trimmer condensers located on top of the 1st I. F. transformer for maximum output.

DO NOT RETUNE THE 2ND I. F. TRANSFORMER.

2. Aligning R. F. Circuits.

(a) Turn the band selector switch to the left hand position. (Broadcast Band).

(b) Leave the receiver tuning condenser rotor plates completely out of mesh.

(c) Connect the output lead from the signal generator through a .00025 mfd., series condenser to the antenna terminal of the receiver.

(d) Set the signal generator to approximately 1570 kilocycles.

(e) Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output.

(f) Set the signal generator to 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector for maximum output.

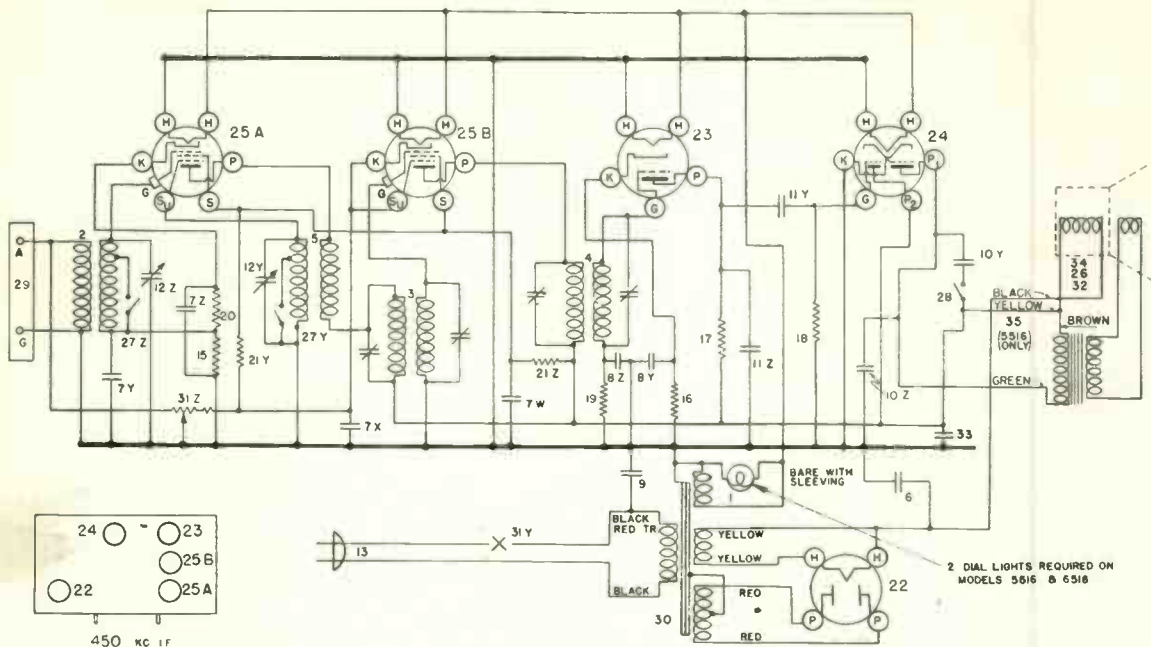
NOTE: Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(h) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.

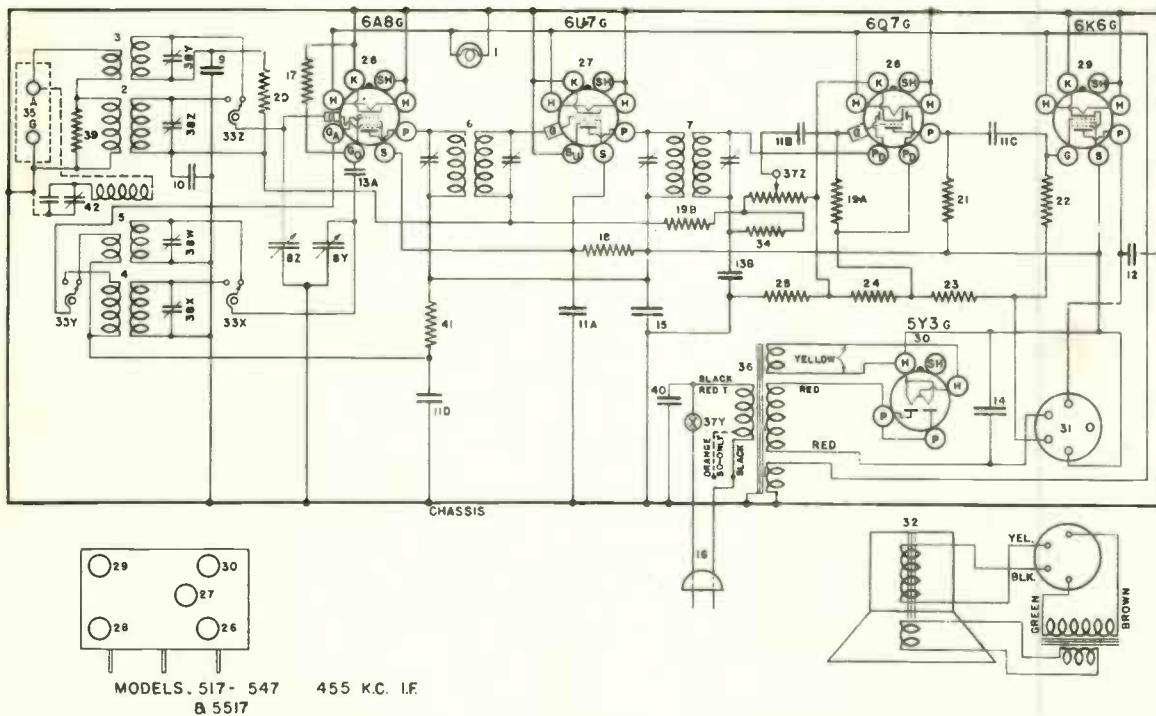
NOTE: There are no adjustments on this receiver for the Police Band.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Description	Item No.	Part No.	Name	Description
1	W —37922	Bulb	Dial Light	29	G1 —26719	Terminal Board	Ant. & Grd.
	G3 —37965	Socket	Dial Light	30	G5 —28500	Transformer	Power—110V. 60 Cy.
2	G42—32000	Coil	Antenna		G6 —28500	Transformer	Power—110V. 25 Cy.
3	G48—32004	Coil	1st I-F (Complete)		G7 —28500	Transformer	Power—220V 25 Cy.
4	G49—32004	Coil	2nd I-F (Complete)	31 Z			Volume Control
5	G47—32002	Coil	Osc.	31 Y			On-Off Switch
6	W —41080	Condenser	12 Mfd 300V.	32	W 219BJ3	Speaker	Used on 5516 Only
7 Z			.02 Mfd. 200V.	33	W —41081	Condenser	16 Mfd. 250V.
7 Y			.02 Mfd. 200V.	34	241BL9	Speaker	Used on 516 only
7 X	W —28623	Condenser	.02 Mfd. 200V.	35	G3 —35696	Cable	Speaker (5516 only)
7 W			.02 Mfd. 200V.				
8 Z			.1 Mfd. 200V.				
8 Y	W —28622	Condenser	.1 Mfd. 200V.		W —31585B	Knob	
8 X			.01 Mfd. 400V.		W —36355	Knob	
9	W —30805	Condenser	.06 Mfd. 400V.		W —35772	Shield	Tube (Half)
10 Z			.03 Mfd. 400V.		W —35773	Cap	Tube Shield
10 Y	W —35011	Condenser	.001 Mfd. 400V.		W —35774	Base	Tube Shield
11 Z			.03 Mfd. 400V.		C —40822	Dial	Calibrated Glass
11 Y	W —25537A	Condenser			W —40815	Bracket	DialGlassMtg. RH
12 Z					W —40816	Bracket	DialGlassMtg. LH
12 Y	G14—33001	Condenser	2 section Var. Tuning.		W —40804	Cushion	Dial Glass
13	B —33906A	Cord & Plug	Power Supply		W —40806	Drive Unit	Dial
15	—31094	Resistor	4500 Ohm.		MG16—40819	Bracket	Drive Mtg. Assy.
16	—21237A	Resistor	60000 Ohm. 1/4 W.		B —40590	Escutcheon	Dial
17	—21455	Resistor	300,000 Ohm.		D — 28	Screw	Escutcheon Mtg.
18	—23785	Resistor	500,000 Ohm.		C —41059	Dial	Calibrated Glass
19	—21454	Resistor	1 Megohm		W —40797	Bracket	Dial Glass Mtg.
20	W —25937	Resistor	275 Ohm Flex		W —40798	Bracket	Dial Support L. H.
21 Z			8500 Ohm		W —40799	Bracket	Dial Support R. H.
21 Y	W —35963	Resistor	25000 Ohm } Candohm		W —40793	Drive Unit	Dial
22	G6 —28807	Socket	Type 80		MG16—40765	Bracket	Drive Mtg. Assy. Only
23	G80—28807	Socket	Type 76		MG33—40765	Drive Bearing	Assy.
24	G90—28807	Socket	Type 6B5		B —40839	Escutcheon	Ring
25A	G75—28807	Socket	Type 6D6		W —28760	Escutcheon	Pin
25B	G75—28807	Socket	Type 6D6		B —40818B	Pointer	Disc.
26	219BL9	Speaker	Used on 6516 Only		W —40486	Pointer	Disc. Screw
27 Z	W —35753A	Switch	Band Selector		B —40802	Bracket	Speaker Mtg. } 6516
27 Y					W —41001A	Clamp	Speaker } Only
28	W —36184A	Switch	Tone Control				



WIRING DIAGRAM OF MODELS 516, 5516 AND 6516



WIRING DIAGRAM—MODELS 517, 547 and 5517

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
 Power consumption approximately 40 watts at 117.5 volts.  
 Voltage drop across speaker field 35 volts.

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .0002 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** † (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum

output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

**NOTE 1:** When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

**NOTE 2:** If at any time the H-F coils are replaced, it may be necessary to vary the inductance of the "OSC" coil by moving the cross-over turn of wire at the gap to make the set track at the 6 megacycle end. Moving the turn toward the short end of the coil will decrease the inductance and moving it toward the long end will increase the inductance. If the signal is weak at 6 megacycles, a similar slight change in the inductance of the "ANT" coil should bring up the signal strength. **THIS IS A CRITICAL OPERATION AND SHOULD NOT BE DONE ON ANY SET UNLESS CHANGING COILS MAKES IT NECESSARY.**

**CHANGES IN PARTS LIST, SERVICE SUPPLEMENT NO. 163**

Item 6, Part No. G136-32004 superseded by G138-32004.

Item 7, Part No. G137-32004 superseded by G139-32004.

Item 24, Part No. W-33012A superseded by

Item 6, Part No. G136-32004 superseded by G138-32004.

Item 7, Part No. G137-32004 superseded by G139-32004.

Item 24, Part No. W-33012A superseded by W-23012A.

**(C) SIGNAL INPUT FREQUENCIES**

	Minimum Capacity	Shunt Alignment
American Broadcast Band	1725 Kilocycles	1400 Kilocycles
High Frequency Band	15400 Kilocycles	15000 Kilocycles

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring diagram.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

**PARTS LIST—MODEL 517, 547 and 5517**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light Bulb		7AE	Cab., Horizontal Table (517 and 547) Superseding 7H and 7HA
	G2 —44252	Light Socket Assy.		7B	Cab., Horizontal Table (517) Moulded Front
2	G132—32000	Ant. Coil, 1725-540 Kc.		7M	Cab., Console (517 and 547)
3	G133—32000	Ant. Coil, 6-15 Mc.		7MB	Cab., Console (5517)
4	G132—32002	Osc. Coil, 1725-540 Kc.		7MA	Cab., Console (517)
5	G133—32002	Osc. Coil, 6-15 Mc.		6KA	Cab., Vertical Table (547)
6	G138—32004	1st I-F Assy., 455 Kc.		7AD	Cab., Vertical Table (547) Superseding 6KA
7	G139—32004	2nd I-F Assy., 455 Kc.		7HA	Cab., Horizontal Table (547)
8	G37 —33001	2 Section Gang Cond. (517)		257BP11"B"	Speaker, Spec. No. 51-A-5 (Cab.—6K, 6KD, 7AC, 6KA and 7AD)
8	G38 —33001	2 Section Gang Cond. (547) Quiktune	32	—42927	V. C. and Cone Assy. for 257BP11"B"
	B —44286C	Dial Face (517)		—41473	Output Trans. for 257BP11"B"
	B —44290	Dial Face (547) Quiktune		—43539	Cone Mtg. Ring for 257BP11"B"
	W —44001A	Face Support Ring (517)		257BP18"B"	Speaker, Spec. No. 51-A-8 (Cab.—7H, 7AE, 7HA and 7B)
	W —43778B	Face Support Ring (547) Quiktune		—42927	V. C. and Cone Assy. for 257BP18"B"
	W —43550A	Pointer (517 only)		—43989	Cone Mtg. Ring for 257BP18"B"
	W —40486	Pointer Mtg. Screw (517)		—43988	Output Trans. for 257BP18"B"
	W —44285	Paper Dial Mask		462CP11"M"	Speaker, Spec. No. 1-D-971 (Cab.—6FF)
	—44267	Metal Dial Mask		—40405	V. C. and Cone Assy. for 462CP11"M"
	B —43544D	Dial Mtg. Bracket		—43989	Output Trans. for 462CP11"M"
	G1 —43564	Pulley and Hub Assy.		—43988	Field Coil for 462CP11"M"
	—44134	Drive Shaft		464BP15"M"	Speaker, Spec. No. 1-D-1017 (Cab.—7M, 7MA and 7MB)
	W —43542B	Drive Shaft Bracket		—43993	V. C. and Cone Assy. for 464BP15"M"
	W —43549	Shaft Retaining Ring		—43995	Output Trans. for 464BP15"M"
	—41582	Drive Cable		—43994	Field Coil for 464BP15"M"
	W —43561	Tension Spring (Cable)		W —43448A	Band Selector Switch
	D —44781	Dial Face (Glass) (5517)		—35600	Resistor, 100,000 Ohm 1/4 W. Ins. Carb.
	W —44085B	Dial Mask (5517)		G1 —26719	Ant. and Gnd. Terminal Assy.
	C —44082E	Dial Glass Support (5517)		—43479	Power Trans., 110 V. 60 Cy.
	W —44084A	Glass Support Ring (5517)		—43569A	Power Trans., 110 V. 50 Cy.
	W —44299	Pointer (5517)		—43480A	Power Trans., 110 V. 25 Cy.
	W —635C	Pointer Spacer (5517)		—43570A	Power Trans., 220 V. 50 Cy.
	W —44833	Pointer Mtg. Screw (5517)	33	—43481A	Power Trans., 220 V. 25 Cy.
	—41582	Drive Cord (18 inches) (5517)	34	—43449A	Volume Control. 1 Meg.
9	G12 —34002	Condenser, .000500 Mf. Moulded	35	W —41247A	Line Switch
10	W —36541	Condenser, .02 Mf. 160 V.	36	—22196	4 Section Shunt Trimmer Cond. Assy.
11ABCD	W —28621	Condenser, .02 Mf. 200 V.		W —30805	Resistor, 20,000 Ohm 1/4 W. Carb.
12	W —23191A	Condenser, .01 Mf. 400 V.		—30137	Condenser, .01 Mf. 400 V.
13AB	G1 —34002	Condenser, .00025 Mf. Moulded		W —43553	Resistor, 3,500 Ohm 1/4 W. Carb.
14	W —44012	Condenser, 16 Mf. 250 V. Electrolytic		W —44381B	Rubber Mtg. Foot (Chassis)
15	W —43450	Condenser, 16 Mf. 200 V. Electrolytic		—44268A	Knob (3) 6K, 6FF, 7AC, 7AE, 7B, 7H, 7KD, 7MA, (7M-517)
16	B —44004	Power Cord and Plug	37Z	B —44226B	Escutcheon—6FF, 7AC, 7AE, 7B, (7M-517)
17	—33390	Resistor, 30,000 Ohm 1/4 W. Carb.	37Y	W —44380B	Escutcheon—7MB Cab.
18	—24990	Resistor, 25,000 Ohm 1/4 W. Carb.	38	G1 —43724	Knob (3) 7MB Cab.
19AB	—36688	Condenser, 3 Megohm 1/4 W. Carb.	39	W —43878A	Escutcheon (Quiktune) Assy. (547)
20	—21455	Resistor, 300,000 Ohm 1/4 W. Carb.	40	W —44956	Celluloid Disc. (Brown) (547)
21	—35601	Resistor, 300,000 Ohm 1/4 W. Ins. Carb.	41	W —43769	Celluloid Disc. (clear), package of 12
22	—23785	Resistor, 500,000 Ohm 1/4 W. Ins. Carb.		B —43898A	Arrow Head Screw (547)
23	W —25937	Resistor, 275 Ohm 1/2 W. Flex.		G165—32004	Escutcheon—7KD Cab.
24	W —23012A	Resistor, 40 Ohm 1/2 W. Flex.		W —44288	Wave Trap
25	W —25357	Resistor, 75 Ohm 3/4 W. Flex.		W —43625	Escutcheon—7MA Cab.
26	G156—36400	Socket, Type 6A8		W —43220	Knob (2) 6KA, 7HA, 7AD, (7AE-547) Cab.
27	G171—36400	Socket, Type 6U7		W —43939	Knob (3) 7M Cab. (547)
28	G160—36400	Socket, Type 6Q7			
29	G172—36400	Socket, Type 6K6			
30	G173—36400	Socket, Type 5Y3			
	W —40911	Tube Shield			
31	G103—28807	Speaker Socket	42		
	W —43552	Speaker Plug Clamp			
	—44681	Speaker Plug			
	6K	Cab., Vertical Table (517)			
	7KD	Cab., Vertical Table (517)			
	7AC	Cab., Vertical Table (517) Superseding 6K and 7KD			
	6FF	Cab., Horizontal Table (517) Export Only			
	7H	Cab., Horizontal Table (517)			

## CHASSIS MODELS 518 & 6518 (FOREIGN)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	G <sub>a</sub>	G <sub>o</sub>
6A8G	Oscillator-Modulator	6.3	165	95	---	---	---	---
6U7G	I-F Amplifier	6.3	165	95	---	---	165	---
6Q7G	Det.—A. V. C. 1st A-F	6.3	72	---	---	---	---	---
6K6G	Power Output	6.3	155	165	---	---	---	---
5Y3G	Rectifier	2.2	---	---	---	14.5	---	---

Voltage drop across speaker field 25 volts.  
 Maximum power output approximately 2 watts.  
 Power consumption at 117.5 volts approximately 37 watts.

### Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 4, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

### Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For both bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**NOTE:** When shunt aligning the Short Wave Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

### (C) SIGNAL INPUT FREQUENCIES

Minimum Capacity Signal

1,725 Kilocycles

7,000 Kilocycles

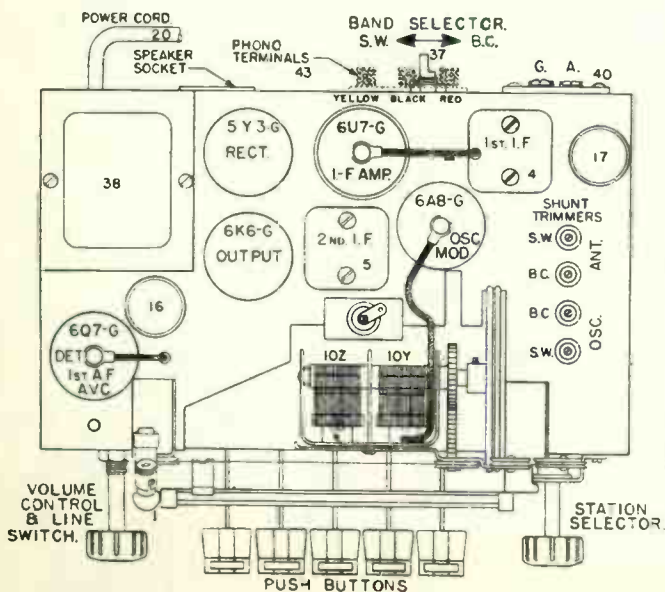


Fig. 2—Top View Models 518 & 6518

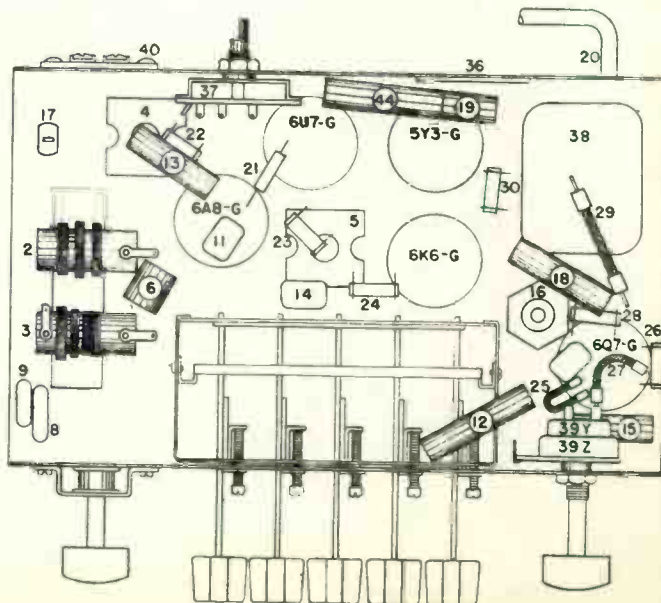


Fig. 3—Bottom View Models 518 & 6518

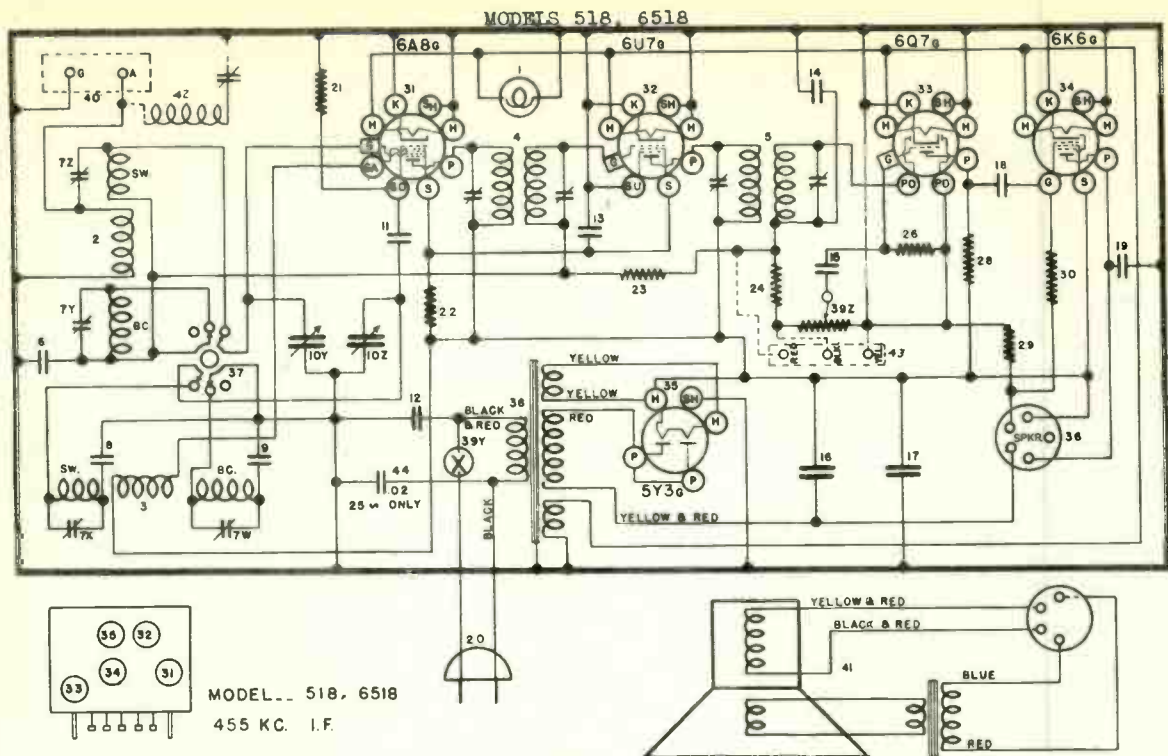


FIG. 1—WIRING DIAGRAM—MODELS 518, 6518

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—3792C	Dial Light, 6-8 Volt	13		
	G12 —45394	Dial Light Socket Assembly	32		
2	G174 —32000	Antenna Coil, B. C. and S. W.	33		
3	G175 —32002	Oscillator Coil, B. C. and S. W.	34	G178 —36100	8 Prong Socket
4	G187 —32004	1st I. F. Transformer	35		
5	G188 —32004	2nd I. F. Transformer	36	G103 —28807	5 Prong Socket (Speaker)
6	W —36541	Condenser, .02 Mf. 160 V.		W —10911	Tube Shield
7Z		S. W. Antenna	37	—45901	Band Change Switch
7Y	W —41217A	Trimmer Condenser	38	—45756	Power Transformer, 110 V. 25 Cycle
7X		B. C. Antenna		—45757	Power Transformer, 230 V. 25 Cycle
7W		S. W. Osc.		—45758	Power Transformer, Universal
8	G13 —34005	Condenser, .0014 Mf. Molded	39Z		Volume Control, 6518
9	G18 —34002	Condenser, .0001 Mf. Molded	39Y	—46314	On-Off Switch, 6518
10Y	G55 —33001	2 Section Gang Condenser/Ant. Osc.	39Z		Volume Control, 1 Megohm 518
10Z			39Y	—45864	On-Off Switch
C	—45747	Dial Glass	40	G1 —26719	Terminal Strip, A-G
B	—45743A	Dial Mask (Polished Metal)	41	279BP12"14"	Speaker, Spec. S-5274-1-5
W	—45984	Dial Glass Clip, L. II.		—46798	Speaker Cone Assy.
W	—45985	Dial Glass Clip, R. II.		—46795	Cardboard Ring
W	—45742B	Dial Glass Cushion		—46709	Output Transformer
W	—46387	Dial Pointer (White Celluloid)	G3	—45683	Push Button Assembly
W	—46037A	Dial Hand Guide	G26	—45683	Key Assembly (6518)
R	—187	1/8" —No. 6 x 32 R. H. Screw for Dial Hand Guide	G32	—45683A	Key Assembly (518)
W	—45266C	Felt Strip	W	—50542C	Key Clip
W	—45808	1/8" —No. 8 P. K. Screw (Dial Glass Clips)	W	—45717	1 1/8" —No. 6 x 32 Screw (Clamp Spring (Key Return)
MG14	—45894	Riveted Dial Support, R. H.	W	—50588B	Adjusting Clip
MG15	—45894	Riveted Dial Support, L. II.	W	—45808	1/8" —No. 8 P. K. Screw (Clip Mtg.)
W	—45895	Drive Shaft (Manual)	W	—50547	Key Plate (Rear Guide)
W	—43542B	Drive Shaft Bracket	G22	—45683	Rocker Plate Assembly
R	—187	1/4" —No. 8 P. K. Screws for Drive Shaft Bracket	W	—50561	1/4" —No. 6 x 40 Fil. Hed. Screw (Rocker Plate Bearing)
G2	—41582	Drive Cord (44 Inches Long)		—50617	Push Button (Black)
G12	—43564	Drive Pulley Assembly		—45553B	Push Button (Brown)
W	23877	1/8" —No. 8 x 32 Set Screw for Drive Pulley (2 Req.)	W	—50531A	Celluloid Cover
W	50607	Spring Cord Tension		—50841	Call Letter Sheet (U. S. A. Stations)
G5	—34002	Condenser, .00005 Mf. Molded		—44934	Knob Tuning (Black)
W	—30805	Condenser, .01 Mf. 400 V.		—45957	Knob Tuning (Brown)
W	28621	Condenser, .02 Mf. 200 V.		—44552	Knob, Vol. and Switch (Black)
G1	—34002	Condenser, .00025 Mf. Molded		—45771	Knob, Vol. and Switch (Brown)
W	28619	Condenser, .006 Mf. 200 V.		—45761A	8A Cabinet (Black)
W	44012	Condenser, 16 Mf. 250 V. Elect. (60 Cycle)		—45946A	8A Cabinet (Brown)
W	46822	Condenser, 30 Mf. 250 V. Elect. (25 Cycle only)	42	G193 —32004	Wave Trap
W	45938	Condenser, 16 Mf. 250 V. Elect.	43	G41 —26719	Photo Terminal
W	28621	Condenser, .02 Mf. 200 V.	44	W —30188	Condenser, .02 Mf. 400 V. (25 Cycle only)
W	34647	Condenser, .006 Mf. 400 V.	W	—43552	Speaker Plug Clamp
B	—45764A	Power Cord		—46210	Call Letter Sheet (European)
W	36761	Resistor, 40,000 Ohms 1/4 W. Ins.		—46399C	Escutcheon (6518 only)
W	22196	Resistor, 20,000 Ohms 1/4 W. Carb.		330	Screw (Escutcheon Mtg.)
W	26577	Resistor, 3 Megohms 1/4 W. Carb.		8K	Cabinet (6518)
W	21873	Resistor, 100,000 Ohms 1/4 W. Carb.		46408	Knob (6518 only) (2 Req.)
W	24537	Resistor, 60 Ohms 1/4 W. Flex.		—46107	Knob (6518) (Hand Switch)
W	26577	Resistor, 3 Megohms 1/4 W. Carb.			
W	23012A	Resistor, 40 Ohms 1/4 W. Flex.			
W	21455	Resistor, 300,000 Ohms 1/4 W. Carb.			
W	25837	Resistor, 275 Ohms 1 W. Flex.			
W	23785	Resistor, 500,000 Ohms 1/4 W. Carb.			

**CIRCUIT CHANGES**

Item 22 was a 30,000 ohm resistor. Item 25, a 60 ohm 1/2 watt flexible resistor added from 607 cathode to ground. Item 26 should be 3 megohm resistor not 11 megs. Item 27, a 40 ohm 1/4 watt resistor should connect from the junction of items 26 and 29 at one end to low side of volume control. Item 29, a 275 resistor was a 375 ohm resistor.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Co	Ga
12A8GT	Oscillator-Modulator	12	90	48	—	3	—4	90
12SK7GT	I-F Amplifier	12	90	90	—	—	—	—
12SQ7GT	Det, AVC, A-F Amplifier	12	40	—	—	—	—	—
50L6GT	Output	50	80	90	—	6	—	—
35Z5GT	Rectifier	35	117.5	—	—	117	—	—

Power output approximately 2 watts.  
 Power consumption approximately 27 watts.  
 Voltage drop across speaker field 25 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of

the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 14, located on top of coil (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers located on the rear of chassis for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier.**

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

**NOTE:** Do not readjust the "OSC" trimmer.

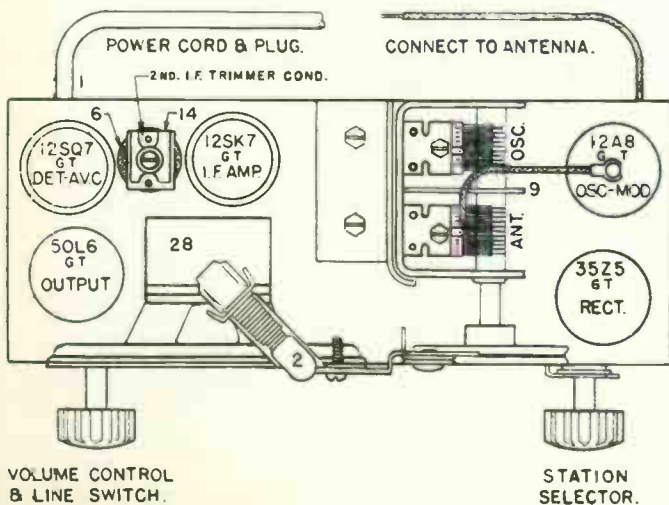


Fig. 2—Top View Models 519 & 529

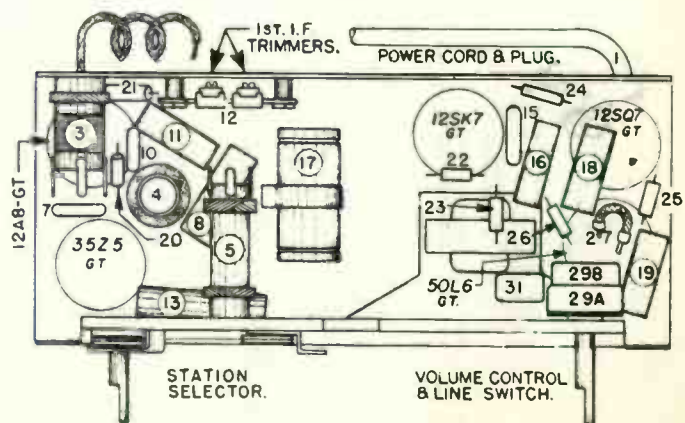
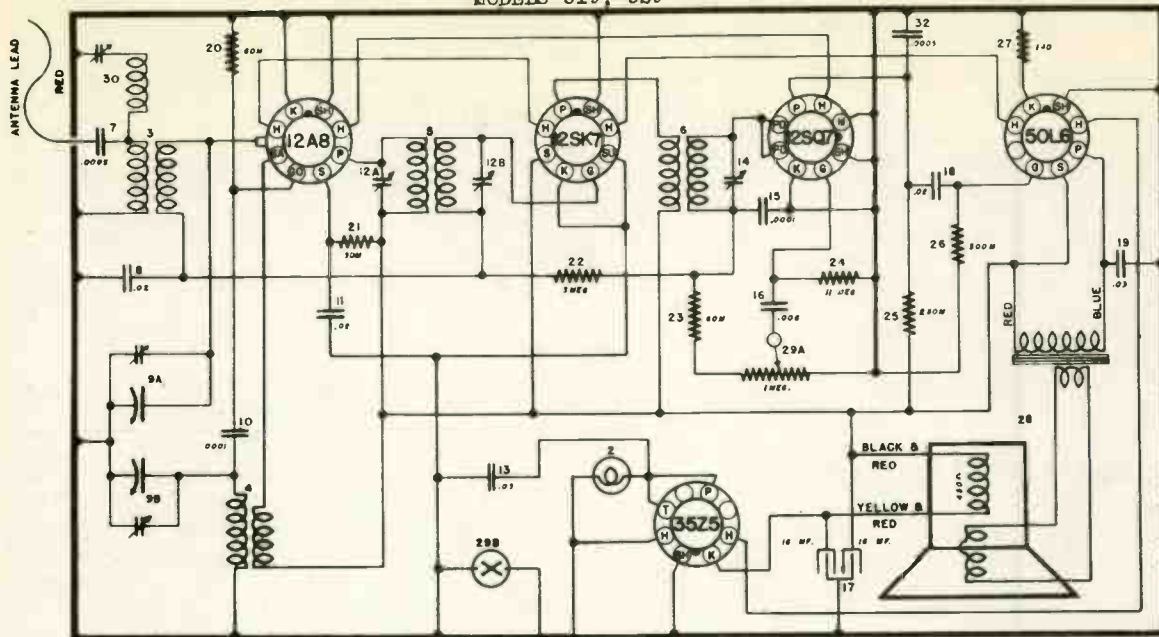


Fig. 3—Bottom View Models 519 & 529





455 KC. I.F.

MODEL - 519 & 529

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B -45781	Power Cable and Plug			<b>MODEL 519 ONLY</b>
	W -4099	Dial Light Bulb, 6.3 Volt			
	G6 -27136	Dial Light Socket Assembly		-47597	Instruction Booklet
3	G189 -32000	Antenna Coil		9EA	Cabinet, Mottled Brown
4	G186 -32002	Oscillator Coil		9EB	Cabinet, Ivory
5	G219 -32001	1st I. F. Transformer (Coil only)		9EC	Cabinet, Red
6	G218 -32001	2nd I. F. Transformer (Coil only)		9EBA	Cabinet, Tan
7	G3 -34002	Condenser, .0005 Mf. Molded		9EAA	Cabinet, Blue
8	W -15780B	Condenser, .02 Mf. 160 V. Paper		-47588A	Cabinet Back
9A	G74 -43001	2 Sect. Gang Condenser, (Ant. Sect. Osc. Sect.)		-47600A	9EB, 9EC, 9EBA, 9EAA, Cabinet Back
9B				-47572	Carton
	-17631	Dial Glass		-17603	Knob (2 Req.) (9EA Cabinet)
	W -46921	Speed Nut (2 Req.) (Dial Glass)		-14934	Knob (2 Req.) (9EB, 9EC, 9EBA, 9EAA, Cabinet)
	G17 -13561	Pulley and Hub Assembly		B -130	No. 6-32 x 1/4" Oval Hd. Mach. Screw (2 Req.) (Cabinet Back)
	MG9 -17560	Dial Back Face		-18467	Resistance Cable, 470 Ohms 220 V.
	G167 -34403	Antenna Lead (519 only)			<b>MODEL 529 ONLY</b>
	B -128	No. 6-32 x 1/4" Bind. Hd. Mach. Screw (2 Req.) (Dial Back Face)			
	W -23877	No. 8-32 x 3/8" Set Screw (Pulley and Hub Assembly)		-47602	Instruction Booklet
	G19 -41582	Drive Cord (27 Inches)		9ED	Cabinet, Mottled Brown
	G26 -41582	Guide Cord (8 Inches)		9EE	Cabinet, Ivory
	W -16087	Drive Cord Spring		9EF	Cabinet, Red
	W -46818	Guide Cord Spring		9EG	Cabinet, Wood
	W -46290	Cord Clamp		9ECA	Cabinet, Blue
	W -17582	Dial Pointer		9EDA	Cabinet, Tan
	W -47559A	Drive Shaft		9EE, 9EF, 9ECA, 9EDA	Cabinet Back
	W -47557A	Drive Shaft Bracket		-17614A	9EG Cabinet Back
	-6876	No. 6-32 x 1/4" W. Hd. Mach. Screw (Drive Shaft Bracket)		-17598A	9ED Cabinet Back
	W -17576	Dial Light Mounting Bracket		-17572	Carton, 9ED, 9EE, 9EF, 9ECA, 9EDA
10	G2 -34002	Condenser, .0001 Mf. Molded		-17571	Carton, 9EG
11	W -15780B	Condenser, .02 Mf. 160 V. Paper		-47603	Knob (2 Req.) (9ED Cabinet)
12A	W -16738	Trimmer Cond., 1st I. F. Secondary		-14934	Knob (2 Req.) (9EE, 9EF, 9ECA, 9EDA, Cabinet)
12B	4879	No. 6-32 x 3/8" W. Hd. Mach. Screw (2 Req.) (Trimmer Condenser)		17615	Knob (2 Req.) (9EG Cabinet)
	W -45574	Spacer (2 Req.) (Trimmer Condenser)		B -130	No. 6-32 x 1/4" Bind. Hd. Mach. Screw (2 Req.)
	W -15518	No. 6-32 Pal Nut (2 Req.) (Trimmer Condenser)		18467	Resistance Cable, 470 Ohms 220 V.
	W -15782B	Condenser, .05 Mf. 120 V. Paper		-17567	Antenna-Roll
14	W -16653	Trimmer Cond., 2nd I. F. Secondary		-17589	Push Buttons (4 Req.) (9EE, 9EF, 9ECA, 9EDA)
15	G2 -34002	Condenser, .0001 Mf. Molded		-47591	Push Buttons (4 Req.) (9ED)
16	W -15810B	Condenser, .006 Mf. 160 V. Paper		-17821	Push Buttons (4 Req.) (9EG)
17	W -46398	Condenser, 16-16 Mf. 125 V. Elect.		-17859	Call Letter Sheet (9EE, 9EF, 9ECA, 9EDA)
18	W -15780B	Condenser, .02 Mf. 160 V. Paper		-17863	Call Letter Sheet (9ED, 9EG)
19	W -50065	Condenser, .03 Mf. 160 V. Paper		W -50551B	Call Letter Cover
20	35928	Resistor, 60,000 Ohms 1/4 W. Ins.		14827	No. 8 x 1 1/4" Hex. Hd. P. K. Screw (3 Req.) (Chassis Mtg.) (9EG)
21	49004	Resistor, 30,000 Ohms 1/4 W. Ins.		W -30109	Flat Washer (Chassis Mtg.) (9EG)
22	26577	Resistor, 3 Megohms 1/2 W. Carb.			<b>PUSH BUTTON PARTS</b>
23	33928	Resistor, 60,000 Ohms 1/4 W. Ins.		G36 -45683	Push Button Unit Assembly
24	30956	Resistor, 10 Megohms 1/2 W. Ins.		G38 -45683	Key Assembly
25	38976	Resistor, 250,000 Ohms 1/4 W. Ins.		G59 -45683	Rocker Plate Assembly
26	36322	Resistor, 500,000 Ohms 1/4 W. Ins.		W -30542E	Key Clip (4 Req.)
27	W -11759	Resistor, 140 Ohms 1/2 W. Flex.		W -50561	No. 6-40 x 1 1/2" Fil. Hd. Screw (2 Req.) (Rocker Plate Bearing)
28	2841L5-K	Speaker, Spec. 41W5		W -47585	Key Plate
	B -128	No. 6-32 x 1/4" Bind. Hd. Mach. Screw (1 Req.) (Speaker)		-31388	Key Plate Screw (2 Req.)
	18345	Cone and V. C. Assembly		-15717	Key Setting Screw (4 Req.)
	18355	Field Coil, 150 Ohms		W -50607C	Key Return Spring (1 Req.)
	48365	Output Transformer			
	48366	Cardboard Ring			
	W -46729A	8 Prong Socket (No Marking)			
29A		Volume Control			
29B	18217	Power Switch			
	W -16662	3/8" Pal Nut			
30	G227 -32001	Wave Trap			
31	G2 -34002	Condenser, .0001 Mf. Molded			
32	G3 -34002	Condenser, .0005 Mf. Molded			

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6A8-G	Osc.-Mod.	6.7	295	—	135	—	0	7.5	155	-10 to -20
6K7-G	I-F Amplifier	6.7	295	—	135	10	0	10	—	—
6J7-G	Det. & A-F Amp.	6.7	1.0	—	65	4	0	4	—	—
6N6-G	Output	6.7	285	295	—	—	0	0	—	—
5Z4-MG	Rectifier	5.0	—	—	—	—	—	390	—	—

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to P. and P2 of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. **NOTE:** When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

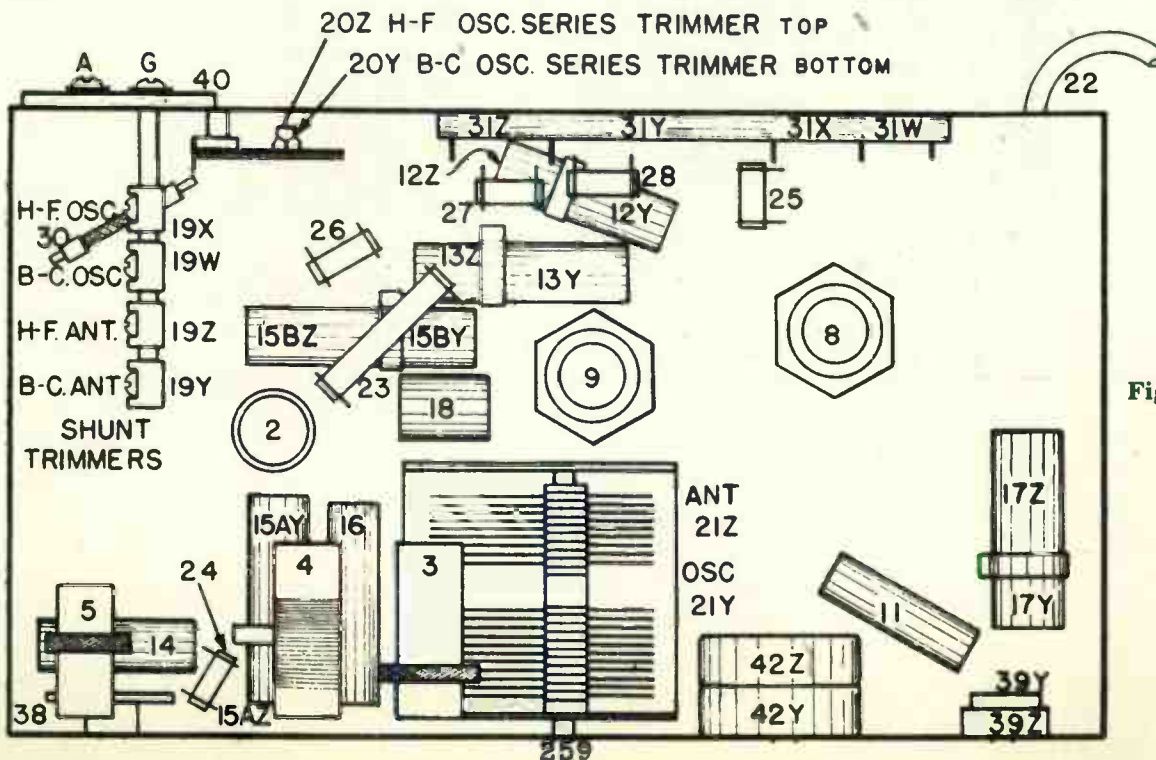


Fig. 3.

MODELS 526, 5526

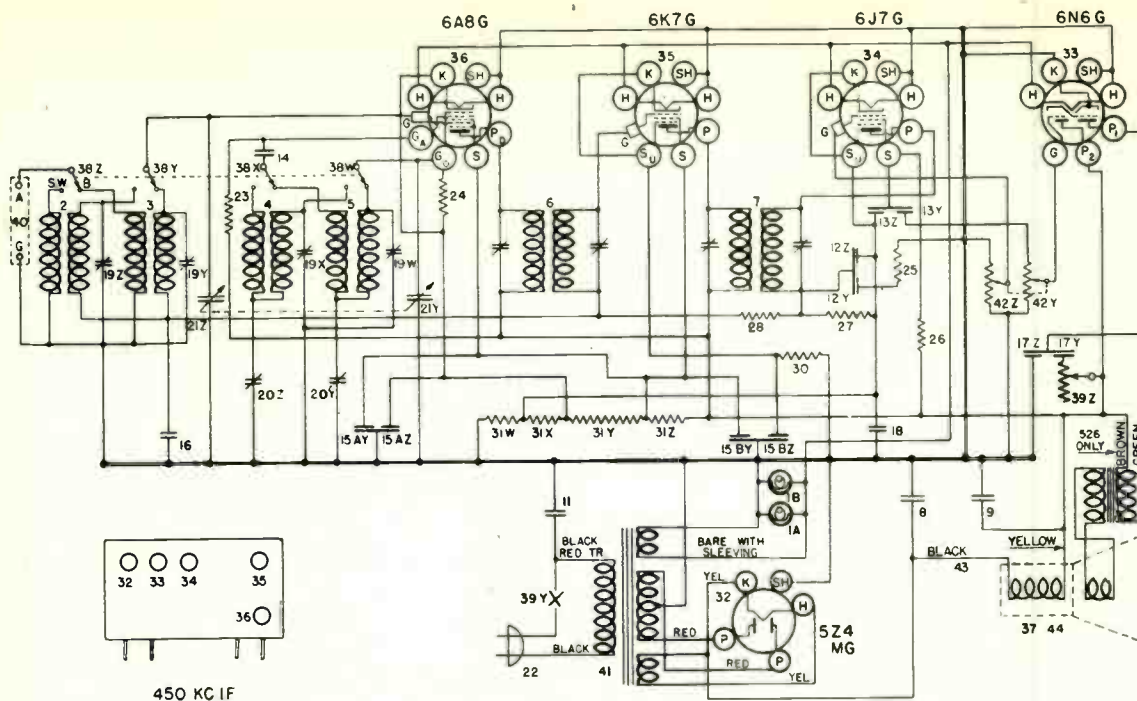


FIG. 1.—WIRING DIAGRAM—MODELS 526 AND 5526

Figures in first column refer to parts in Diagrams.					
Item	Part No.	Description	Item	Part No.	Description
1A	W —37922	Dial Light Bulb	22	—33905A	Power Cord & Plug
1B	W —37922	Dial Light Bulb	23	—3370A	Resistor 20,000 Ohm
2	G82 —33000	Ant. Light Socket Assembly	24	—21237	Resistor 60,000 Ohm
3	G81 —33000	Ant. Coil S. W. B.	25	—21875	Resistor 100,000 Ohm
4	G65 —32002	Osc. Coil S. W. B.	26	—21155	Resistor 300,000 Ohm
5	G66 —32002	Osc. Coil B. C. B.	27	—33314	Resistor 400,000 Ohm
6	G71 —32001	1st I-F Assembly	28	—37245	Resistor 1.5 Megohm
7	G72 —32001	2nd I-F Assembly	29	None	
8	W —36055	Condenser 35 Mfd. 400 V.	30	W —28106	Resistor 500 Ohm 1/4 W. Flex.
9	W —36057	Condenser 40 Mfd. 300 V.	31Z		10,000 Ohm
10	None		31Y	W —37246A	Candohm
11	—30805	Condenser 0.01 Mfd. 400 V.	31X		25,000 Ohm
12Z	W —30322A	Condenser 0.00017 Mfd. 200 V.	31W		185 Ohm
12Y	W —30322A	Condenser 0.006 Mfd. 200 V.	32	G154 —36400	Socket 5Z4
13Z	W —25537A	Condenser 0.001 Mfd. 400 V.	33	G165 —36400	Socket 6N6
13Y	W —25537A	Condenser 0.03 Mfd. 400 V.	34	G157 —36400	Socket 6J7
14	W —23191A	Condenser 0.01 Mfd. 400 V.	35	G151 —36100	Socket 6K7
15AZ	W —28623	Condenser 0.02 Mfd. 200 V.	36	G156 —36400	Socket 6A8
15AY	W —28623	Condenser 0.02 Mfd. 200 V.	37	331-BL-9	Speaker (526)
15BZ	W —28623	Condenser 0.02 Mfd. 200 V.		432-CI-3	Speaker (5526)
15BY	W —28623	Condenser 0.02 Mfd. 200 V.	G3	—35696	Speaker Cable (5526)
16	W —27216	Condenser 0.05 Mfd. 200 V.	W	—41001A	Speaker Clamp
17Z	W —31052	Condenser 0.004 Mfd. 400 V.	38W		
17Y	W —31052	Condenser 0.05 Mfd. 400 V.	to		
18	W —36541	Condenser 0.02 Mfd. 160 V.	38Z		
19Z			39Z	W —11028	Tone control
19Y	W —37211A	4 Section Trimmer Cond.	39Y		On-Off Switch
19X			40	G1 —26719	Ant & Grd. Terminal Board
19W			41	G12 —28500	Power Trans. 60 Cy. 110 V.
20Z	G29 —33006	S. W. Osc. Series Trimmer		G13 —28500	Power Trans. 25 Cy. 110 V.
20Y		B. C. Osc. Series Trimmer		G14 —28500	Power Trans. 25 Cy. 220 V.
21Z	G17 —33001	Var. Tuning Cond. Gang.	42Z		Volume Control A-F Grid
21Y			42Y	—41027	Volume Control Output Grid.
C	—40821	Dial Glass	B	—40839	Escutcheon Ring
W	—40186	Pointer Disc Mtg. Screw	W	—28760B	Escutcheon Pin
B	—40818B	Pointer Disc	W	—37339	Knob V. C. & Station Select.
MG16	—40765	Drive Mtg. Brkt. Assembly	W	—37341	Knob T. C. & Band Select.
W	—40801	Dial Glass Cushion	W	—40911	Shield. Tube
W	—40797	Dial Glass Brkt.	W	—27981A	Base Tube Shield
W	—40798	Support Brkt. L. H.			
W	—40799	Support Brkt. R. H.			
B	—40802	Speaker Mtg. Bracket (526)			
W	—40801	Drive Segment			
W	—40793	Dial Drive Unit			
MG33	—40765	Drive Bearing Assembly			

## MODEL 527 (Battery Fiver)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1C7-G	Oscillator-Modulator	2.0	112	37	0	112	-1*
1D5-G	I-F Amplifier	2.0	112	37	0	—	—
1H6-G	Detector & 1st A-F Amp.	2.0	56	—	0	—	—
1H4-G	2nd A-F Amplifier	2.0	43	—	0	—	—
1J5-G	Output	2.0	110	112	-1*	—	—

Power Output approximately .5 Watt.

"A" Battery Drain approximately .42 Ampere at 2 Volts.

"B" Battery Drain approximately 16 Milliamperes at 135 Volts.

\*Measured at Grid Terminal through 500,000 Ohm Grid Resistor.

\*\*Measured at Go Terminal with Dial Set at approximately 1000 Kc.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1J5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger condenser to the top cap of the 1C7G Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer located on the "Ant" section of the condenser gang for maximum output.

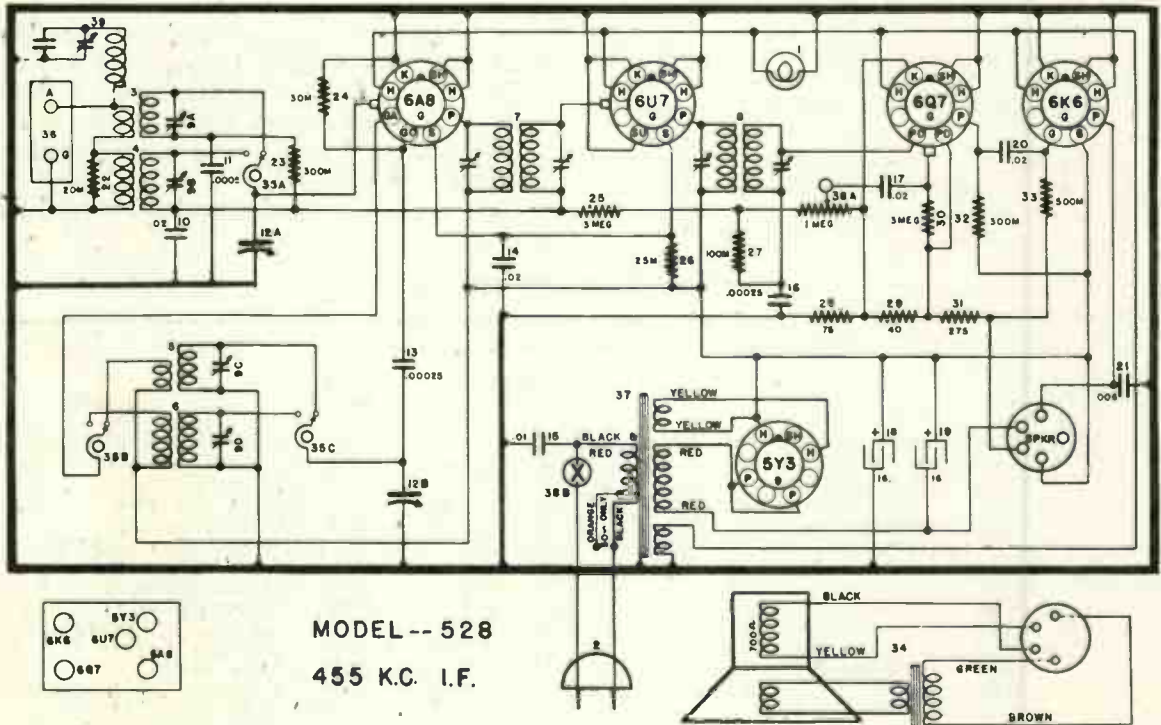
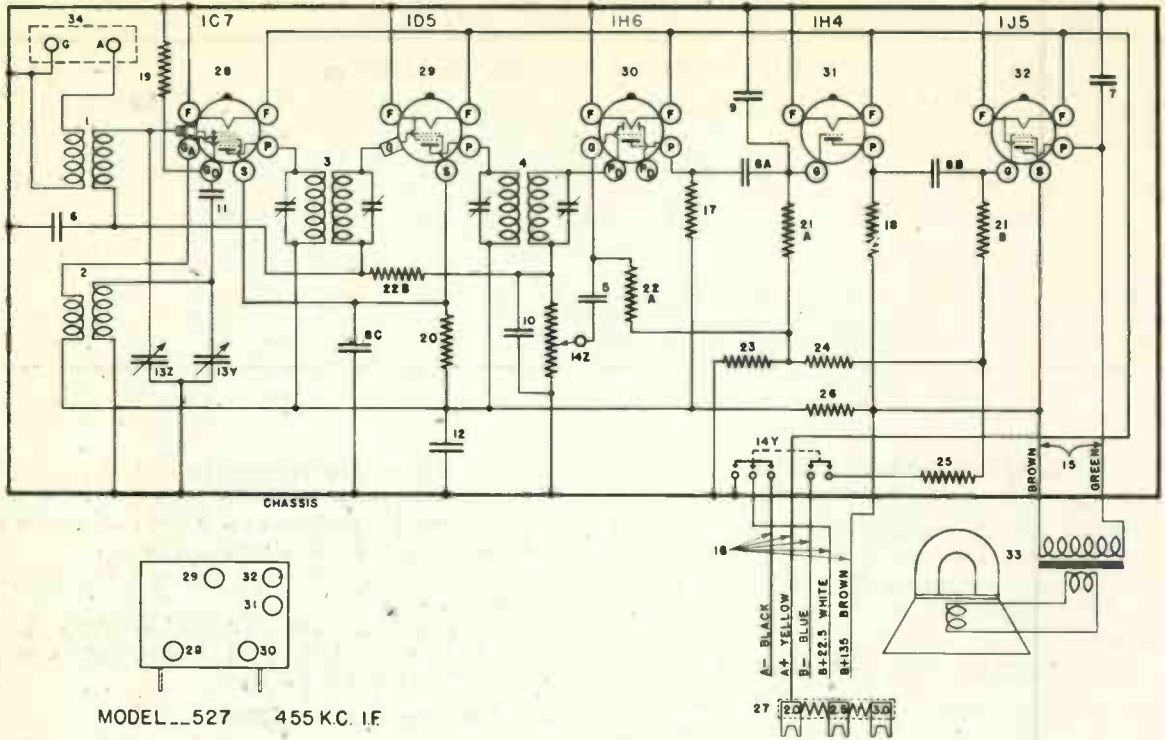
(f) Tune the station selector to the generator signal for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

### PARTS LIST—MODEL 527

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G136—32000	Antenna Coil 540-1725 Kc.	28	G1 —43900	Socket Type 1C7
	G136—32002	Oscillator Coil 540-1725 Kc.	29	G2 —43900	Socket Type 1D5
3	G146—32004	1st I-F Assembly, 455 Kc.	30	G3 —43900	Socket Type 1H6
4	G147—32004	2nd I-F Assembly, 455 Kc.	31	G4 —43900	Socket Type 1H4
5	W —30323	Condenser .01 Mf. 200 V.	32	G5 —43900	Socket Type 1J5
6	W —37226	Condenser .02 Mf. 160 V.	33	31PJ3 "B"	Speaker—Spec. 61 PD-6
7	W —28904	Condenser .004 Mf. 200 V.		—43666	Cone and V. C. Assembly
8ABC	W —28621	Condenser .02 Mf. 200 V.		—43668	Mtg. Ring (Cone)
9	G3 —34002	Condenser 500 Mmf. (.0005)		—43667	Output Trans.
10	G11 —34002	Condenser 175 Mmf. (.000175)	34	G1 —26719	Ant. & Gnd. Terminal Assembly
11	G2 —34002	Condenser 100 Mmf. (.0001)		B —43863	Dial Face
12	W —41081	Condenser 16 Mf. 250 V.		W —43787	Mask—Dial
13	G35 —33001	2 Sect. Var. Tuning Cond.		G2 —43564	Pulley and Hub Assembly
14Z		Vol. Cont., 1 Meg.		W —43548A	Shaft—Drive
14Y		Battery Switch		W —43542A	Bracket—Drive Shaft Mtg.
15	MG11 —43859	Speaker Lead Assembly		W —43778	Ring—Dial Glass Support
16	B —43862	Battery Cable, 5 Lead		W —43549	Ring—Retaining (Shaft)
17	—23403	Resistor 150,000 Ohm ½ W.		W —43550	Pointer
18	—21237A	Resistor 60,000 Ohm ½ W.		W —43561	Spring—Cable Tension
19	—21875	Resistor 100,000 Ohm ½ W.		—41582	Cable—Drive
20	—37472	Resistor 50,000 Ohm ½ W.		—28651	"A—" Cable Marker
21AB	—23785	Resistor 500,000 Ohm ¼ W.		—28650	"A+" Cable Marker
22AB	—26577	Resistor 3 Megohm ¼ W.		—28647	"B+22" Cable Marker
23	W —41759	Resistor 140 Ohm ½ W. Flex.		—28652	"B—" Cable Marker
24	W —28106	Resistor 500 Ohm ½ W. Flex.		W —28645	"B+135" Cable Marker
25	W —22514	Resistor 750 Ohm ½ W. Flex.		W —43320	Knob
26	W —30960	Resistor 2600 Ohm 1 ½ W. Flex.			
27	W —41955A	Fil. Reg. Resistor 1.83 Ohm Tap, 1.1 Ohm			

MODELS 527, 528



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

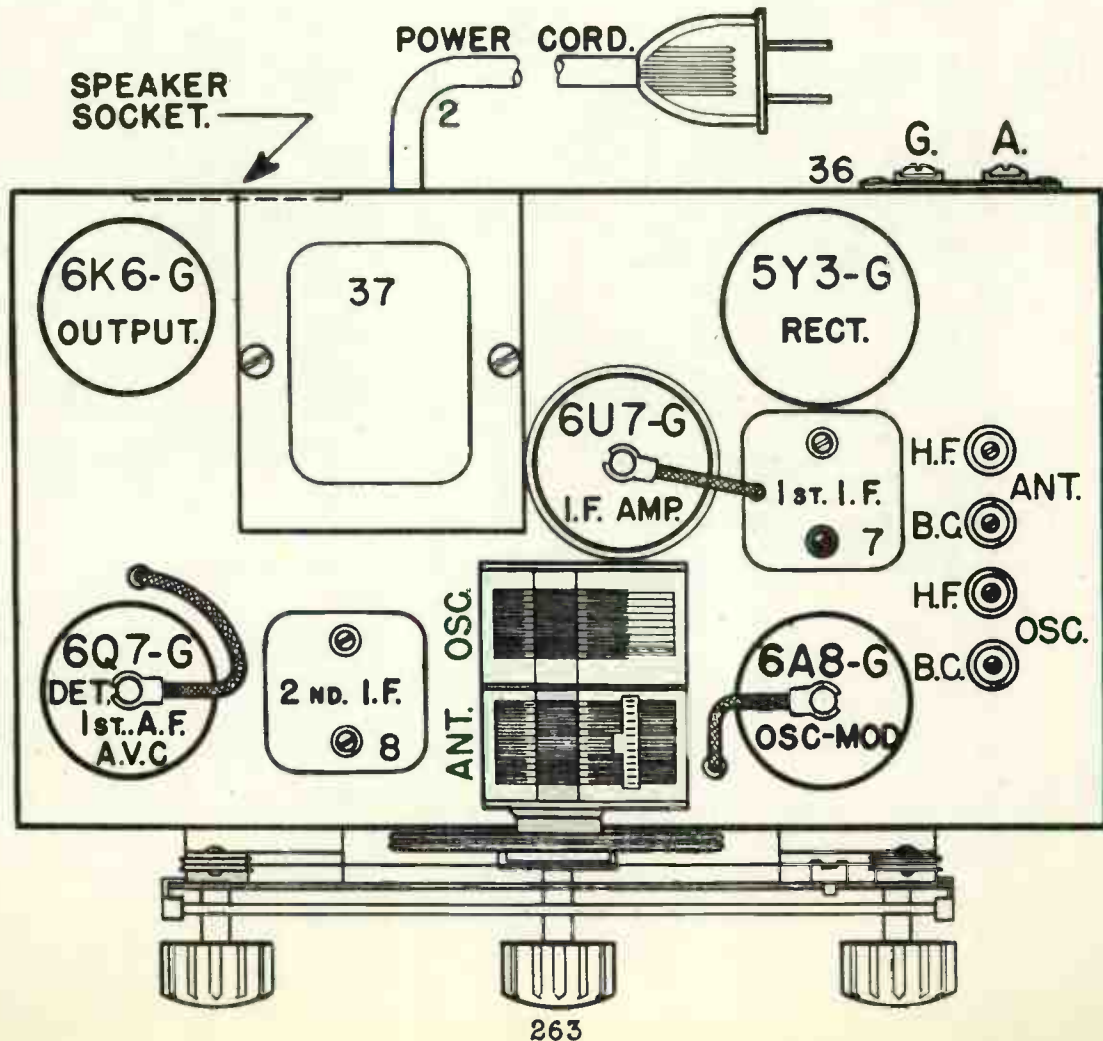
(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

**Aligning R. F. Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**



**PARTS LIST — MODEL 528**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	W —37922	Dial Light Bulb, 6-8 Volt		—46682	V. C. and Cone Assembly	
2	B —44004	Power Cord and Plug		—46683	Field Coil, 700 Ohms 40 MA	
3	G133—32000	H. F. Antenna Coil		—46684	Output Transformer	
4	G132—32000	B. C. Antenna Coil		—46685	Cardboard	
5	G133—32002	H. F. Oscillator Coil	34	279-BP-12-"H"	Speaker, Spec. S-5274-J-B	
6	G132—32002	B. C. Oscillator Coil		—46798	V. C. and Cone Assembly	
7	G138—32004	1st I. F. Transformer		—46749	Output Transformer	
8	G139—32004	2nd I. F. Transformer		—46795	Cardboard Ring	
9A	W —41247A	Trimmer Condenser	34	279-BP-12-"U"	Speaker, Spec. 5-B-134	
9B					—46121	Output Transformer
9C				35A	—43448	Band Change Switch, Antenna Section
9D				35B	—43448	Band Change Switch, Oscillator Pri- mary Section
10	W —36541	Condenser, .02 Mf. 160 V. Paper			Band Change Switch, Oscillator Sec- ondary Section	
11	G12 —34802	Condenser, .0005 Mf. Molded	35C	—43448	3/8" Pal Nut (Band Change Switch)	
12A	G68 —33001	Ganged Variable Cond. (Ant. Section Osc. Section)		W —35201	Terminal Board, Marked "A", "G"	
12B				36	G1 —26719	Power Transformer, 110 V. 60 Cycle
	D —46931	Dial Glass	37	—43479	Power Transformer, 110 V. 50 Cycle	
	C —46930	Dial Glass Support		—43569A	Power Transformer, 110 V. 50 Cycle	
	MG15—46922	R. H. Pulley and Bracket Assembly		—43570A	Power Transformer, 220 V. 50 Cycle	
	MG16—46922	L. H. Pulley and Bracket Assembly		—43580A	Power Transformer, 110 V. 25 Cycle	
	G1 —43564	Pulley and Hub Assembly		—43581A	Power Transformer, 220 V. 25 Cycle	
	—15890A	Dial Hand		N —5096	No. 8 x 3/16" Hex. Nut (2 Req.) (Trans- former Fastening)	
	W —45875A	Dial Glass Cushion (2 Req.)			{ Volume Control, 1 Megohm	
	W —46020	Dial Glass Clip, L. H.	38A	—43449A	Power Switch	
	W —46021	Dial Glass Clip, R. H.	38B		3/8" Pal Nut (Volume Control)	
	—43882	No. 8 x 1/4" P. H. Screw (Dial Glass Clip)	39	W —35201	Wave Trap	
	W —46035	Dial Hand Guide		G164—32004	8 Prong Socket (No Marking)	
	G14 —41582	Drive Cord (36")		G178—36400	Cabinet	
	—77	No. 4—36 x 3/16" R. Hd. Mach. Screw (Dial Hd. Guide) (2 Req.)		—8HG	Carton	
	M —44989	Drive Spring		—46424	Escutcheon	
	W —44134A	Drive Shaft	B	—46934	No. 2 x 3/8" Oval Hd. Ctsk. Hd. Screw (Escutcheon)	
	W —43542B	Drive Shaft Bracket	D	—30	Chassis Mtg. Foot	
	—43882	No. 8 x 1/4" P. K. Screw (Drive Shaft Bracket) (2 Req.)		W —43553	Grille Cloth	
	W —40911	Tube Shield		—46369	Knob (3 Req.)	
13	G1 —34002	Condenser, .00025 Mf. Molded		—46408	No. 6 x 32 Hex. Nut (2 Req.) (Speaker)	
14	W —28621	Condenser, .02 Mf. 200 V. Paper	N	—6	Shakeproof Washer (Speaker)	
15	W —30805	Condenser, .01 Mf. 400 V. Paper	W	—2118	Speaker Plug Clamp	
16	G1 —34002	Condenser, .00025 Mf. Molded	W	—43552	No. 8 x 5/16" H. H. P. K. Screw (Speaker Plug Clamp)	
17	W —28621	Condenser, .02 Mf. 200 V. Paper		—45808	Instruction Booklet	
18	W —46128	Condenser, 16 Mf. 250 V. Elect.		—16936	Instruction Booklet, 50 Cycle	
19	W —46128	Condenser, 16 Mf. 250 V. Elect.		—43093	Instructions (Universal Transformer)	
20	W —28621	Condenser, .02 Mf. 200 V. Paper		—45439	Short Wave Instructions	
21	W —34647	Condenser, .006 Mf. 400 V. Paper		—45159	No. 8 x 3/4" W. Hd. Mach Screw (Chassis Fastening) (3 Req.)	
22	—22196	Resistor, 20,000 Ohms 1/2 W. Carb.		—44499	Flat Washer (Chassis Fastening) (3 Req.)	
23	—21455	Resistor, 300,000 Ohms 1/2 W. Carb.	W	—45579	No. 4 x 1/2" Rd. Hd. Wood Screw (Cabinet) (2 Req.)	
24	—33390	Resistor, 300,000 Ohms 1/2 W. Carb.		—15982	Felt Strip (2 Req.)	
25	—26577	Resistor, 3 Megohms 1/2 W. Carb.				
26	—24990	Resistor, 25,000 Ohms 1/2 W. Carb.				
27	—35600	Resistor, 100,000 Ohms 1/2 W. Ins.				
28	W —25357	Resistor, 75 Ohms 3/4 W. Flex.				
29	W —23012A	Resistor, 40 Ohms 1/2 W. Flex.				
30	—26577	Resistor, 3 Megohms 1/2 W. Carb.				
31	W —25937	Resistor, 275 Ohms 1/2 W. Flex.				
32	—35601	Resistor, 300,000 Ohms 1/2 W. Ins.				
33	—23785	Resistor, 500,000 Ohms 1/2 W. Carb.				
34	279-BP-12-"B"	Speaker, Spec.				

TUBE VOLTAGES—MODEL 534

Type	Where Used	Ef	Ep	Esg	Esup	Ek	Eg
6A7	Osc. Mod.	6.3	100	70	2.5	2.5	0
6D6	I. F. Amp.	6.3	205	100	3.0	3.0	0
75	Diode and A. F.	6.3	50	—	0	0	x
42	Output	6.3	195	205	—	0	-8
80	Rect.	4.9	—	—	—	—	—

PEAKING I.F. STAGES AT 456 Kc.

NOTE: Be sure speaker is connected before turning on receiver.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the Type 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator at 456 kilocycles.
- III. Turn the volume control of the receiver on full. Turn the tuning condenser until the plates are completely meshed and turn the band selector switch to the right. Turn the tone control to the left.
- IV. (a) Peak both I.F. tuning condensers located on top of the 2nd I.F. transformer (Fig. 2). NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 20 to 60 volts output is satisfactory.  
(b) Peak both I.F. tuning condensers located on top of the 1st I.F. transformer (Fig. 2).
- V. Repeat operation IV to insure accurate adjustment of the I.F. tuning condensers.

PEAKING R.F. CIRCUITS

Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On the Broadcast Band this consists of a .0002 mfd. mica condenser and on the Short Wave Band it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal.

- I. To Peak The Broadcast Band: See NOTE in IV (a) under peaking I.F. Stages, also Fig. 3 for location of parallel trimmer condensers and Fig. 2 for location of oscillator series trimmer (or padding) condenser.  
(a) Set test oscillator at 1400 kilocycles. Tune the station selector until the dial pointer points to 140 on the dial. Then adjust the oscillator parallel

trimmer condenser (Broadcast Band) for maximum output.

(b) With the same dial setting peak the antenna parallel trimmer condenser for the Broadcast Band.

(c) Set the test oscillator at 600 kilocycles.

(d) Tune in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

(e) Close the oscillator series padding condenser (Broadcast Band), Fig. 2, 1/8 turn and re-tune the station selector to the 600 kilocycle signal for maximum output, noting the reading on the output meter.

(f) If the meter reads higher after operation (e) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If the meter reads lower after operation (e) open the oscillator series trimmer condenser 1/8 turn and re-tune the station selector to the 600 kilocycle signal, noting the reading on the output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(g) Repeat operations (a) and (b) for more accurate adjustments.

- II. To Peak The Short Wave Band:

(a) Be sure to change the dummy antenna as described above.

(b) Close the oscillator parallel trimmer condenser (Short Wave Band) and then open three turns.

(c) Close the antenna parallel trimmer condenser (Short Wave Band) and then open 1/2 turn.

(d) Tune the station selector to 15 megacycles (15 on the dial).

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser.

(g) Reduce the output from the test oscillator to the previous output and re-tune the station selector to 15 megacycles at 15 on the dial.

(h) Peak the antenna parallel trimmer condenser for the Short Wave Band for maximum output, then re-tune the station selector again for maximum output.

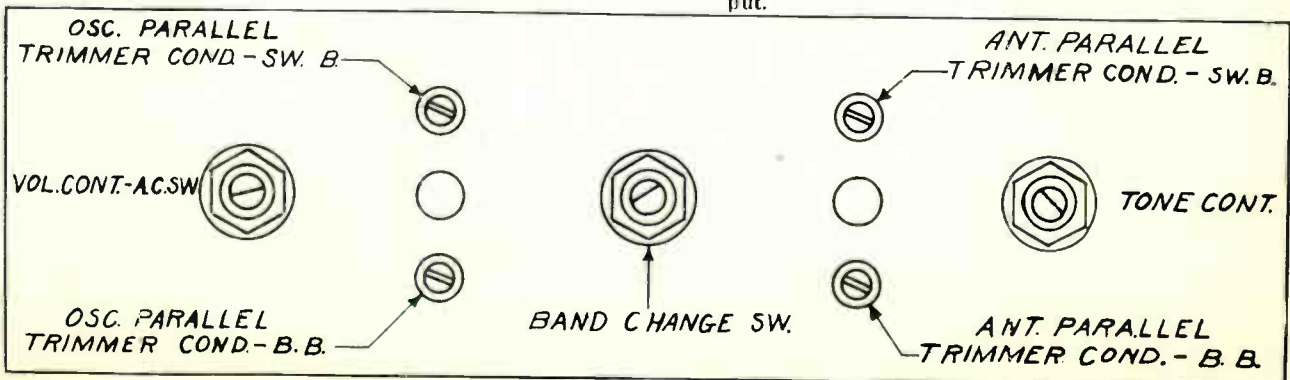


Fig. 3—Front View



MODEL 534

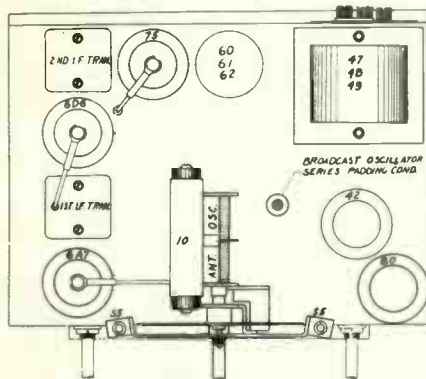
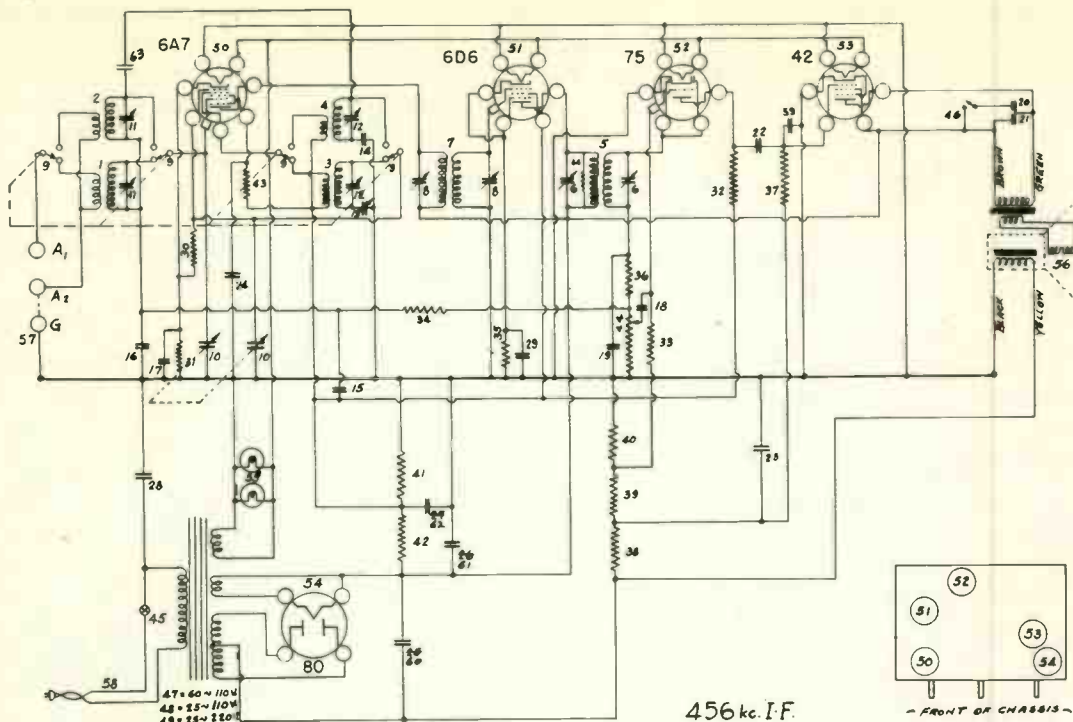


Fig. 2—Top View

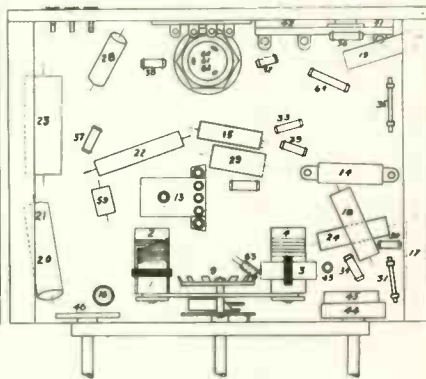


Fig. 4—Bottom View

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G39—32000	Low Freq. Ant. Trans.	43	—23868	6,500 Ohm Resistor
2	G40—32000	High Freq. Ant. Trans.	44	W—35013	Level Control 1 Megohm
3	G31—32002	L. F. Osc. Trans.	45	W—35013	Power Switch
4	G32—32002	H. F. Osc. Trans.	46	W—34191	Tone Control Switch
5	G38—32004	2nd I. F. Trans.	47	G8—28500	Power Trans. 60 Cy. 110 V.
6	G39—32004	I. F. Trimmer Cond.	48	G9—28500	Power Trans. 25 Cy. 110 V.
7	G39—32004	1st I. F. Trans.	49	G10—28500	Power Trans. 25 Cy. 220 V.
8	B—35031	4 Pole S. T. Sw.	50	G47—28807	6A7 Socket
9	B—35025	Variable Cond. Gang	W—27981A	W—27981A	Tube Shield Base
10	G26—32086	Dial Drive Assembly	W—28632A	W—28632A	Tube Shield
	W—32008A	Dial Hand	G75—28807	G75—28807	6D6 Socket
	W—32293	Dial Hand Nuts (2)	W—27981A	W—27981A	Tube Shield Base
11	W—35033	Ant. Trimmer Cond.	B—26009D	B—26009D	Tube Shield
12	W—35033	Osc. Trimmer Cond.	G41—28807	G41—28807	75 Socket
13	G10—33005	Series Cond.	W—27981A	W—27981A	Tube Shield Base
14	G12—34000	4725 Mmf. Cond.	W—28632A	W—28632A	Tube Shield
15	W—32378	0.01 Mfd. 400 V. Cond.	G25—28807	G25—28807	-42 Socket
16	W—32380	0.05 Mfd. 200 V. Cond.	G6—28807	G6—28807	-80 Socket
17	W—28621	0.02 Mfd. 200 V. Cond.	W—4099A	W—4099A	6-8 V Dial Lamp
18	W—28619	0.006 Mfd. 200 V. Cond.	G4—27134	G4—27134	Light Bracket Assem. (2)
19	W—27932	0.0001 Mfd. 200 V. Cond.	W—3183L	W—3183L	Speaker
20	W—35011	0.03 Mfd. 400 V. Cond.	G5—3112E	G5—3112E	Speaker Term. Board
21	W—35011	0.006 Mfd. 400 V. Cond.	W—34627	W—34627	Insulator
22	W—27218	0.05 Mfd. 200 V. Cond.	W—34628	W—34628	Term. Board Cover
23	W—30321A	1.0 Mfd. 160 V. Cond.	G16—26719	G16—26719	Ant. Gnd. Terminal
24	W—28621	0.02 Mfd. 200 V. Cond.	B—33905	B—33905	Power Cable & Plug
25			G1—34002	G1—34002	0.00025 Mfd. (Mica)
26	See 60-61-62		B—30059C	B—30059C	8 Mfd. 450 V.) Condenser
27					8 Mfd. 250 V.)
28	W—30805	0.01 Mfd. 400 V. Cond.	G31—34403	G31—34403	1.0 Mmf.
29	W—24049B	0.1 Mfd. 200 V. Cond.	—21454	—21454	1 Megohm Resistor
30	—21453	40,000 Ohm Resistor	B—35034	B—35034	Chassis End (2)
31	W—25937	275 Ohm Flex. Resistor	W—31157B	W—31157B	Knob (1) Station Selector
32	—21455	300,000 Ohm Resistor	W—33991	W—33991	Knob (1) Band Change
33	—26577	3 Megohm Resistor	W—31585B	W—31585B	Knob (2) (Tone Control & Volume Control)
34	—26577	3 Megohm Resistor	B—33528A	B—33528A	Escutcheon
35	W—25937	275 Ohm Flex. Resistor	W—33984	W—33984	Escutcheon Gasket
36	—21455	300,000 Ohm Resistor	W—34306	W—34306	Escutcheon Lens
37	—23785	500,000 Ohm Resistor	—34976	—34976	Grille Cloth
38	—23785	500,000 Ohm Resistor			
39	—34018	200,000 Ohm Resistor			
40	—21876	10,000 Ohm Resistor			
41		25,000 Ohm Resistor			
42	W—31883	8,500 Ohm Resistor			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	67.5	-2.5	—	—
1A6	Osc.-Mod.	2.0	135	67.5	-2.5	135	-5 to -10
34	I-F Amplifier	2.0	135	67.5	-2.5	—	—
1B5	Diode Detector & A-F Amplifier	2.0	65	—	-0.1	—	—
33	Output	2.0	130	135	-1.0	—	—

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.**
- (b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 450 kilocycles.
- (d) Adjust the trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust the trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.
- (e) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.
- (f) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.
- (g) Repeat operations (d), (e) and (f) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G55-32000	Antenna Coil (only)		—37156	Pointer
	W-30802A	Coil Shield		—37157	Pointer Screw (1)
	W-30026	Retaining Ring	13	C-37396	Battery Cable
2	G73-32004	First I. F. Assembly	14	W-35111	Speaker Cable
3	G38-32004	Second I. F. Assembly	15	—27121	Resistor 5000 Ohm ¼ W.
4	G67-32002	Oscillator Coil (only)	16	—24814	Resistor 7000 Ohm ¼ W.
	W-25025B	Coil Shield	17	—37377	Resistor 20,000 Ohm 1 W.
	W-25200	Coil Socket	18	—34019	Resistor 75,000 Ohm ¼ W.
	W-26891	Insulating Washer	19A	—21455	Resistor 300,000 Ohm ¼ W.
	W-21541C	Retaining Ring	19B	—21455	Resistor 300,000 Ohm ¼ W.
5	G53-32001	R. F. Coil (only)	19C	—21455	Resistor 300,000 Ohm ¼ W.
	W-30802A	Coil Shield	20	—21454	Resistor 1.0 Megohm ¼ W.
	W-30026	Retaining Ring	21	—26577	Resistor 3.0 Megohm ¼ W.
6	G2-34002	Condenser 0.0001 Mfd. Mica	22	W-23013	Resistor 20,000 Ohm ½ W. Flex.
7A	G1-34002	Condenser 0.00025 Mfd. Mica	23A	G31-28807	Socket 34
7B	G1-34002	Condenser 0.00025 Mfd. Mica	23B	G31-28807	Socket 34
8A	W-28619	Condenser 0.006 Mfd. 160 Volt	24	G55-28807	Socket 1A6
8B	W-28619	Condenser, 0.006 Mfd. 160 Volt	25	G91-28807	Socket 1B5
9A	W-28621	Condenser 0.02 Mfd. 200 Volt	26	G36-28807	Socket 33
9B	W-28621	Condenser 0.02 Mfd. 200 Volt		W-26974	Tube Shield
10A	W-24049B	Condenser 0.1 Mfd. 200 Volt		W-26973	Shield Base
10B	W-24049B	Condenser 0.1 Mfd. 200 Volt	27	31-MS-3	Speaker
11A	W-29910A	Condenser 0.25 Mfd. 200 Volt	28	G1-26719	Terminal Board—Ant & Grnd.
11B	W-29910A	Condenser 0.25 Mfd. 200 Volt	29Z	—37409	Volume Control
11C	W-29910A	Condenser 0.25 Mfd. 200 Volt	29X		On-Off Switch
12Z	G43-33002	Three Section Tuning Con. Gang	30	—34883	Resistor 2. Megohm ¼ W.
12X			31	—26578	Resistor 5.0 Megohm ¼ W.
12Y				B-35917	Escutcheon
				D-28	Escutcheon Screw (3)
				W-31585B	Knob (2)
	—37147	Dial Drive Unit	G2-23300	Resistor 0.53 Ohm (For air cell only)	
	MG18-35757	Drive Mounting Bracket			
	W-36150A	Dial Face			
	—37158	Dial Glass			

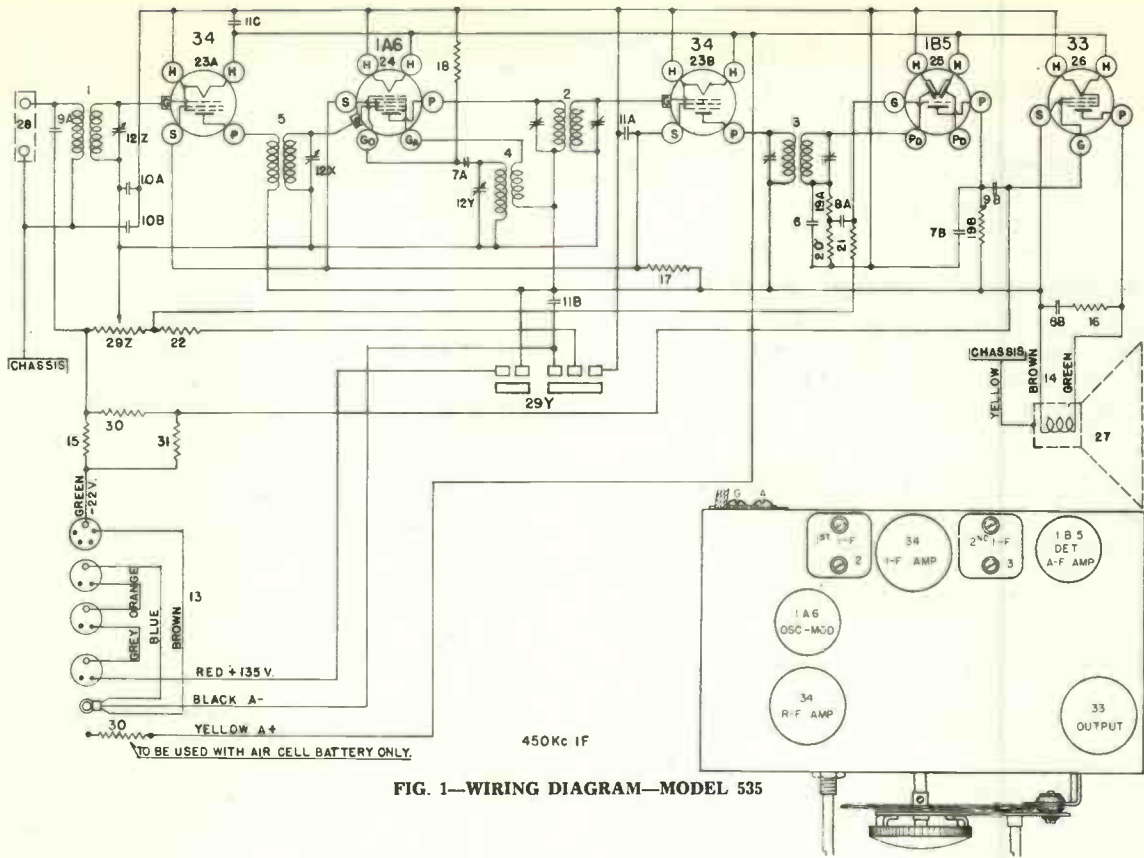


FIG. 1—WIRING DIAGRAM—MODEL 535

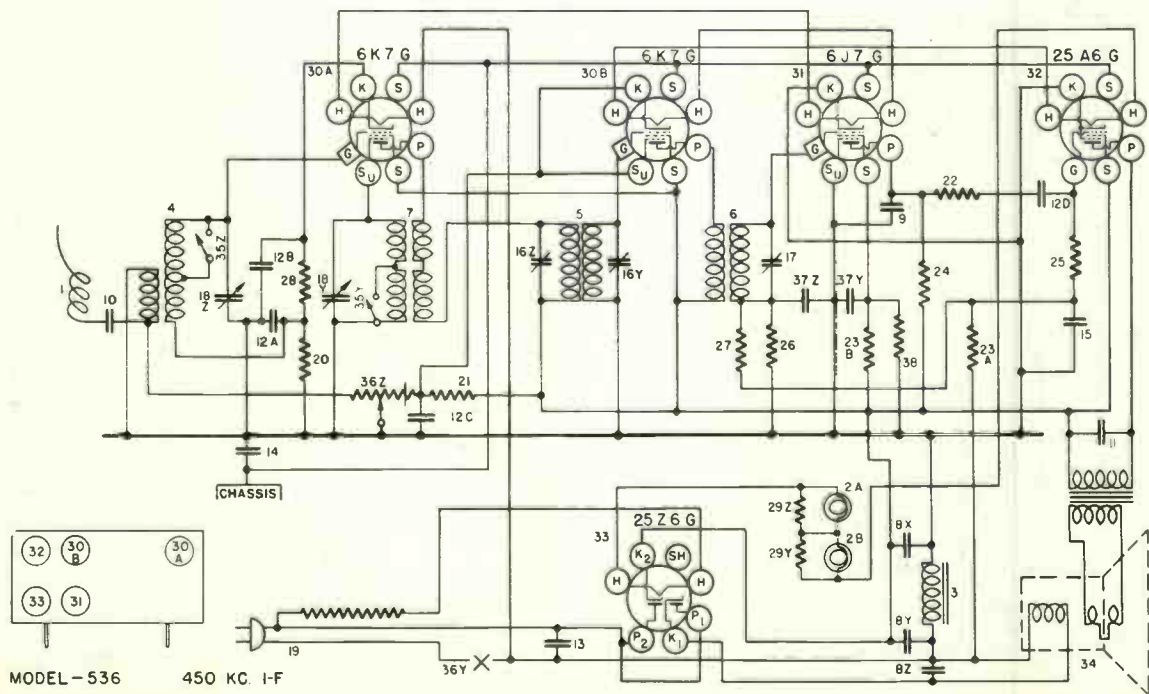


FIG. 1—WIRING DIAGRAM—MODEL 536 AND 5536

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	K
6K7	Osc.- Modulator	6.5	100	100	16	19
6K7	I-F Amplifier	6.5	100	100	0	3.
6J7	Detector	6.5	35	10	0	—
25A6	Output	25.2	92	100	—	—
25Z6	Rectifier	25.2	—	—	—	—

Readings taken on 117.5 Volt A-C Power Supply.  
Power Consumption Approximately 50 Watts at 117.5 Volts.  
Voltage Reading Approximately 10% Lower on 117.5 Volts, D. C.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6K7 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the right (High Frequency Position) and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Illus. No. 17—Fig. 3, located on the rear of the chassis for maximum output.

(e) Adjust the 1st I-F trimmer condensers, Illus. Nos. 16Z and 16Y, located on the rear of the chassis for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer (18-Y ) located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the tuning condenser slightly for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Antenna—Flexible	19	W —41162	Drive Chain—5536 only
2A	W —4099B	Dial Light	20	W —41160	Bearing Bracket—5536 only
2B	W —4099B	Dial Light	21	W —41159A	Shaft—5536 only
	G6 —27134	Dial Light Socket Assembly	22	W —40909	Spring Washer—5536 only
3	G4 —28859	Filter Choke	23A	W —31840A	Snap Ring—5536 only
4	G106—32000	Ant. Coil	24	B —40999	Power Cord & Plug
5	G104—32004	1st I-F Coil	25	—36316	Resistor, 2700 Ohm 1/4 W.
6	G103—32004	2nd I-F Coil	26	—4921C	Resistor, 10,000 Ohm 1 W.
7	G94 —32002	Osc. Coil	27	—35928	Resistor, 60,000 Ohm 1/4 W.
8Z		Condenser, { 8 Mfd. 125 V.	28	—35600	Resistor, 100,000 Ohm 1/4 W.
8Y	W. —29801A	Condenser, { 16 Mfd. 125 V.	29	23B —35600	Resistor, 100,000 Ohm 1/4 W.
8X		Condenser, { 25 Mfd. 100 V.	30	24 —35601	Resistor, 300,000 Ohm 1/4 W.
9	G1 —34002	Condenser, .00025 Mfd. (Molded)	31	25 —36322	Resistor, 500,000 Ohm 1/4 W.
10	W —28620	Condenser, .003 Mfd. 200 V.	32	26 —35927	Resistor, 2 Megohm 1/4 W.
11	W —23191A	Condenser, .01 Mfd. 400 V.	33	27 —33490	Resistor, 10 Megohm 1/4 W.
12A	W —36541	Condenser, .02 Mfd. 160 V.	34	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
12B	W —36541	Condenser, .02 Mfd. 160 V.	35	W —41000	Candohm—2 Sections
12C	W —36541	Condenser, .02 Mfd. 160 V.	36A	G151—36400	Socket Type 6K7
12D	W —36541	Condenser, .02 Mfd. 160 V.	36B	G151—36400	Socket Type 6K7
13	W —32780B	Condenser, .05 Mfd. 400 V.	31	G157—36400	Socket Type 6J7
14	W —24049C	Condenser, 1 Mfd. 160 V.	32	G161—36400	Socket Type 25A6
16	W —37075	Condenser, 2 Section Trimmer	33	G162—36400	Socket Type 25Z6
17	W —40998	Condenser, 1 Section Trimmer	W —40911		Tube Shield
18	G22 —33001	2 Section Var. Tuning Condenser	W —27981A		Tube Shield Base
	C —40926	Dial Glass—536 only	34	B —41012	Speaker 237BL9
	W —40632B	Pointer Disc—536 only		W —40593	Speaker Mtg. Bracket
	W —41014A	Dial Glass Bracket R-H—536 only		— 6415	Mtg. Bracket Screw
	W —41013A	Dial Glass Bracket L-H—536 only	35	—41004	Band Selector Switch
	W —41227	Drive Chain—536 only	36Z	—41002	Volume Control 4800 Ohm Tap 160 Ohm
	W —40633B	Bearing Support—536 only	36Y		I-line Switch
	W —41112A	Driven Sprocket—536 only	B —40590		Escutcheon
	W —41113A	Driver Sprocket	D — 28		Escutcheon Mtg. Screws (4) } 536 only
	W —40486	Pointer Disc Mtg. Screw	W —41019		Knob
	C —40927	Dial Glass—5536 only	W —40839		Escutcheon
	B —40818B	Pointer Disc—5536 only	W —40840		Escutcheon Plate
	W —41158	Support Bracket L-H—5536 only	W —29760A		Escutcheon Pin } 5536 only
	W —41143	Support Bracket R-H—5536 only	W —41019		Knob (2)
	W —40797	Dial Glass Bracket—5536 only	W —41021		Knob (1)

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Det & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3	Rectifier	5.0	—	—	225	—	—

Power output approximately 2 watts.  
 Power consumption approximately 40 watts at 117.5 volts.  
 Voltage drop across speaker field 36 volts.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter across the "P" and "S" terminals of the 6K6G output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the

2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier**

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser (33Y) for maximum output.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune the receiver to the generator signal for maximum output (appx. 140 on the dial).

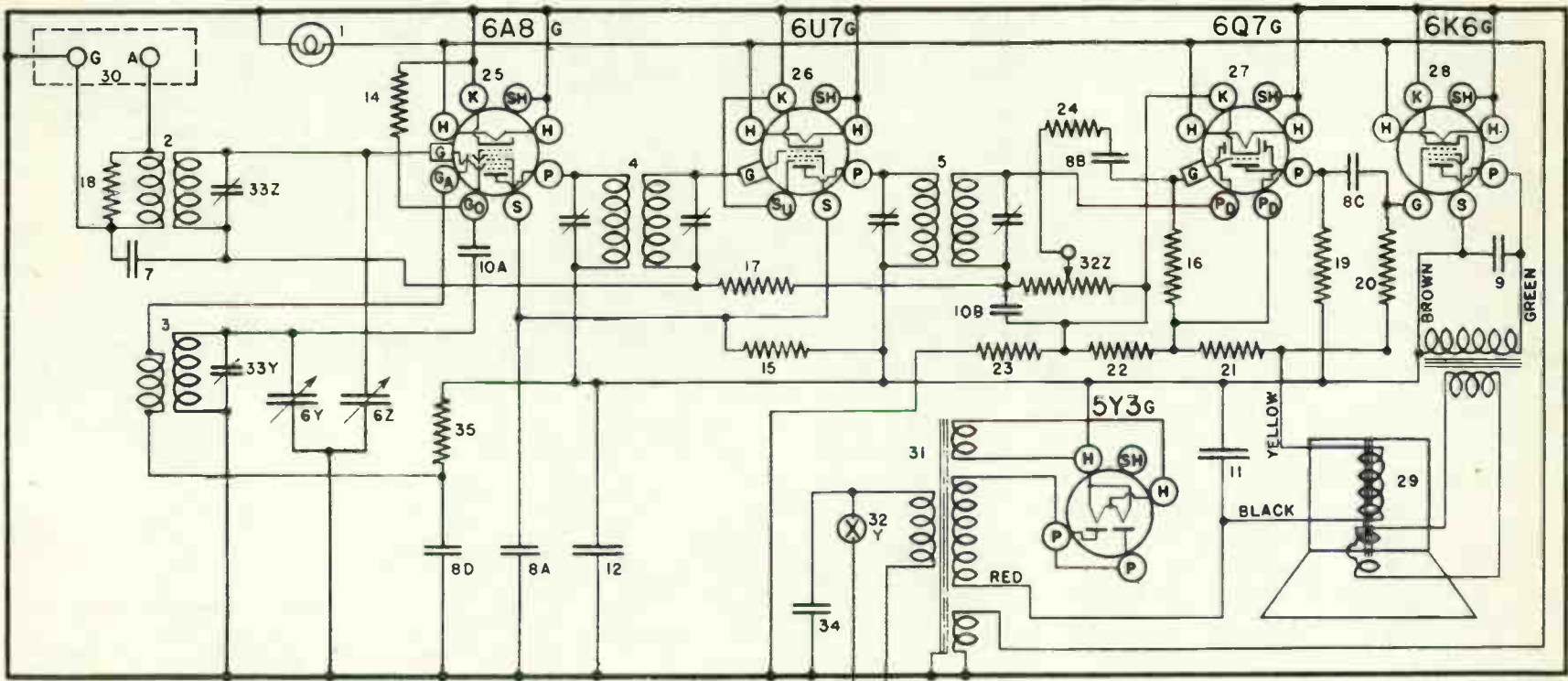
(f) Adjust the "ANT" trimmer condenser (33Z) for maximum output. **DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.**

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

Figures in first column refer to parts in Diagrams.

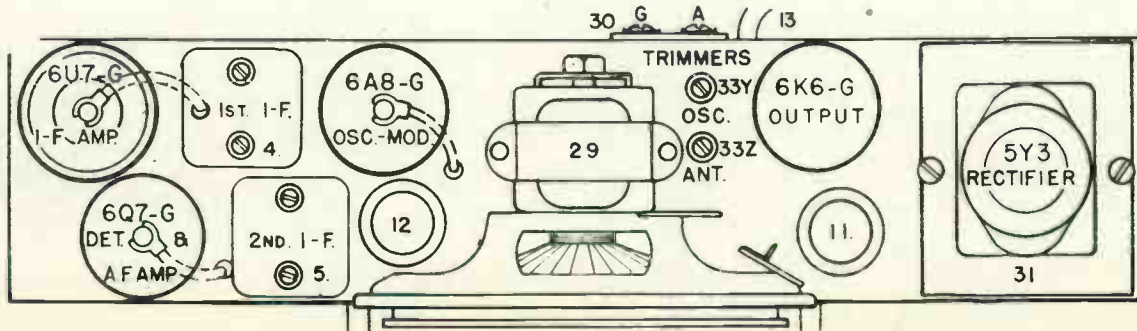
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Bulb—Dial Light	20	—23785	Resistor 500,000 Ohm 1/4W. Carb.
	W —43568	Bracket—Dial Light	21	W —28589	Resistor 350 Ohm 1/2W. Flex.
2	G132—32000	Ant. Coil	22	W —23012A	Resistor 40 Ohm 1/2W. Flex.
3	G132—32002	Osc. Coil	23	W —24537	Resistor 60 Ohm 1/2W. Flex.
4	G144—32004	1st I-F Assembly	24	—36761	Resistor 40,000 Ohm 1/4W. Ins.
5	G145—32004	2nd I-F Assembly	25	G156—36400	Socket Type 6A8
6	G34 —33001	2 Section Var. Cond. Gang	26	G171—36400	Socket Type 6U7
	G2 —43564	Pulley Assembly	27	G160—36400	Socket Type 6Q7
	C —43763	Dial Glass—Calibrated	28	G172—36400	Socket Type 6K6
	W —43779	Mask—Dial		W —40911	Tube Shield
	W —43739	Support—Dial		W —27981	Base—Tube Shield
	W —41582	Cable—Cond. Drive	29	260BL9 "B"	Speaker Spec. No. 50-A-4
	W —43561	Spring—Cable Tension		—41472	Cone for 260BL9 "B" Speaker
	W —43740	Shaft—Drive		—43943	O. P. Trans. for 260BL9 "B" Spkr.
	W —41611	Retaining Ring—Drive Shaft		—43540	Carb'd Ring for 260BL9 "B" Spkr.
	W —43770	Pointer		G1 —26719	Ant. and Ground Term. Assembly
7	W —36541	Condenser .02 Mf. 160 V.		—43748	Power Trans. 50-60 Cy. 110 V.
8A—D	W —28621	Condenser .02 Mf. 200 V.	30	—43747	Power Trans. 25 Cy. 110 V.
9	W —34647	Condenser .006 Mf. 400 V.	31	—43733	Vol. Cont. 1 Meg.
10AB	G1 —34002	Condenser .00025 Mf. 200 V.			Line Switch
11	W —41081	Condenser 16 Mf. 250 V.	32Z	W —37986A	2 Sect. Shunt Trimmer
12	W —43450	Condenser 16 Mf. 200 V.	32Y	W —30805	Condenser .01 Mf. 400 V.
13	B —43742	Power Cord and Plug	33	—30137	Resistor 3,500 Ohm 1/4W.
14	—21237A	Resistor 60,000 Ohm 1/4W. Carb.	34	G2 —43788	Grille Cloth Assy.—HC9-Cab.
15	—24814	Resistor 7,000 Ohm 1/4W. Carb.	35	G3 —43788	Grille Cloth Assy.—HE9-Cab.
16	—26577	Resistor 3 Megohm 1/4W. Carb.		W —43789	Escutcheon—Cab-Mod. HC 50 & 60
17	—36688	Resistor 3 Megohm 1/4W. Ins.		W —43790	Escut.—Cab-Mod. HE 43, 50 & 61
18	—22196	Resistor 20,000 Ohm 1/4W. Carb.		C —43782	Escut.—Cab-Mod. HE 71 & HC 71
19	—35601	Resistor 300,000 Ohm 1/4W. Ins.		W —43764	Knob
				B —43743	Bottom Cover

WIRING DIAGRAM—MODEL 537



271

MODEL 537



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
12A8GT	Oscillator-Modulator	—	—	95	50	-10	95	—	—
12SK7GT	I-F Amplifier	—	—	—	-1	—	95	—	95
12SQ7GT	Det. AVC, A-F Amplifier	—	—	—	Diode	Diode	35	—	—
50L6GT	Output	—	—	95	95	-8*	—	—	—
35Z5GT	Rectifier	—	—	Tap	—	117.5 A.C.	—	—	100

**ALIGNMENT PROCEDURE**

**NOTE:** The chassis of this receiver is connected to one side of the power lines and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. This does not apply to the J models which have isolating power transformers.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (BLUE LEAD) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- (b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.
- (e) Adjust the 1st I-F trimmer condensers for maximum output.
- (f) Repeat operations (d) and (e) for more ac-

**Aligning the R-F Amplifier.**

- (a) Leave signal generator output lead connected to the antenna lead (BLUE). Set signal generator to 1712 kilocycles for models without a loop antenna, or to 1620 kilocycles for models equipped with a loop antenna.

- (b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang for maximum output. It is not necessary that the receiver tune through this signal.

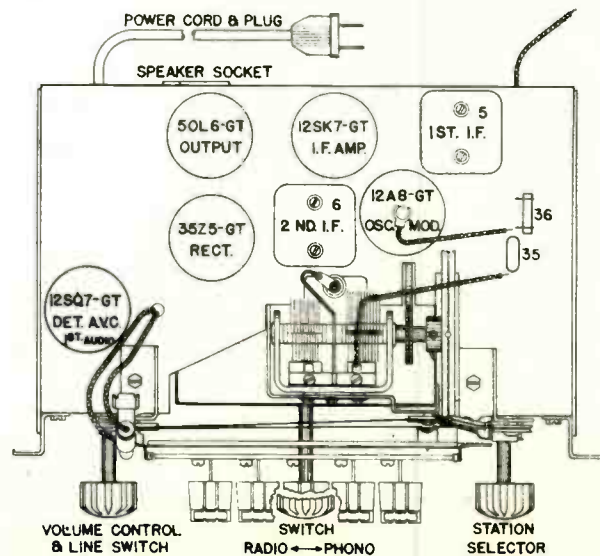
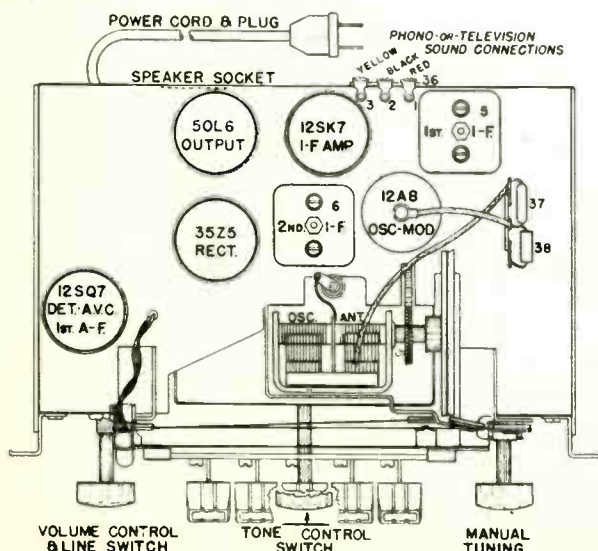
- (c) Set the signal generator to 1400 kilocycles.
- (d) Tune in the 1400 kilocycles in the region of 140 on the dial for maximum output.
- (e) Adjust the trimmer condenser on the "ANT" section of the gang for maximum output.
- (f) Repeat the above for more accurate adjustments.

**WAVE TRAP**

Some models without the loop antenna are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, a fixed condenser and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 30).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.



MODELS 539, J539

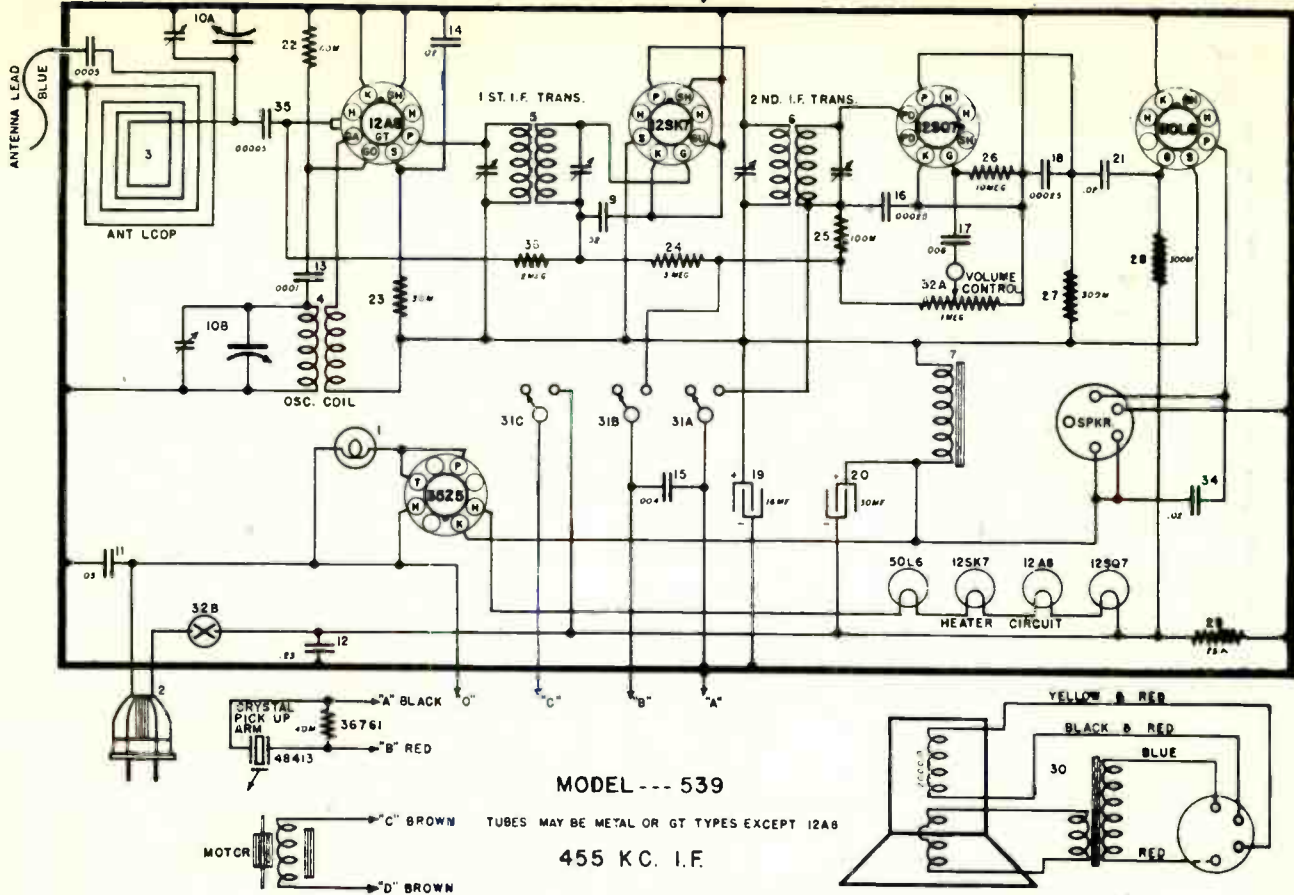


FIG. 1-C—WIRING DIAGRAM—MODEL 539

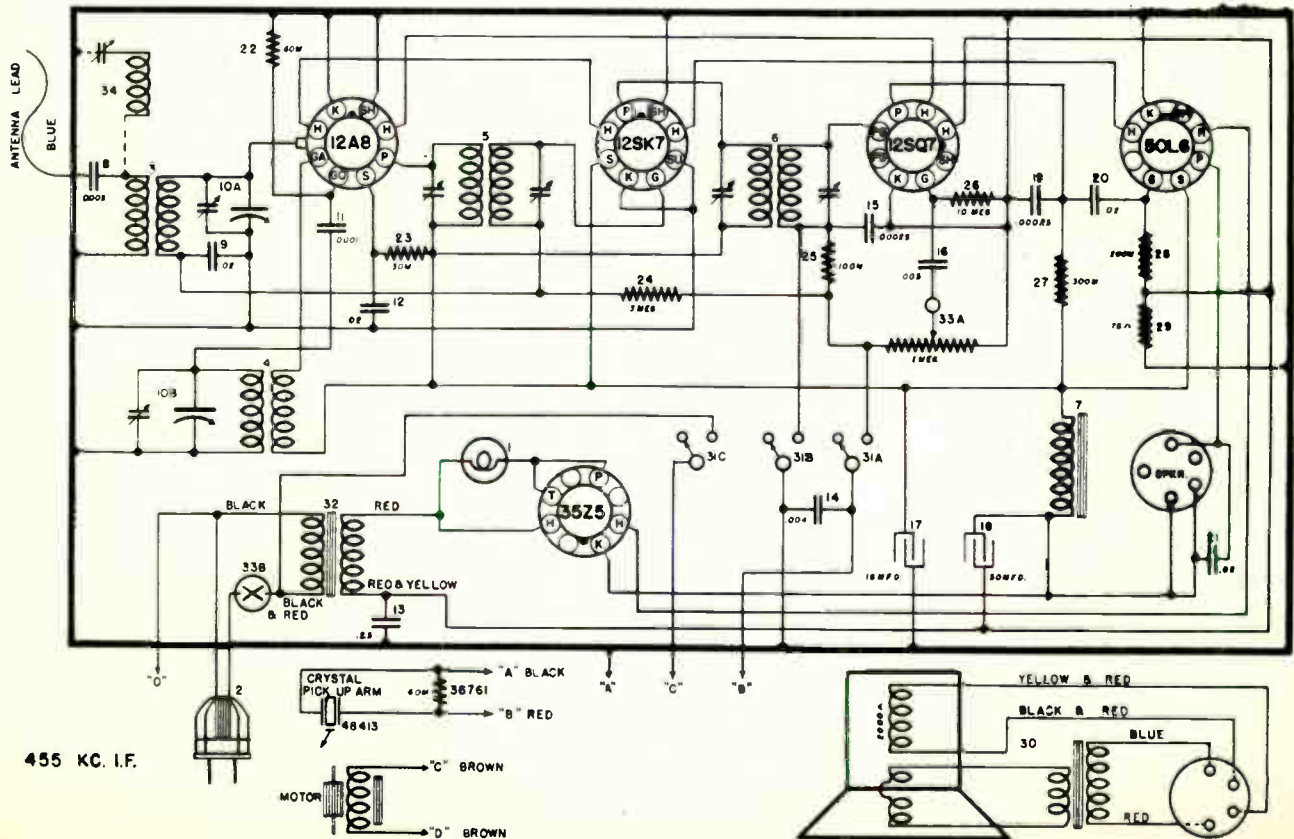


FIG. 1-D—WIRING DIAGRAM—MODEL J-539



MODELS 5539, J5539

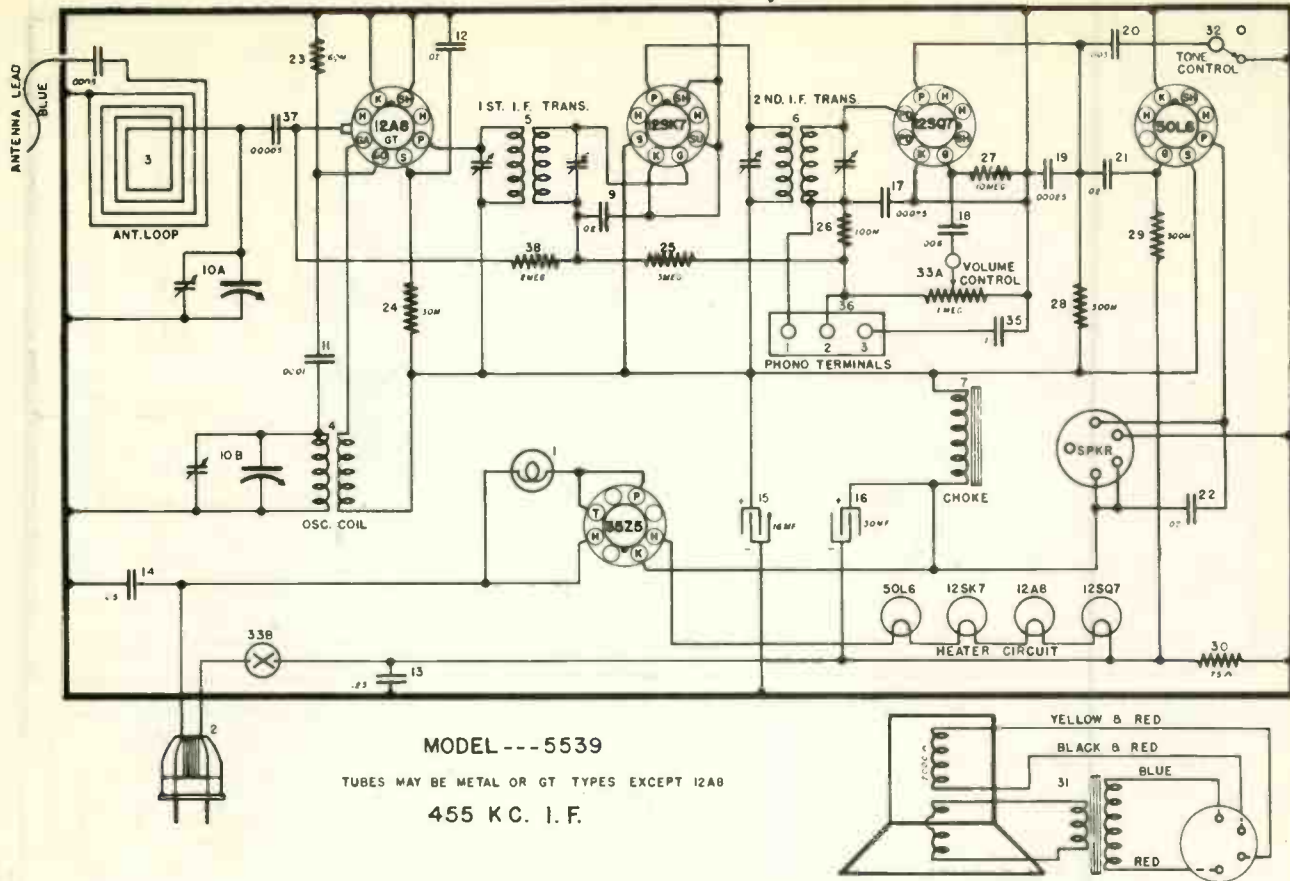


FIG. 1-A—WIRING DIAGRAM—MODEL 5539

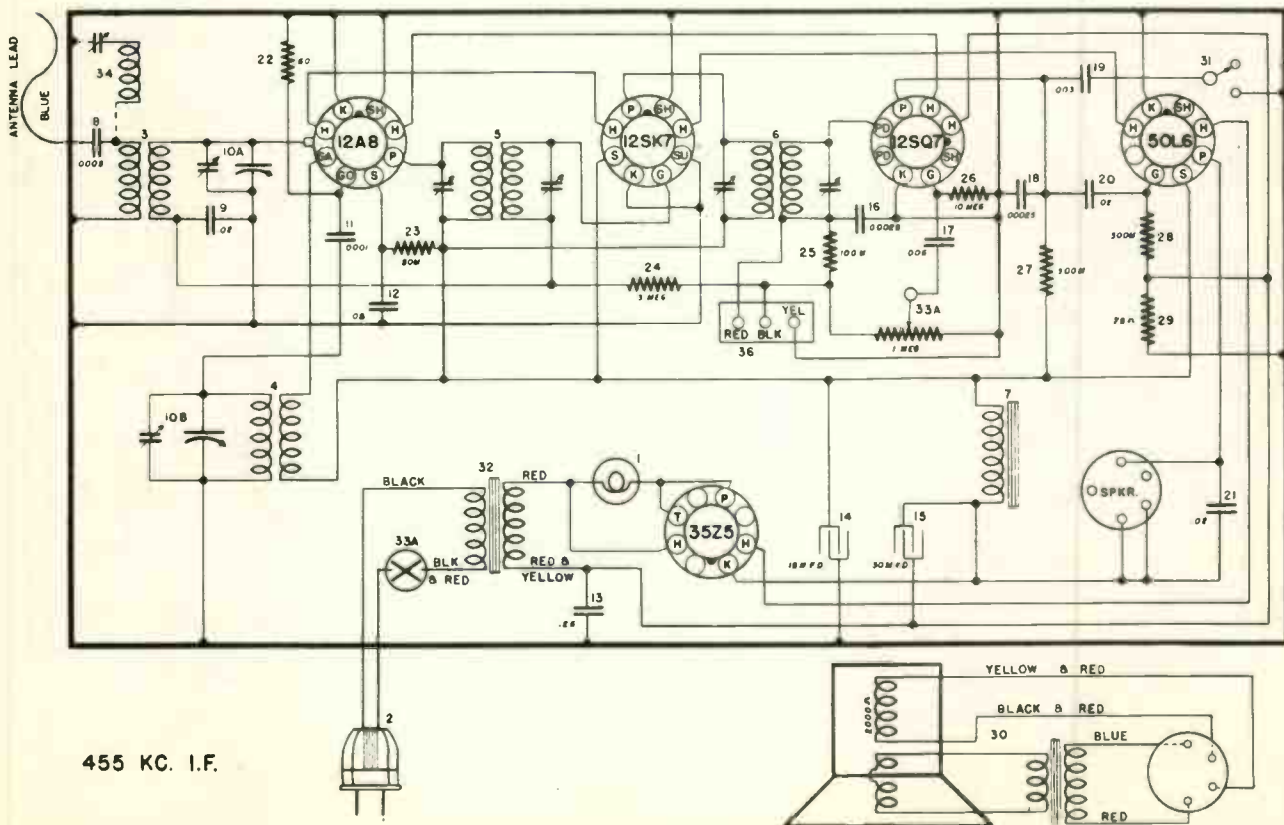


FIG. 1-B—WIRING DIAGRAM—MODEL J-5539  
 274

## PARTS LIST — MODELS 539, J-539

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—43567	Dial Lamp		—15985	R. H. Clip—Dial Glass Mtg.
	G2 —47431	Socket Assv. Dial Lamp		—45850	Pointer—Dial Hand
2	—45784	Power Cord and Plug		—46037	Guide—Pointer
2	—45769	Power Cord and Plug (J-539)	G12	—43564	Pulley and Hub Assy.
3	G186—32000	Antenna Coil		—46056	Shaft—Manual Drive
3	G7 —48821	Loop Antenna (Loop Sets only)		—43542	Bracket—Drive Shaft Mtg.
4	G184—32002	Oscillator Coil	G2	—41582	Drive Cord (44 Inch)
5	G221—32004	1st I-F. Assy.		—46087	Spring—Cord Tension
6	G188—32004	2nd I-F. Assv.		—45766	Felt Strin
7	—47704	"B" Filter Choke		—45580	Rubber Grommet—P. B. Unit Mtg.
8	G3 —34002	Condenser, .0005 Mf. Mica		—45620	Headed Bushing—Grommet Mtg.
9	—28621	Condenser, .02 Mf. 200 V.		—17789	R. H. Chassis Mtg. Strap (One Lug Off)
10	G52 —33001	Condenser, 2 Section Var. Tuning		—45764	L. H. Chassis Mtg. Strap
11	—32380	Condenser, .05 Mf. 200 V.		—46019	Support Strip—Power Trans. (J-539)
11	G2 —34002	Condenser, .0001 Mf. Mica (J-539)		9EM	Cabinet
12	—34712	Condenser, .25 Mf. 160 V.		—49502	Cabinet Lid
12	—28621	Condenser, .02 Mf. 200 V. (J-539)		—48330	Lid Cushion
13	G2 —34002	Condenser, .0001 Mf. Mica		—47735	Cabinet Back
13	—34712	Condenser, .25 Mf. 160 V. (J-539)		—46464	Thumb Screw—Back Mtg.
14	—28621	Condenser, .02 Mf. 200 V.		—47709	Shipping Carton
14	—35139	Condenser, .004 Mf. 400 V. (J-539)		—47850	Hinge—Cabinet Lid
15	—35139	Condenser, .004 Mf. 400 V.		—18527	Hinge Screw (FS-18)
15	G1 —34002	Condenser, .00025 Mf. Mica (J-539)		—47159	Lid Support
16	G1 —34002	Condenser, .00025 Mf. Mica		—45771	Knob
16	—34713	Condenser, .006 Mf. 160 V. (J-539)		—48428	Push Button
17	—34713	Condenser, .006 Mf. 160 V.		—47436	Instruction Booklet (No Loop)
17	—45783	Condenser, 16 Mf. 125 V. (J-539)		—49132	Instruction Booklet (With Loop)
18	G1 —34002	Condenser, .00025 Mf. Mica	MG31	—47421	Instruction Envelope Assy. (Receivers With Loop)
18	—47702	Condenser, 30 Mf. 125 V. (J-539)		50551	Celluloid Cover—Call Letter
19	—45783	Condenser, 16 Mf. 125 V.		—47851	Station Call Sheet
19	G1 —34002	Condenser, .00025 Mf. Mica (J-539)		—47706	R. H. Chassis Support Bracket
20	—47702	Condenser, 30 Mf. 125 V.		—47707	L. H. Chassis Support Bracket
20	—28621	Condenser, .02 Mf. 200 V. (J-539)		—47761	Oval, Phillips Ctsk. Hd. Screw—Chassis Mtg.
21	—28621	Condenser, .02 Mf. 200 V.		—47728	Decorative Washer—Chassis Mtg.
22	—35928	Resistor, 60,000 Ohms $\frac{1}{4}$ W.		—47721	Sw'g'd Hd. Mach. Screw—Spkr. Mtg.
23	—33390	Resistor, 30,000 Ohms $\frac{1}{4}$ W.		—2046	No. 8 Int. Shakeproof Washer—Spkr. Mtg.
24	—26577	Resistor, 3 Megohms $\frac{1}{3}$ W.		5096	8—32 Nut—Speaker Mtg.
25	—35600	Resistor, 100,000 Ohms $\frac{1}{2}$ W.		—47712	Baffle Plate—Speaker Mtg.
26	—50956	Resistor, 10 Megohms $\frac{1}{4}$ W.		—47217	Rubber Grommet—Baffle Mtg.
27	—21455	Resistor, 300,000 Ohms $\frac{1}{3}$ W.		—47219	Headed Bushing—Baffle Mtg.
28	—21455	Resistor, 300,000 Ohms $\frac{1}{3}$ W.		N —8	8—32 Nut—Baffle Mtg.
29	—48708	Resistor, 75 Ohms $1\frac{1}{2}$ W.		—47805	Dust Cloth—Speaker Opening
30	390-BP-12" M"	Speaker, Mfr. Spec. No. 1-D-1580		—47844	Escutcheon—Dial Opening
	—48882	V. C. and Cone Assy.		—47843	Phillips Hd. Wood Screw—Escutcheon Mtg.
	—43674	Cardboard Ring—Cone Mtg.		—47758	Chassis Bottom (J-539)
	—48883	Field Coil (2,000 Ohms)		—48927	Loop Antenna Shield
	—48884	Output Transformer		—49060	Loop Support Block
	—44682	Speaker Plug		—46169	Motor, 110 Volt, 50-60 Cycle
31	—47665	Phono-Radio Switch		MG45	Rubber Drive Pulley—60 Cycle Kit
32	—46124	Line Switch and Vol. Control (1 Meg.)		MG46	Rubber Drive Pulley—50 Cycle Kit
32	—48159	Power Transformer, 110 V., 50. 60 Cycle (J-539 only)		—46174	Bracket—Motor Mounting
33	G193—32004	Wave Trap—Model 539 Without Loop	S	—159	Screw—Motor Bracket Mounting
33	—46124	Line Switch and Vol. Control (1 Meg.) (J-539)		—46144	Motor Shield—Top Cover
34	—28621	Condenser, .02 Mf. 200 V.	S	—80	Screw—Motor Shield Mounting
34	G193—32004	Wave Trap—Model J-539 Without Loop		—49115	Motor—110 Volt, 50-60 Cycle (J-539)
35	G5 —34002	Condenser, .00005 Mf. Mica—Loop Sets only		—47399	Insulating Cover—Motor (J-539)
36	—35927	Resistor, 2 Megohms—Loop Sets only	MG32	—47421	Tone Arm Complete
	G7 —45683	Push Button Unit		—47327	Flat Washer—Tone Arm Mtg.
	G23 —45683	Riveted Key Assy.		—47328	Lockwasher—Tone Arm Mtg.
	—50542	Clamp—Toggle Lock		—47329	Nut ( $\frac{1}{2}$ "—32)—Tone Arm Mtg.
	—45717	Screw—Station Setting		—47326	Arm and Pivot only
	—50607	Spring—Key Return		—47325	Crystal Unit only
	—50547	Plate—Key Slide Adj.		—47324	Needle Screw
	G22 —45683	Rocker Bar and Gear Assy.		—47333	Tone Arm Rest Bracket
	—50273	Rubber Band (Key)		—47335	Locking Ring—Tone Arm Rest
	—50561	Screw—Rocker Bar Bearing		—47724	Rubber Arm Rest
	G28 —45683	Riveted Mtg. Bracket (P. B. Unit)		—7801	Screw—Rest Bracket Mounting
	—47717	Glass Dial—Without Loop		—47791	Needle Cup
	—48986	Glass Dial—Loop Models only		—47790	Lid—Needle Cup
	—45742	Cushion—Dial Glass		—46364	Chrome Tipped Needle
	MG14—45894	R. H. Riveted Dial Support Bracket		—16172	Turntable (FS-71)
	MG15—45894	L. H. Riveted Dial Support Bracket		—36761	Resistor, 40,000 Ohms $\frac{1}{4}$ W.
	—45743	Dial Support		—48413	Tone Arm Assy.
	—45984	L. H. Clip—Dial Glass Mtg.			

PARTS LIST — MODELS 5539, J-5539

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1		Dial Lamp	38	-35927	Resistor, 2 Megohms—Loop Model only
2	G2 -43567	Socket Assy.—Dial Light		G11 -45683	Push Button Unit
2	-45781	Power Cord and Plug		G26 -45683	Riveted Key Assy.
2	45769	Power Cord and Plug (J-5539)		-50542	Clamp—Toggle Lock
3	G186 -32000	Antenna Coil		-45717	Screw—Station Setting
3	G7 -48821	Loon Antenna—Later Models		-50607	Spring—Key Return
4	G184 -32002	Oscillator Coil		-50547	Plate—Key Slide Adj.
5	G221 -32004	1st I-F. Assy.		G22 -45683	Rocker—Bar and Gear Assy.
6	G188 -32004	2nd I-F. Assy.		-50273	Rubber Band (Key)
7	-47704	"B" Filter Choke		-50561	Screw—Rocker Bar Bearing
8	G3 -34002	Condenser, .0005 Mf. Mica		G28 -45683	Riveted Mtg. Bracket (P. B. Unit)
9	-28621	Condenser, .02 Mf. 200 V.		-47725	Glass Dial Face—Model Without Loop
10	G52 -33001	Condenser Gang—2 Sect. Var. Tuning		-49076	Glass Dial Face—Loon Model only
11	G2 -34002	Condenser, .0001 Mf. Mica		-15742	Cushion—Dial Glass (Short)
12	-28621	Condenser, .02 Mf. 200 V.		MG14 -45894	R. H. Riveted Dial Support Bracket
13	-34712	Condenser, .25 Mf. 160 V.		MG15 -45894	L. H. Riveted Dial Support Bracket
14	-32380	Condenser, .05 Mf. 200 V.		-45743	Dial Support
14	-45783	Condenser, 16 Mf. 125 V. (J-5539)		-46388	Extension—Dial Support
15	-45783	Condenser, 16 Mf. 125 V.		-45978	Clip—Dial Mounting (4)
15	-47702	Condenser, 30 Mf. 125 V. (J-5539)		G2 -16757	Pointer—Dial Hand Assy.
16	-47702	Condenser, 30 Mf. 125 V.		G12 -43564	Pulley and Hub Assy.
16	G1 -34002	Condenser, .00025 Mf. Mica (J-5539)		-46056	Shaft—Manual Drive
17	G1 -34002	Condenser, .00025 Mf. Mica		-13542	Bracket—Shaft Mounting
17	-34713	Condenser, .006 Mf. 160 V. (J-5539)		G2 -41582	Drive Cord (42 Inch)
18	-34713	Condenser, .006 Mf. 160 V.		-46087	Spring—Cord Tension
18	G1 -34002	Condenser, .00025 Mf. Mica (J-5539)		-15766	Felt Strip
19	G1 -34002	Condenser, .00025 Mf. Mica		490-BP-15"R"	Speaker, Mfg. Spec. No. F-5725
19	-25435	Condenser, .003 Mf. 400 V. (J-5539)		-48616	V. C. and Cone Assy.
20	-25435	Condenser, .003 Mf. 400 V.		-43978	Cardboard Ring—Cone Mtg.
20	-28621	Condenser, .02 Mf. 200 V. (J-5539)		-48617	Output Transformer
21	-28621	Condenser, .02 Mf. 200 V.		-48618	Field Coil (2,000 Ohms)
22	-28621	Condenser, .02 Mf. 200 V.		490-BP-15"H"	Speaker, Mfg. Spec. No. S-6077-BA8
22	-35928	Resistor, 60,000 Ohms (J-5539)		-49496	V. C. and Cone Assy.
23	-35928	Resistor, 60,000 Ohms		-49499	Cardboard Ring—Cone Mtg.
23	-33390	Resistor, 30,000 Ohms (J-5539)		-49498	Output Transformer
24	-33390	Resistor, 30,000 Ohms		-49497	Field Coil (2,000 Ohms)
24	-26577	Resistor, 3 Megohms (J-5539)		9EP	Cabinet
25	-26577	Resistor, 3 Megohms		-47736	Back—Cabinet
25	-35600	Resistor, 100,000 Ohms (J-5539)		-46464	Thumb Screw—Back Mtg.
26	-35600	Resistor, 100,000 Ohms		47734	Shipping Carton
26	-50956	Resistor, 10 Megohms (J-5539)		-47960	Knob (3 Req.)
27	-50956	Resistor, 10 Megohms		-45553	Push Button
27	-21455	Resistor, 300,000 Ohms (J-5539)		-47851	Call Letter Sheet
28	-21455	Resistor, 300,000 Ohms		50551	Celluloid Cover—Call Letter
29	-21455	Resistor, 300,000 Ohms		47730	Instruction Booklet (No Loop)
29	-48708	Resistor, 75 Ohms 1½W. (J-5539)		49133	Instruction Booklet (With Loop)
30	-48708	Resistor, 75 Ohms 1½W.		48206	Instruction Booklet (J-5539) (No Loop)
30	490-BP-15	Speaker (J-5539)		49134	Instruction Booklet (J-5539) (With Loop)
31	490-BP-15	Speaker		MG31 -47716	Instruction Envelope Assy. (5539) (With Loop)
	-44682	Plug—Speaker		MG31 -48029	Instruction Envelope Assy. (J-5539) (With Loop)
	-47705	Switch Mtg. Plate—Tone Control		-48927	Shield—Antenna Loop
31	-47726	Tone Control Switch (J-5539)		G9 -48821	Antenna Support Assy.
32	-47726	Tone Control Switch		-49352	Phono Instruction
32	-48159	Power Transformer, 50-60 Cycle, 110 Volt for J-5539 only			
33	-46124	Line Switch and Vol. Control (1 Meg.)			
34	G193 -32004	Wave Trap—Not Used With Loop			
35	-24049	Condenser, .1 Mf. 200 V. (5539 only)			
36	G51 -26719	Phono Terminal Board			
37	G5 -34002	Condenser, .00005 Mf. Mica—Loop Model only			

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	Su	G	K
6D6	Osc.-Mod.	6.5	105	105	0	-17	20
6D6	I-F Amplifier	6.5	105	105	3.5	0	3.5
6B7	Diode Detector & A-F Amplifier	6.5	25	20	—	0	1.5
43	Output	25.2	100	105	—	-20	0
25Z5	Rectifier	25.2	117.5 A.C.				

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6D6 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

- (c) Set the signal generator to 450 kilocycles.
- (d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
- (e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.
- (f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer (18-Y Fig 3) located on the "OSC" section of the condenser gang for maximum output.
- (e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.
- (f) Readjust the tuning condenser slightly for maximum output.
- (g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Ant. (Flex Wire)	19	W —36150A	Dial Face
2	G4 —27134	Dial Light Socket Assm.	20	—37158	Dial Glass
3	G3 —28859	Filter Choke	21	—37156	Pointer
4	G51—32000	Ant. Coil	22	—37157	Pointer Screw
5	W —36457	Ant. Coil Mounting Brkt.	23	B —33906A	Power Supply Cord & Plug
6	G51—32004	1st I. F. Assm.	24	—31093	Resistor, 2700 Ohm ¼ W.
7	G49—32004	2nd I. F. Assm.	25	—23616	Resistor, 15,000 Ohm 1. W.
8Z	G6 —32002	Osc. Coil	26	—21237A	Resistor, 60,000 Ohm ¼ W.
8Y	W —25200	Coil Socket	27	—35929	Resistor, 150,000 Ohm ¼ W.
8X	W —25025B	Coil Shield	28	—21455	Resistor, 300,000 Ohm ¼ W.
8W	W —26891	Coil Insulator	29	—23785	Resistor, 500,000 Ohm ¼ W.
9	W —21541C	Retaining Ring	30	—23785	Resistor, 500,000 Ohm ¼ W.
10		Condenser, 25. Mfd. 125 V.	31	—33490	Resistor, 10. Megohm ¼ W.
11Z	W —31992	Condenser, 8. Mfd. 125 V.	32	W —28589	Resistor, 350 Ohm ½ W. Flex.
11Y		Condenser, 16. Mfd. 100 V.	33	W —27503	Resistor, 1,400 Ohm ½ W. Flex.
12		Condenser, 10. Mfd. 125 V.	34	W —36114	Resistor, Candohm
13	G2 —34002	Condenser, 100. Mmfd.	35Z	G75—28807	Socket, 6D6
14Z	W —30325A	Condenser, 0.003 Mfd. 200 V.	35Y	G75—28807	Socket, 6D6
14Y	W —30322A	Condenser, 0.00017 Mfd. 200 V.	36	G51—28807	Socket, 25Z5
15Z	W —30323	Condenser, 0.006 Mfd. 200 V.	37	G30—28807	Socket, 43
15Y	W —28621	Condenser, 0.01 Mfd. 200 V.		G48—28807	Socket, 6B7
16	W —28623	Condenser, 0.02 Mfd. 200 V.		W —35772	Tube Shield (Half) (6)
17	W —29271	Condenser, 0.02 Mfd. 200 V.		W —35773	Tube Shield Cap (3)
18Z	W —24049B	Condenser, 0.02 Mfd. 200 V.		W —35774	Tube Shield Base (3)
18Y	W —29910A	Condenser, 0.02 Mfd. 400 V.		214—BL—9	Speaker
	G14—33001	Condenser, 0.1 Mfd. 200 V.			Volume Control
	—36147B	Condenser, 0.25 Mfd. 200 V.			On-Off Switch
MG16	—35757	2 Section Tuning Cond. Gang		W —32780A	Condenser, 0.05 Mfd. 400 V.
		Dial Drive Assm.		—34883	Resistor, 2 Megohm ¼ W.
		Dial Drive Support Brkt. Assm.		B —35917	Escutcheon
				D —28	Escutcheon Screws (3)
				W —31585B	Knobs (2)

MODELS 545, 546

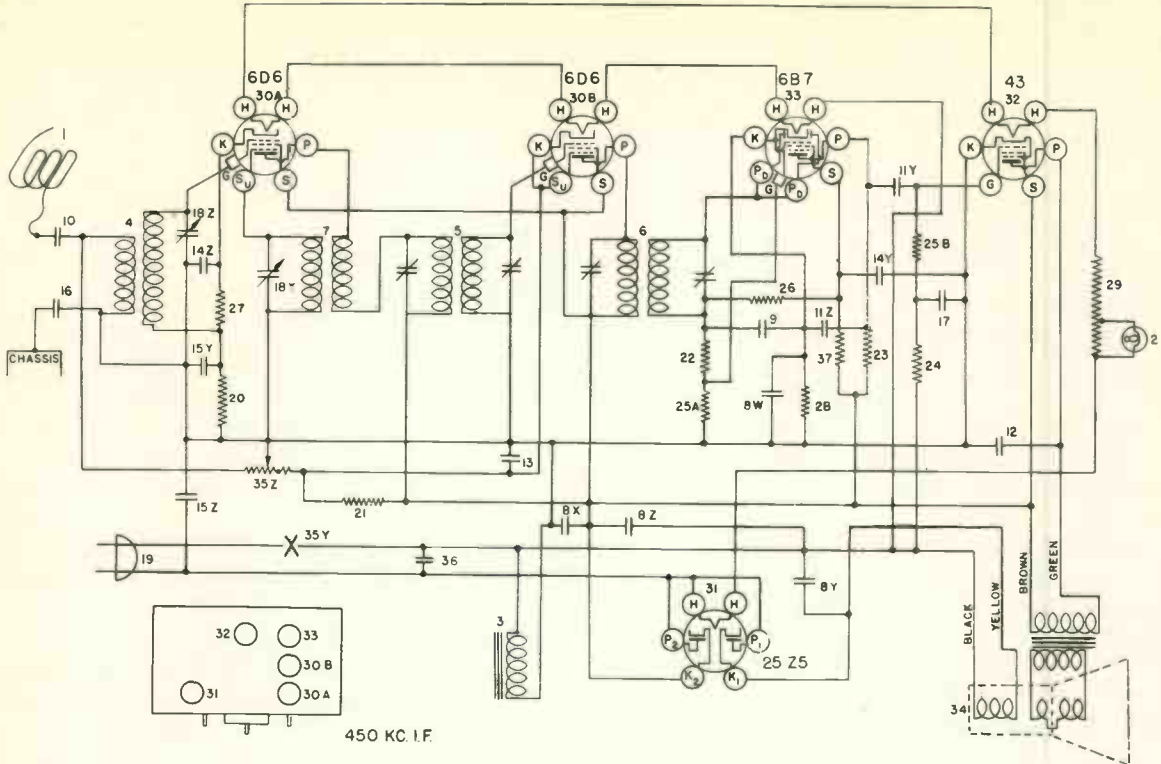


FIG. 1—WIRING DIAGRAM—MODEL 545

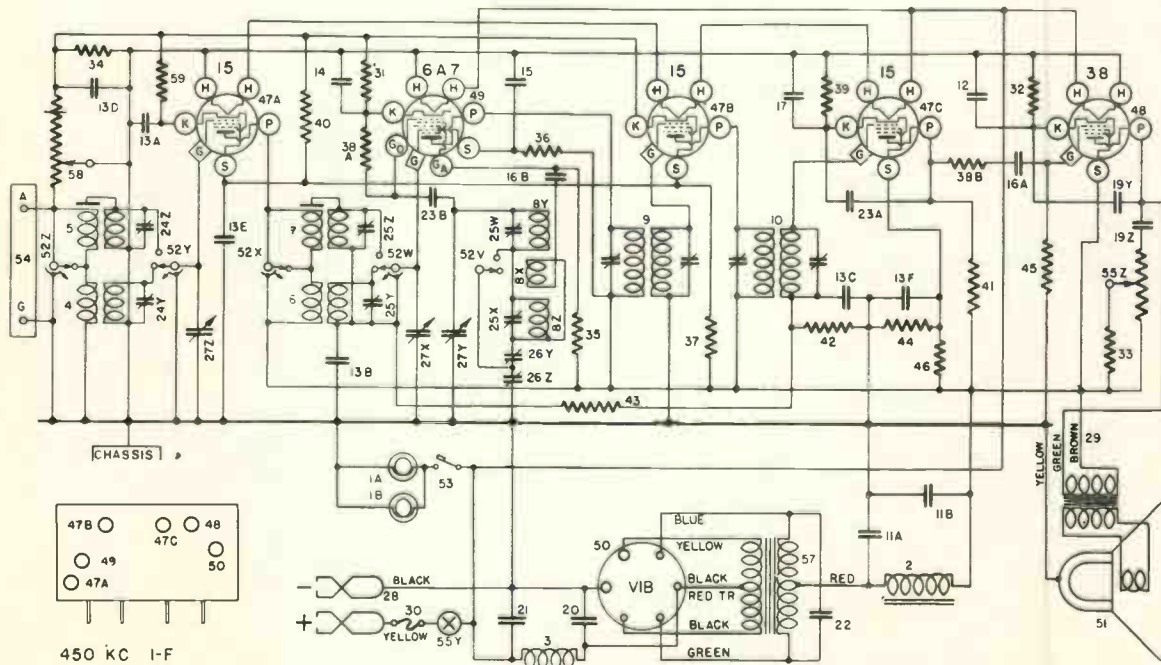


FIG. 1. WIRING DIAGRAM—MODEL 546

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Ga	Go
15	R-F Amplifier	2.0	180	96	2.6	---	---
6A7	Oscillator-Modulator	6.0	180	84	3.8	130	Neg
15	I-F Amplifier	2.0	180	96	2.6	---	---
15	Detector	2.0	90	13	3.8	---	---
38	Output	6.0	170	180	14.5	---	---

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R.F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer.

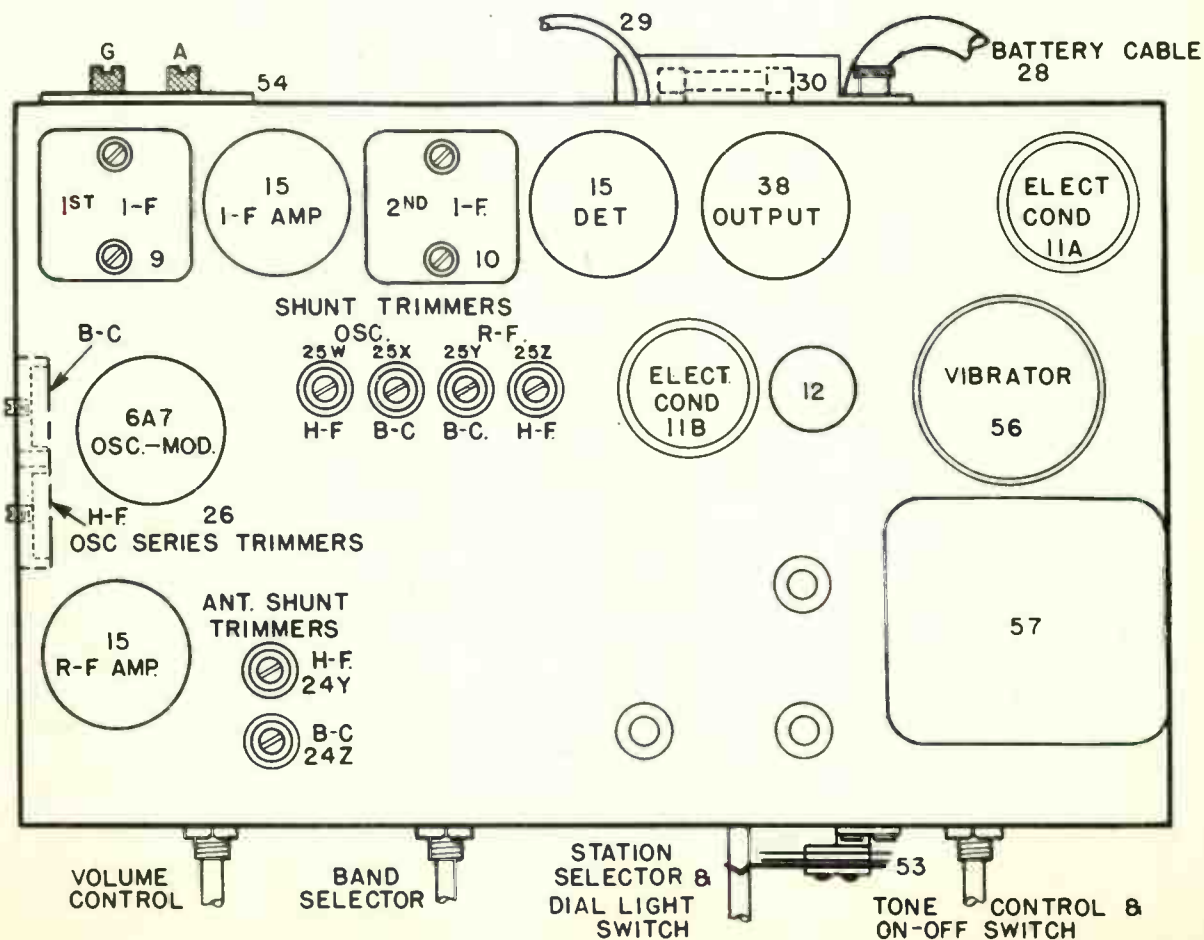


Fig. 2. Top View 546

## PARTS LIST—MODEL 546

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —37922	Dial Bulb		W —34223	Fuse Cover Insulator
	G3 —37965	Dial Light Socket Assembly		W —4072	Thumb Screw (Cover)
2	G27 —24628	Filter Choke	31	W —21964	Resistor 165 Ohm 1/2 W. Flexible
3	G16 —28067	R-F Filter Choke	32	W —21452	Resistor 1100 Ohm 3/4 W. Flexible
4	G114 —32000	Ant Coil—B-C-B	33	W —27503	Resistor 1400 Ohm 3/4 W. Flexible
5	G115 —32000	Ant Coil—H-F-B	34	W —23013	Resistor 2000 Ohm 1 1/4 W. Flexible
6	G81 —32001	R-F Coil—B-C-B	35	W —37485	Resistor 15,000 Ohm 1/2 W. Car.
7	G82 —32001	R-F Coil—H-F-B	36	—33390	Resistor 30,000 Ohm 1/4 W. Car.
8	G104 —32002	Double Osc Coil.	37	—37472	Resistor 50,000 Ohm 1/4 W. Car.
9	G109 —32004	1st I-F Assembly	38A	—21237A	Resistor 60,000 Ohm 1/4 W. Car.
10	G110 —32004	2nd I-F Assembly	38B	—21237A	Resistor 60,000 Ohm 1/4 W. Car.
11A	W —36057	Condenser 40 Mfd. 300 V. Electrolytic	39	—36761	Resistor 40,000 Ohm 1/4 W. Ins.
11B	W —36057	Condenser 40 Mfd. 300 V. Electrolytic	40	—23403	Resistor 150,000 Ohm 1/4 W. Car.
12	W —41195	Condenser 12 Mfd. 25 V. Electrolytic	41	—35930	Resistor 200,000 Ohm 1/4 W. Ins.
13A	W —35936	Condenser .05 Mfd. 200 V	42	—23785	Resistor 500,000 Ohm 1/4 W. Car.
To			43	—21454	Resistor 1 Megohm 1/4 W. Car.
13E	W —35936	Condenser .05 Mfd. 200 V.	44	—35602	Resistor 1 Megohm 1/4 W. Ins.
14	W —32380	Condenser .05 Mfd. 200 V.	45	—37245	Resistor 1.5 Megohm 1/4 W. Car.
15	W —30488	Condenser .02 Mfd. 400 V.	46	—36688	Resistor 3 Megohm 1/4 W. Ins.
16A	W —34647	Condenser .006 Mfd. 400 V.	47A	G88 —28807	Socket Type 15
16B	W —34647	Condenser .006 Mfd. 400 V.	47B	G88 —28807	Socket Type 15
17	W —34712	Condenser .25 Mfd. 160 V.	47C	G88 —28807	Socket Type 15
18	W —24049B	Condenser .1 Mfd. 200 V.	48	G15 —28807	Socket Type 38
19Z	W —25537A	Condenser .03 Mfd. 400 V.	49	G47 —28807	Socket Type 6A7
19Y	W —25537A	Condenser .001 Mfd. 400 V.	50	G92 —28807	Socket Type V1B.
20	W —37174	Condenser .5 Mfd. 160 V.	W —27981A	Tube Shield Base	
21	W —37190	Condenser .02 Mfd. 160 V.	W —40911	Tube Shield	
22	W —37214	Condenser .001 Mfd. 1000 V.	51	—33PJ-3	Speaker Spec. R-6000 D-1 (Table)
23A	G2 —34002	Condenser .0001 Mfd. (Molded)		—41434	Cone Assy. for Above Speaker
23B	G2 —34002	Condenser .0001 Mfd. (Moldec)		—41454	Output Transformer for Above Speaker
24	W —37986	2 Section Shunt Trimmer Condenser		—41458	Mtg. Ring (Cardboard) for Above Cone
25	W —41247	4 Section Shunt Trimmer Condenser		—43PJ-3	Speaker Spec. R-8000 B-3 (Console)
26	W —41288	2 Section Osc. Series Trimmer		—41452	Cone Assy. for Above Speaker
27	G23 —33001	3 Section Var. Tuning Condenser		—41459	Mtg.-Ring (Cardboard) for Above Cone
	C —41321	Dial (Glass)		—41456	Output Transformer for Above Speaker
	W —40804	Dial Glass Cushion	52	B —41253A	Band Selector Switch
	B —40818B	Pointer Disc	53	W —41068A	Dial Light Switch
	W —40486	Pointer Disc Screw	54	G10 —26719	Ant. & Grd. Terminal Assembly
	W —41314	Shaft Assembly (Sprocket etc.)	55Z	—32908	Tone Control
	B —41316	Support Bracket (Bearing)	55Y	—37216	On-off Switch
	B —41315	Sprocket Assembly (Driver)	56	—37216	Vibrator
	W —40909	Spring Washer (Shaft)	57	G11 —32769	Power Transformer
	W —31840A	Snap Spring (Shaft)	58	—41252	Volume Control (10,000 Ohm)
	W —41317	Lower glass Support Bracket	59	W —35467	Resistor 220 Ohm 1/2 W. Flexible
	W —41318	Upper glass Support Bracket R-H		—34903	Battery Clip (+) (Pos.)
	W —41319	Upper glass Support Bracket L-H		—34904	Battery Clip (-) (Neg.)
	W —41320	Drive Chain	B —40839	Escutcheon	
	W —41743	Chain Take up Spring	W —28760B	Escutcheon Pin	
28	MG25 —37103	Battery Cable Assembly	W —41221	Upper Knob (1) } Dial Light	
29	G9 —35696	Speaker Cable	W —41222	Lower Knob (1) } Station Select.	
30	W —37624	Fuse (4 Amp.)	W —41366A	Knob (1) Band Select.	
	G2 —33339	Fuse Panel Assembly	W —41224	Knob (2) V. C. & T. C	
	W —33310A	Fuse Cover			

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	Ga	Go
1C7-G	Oscillator-Modulator	2.0	120	40	0	120	-3
1D5-G	I-F Amplifier	2.0	120	40	0	—	—
1H6-G	Detector & 1st A-F Amp.	2.0	50	—	0	—	—
1H4-G	2nd A-F Amplifier	2.0	50	—	0	—	—
1G5-G	Output	2.0	123	129	-6	—	—

Power Output approximately .750 Watt.  
 "A" Battery Drain approximately .42 Ampere at 2 Volts.  
 "B" Battery Drain approximately 18 Milliamperes at 135 Volts.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1G5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger condenser to the top cap of the 1C7G Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**2. Aligning the R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .0001 mfd. condenser to the "ANT." terminal of the receiver. Connect generator ground lead to the chassis.

(b) Set signal generator to 1725 kilocycles.

(c) Open condenser gang all the way.

(d) Adjust "OSC." trimmer on gang to 1725 kc. signal, the gang does not have to tune through this signal.

(e) Set signal generator to 1400 kilocycles.

(f) Tune-in 1400 kc. signal with station selector, should be approximately 140 on dial.

(g) Adjust "ANT." trimmer on gang for maximum output. Do not readjust "OSC" trimmer. Repeat above operations for more accurate adjustments.

**MODEL 558**

This model receiver is similar to model 548. The main difference is in the output system. The output tube is a 1J6G, dual triode, impedance coupled. Bias for the 1J6G is obtained from drop across item 27 a 60 ohm resistor. The use of the 1J6G will increase the total "A" drain as listed in the 548 voltage chart by 120 M. A. Likewise the maximum power output is increased to approximately 2 watts.

The R-F and I-F adjustment procedure is the same as model 548.

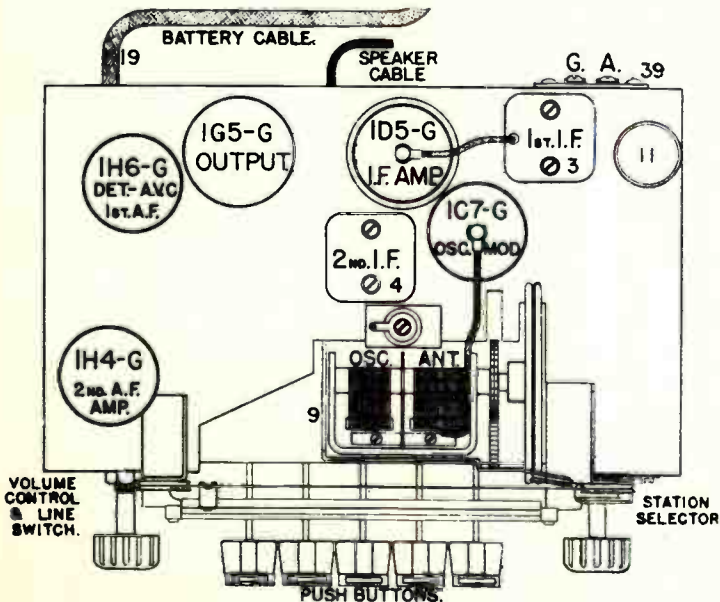


Fig. 2—Top View Model 548

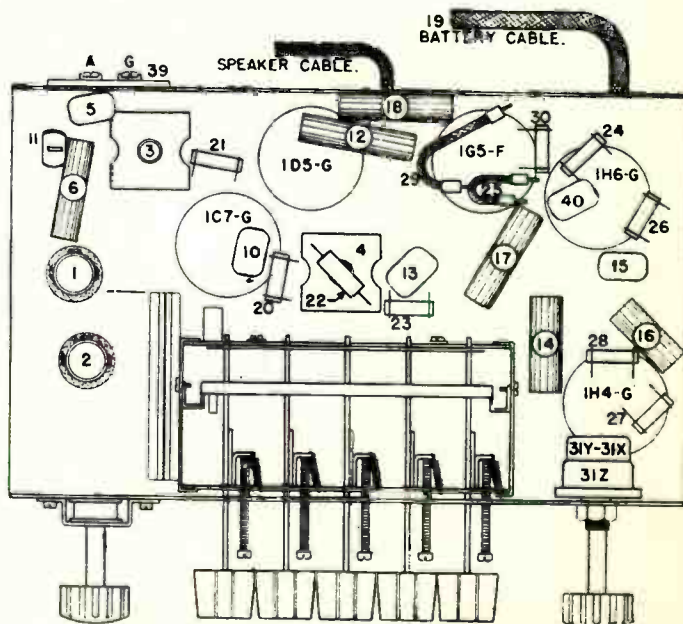


Fig. 3—Bottom View Model 548



MODELS 548, 5548, 558

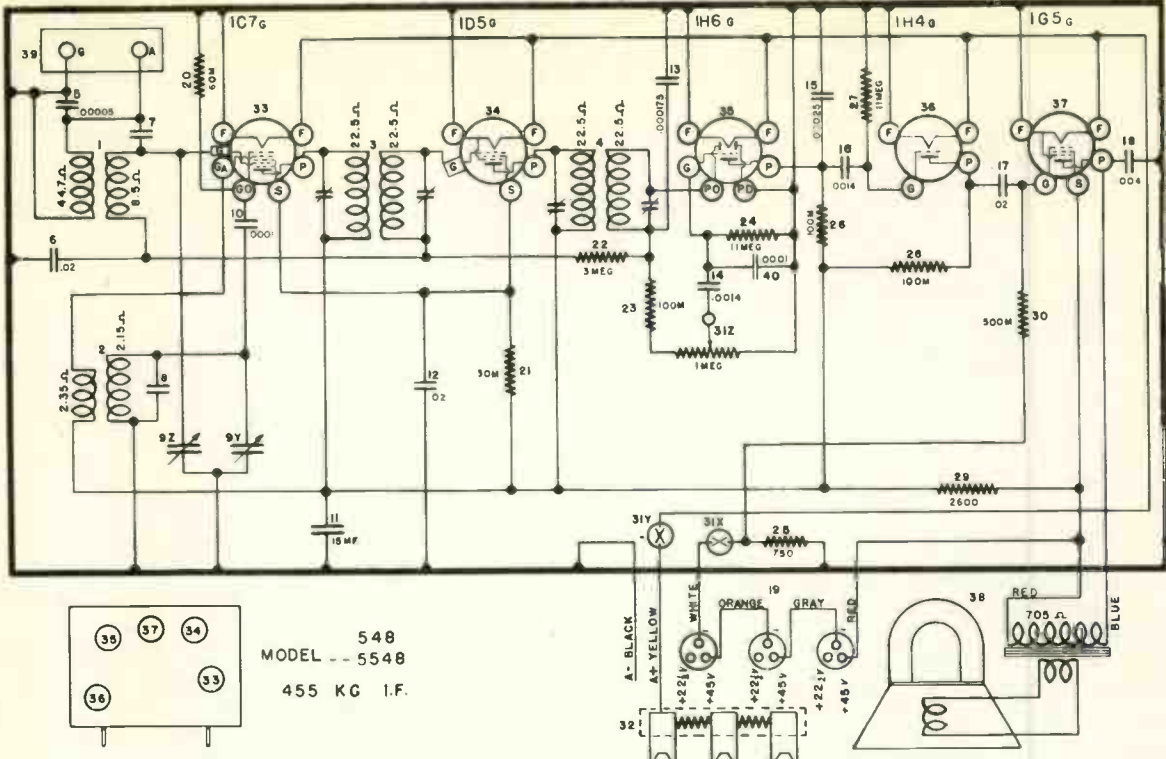


FIG. 1A--WIRING DIAGRAM MODELS 548, 5548

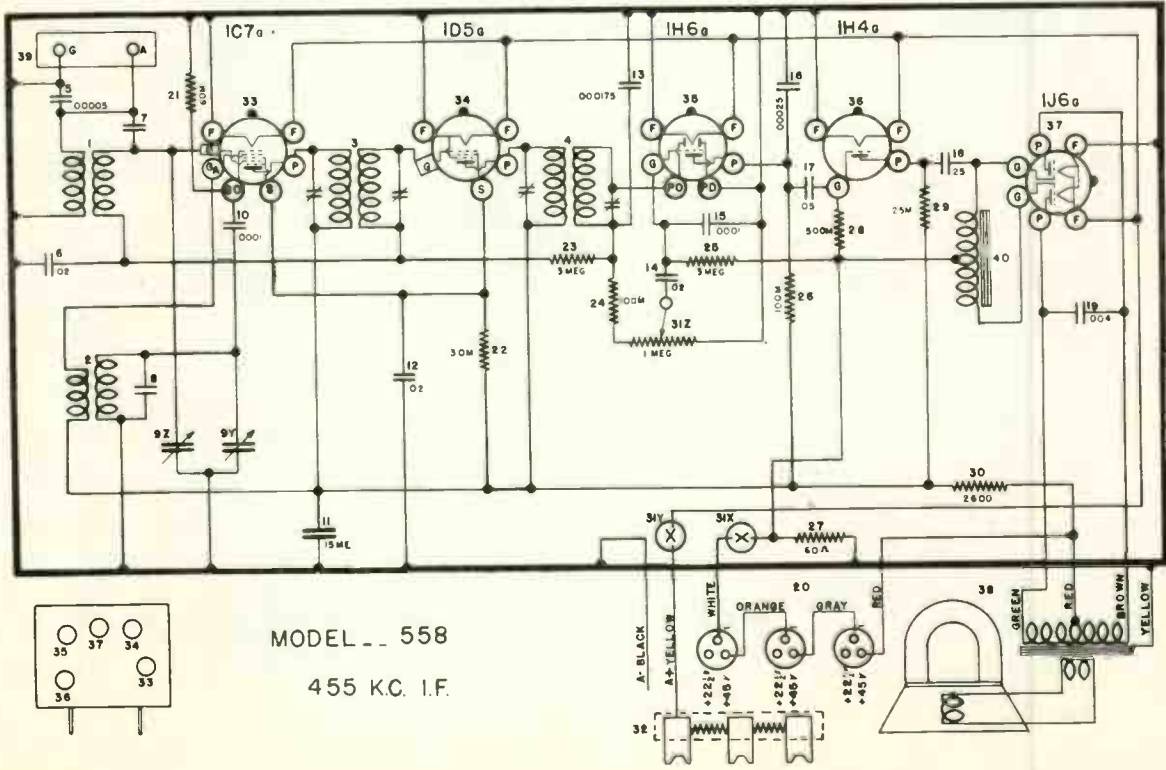


FIG. 1B--WIRING DIAGRAM MODEL 558

PARTS LIST—MODELS 548 & 5548

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G176-32000	Antenna Coil	38	W -46911	Tube Shield
2	G177-32002	Oscillator Coil		274PL18"HI"	Speaker, Spec. S-4504 AMD:5
3	G194-32004	1st I. F. Transformer		-46800	Speaker Cone Assembly
4	G195-32004	2nd I. F. Transformer		-46802	Output Transformer
5	G5-34002	Condenser, .00005 Mf. Molded		-46803	Cardboard Ring
6	W -28621	Condenser, .02 Mf. 200 V. Paper	39	G1 -26719	Terminal (A-G)
7	G3 -50640	Condenser (Capacity Coupling) Ant.	40	G2 -31002	Condenser, .0001 Mf. Molded
8	G3 -50640	Condenser (Capacity Coupling) Osc.		G3 -45683	Push Button Unit Assembly
9Z	G52 -33001	2 Sect. Condenser (Antenna Oscillator)		G32 -45683	Riveted Key Assembly
9V	W -23877	Set Screw (For Pulley-Hub Assembly)		G22 -45683	Rocker Plate Assembly
	G12 -43564	Pulley and Hub Assembly		MG28 -45683	Riveted Mounting Bracket
	MG14 -45894	Riveted Dial Support Bracket, R. H.		W -50547	Key Plate
	MG16 -46000	Riveted Dial Support Bracket, L. H.		W -50607C	Key Return Spring
	C -46042	Dial Glass		W -45646B	Adjusting Clip
	W -45984	Dial Glass Clip, L. H.		W -50542D	Key Clip (Lock Clamp)
	W -45985	Dial Glass Clip, R. H.		W -50561	Screw (Rocker Plate Bearing)
	W -46397	Dial Pointer (White)		-45717	Clamp Screw (No. 6-32 x 1 1/4")
	W -46037	Dial Hand Guide		-31388	Key Plate Mounting Screw (No. 8-32 x 3/4")
	W -45742B	Dial Glass Cushion		-2046	No. 8 Shakeproof Washer (Key Plate Screw)
	B -45743B	Dial Support			
	W -48056	Drive Shaft (548)			
	W -45865	Drive Shaft (548)			
	W -43542B	Drive Shaft Bracket		-8AA	Cabinet
	G2 -41582	Drive Cord (44 Inches)		-45771	Knob (2 Req.)
	W -46290	Cord Clamp		-46006	Instruction
	W -46087	Drive Cord Spring		-45553B	Push Button (5 Req.)
10	G2 -34002	Condenser, .0001 Mf. Molded		-47863	Call Letter Sheet
11	W -45968	Condenser, 15 Mf. 250 V. Elect.	W	-50551B	Call Letter Cover
12	W -28621	Condenser, .02 Mf. 200 V. Paper	N	-6	No. 6-32 Hex. Nut (Spkr. Mtg.) (3 Req.)
13	G11 -34002	Condenser, .000175 Mf. Molded		W -2118	No. 6 Shakeproof Washer (Spkr. Mtg.) (3 Req.)
14	W -41461	Condenser, .0014 Mf. 200 V. Paper		-45762A	Carton
15	G1 -34002	Condenser, .00025 Mf. Molded		-46242	Rubber Mounting Screw (Chassis Mtg. Screw) (4 Req.)
16	W -41461	Condenser, .0014 Mf. 200 V. Paper			
17	W -28621	Condenser, .02 Mf. 200 V. Paper			
18	W -28904	Condenser, .004 Mf. 200 V. Paper			
19	C -46014	Battery Cable, Model 548			
19	C -46072A	Battery Cable, Model 5548			
20	-21237A	Resistor, 60,000 Ohms 1/4 W. Carbon			
21	-33390	Resistor, 30,000 Ohms 1/4 W. Carbon			
22	-26577	Resistor, 3 Megohms 1/4 W. Carbon	B	-8D	Cabinet
23	-21875	Resistor, 100,000 Ohms 1/4 W. Carbon		16118A	Escutcheon
24	-37584	Resistor, 11 Megohms 1/4 W. Carbon		-45972	Knob (2 Req.)
25	W -22514	Resistor, 750 Ohms 1/4 W. Flex.		-46075	Instructions
26	21875	Resistor, 100,000 Ohms 1/4 W. Carbon	W	47863	Call Letter Sheet
27	37584	Resistor, 11 Megohms 1/4 W. Carbon	N	-50551B	Call Letter Cover
28	21875	Resistor, 100,000 Ohms 1/4 W. Carbon		-6	No. 6-32 Hex. Nut (4 Req.) (Speaker Mtg.)
29	W -30960	Resistor, 2,600 Ohms 1/4 W. Flex.	W	2118	No. 6 Shakeproof Washer (4 Req.) (Speaker Mtg.)
30	-23785	Resistor, 500,000 Ohms 1/4 W. Carbon		-46194	Push Button (5 Req.)
31Z		Volume Control		-14499	No. 8-32 x 3/4" W. H. M. Screw (4 Req.) (Chassis)
31Y	-45996A	Switch "A" Supply Model 548		W -26372A	Flat Washer (4 Req.) (Chassis)
31X		Switch "B" Supply		-46332	Felt Strip (2 Req.)
31Z		Volume Control			
31Y	-46057A	Switch "A" Supply Model 5548			
31X		Switch "B" Supply			
32	W -41905A	Resistance Strip, 1.83 Ohms Tap at 1.1 Ohms			
33					
34					
35	G178-36100	8 Prong Sockets (No Marking)			
36					
37					

PARTS LIST—MODEL 558

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G176-32000	Antenna Coil	32	W -11955A	Resistance Strip, 1.83 Ohms Tap at 1.1 Ohms
2	G177-32002	Oscillator Coil			
3	G194-32004	1st I. F. Transformer	33		
4	G195-32004	2nd I. F. Transformer	34		
5	G5-34002	Condenser, .00005 Mf. Molded	35	G178-36400	8 Prong Tube Sockets (No Marking)
6	W -28621	Condenser, .02 Mf. 200 V. Paper	36		
7	G6 -50640	Condenser Capacity Coupling	37		
8	G3 -50640	Condenser Capacity Coupling	38	W -40911	Tube Shield
9Z	G52 -33001	2 Sect. Variable Condenser, Antenna Section		42PJ4"A"	Speaker, Spec. R-8000-B-1
9V	G52 -33001	2 Sect. Variable Condenser, Oscillator Section		-41452	Speaker Cone (Without V. C.)
	G1 -46757	Dial Hand Assy.		-41455	Output Transformer
	G12 -43564	Hub and Pulley Assy.	39	-41459	Cardboard Ring
	W -23877	Set Screw for Hub and Pulley Assy. (2 Req.)	40	-41460	Dust Cap
	W -46056	Drive Shaft		G1 -26719	Terminal Board, A-G
	W -43542B	Drive Shaft Bracket		G24 -29635	Choke Coil
	W -46087	Drive Cord Spring		G7 -45683	Push Button Unit Assembly
	G2 -41588	Drive Cord (44 Inches)		G23 -45683	Riveted Key Assembly
	W -45806	No. 8 x 3/4" P. K. Screw (Drive Shaft Bracket)		G22 -45683	Rocker Plate Assembly
	D -46372B	Dial Glass		G28 -45683	Riveted Mtg. Bracket Assembly
	B -46388A	Dial Support Extension		W -50542D	Key Clip (5 Req.)
	W -45978	Dial Glass Clip (4 Req.)		W -45646B	Adjusting Clip (1 Req.)
	W -45742B	Dial Glass Cushion		W -50547	Key Plate
	B -45743B	Dial Support		-31388	No. 8-32 x 3/8" Washer Hd. Screw (4 Req.)
	W -45850	Dial Pointer		-2046	No. 8 Shakeproof Washer (Key Plate Screw)
	W -46756	Dial Pointer Extension		W -50561	Rocker Plate Bearing (2 Req.)
	O -8	Flat Washer		-45717	Clamp Screw (No. 6-32 x 1 1/4")
	G4 -33354	Flex. Socket Assy. (1 Req.)		W -50588B	Adjusting Clip (1 Req.)
	G2 -34002	Condenser, .0001 Mf. Molded		W -50607C	Key Return Spring
10	W -45968	Condenser, 15 Mf. 250 V. Elect.		-8RA	Cabinet
11	W -28621	Condenser, .02 Mf. 200 V. Paper	W	-46378	Escutcheon
12	W -28621	Condenser, .02 Mf. 200 V. Paper		-45972	Knob
13	G11 -34002	Condenser, .000175 Mf. Molded		-46333	Instructions
14	W -28621	Condenser, .02 Mf. 250 V. Paper		-46194	Push Button
15	G2 -34002	Condenser, .0001 Mf. Molded		-47863	Call Letter Sheet
16	G1 -34002	Condenser, .00025 Mf. Molded	W	-50551B	Call Letter Cover
17	W -27216	Condenser, .05 Mf. 200 V. Paper		-46103	Grid Cloth
18	W -28910A	Condenser, .25 Mf. 200 V. Paper	N	-8	No. 8 Nex. Nut (Speaker)
19	W -28904	Condenser, .004 Mf. 200 V. Paper		-2046	No. 8 Shakeproof Washer (Speaker)
20	C -46014	Battery Cable	O	-8	No. 8 Flat Washer (Speaker)
21	-21273	Resistor, 60,000 Ohms 1/4 W. Carb.		-29682	No. 8 x 3/4" W. H. Screw (Chassis Fastening)
22	-33390	Resistor, 30,000 Ohms 1/4 W. Carb.	W	-45572	Flat Washer (Chassis Fastening)
23	-26577	Resistor, 3 Megohms 1/4 W. Carb.	D	-30	No. 2 x 3/4" Oval Clsk. Screw (Escutcheon)
24	-21875	Resistor, 100,000 Ohms 1/4 W. Carb.			
25	-37577	Resistor, 3 Megohms 1/4 W. Carb.			
26	-21875	Resistor, 100,000 Ohms 1/4 W. Carb.			
27	W -24537	Resistor, 60 Ohms 1/4 W. Flex.			
28	-23785	Resistor, 500,000 Ohms 1/4 W. Carb.			
29	-24990	Resistor, 25,000 Ohms 1/4 W. Carb.			
30	W -30960	Resistor, 2,600 Ohms 1/4 W. Flex.			
31Z		Volume Control			
31Y	-46057	"A" Line Switch			
31X		"B" Line Switch			

VOLTAGE READINGS—WITH CR649 BATTERY PACK

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	70	40	Neg.	70	0	0
1N5GT	I-F Amplifier	0	4.5	70	70	1.5	—	3	0
1H5GT	Det. AVC, 1st Audio	0	3.0	11	11	—	—	1.5	6
1A5GT	Output	0	6.0	68	70	—	6	4.5	1.5
117Z6GT	Rectifier	0	0	0	68	0	0	0	6.0

VOLTAGE READINGS—@ 117.5 VOLT LINE (A.C.)

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	102	56	-3	102	0	0
1N5GT	I-F Amplifier	0	4.5	102	102	1.5	—	3.0	0
1H5GT	Det. AVC, 1st Audio	0	3.0	17	17	—	0	1.5	45
1A5GT	Output	0	6.0	98	102	—	28	4.5	1.5
117Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	142	117.5 A.C.	0	0	126

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

Tuning the I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving the tubes' grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mf.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

Aligning the R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mf. condenser to "A" terminal and the ground lead to the "G" terminal on the back of the cabinet.

It is essential that the following alignment be made with the receiver in the cabinet and the battery and back in position. Trimmer adjustments may be made on the two luggage type carrying cases through the two holes in the top, beneath the carrying handle. On the walnut cabinet model the oscillator will have to be aligned before placing chassis in the cabinet and then adjust the antenna trimmer provided on the back.

Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

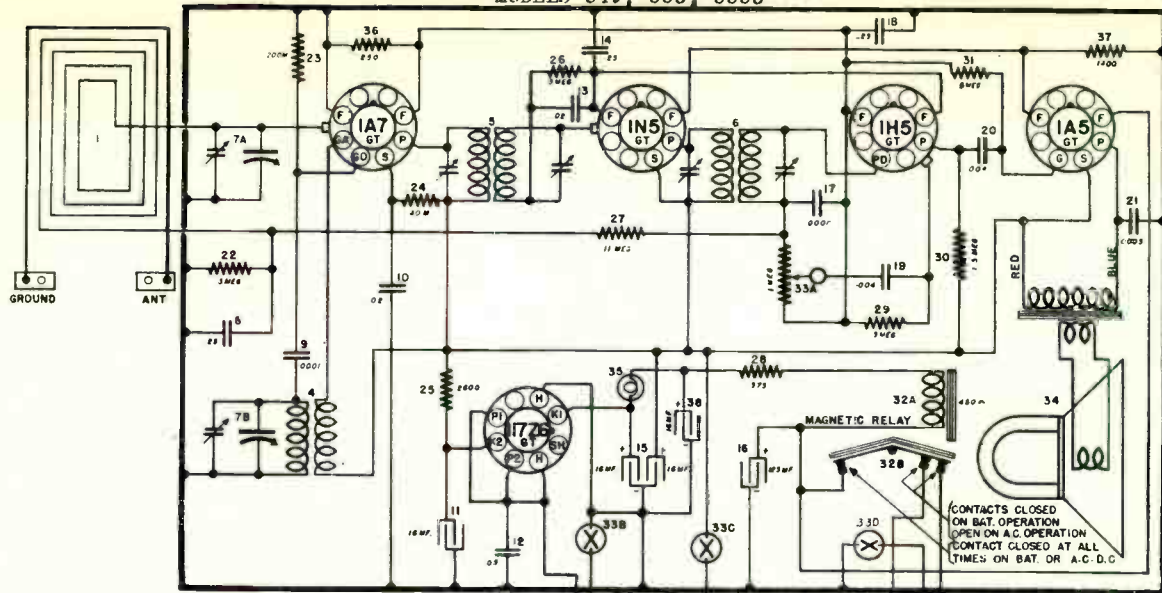
(a) Set signal generator to 1400 kilocycles.

(b) Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.

(c) Adjust antenna trimmer (front section of gang) for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —48732A	Loop Antenna	33A		Volume Control, 1 Megohm
2	B —48698	A. C.-D. C. Power Cord and Plug	33B		A. C.-D. C. Switch
3	B —48699	Battery Cable	33C		B+ Battery Switch
4	G209-32002	Oscillator Coil	33D		Relay—Ground
5	G194-32004	1st I-F. Transformer Assembly	34	W —46662	Pal Nut
6	G195-32004	2nd I-F. Transformer Assembly	35	392-PL-6."	Speaker, Spec.
7A	G84 —33001	2 Section Var. Cond. { Antenna Section Oscillator Section	36	W —47977	Dial Light Bulb, 110 Volt
7B			LW —49514	Dial Light Socket Assembly	
	D —18431A	Dial Face	37	W —51085	Resistor, 250 Ohms ½ Watt Ins.
	O —8	No. 8—32 x ¼" W. Hd. Screw (Dial Face)	38	W —27503	Resistor, 1,400 Ohms ¼ Watt Flex.
	W —13519	Flat Washer (Dial Face)		W —45783	Condenser, 16 Mf. 125 Volts Elect.
	W —48695	Retaining Ring (Drive Shaft)		—9EEA	Cabinet
	W —44808B	Drive Shaft		—9EAB	Cabinet
	W —6876	Drive Shaft Bracket		—9EDB	Cabinet
	G19 —41583	Screw (Drive Shaft Bracket) (2 Req.)	B	—48605	Speaker Screen (9EEA and 9EDB)
	W —44989	Drive Cord, 17"			Speaker Screen
	W —46929	Drive Cord Spring	W	—48691	Dial Lens
	U —49113	Drive Cord Clamp		—48705A	Knob
	U —49111	Dial Pointer		—48719A	Knob
	W —20800	No. 6—32 x ¼" Gulmit Screw (Dial Pointer)	B	—48732A	Loop Antenna
	W —51108A	Shakeproof Washer (Dial Pointer)	C	—48715B	Chassis Shield
8	W —34712	8 Prong Socket (No Marking)	W	—49139	Relay Insulator
9	G2 —34002	Condenser, .25 Mf. 160 Volts Paper	W	—41142	Trimmer Condenser (9EAB)
10	W —28621	Condenser, .0001 Mf. Molded	W	—4318B	Spacer (2 Req.) (9EAB)
11	W —16128	Condenser, .02 Mf. 200 Volts Paper	R	—135	No. 6—32 x ¼" Rd. Hd. Mach. Screw (2 Req.) (9EAB)
12	W —23615	Condenser, .02 Mf. 250 Volts Elect.	W	—45513	No. 6—32 Pal Nut (2 Req.) (9EAB)
13	W —28621	Condenser, .02 Mf. 400 Volts Paper	B	—49453	Loop Cover (9EDB)
14	W —34712	Condenser, .02 Mf. 200 Volts Paper		—49451	Instructions
15	W —16398	Condenser, .25 Mf. 160 Volts Paper		—48609	Carton (9EEA)
	W —48562	Condenser, 16 Mf. 125 Volts Elect.		—49348	Carton (9EAB)
16	W —48562	Condenser, 125 Mf. 7½ Volts Elect.		—49450	Carton (9EDB)
17	G2 —34002	Condenser, .0001 Mf. Molded		—44827	No. 8 x ½" H. H. P. K. Screw (Chassis Mtg.) (9EEA and 9EDB)
18	W —34712	Condenser, .25 Mf. 160 Volts Elect.		—44392	No. 8 x 1" H. H. P. K. Screw (Chassis Mtg.) (9EAB)
19	W —28904	Condenser, .004 Mf. 200 Volts Paper			Flat Washer (Chassis Mtg.) (3 Req.)
20	W —28904	Condenser, .004 Mf. 200 Volts Paper	W	—30409	Hole Plug (2 Req.) (9EEA and 9EDB)
21	G3 —34002	Condenser, .0005 Mf. Molded	W	—32947	Cork (2 Req.) (9EEA and 9EDB)
22	W —36688	Resistor, 3 Megohms ¼ Watt Ins.	W	—49160	No. 6 x ¼" Rd. Hd. Wood Screw (2 Req.) (9EEA)
23	W —35930	Resistor, 200,000 Ohms ¼ Watt Ins.	W	—44482	Battery Mtg. Strap (9EDB)
24	W —36761	Resistor, 40,000 Ohms ¼ Watt Ins.	W	—20881	No. 6 x ¾" Rd. Hd. Wood Screw (2 Req.) (9EDB)
25	W —30960	Resistor, 2,600 Ohms 1½ Watt Flex.	S	—80	No. 4 x ¾" Rd. Hd. Wood Screw (Loop Cover)
26	W —36688	Resistor, 3 Megohms ¼ Watt Ins.	W	—49072	CR-649 Battery Pack and Carton
27	W —48693	Resistor, 11 Megohms ¼ Watt Ins.			
28	W —21965	Resistor, 375 Ohms 1 Watt Flex.			
29	W —47131	Resistor, 5 Megohms ¼ Watt Ins.			
30	W —48692	Resistor, 1½ Megohms ¼ Watt Ins.			
31	W —47131	Resistor, 5 Megohms ¼ Watt Ins.			
32A	MG26—48390	Relay Coil			
32B		Relay Switch			



RELAY

The receiver, when plugged into 110 volt circuit, will operate on the batteries until rectifier warms up and trips the relay. When relay trips there should be no decrease or dead spot in output as rectifier should be warmed up sufficiently to carry load and give a slight increase in output due to higher plate voltage available.

The relay is insulated from the chassis and care should be exercised when probing so as not to short it.

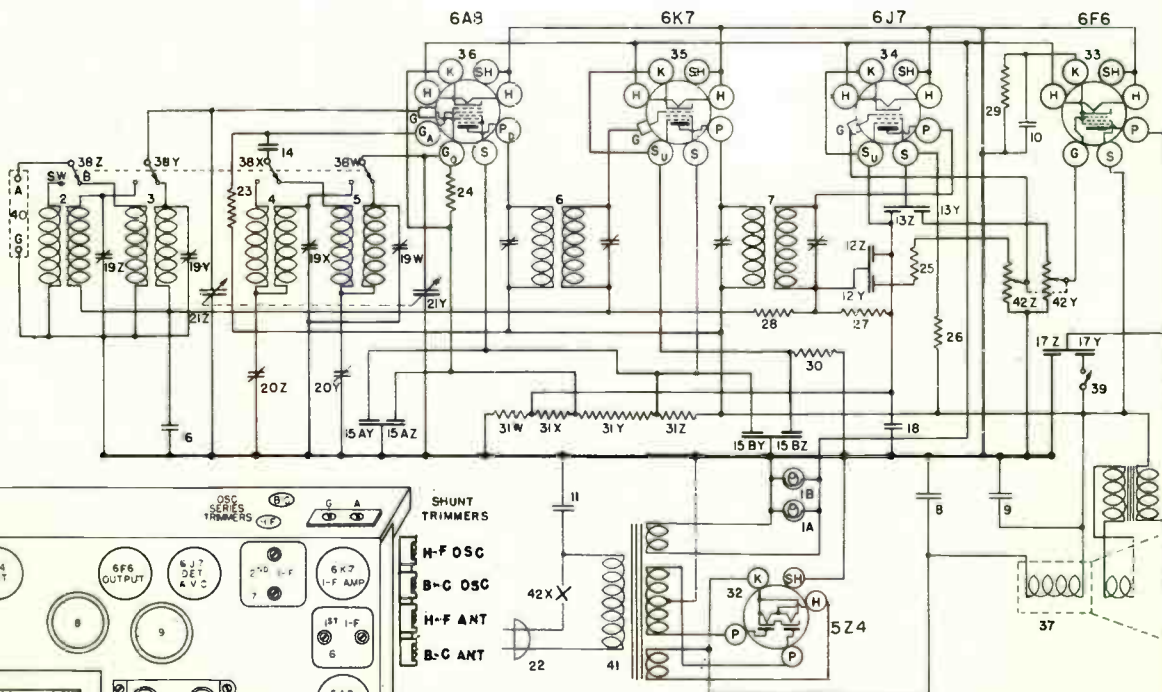
In earlier models the relays have three sets of contacts and the single side must make contact at all times. The double side must make contact when batteries are used and both contacts (double contact side) must break when operated on 110 volt circuits. Later models the single contact side was omitted and a flexible braid connection used instead.

—WIRING DIAGRAM—MODEL 549

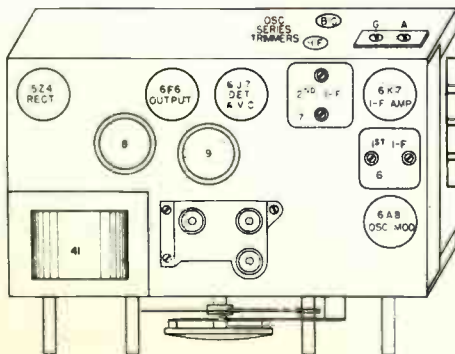
MODEL --- 549

455 K.C. I.F.

BATTERY CABLE  
A-RED  
B-BLUE  
B-YELLOW  
PLUG



WIRING DIAGRAMS—MODELS 555 AND 5555



**TUBE SOCKET VOLTAGE READINGS**

Type	Where Used	H	P	S	Su	G	K	Ga	Go
6A8	Osc.-Mod.	6.7	295	135	—	0	7.5	155	-10 to -20
6K7	I-F Amplifier	6.7	295	135	10	0	10	—	—
6J7	Det. & A-F Amp.	6.7	1.0	65	4	0	4	—	—
6F6	Output	6.7	295	295	—	0	20	—	—
5Z4	Rectifier	5.0	—	—	—	—	390	—	—

Power Output Approximately 3 Watts. Power Consumption Approximately 85 Watts at 117.5 Volts.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. \*For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm carbon resistor (\* Non Inductive).

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned, and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" parallel trimmers (shunt alignment. ) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the the adjustment of the "ANT" trimmer.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description				
1A	G6 —27134	Dial Light Assm.	22	B —37354	Dial Face only				
1B	G6 —27134	Dial Light Assm.	23	B —33906A	A. C. Cord & Plug				
2	G82 —32000	Ant. Coil, S. W. B.	24	—5370A	Resistor, 20,000 Ohm				
3	G81 —32000	Ant. Coil, B. C. B.	25	—21237	Resistor, 60,000 Ohm				
4	G65 —32002	Osc. Coil, S. W. B.	26	—21875	Resistor, 100,000 Ohm				
5	G66 —32002	Osc. Coil, B. C. B.	27	—21455	Resistor, 300,000 Ohm				
6	G71 —32004	1st I. F. Assm.	28	—33344	Resistor, 400,000 Ohm				
7	G72 —32004	2nd I. F. Assm.	29	—37245	Resistor, 1.5 Megohm				
8	W —36055	Condenser, 35. Mfd. 400 Volt	30	W —25291	Resistor, 500 Ohm 1½ W. (Flex)				
9	W —36057	Condenser, 40. Mfd. 300 V.	31Z	W —28106	Resistor, 500 Ohm ½ W. (Flex)				
10	W —36931	Condenser, 12 Mfd. 25 V.	31Y	W —37246A	Resistor, 10,000 Ohm Candohm				
11	W —30805	Condenser, 0.01 Mfd. 400 V.	31X		Resistor, 25,000 Ohm Candohm				
12Z	W —30322A	Condenser, 0.00017 Mfd. 200 V.	31W		Resistor, 185. Ohm Candohm				
12Y		Condenser, 0.006 Mfd. 200 V.	32	G154—36400	Resistor, 185. Ohm Candohm				
13Z	W —25537A	Condenser, 0.001 Mfd. 400 V.	33	G153—36400	Socket, 5Z4				
13Y		Condenser, 0.03 Mfd. 400 V.	34	G157—36400	Socket, 6F6				
14	W —23191A	Condenser, 0.01 Mfd. 400 V.	35	G151—36400	Socket, 6J7				
15AZ	W —28623	Condenser, 0.02 Mfd. 200 V.	36	G156—36400	Socket, 6K7				
15AY		Condenser, 0.02 Mfd. 200 V.	37	331—CL—9	Socket, 6A8				
15BZ	W —28623	Condenser, 0.02 Mfd. 200 V.	38W	432—CJ—3M	Speaker, (555)				
15BY		Condenser, 0.02 Mfd. 200 V.		G3 —35696	Speaker, (5555) Console				
16	W —27216	Condenser, 0.05 Mfd. 200 V.	38Z	—37247	Speaker Cable (5555)				
17Z	W —35011	Condenser, 0.006 Mfd. 400 V.			39	W —36184A	Band Change Switch		
17Y		Condenser, 0.03 Mfd. 400 V.	40	G1 —26719			Tone Control Switch		
18	W —36541	Condenser, 0.02 Mfd. 160 V.	41	G12 —28500	Ant. & Grd. Terminal				
19Z	W —37241A	4 Section Trimmer Cond.	42Z	—37395	Power Trans. 60 Cy. 110 V.				
19Y					G29 —33006	S. W. Osc. Series Padder	G13 —28500	Power Trans. 25 Cy. 110 V.	
19V								B. C. Osc. Series Padder	G14 —28500
20Z	G17 —33001	Var. Tuning Cond. Gang	42Y	—37395	Volume Control A. F. Grid				
20Y					—37353C	Dial Assm. Complete	42X	—37395	Volume Control Output Grid
21Z									—37158
21Y					—37156	Dial Pointer	D —28	Escutcheon	
					—37157	Pointer Screw	W —31585B	Escutcheon Screws (3)	
			W —36355	Knob, V. C. & Dial					
				Knob, T. C. & Band Change					

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	-2.5	—	—
1A6	Osc.-Modulator	2.0	135	65	-2.5	85	-5 to -20
34	I-F Amplifier	2.0	135	65	-2.5	—	—
1B5	Diode Detector and A-F Amplifier	2.0	60	—	—	—	—
33	Output	2.0	135	135	-1.0	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02. or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(f) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

(i) Repeat operations (f) and (g) for more accurate adjustments.

Figures in first column refer to parts in Diagrams.

Item No	Part No.	Description	Item No.	Part No.	Description
1A	W -37188	Dial Light	22	NONE	
1B	W -37188	Dial Light	23	-22196	Resistor 20000 Ohm 1/4 W.
	G6 -27134	Dial Light Socket Assembly	24	-37377	Resistor 20000 Ohm 1W.
2	G76 -32000	Ant. Coil	25	-34019	Resistor 75000 Ohm 1/4 W.
3	G73 -32004	1st I-F Assembly	26A	-35601	Resistor 300000 Ohm 1/4 W.
4	G38 -32004	2nd I-F Assembly	26B	-35601	Resistor 300000 Ohm 1/4 W.
5	G47 -32002	Osc. Coil	26C	-35601	Resistor 300000 Ohm 1/4 W.
6	G53 -32001	R-F Coil	27	-21454	Resistor 1 Megohm 1/4 W.
7	G9 -34002	Condenser .00002 Mfd. (Molded)	28	-35602	Resistor 1 Megohm 1/4 W.
8	G2 -34002	Condenser .0001 Mfd. (Molded)	29	-26577	Resistor 3 Megohm 1/4 W.
9A	G1 -34002	Condenser .00025 Mfd. (Molded)	30	-36318	Resistor 15000 Ohm 1/4 W.
9B	G1 -34002	Condenser .00025 Mfd. (Molded)	31A	G31 -28807	Socket Type-34
10	W -28619	Condenser .006 Mfd. 200 V.	31B	G31 -28807	Socket Type-34
11	W -28621	Condenser .02 Mfd. 200 V.	32	G55 -28807	Socket Type-1A6
12Z	W -28623	Condenser .02 Mfd. 200 V.	33	G41 -28807	Socket Type-1B5
12Y	W -28623	Condenser .02 Mfd. 200 V.	34	G36 -28807	Socket Type-33
13	W -32378	Condenser .01 Mfd. 400 V.	W	-26973B	Tube Shield Base
14A	W -24049B	Condenser .1 Mfd. 200 V.	W	-26974B	Tube Shield
14B	W -24049B	Condenser .1 Mfd. 200 V.	35	31PJ3"A"	Speaker (Table) R-6000 C-8 & D-2
15A	W -29910A	Condenser .25 Mfd. 200 V.		-41434	Cone Assembly
15B	W -29910A	Condenser .25 Mfd. 200 V.		-41453	Output Trans.
15C	W -29910A	Condenser .25 Mfd. 200 V.		-41458	Cone Mtg. Ring
16	G43 -33002	3 Section Var. Tuning Condenser		41PJ3"A"	Speaker (Console) R-8000 B-2
	C -41059	Dial Glass		-41452	Cone Assembly
	W -42629	Pointer		-41457	Output Trans.
	B -42374	Dial Mask		-41459	Cone Mtg. Ring
	W -40794	Bearing Bracket	36	W -41068	Dial Light Switch
	W -31840A	Snap Ring	37	G1 -26719	Ant. & Grd. Terminal Assembly
	W -40909	Spring Washer	38Z		Volume Control (100000 Ohm)
	W -40795A	Hand Shaft	38Y		Battery Switch
	W -40797	Dial Glass Bracket (2)	39		Band Selector Switch
	W -40798	Support Bracket L-H.	40	W -35758	Condenser .008 Mfd. 400 V.
	W -40799	Support Bracket R-H.	41	G95 -28807	Socket-Ballast Tube
	W -41578	Gear Spring	W	-43251	Ballast Tube
	W -41739	Drive Unit	B	-40839A	Escutcheon Ring
17	C -37396	Battery Cable	W	-28760B	Escutcheon Pin
		(Sets with no Ballast Tube Provision)	W	-31585C	Knob (Large)
	B -41971	Battery Cable (for "B-C" Packs)	W	-36355A	Knob (Small)
	C -41972	Harness (for adapting B-41971 to Individual "B & C")	W	-25025B	Osc. Coil Shield
	C -43461	Battery Cable	W	-21541	Retaining Ring
		(Sets with Ballast Tube Provisions)	W	-25200	Coil Socket
18	G6 -35696	Speaker Cable	W	-26891	Insulating Washer
19	G2 -23300	Resistor .53 Ohm (Air Cell)	W	-30802A	R-F & Ant. Coil Shield
20	W -36760	Resistor 20000 Ohm 1/4 W.	W	-30026A	Retaining Ring
21	W -27121	Resistor 5000 Ohm 1/4 W.	W	-37164	Insulating Washer

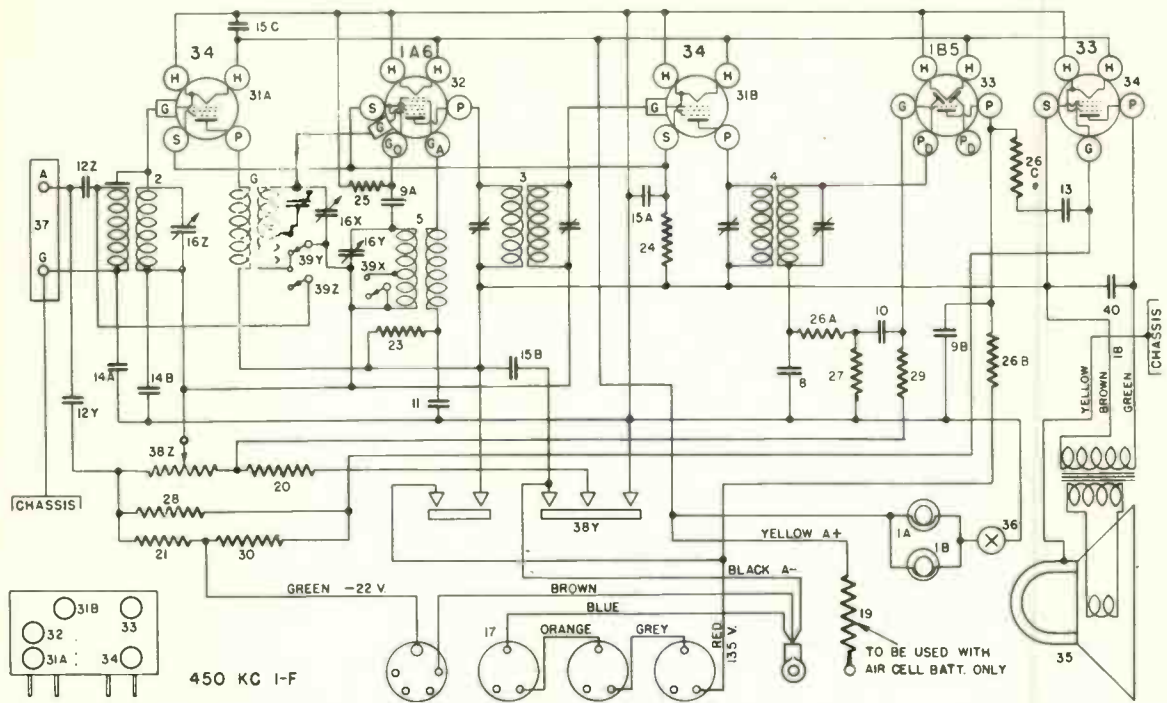


FIG. 1—WIRING DIAGRAM—MODEL 556

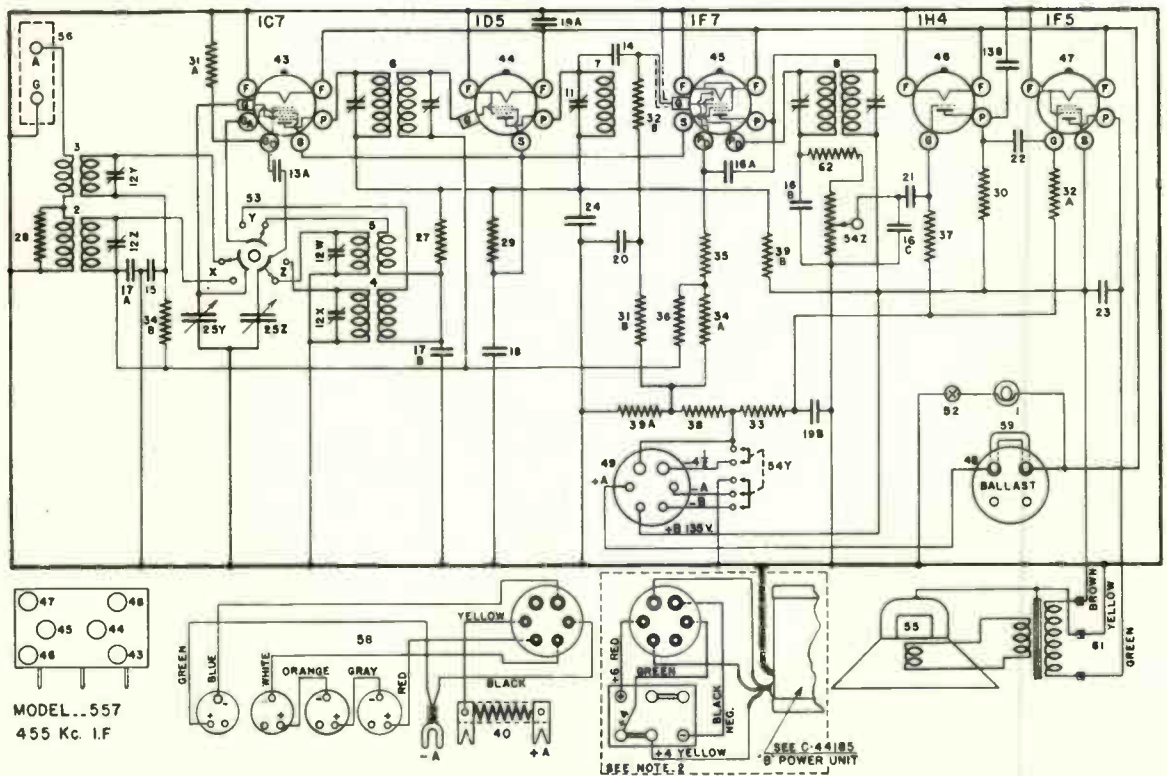


FIG. 1—WIRING DIAGRAM—MODEL 557

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Go	Ga
1C7G	Oscillator-Modulator	2.0	120	54	Neg	84
1D5G	1st I-F Amplifier	2.0	120	54	—	—
1F7G	2nd I-F Amplifier, AVC and Detector	2.0	135	54	—	—
1H4G	1st A-F Amplifier	2.0	72	—	—	—
1F5G	Output	2.0	130	135	—	—

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. or larger, condenser to the top cap of the 1C7G oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground (G) terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 3rd I-F assembly for maximum output. (See Fig. 2 item 8).

(f) Adjust the 2nd I-F trimmer condenser, Fig. 2 item 11, for maximum output.

(g) Adjust both trimmers located on top of the 1st I-F assembly, item 6, for maximum output.

(h) Check operations (e), (f) and (g) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A)

terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (c) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**NOTE:** When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

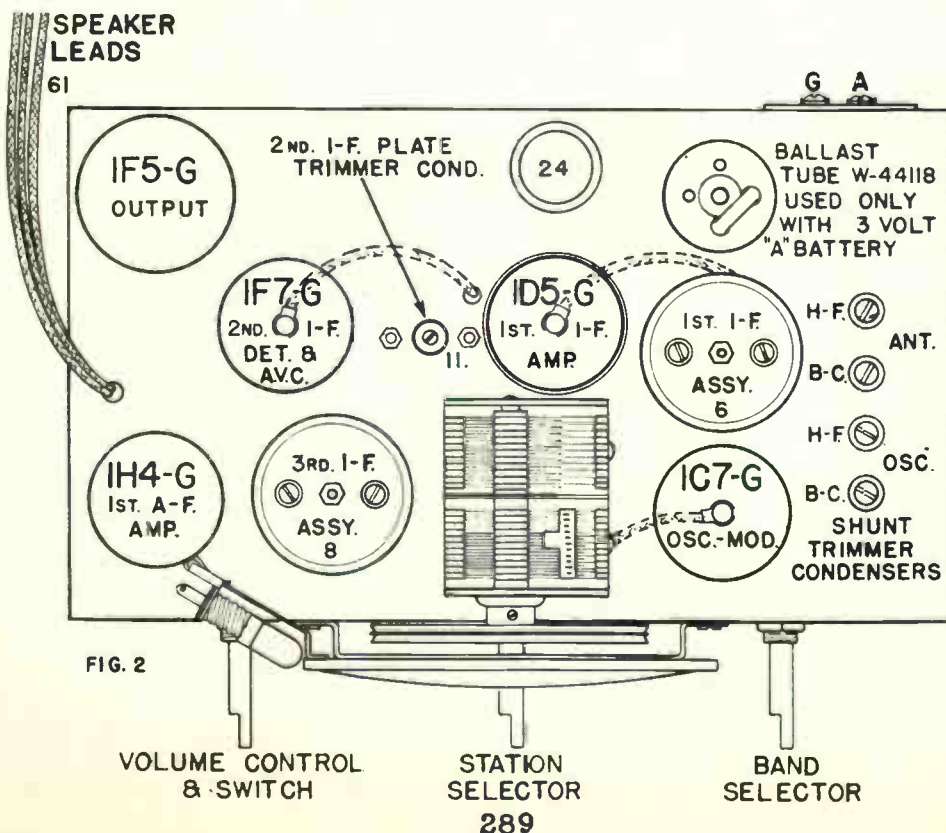


FIG. 2



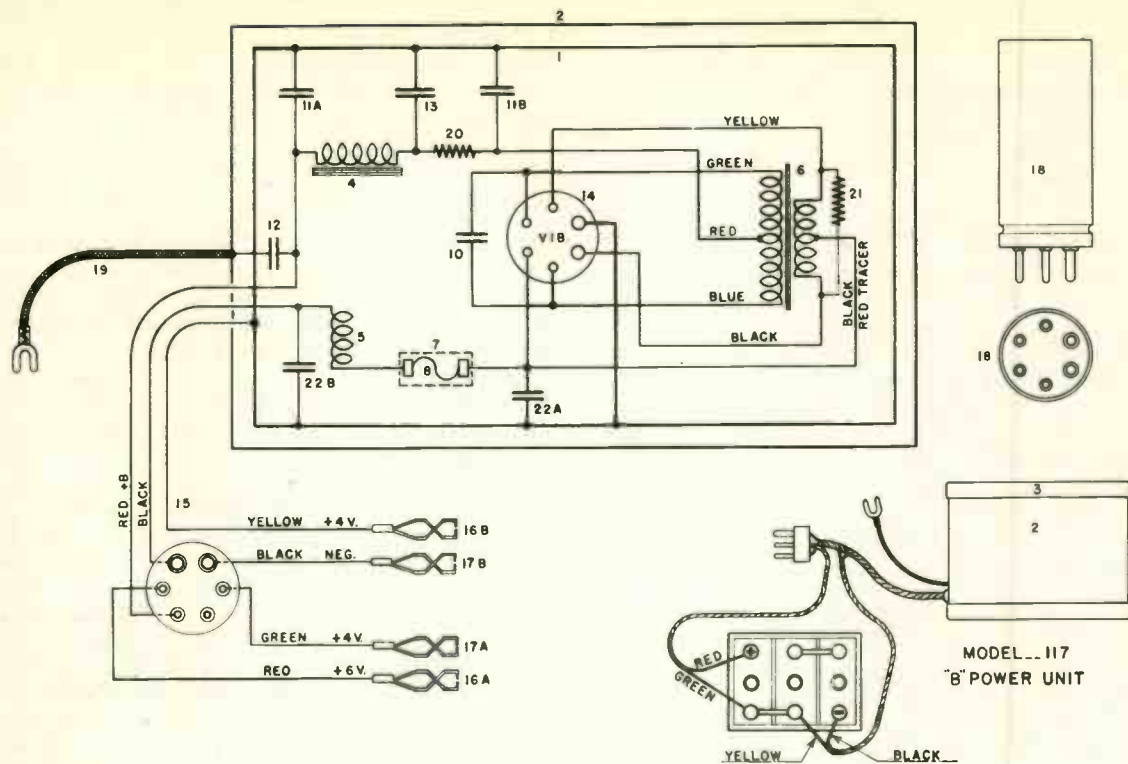


Fig. 5 Wiring Diagram—Model 117  
POWER SUPPLY FOR MODEL 557

PARTS LIST—MODEL 557

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37188	Dial Light Bulb, 2 V., .06 Amp.	52	MG12-44140	Dial Light Switch and Brkt. Assy.
2	G6-27134	Light Brkt. Assy.	53	W-4348A	Band Selector Switch
3	G132-32000	Ant. Coil, B. F.	54Z	W-43R54A	Volume Control (1 Meg.)
4	G132-32002	Ant. Coil, H. F.	54Y	W-43R54A	Batt. Switch
5	G132-32002	Osc. Coil, B. C.	55	31PJ3 "A"	Speaker, Spec. No. R-6000, C8 and D2, 6"
6	G132-32002	Osc. Coil, H. F.		-41434	V. C. and Cone Assy. for 31PJ3 "A" Spkr.
7	G151-32004	1st I-F Assy., 455 Kc.		-41453	Output Trans. for 31PJ3 "A" Spkr.
8	G150-32004	2nd I-F Plate Coil Assy., 455 Kc.		-41458	Cone Mounting Ring for 31PJ3 "A" Spkr.
9	G160-32004	3rd I-F Assy., 455 Kc.		-41452	V. C. and Cone Assy. for 41PJ3 "A" Spkr.
10		NONE		-41459	Cone Mounting Ring for 41PJ3 "A" Spkr.
11	W-41142A	2nd I-F Trimmer Condenser		-41457	Output Trans. for 41PJ3 "A" Spkr.
12	W-41247A	4 Section Trimmer Condenser		-41457	Output Trans. for 41PJ3 "A" Spkr.
13AB	G1-31002	Condenser, .00025 Mf. Molded		G1-26719	Ant. and Gnd. Terminal Assy.
14	G3-31002	Condenser, .0005 Mf. Molded			NONE
15	G12-34002	Condenser, .0005 Mf. Molded		C-44149A	Battery Cable
16ABC	G2-34002	Condenser, .0005 Mf. Molded		W-41968B	Ballast Sock. Jumper Wire]
17AB	W-36511	Condenser, .02 Mf. 160 V.		W-44118	Ballast Tube
18	W-29910A	Condenser, .25 Mf. 200 V.		W-44854	Speaker Cable
19AB	W-37732	Condenser, .3 Mf. 160 V.	56		Resistor, 200,000 Ohm 1/2 W.
20	W-21019C	Condenser, .1 Mf. 200 V.	57		Cabinet—Table
21	W-28621	Condenser, .02 Mf. 200 V.	58		Cabinet—Console
22	W-27216	Condenser, .05 Mf. 200 V.	59		Knob—Lower—Dial Light Switch
23	W-25435	Condenser, .003 Mf. 400 V.	60		Knob—Upper—Station Selector
24	W-44012	Condenser, 16 Mf. 250 V.	61		Knob—V. C. and Band Switch
25	G37-33001	2 Section Var. Tun. Cond.	62		Rubber Mtg. Foot
	W-41414B	Glass Dial Face			Escutcheon
	W-44285	Dial Mask (Paper)			Grille—for 7D Cab.
	W-44267	Dial Mask (Metal Disc)			Grille—for 7MA Cab.
	W-44001A	Dial Support Ring			
	B-44130A	Dial Support Bracket			
	W-43550	Dial Pointer			
	G1-43564	Pulley Assy.			
	W-44130	Drive Shaft			
	W-43561	Cable Tension Spring			
	W-41582	Drive Cable - 17 1/2 Inches			
	W-40486	Pointer Mounting Screw			
		NONE			
26			1	C-44133	Chassis Pan
27	W-36317	Resistor, 10,000 Ohm 1/2 W.	2	C-44138	Case Body
28	W-36790	Resistor, 20,000 Ohm 1/2 W.	3	W-44132A	Cover
29	W-33380	Resistor, 30,000 Ohm 1/2 W.	4	G76-24628	"B" Filter Choke
30	W-36761	Resistor, 40,000 Ohm 1/2 W.	5	G23-29067	"A" Filter Choke
31AB	W-35928	Resistor, 60,000 Ohm 1/2 W.	6	G16-32769	Power Transformer
32AB	W-36319	Resistor, 75,000 Ohm 1/2 W.	7	G4-33339	Fuse Panel Assy.
33	W-35600	Resistor, 100,000 Ohm 1/2 W.	8	W-37621	Fuse 4 Amp.
34AB	W-35601	Resistor, 300,000 Ohm 1/2 W.	9		NONE
35	W-36322	Resistor, 500,000 Ohm 1/2 W.	10	W-31632A	Condenser, .01 Mf. 1,000 V.
36	W-35902	Resistor, 1 Megohm 1/2 W.	11AB	W-35936	Condenser, .05 Mf. 200 V.
37	W-35927	Resistor, 2 Megohm 1/2 W.	12	W-44131B	Condenser, 20 Mf. 150 V.
38	W-27503	Resistor, 1,400 Ohm 1/2 W. Flex.	13	W-44217	Condenser, 16 Mf. 200 V.
39AB	W-23013	Resistor, 2,000 Ohm 1/2 W. Flex.	14	G92-28807	Socket for Vibrator
40	G7-23300	Resistor, .70 Ohm (Air Cell Series)	15	C-44139	Cable and Plug
43	G1-43803	Socket, Type IC7	16AB	W-34903	Batt. Clip—Pos.
44	G2-43800	Socket, Type ID5	17AB	W-34904	Batt. Clip—Neg.
45	G7-43800	Socket, Type IF7	18	W-44145	Vibrator—4 Volt
46	G4-43800	Socket, Type IH4	19	W-44146	Gnd. Clip—Vibrator
47	G6-43800	Socket, Type IF5		G122-34403	Bonded Lead
48	G95-28807	Socket Ballast		W-3328	Grommet
49	W-40911	Tube Shield	20	W-38915	Resistor, 100 Ohm 1/2 W.
50	G21-28807	Socket (Power Cable)	21	W-38977	Resistor, 220 Ohm 1/2 W.
51		NONE	22AB	W-50161	Condenser, .5 Mf. 130 V.
		NONE		W-44186	Cushion Strap
		NONE		W-44264	End Plate 1 1/2" x 1 1/2" (2)

Parts List For 117 Converter

1	C-44133	Chassis Pan
2	C-44138	Case Body
3	W-44132A	Cover
4	G76-24628	"B" Filter Choke
5	G23-29067	"A" Filter Choke
6	G16-32769	Power Transformer
7	G4-33339	Fuse Panel Assy.
8	W-37621	Fuse 4 Amp.
9		NONE
10	W-31632A	Condenser, .01 Mf. 1,000 V.
11AB	W-35936	Condenser, .05 Mf. 200 V.
12	W-44131B	Condenser, 20 Mf. 150 V.
13	W-44217	Condenser, 16 Mf. 200 V.
14	G92-28807	Socket for Vibrator
15	C-44139	Cable and Plug
16AB	W-34903	Batt. Clip—Pos.
17AB	W-34904	Batt. Clip—Neg.
18	W-44145	Vibrator—4 Volt
19	W-44146	Gnd. Clip—Vibrator
	G122-34403	Bonded Lead
	W-3328	Grommet
20	W-38915	Resistor, 100 Ohm 1/2 W.
21	W-38977	Resistor, 220 Ohm 1/2 W.
22AB	W-50161	Condenser, .5 Mf. 130 V.
	W-44186	Cushion Strap
	W-44264	End Plate 1 1/2" x 1 1/2" (2)

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
1C6	(*) Oscillator-Modulator	2.0	112	45	0	112	-5 to -20
34	I-F Amplifier	2.0	112	45	0	—	—
1B5	Detector & A-F Amplifier	2.0	60	—	0	—	—
30	2nd. A-F Amplifier	2.0	45	—	0	—	—
950	Output	2.0	110	112	-4 (C)	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 950 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1C6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(i) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

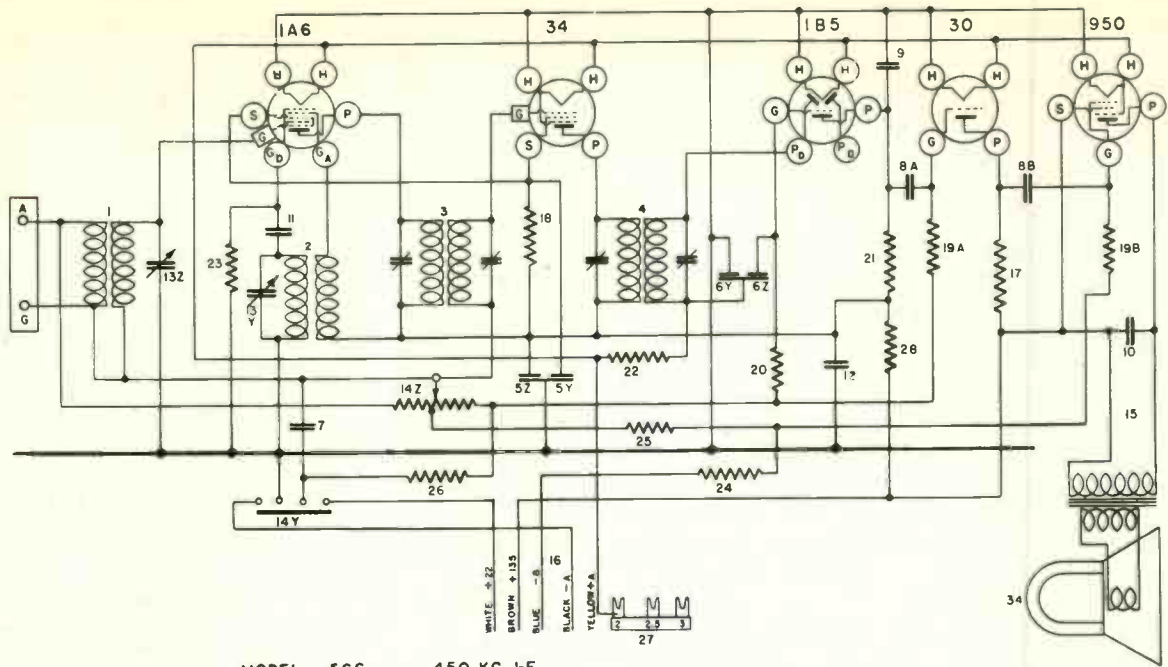
(f) Tune the station selector to the generator signal for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

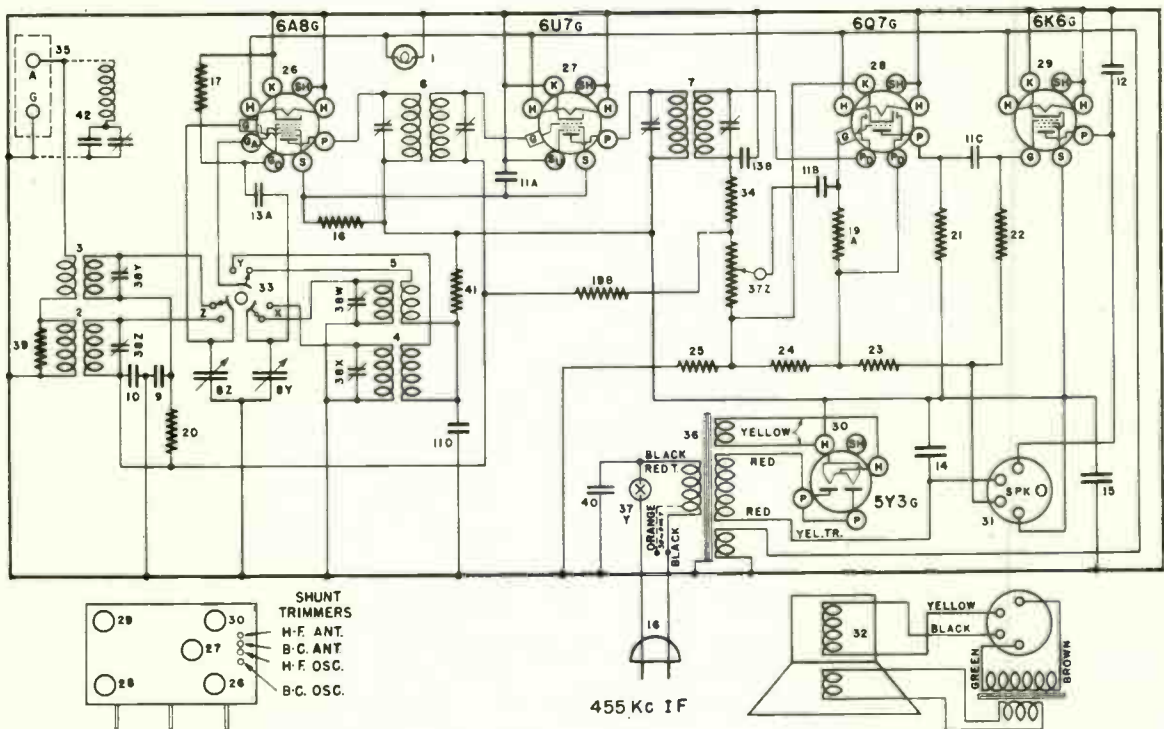
Item No.	Part No.	Function	Item No.	Part No.	Function
1	G116—32000	Coil Ant. Transformer 540-1725Kc.	21	—23403	Resistor 150,000 Ohm. ¼W. 1st A-F Plate Load
2	G105—32002	Coil Osc. Transformer 540-1725Kc.	22	—35602	Resistor 1 Megohm Ins. ¼W. Diode Load
3	G117—32004	Coil Assy. 1st I-F Transformer 450Kc.	23	—21875	Resistor 100,000 Ohm. ¼W. Osc. Grid Return
4	G115—32004	Coil Assy. 2nd I-F Transformer 450Kc.	24	W —29585	Resistor 600 Ohm. Flex. ½W. 1st Bias Divider
5Z	W —28623	Cond. .02MF. 200V. Plate Supply Bypass	25	W —35467	Resistor 220 Ohm. Flex. ½W. 2nd Bias Divider
5Y	W —30322A	Cond. .006 MF. Det.-1st A-F Coupler	26	W —41759	Resistor 140 Ohm. Flex. ¼W. Audio Bias Divider
6Z		Cond. .00017 MF. Diode Load Bypass	27	W —41955A	Resistor on "A" Bat. Lead Used with 1C6 Tube
6Y		Cond. .02 MF. 160V. R-F&I-F Bias Filter	(27)	W —41955	Resistor on "A" Bat. Lead Used with 1A6 Tube
7	W —37226	Cond. .02 MF. 160V. 1st & 2nd A-F Coupler	28	W —30960	Resistor 2600 Ohm. Flex. 1½W. Plate Supply Filter
8A	W —36541	Cond. .02 MF. 160V. 2nd & Output A-F Coupler	29	G89 —28807	Socket 1C6 Osc.-Mod.
8B	W —36541	Cond. .02 MF. 160V. 2nd & Output A-F Coupler	(29)	G55 —28807	Socket 1A6
9	W —30270	Cond. .001 MF. 400V. 1st A-F Plate Bypass	30	G31 —28807	Socket 34 I-F
10	W —28904	Cond. .004 MF. 200V. Output Plate Bypass	31	G91 —28807	Socket 1B5 Det. 1st A-F
11	G2 —34002	Cond. .0001 MF. Molded Osc. Grid Coupler	32	G9 —28807	Socket 30 2nd A-F
12	W —41081	Cond. 16 MF. 250V. Plate supply Filter (Electrolytic)	33	G94 —28807	Socket 950 Output
13Z	G24 —33001	Cond. Var. Tuning Antenna Section	34	—41055	Speaker Type 31PJ3, "A"
13Y			—41792	Volume Control 3410 Ohm, Tapped 4 Contact Switch Battery A & B Supply	—41434
14Z	MG11—41760	Cable Speaker			—41453
14Y			B —41748	Cable 5 Lead Battery	—41458
15	—21237	Resistor 60,000 Ohm. ¼W. 2nd A-F Plate Load			35
16			—37472	Resistor 50,000 Ohm. ¼W. Screen Supply Filter	W —41790
17	—23785	Resistor 500,000 Ohm. ¼W. 2nd A-F Grid Return			W —41789
18			—23785	Resistor 500,000 Ohm. ¼W. Output Grid Return	W —41784
19A	—37583	Resistor 2.5 Megohm ¼W. 1st A-F Grid Return			W —41785
19B			—37583	Resistor 2.5 Megohm ¼W. 1st A-F Grid Return	W —42247
20	—37583	Resistor 2.5 Megohm ¼W. 1st A-F Grid Return			W —42258
					W —41822
			G1 —23472	Knob Control	

MODELS 566, 567



MODEL - 566 450 KC 1-F

FIG. 1—WIRING DIAGRAM—MODEL 566



455 KC 1-F

FIG. 1—WIRING DIAGRAM—MODEL 567

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga
6A8G	Oscillator-Modulator	6.3	160	115	0	-1.2	160
6U7G	I-F Amplifier	6.3	160	115	0	-1.2	—
6Q7G	Diode Detector & A-F Amplifier	6.3	80	—	2.5	-2.5	—
6K6G	Output	6.3	160	160	0	-5.0	—
5Y3G	Rectifier	5.0	—	—	225	—	—

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (Broadcast Band).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the top of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna

(A) terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

With 455 kc. input, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light, 6-8 V.	27	G171—36400	Socket, Type 6U7
	G2 —44252	Socket Assy. Dial Light	28	G160—36400	Socket, Type 6Q7
2	G132—32000	Ant. Coil, B. C.	29	G172—36400	Socket, Type 6K6
3	G133—32000	Ant. Coil, H-F.	30	G173—36400	Socket, Type 5Y3
4	G132—32002	Osc. Coil, B. C.	31	G103—28807	Socket Speaker
5	G133—32002	Osc. Coil, H-F.	W —40911		Tube Shield
6	G138—32004	1st I-F Assy.	32	257BP11"U"	Speaker, Spec. 5-B-5
7	G139—32004	2nd I-F Assy.		—44537	V. C. and Cone Assy.—257BP11"U"
	W —36139A	Dual I-F Trimmer		—44538	Output Trans.—257BP11"U"
8	G37 —33001	2 Section Gang Cond.		257BP11"B"	Speaker, Spec. 51-A-5
	B —44286C	Dial Face (Glass)		—42927	V. C. and Cone Assy.—257BP11"B"
	—44267	Dial Mask (Metal)		—41473	Output Trans.—257BP11"B"
	W —44285	Dial Mask (Paper)		—44681	Speaker Plug
	B —43544D	Support—Dial Glass	33	W —43448A	Band Switch
	W —43550A	Pointer	34	—35600	Resistor, 100,000 Ohm 1/4W.
	W —40486	Screw—Pointer Mtg.	35	G1 —26719	Ant. and Gnd. Terminal Assy.
	W —44403	Ring—Dial Glass Support	36	—43479	Power Trans., 110 V. 60 Cy.
	G1 —43564	Pulley and Hub Assy.		—43569A	Power Trans., 110 V. 50 Cy.
	W —43542B	Bracket—Drive Shaft		—43570A	Power Trans., 220 V. 50 Cy.
	W —44134	Drive Shaft		—43480A	Power Trans., 110 V. 25 Cy.
	W —43549	Retaining Spring (Shaft)		—43481A	Power Trans., 220 V. 25 Cy.
	—41582	Drive Cord	37	—43449A	Vol. Cont. (1 Meg.) and Switch
	W —43561	Spring—Cord Tension	38	W —41247A	4 Section Shunt Trimmer Assy.
9	G12 —34002	Condenser, 500 Mmf. Molded	39	—22196	Resistor, 20,000 Ohm 1/4W.
10	W —36541	Condenser, .02 Mf. 160 V.	40	W —30805	Condenser, .01 Mf. 400 V.
11A	W —28621	Condenser, .02 Mf. 200 V.	41	—30137	Resistor, 3,500 Ohm 1/4W.
11B	W —28621	Condenser, .02 Mf. 200 V.		—7BB	Cabinet (Black Body)
11C	W —28621	Condenser, .02 Mf. 200 V.		—7BC	Cabinet (Brown Body)
11D	W —28621	Condenser, .02 Mf. 200 V.		—7BD	Cabinet (Wood Grain Body)
12	W —34647	Condenser, .006 Mf. 400 V.		—44106B	Cover (Used on 7BC and 7BD) Black
13A	G1 —34002	Condenser, 250 Mmf. Molded	W—44044A-FS1		Foot—Black
13B	G1 —34002	Condenser, 250 Mmf. Molded	—44045C		Cover (Used on 7BB) Red
14	W —44012	Condenser, 16 Mf. 250 V.	W—44044A-FS46		Foot—Red
15	W —44013	Condenser, 16 Mf. 200 V.	—44552		Knob (Black)
16	B —44004	Cord and Plug	—44268A		Escutcheon
17	—33390	Resistor, 30,000 Ohm 1/4W.	W —44436		Felt Pad (Escutcheon) (4 Req.)
18	—24990	Resistor, 25,000 Ohm 1/4W.	W —44015A		Chassis Support Brkt. (Upper)
19A	—26577	Resistor, 3 Megohm 1/4W.	W —44016		Chassis Support Brkt. (Lower)
19B	—26577	Resistor, 3 Megohm 1/4W.	W —44041A		Sound Baffle
20	—21455	Resistor, 300,000 Ohm 1/4W.	MG44 —44026		Grille Cloth Assy.—7BB
21	—35601	Resistor, 300,000 Ohm 1/4W.	MG43 —44026		Baffle Assy.—7BB
22	—23785	Resistor, 500,000 Ohm 1/4W.	MG42 —44026		Grille Cloth Assy.—7BC and 7BD
23	W —25937	Resistor, 275 Ohm 1/2W.	MG41 —44026		Baffle Assy.—7BC and 7BD
24	W —23012A	Resistor, 40 Ohm 1/2W.	42	G164—32004	Wave Trap
25	W —25357	Resistor, 75 Ohm 3/4W.			
26	G156—36400	Socket, Type 6A8			

## CHASSIS NO. 568 (TROUPER)

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G	
6K7GT	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—	
6J7GT	Detector	6.3	20	10	7	—	—	
25L6GT	Output	25	85	98	6	—	—	
25Z6GT	Rectifier	25	—	—	126	—	—	
W-46416	Ballast	55 Volts A. C.						—

#### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-G Output tube. Be sure the output meter is protected from D. C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

#### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A. C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead on the receiver. The ground lead of the generator should be connected through a .001 Mf. condenser to

the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 Kc.

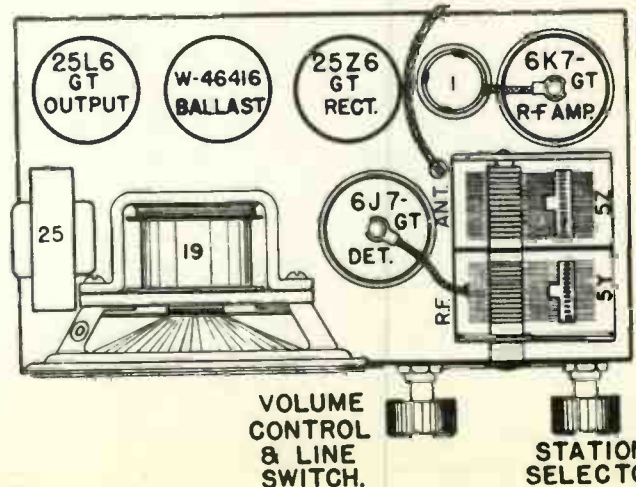
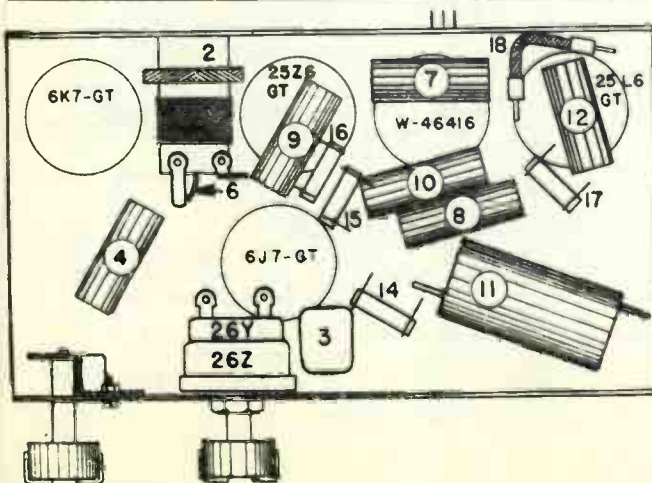
(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

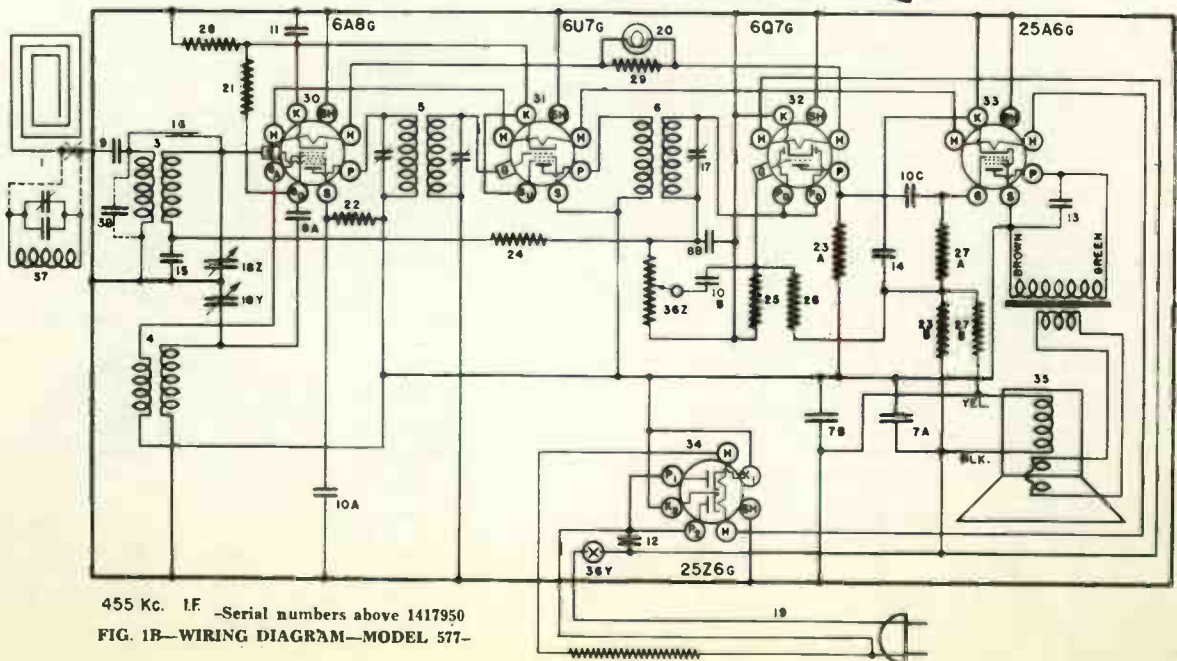
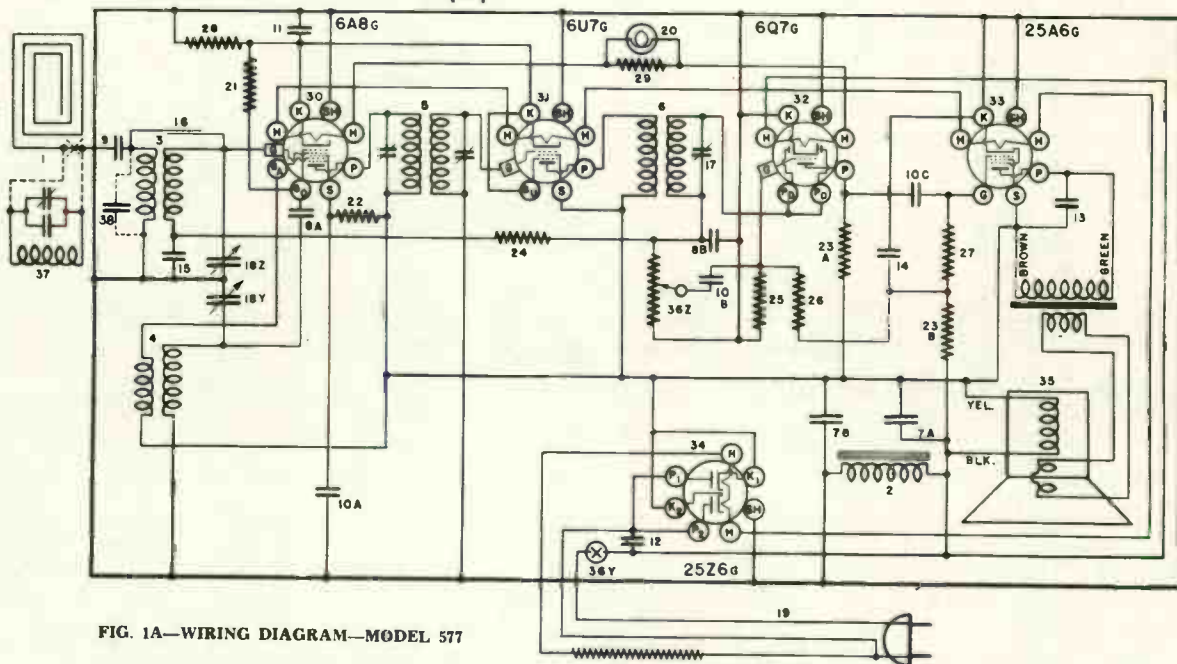
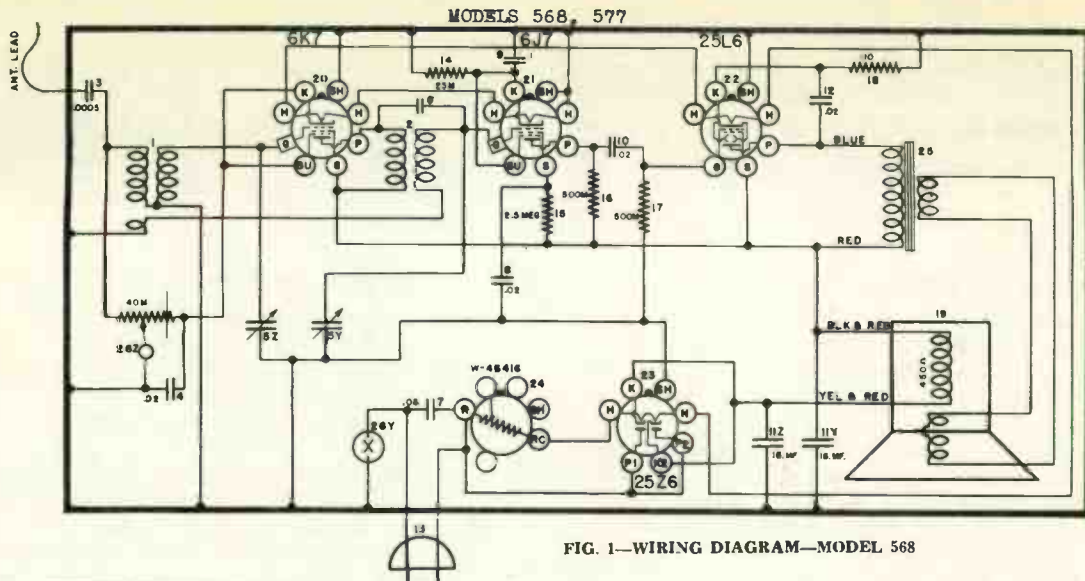
NOTE: Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G182—32000	Antenna Coil	19	284-BL-4"B"	Speaker—Spec. No. 40WA3
2	G102—32001	R-F. Coil		—46691	Field Coil—450 Ohm 60 M. A.
3	G3—34002	Condenser, .0005 Mf. Molded		284-BL-4"H"	Speaker—Spec. No. S5330M4
4	W—45708B	Condenser, .02 Mf. 160 V.		—46901	Field Coil—450 Ohm 60 M. A.
5	G60—33001	2 Section Gang Condenser	20 to 24	G178—36400	Socket—8 Prong Octal
	D—46418	Dial Face		W—46477	Tube Shield
	W—46425	Pointer	25	G25—29535	Output Transformer
	—41587	Pointer Mtg. Screw	26Z	—46411	Volume Control—
	W—44809C	Drive Shaft	26Y	—46416	Line Switch—
	W—44808B	Bracket—Shaft Mtg.		W—46416	Ballast Tube
	W—43549	"C" Washer—Shaft Mtg.		B—46880	Power Cable for 220 V. (Resistor)
	G10—41582	Drive Cord—8¼ Inches		8FC	Cabinet—Mottled Brown
	W—44989	Spring—Cord Tension		—45242	Knob—2 Req.
	W—46854A	Dial Support Brkt.		—45505A	Cabinet Back
6	G3—50640	Twisted Lead—Cap. Coupling Assy.		8FD	Cabinet—Ivory
7	W—45782B	Condenser, .05 Mf. 120 V.		W—45324	Knob—2 Req.
8	W—45780B	Condenser, .02 Mf. 160 V.		—45506A	Cabinet Back
9	W—50105	Condenser, .1 Mf. 160 V.		G3—45281	Baffle and Grille Cloth Assy.
10	W—45708B	Condenser, .02 Mf. 160 V.		W—46421	Celluloid Dial Lens
11Z	W—46398	Condenser, 16 Mf. 125 V.		—46437	Instruction Booklet
11Y	W—46398	Condenser, 16 Mf. 125 V.		W—46454	Cabinet Assy.—8FC—Mottled Brown
12	W—45780B	Condenser, .02 Mf. 160 V.		W—46866	Cabinet Assy.—8FD—Ivory
13	B—45784	Power Cord and Plug		—44763	Single Shipping Carton
14	—24990	Resistor, 25,000 Ohm ¾W.			
15	—37583	Resistor, 2.5 Megohm ¾W.			
16	—23785	Resistor, 500,000 Ohm ¾W.			
17	—23785	Resistor, 500,000 Ohm ¾W.			
18	W—45965	Resistor, 110 Ohm ½W.			





TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	105	60	—	3	-12	105
6U7G	I-F Amplifier	6.3	105	105	3	3	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	105	—	—	0	—	—
25A6G	Output	25.0	100	105	—	0	—	—
25Z6G	Rectifier	25.0	117.5	—	—	110	—	—

Tuning the I-F Amplifier to 455 Kilocycles.

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, located at the rear of the chassis, for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

Aligning the R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Note: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

With 455 kc. input signal from generator, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —31765B	Antenna Roll	21	—35928	Resistor 60.00 Ohm ¼ W.
2	G 16—29535	"B" Filter Choke (Before Serial No. 1417951)	22	—21453	Resistor 40,000 Ohm 1/3 W.
3	G144—32000	Ant. Coil	23A	—21455	Resistor 300,000 Ohm 1/3 W.
4	G147—32002	Osc. Coil	23B	—21455	Resistor 300,000 Ohm 1/3 W.
5	G158—32004	1st I-F Assy.	24	—34883	Resistor 2 Megohm 1/3 W.
6	G159—32004	2nd I-F Coil Assy.	25	—21454	Resistor 1. Megohm 1/3 W.
7A	W —43280	Condenser 25 Mf. 150 V.	26	—33490	Resistor 10. Megohm 1/3 W.
7B	W —43280	Condenser 25 Mf. 150 V.	27A	—23785	Resistor 500,000 Ohm 1/3 W.
8A	G 1—34002	Condenser .00025 Mf. Molded	27B	—23785	Resistor 500,000 Ohm 1/3 W.
8B	G 1—34002	Condenser .00025 Mf. Molded			(After Serial No. 1417950)
9	G 3—34002	Condenser .0005 Mf. Molded	28	W —21964	Resistor 165 Ohm ½ W. Flex.
10A	W —28621	Condenser .02 Mf. 200 V.	29	W —44396	Resistor 40 Ohm 3½ W. Flex.
10B	W —28621	Condenser .02 Mf. 200 V.	30	G156—36400	Socket Type 6A8
10C	W —28621	Condenser .02 Mf. 200 V.	31	G171—36400	Socket Type 6U7
11	W —32380	Condenser .05 Mf. 200 V.	32	G160—36400	Socket Type 6Q7
12	W —23615	Condenser .05 Mf. 400 V.	33	G161—36400	Socket Type 25A6
13	W —30323	Condenser .01 Mf. 200 V.	34	G162—36400	Socket Type 25Z6
14	W —34712	Condenser .25 Mf. 160 V.		W —40911	Tube Shield
15	W —35936	Condenser .05 Mf. 160 V.	35	—255BL6"Q"	Speaker Sp. No. 23393 (2000 Ohm Field) Used Before Serial No. 1417951.
16					
17	W —44142	2nd I-F Trimmer			
	W —28129	Spacer (Mtg. W-44142)		—43464	V. C. & Cone Assy. } Used
18	G 43—33001	2 Sect. Var. Tuning Cond.		—43465	Output Transformer } On
	B —44400C	Dial Face (Glass)		—43466	Cone Mtg. Ring } 255BL6
	B —44307A	Dial Glass Brkt.			273BL6
	W —44285	Dial Mask (Paper)		B —44374A	'Q' Only
	W —44267	Dial Mask (Metal)		—273BL6"Q"	
	W —44001A	Dial Support Ring			
	W —44306	Drive Shaft Bracket			
	W —44918	Drive Shaft	36Z		Baffle Board
	W —43549	Ret. Ring (Shaft)	36Y	—43449	Speaker Spec. No. 26253 (525 Ohm Field) Used After Serial No. 1417950
	G 3—43564	Pulley & Hub Assy.	37	G169—32004	Vol. Control ½ Meg.
	W —41582	Drive Cord	38	G 5—34002	On-Off Switch
	W —43561	Drive Cord Spring		—7 DC	Wave Trap Assy.
	W —43550A	Pointer		—44330	Condenser .00005 Mf. Molded
	W —40486	Screw FS20 Pointer Mtg.		—44268A	Cabinet
19	B —44192	Power Cord & Plug		W —44381B	Grille Cloth
	B —30772B	Power Cord & Plug for adapting set to 220 V. Power Sup.		B —44373A	Escutcheon
20	W —44337	Dial Light 6-8 V.			Knob
	G 6—27134	Socket Assy. Dial L.			Cabinet Back

**TUBE SOCKET VOLTAGE READINGS**

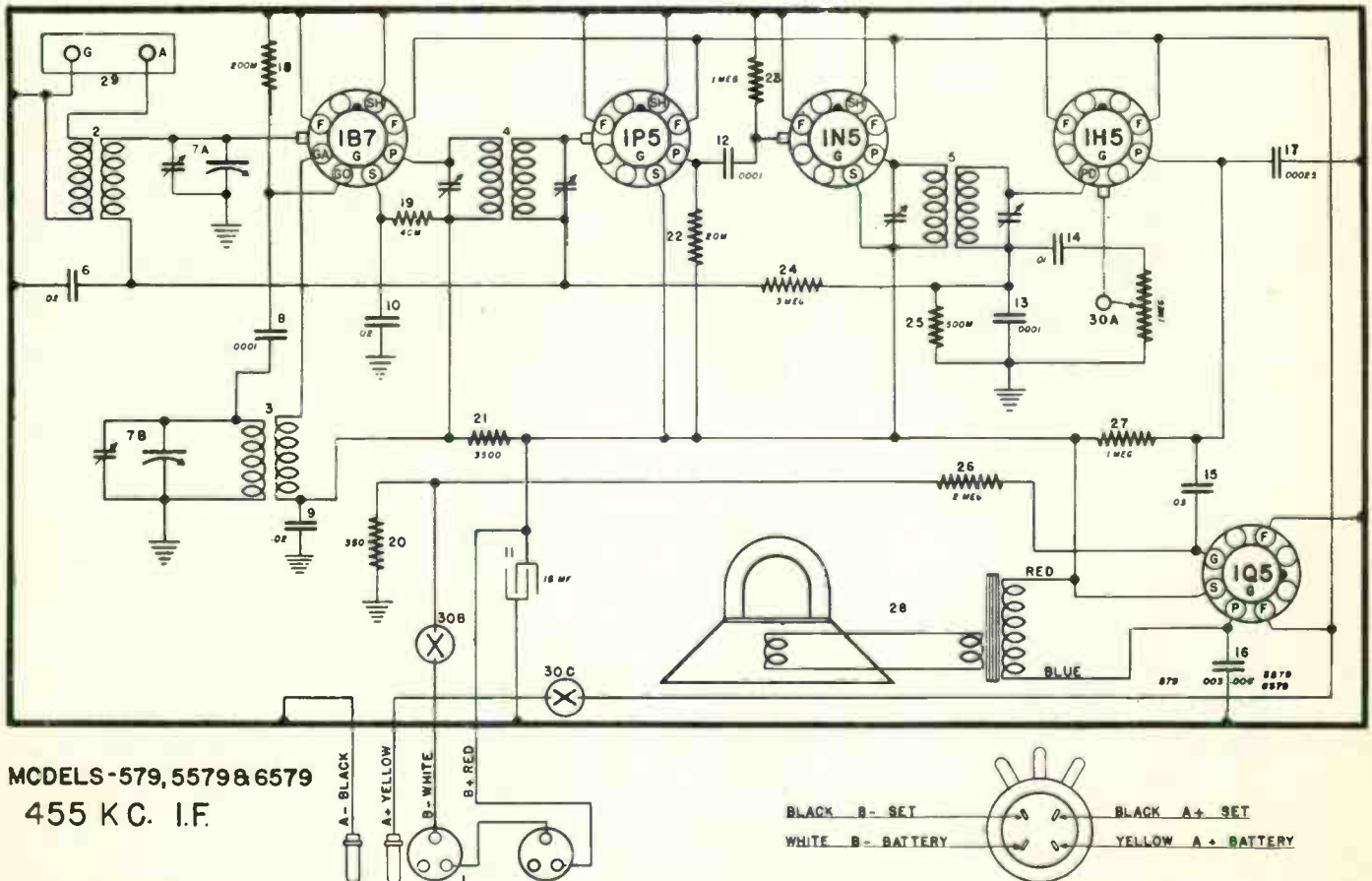
Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5U	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

**1. Tuning the I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc.Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely meshed. Turn the volume control knob to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output.
- (e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.
- (f) Check operations (d) and (e) for more accurate adjustments.

**2. Aligning R-F Amplifier.**

- (a) Connect the output lead from the signal generator through a .0001 mfd. condenser to the "ANT." terminal of the receiver. Connect generator ground lead to the chassis.
- (b) Set signal generator to 1712 kilocycles.
- (c) Open condenser gang all the way.
- (d) Adjust "OSC" trimmer on gang to 1712 kc. signal, the gang should just tune through this signal.
- (e) Set signal generator to 1400 kilocycles.
- (f) Tune-in 1400 kc. signal with station selector, should be approximately 140 on dial.
- (g) Adjust "ANT." trimmer on gang for maximum output. Do not readjust "OSC" trimmer. Repeat above operations for more accurate adjustments.



MODELS-579, 5579 & 6579  
455 KC. I.F.

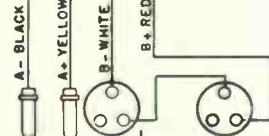


FIG. 1—WIRING DIAGRAM—MODELS 579, 5579, 6579



**PARTS LIST — MODELS 579, 5579, 6579**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48312	Battery Cable (579, 5579)		—46290	Cord Clamp
	—47061	Battery Cable (6579)		G12 —43564	Pulley and Hub Assy. (On Gang)
2	G189—32000	Antenna Coil	MG20—47860	—47860	Idle Pulley Bracket Assy.
3	G186—32002	Oscillator Coil		—45580	Rubber Grommet—P. B. Unit Mtg. (4)
4	G194—32004	1st I-F. Assy.		—45620	Headed Bushing—P. B. Unit Mtg. (4)
5	G195—32004	2nd I-F. Assv.		—6495	No. 8—32 x 1/16" Screw—P. B. Unit Mtg. (4)
6	—28621	Condenser, .02 Mf. 200 V.		—47914	Speaker Rear Mtg. Bracket
7	G79 —33001	2 Section Var. Tuning Condenser		—47893	Speaker Lower Mtg. Bracket
8	G2 —34002	Condenser, .0001 Mf. Mica		—48764	Cord Guide (Idle Pulley)
9	—28621	Condenser, .02 Mf. 200 V.		—46293	Idle Pulley
10	—28621	Condenser, .02 Mf. 200 V.		—46294	Idle Bearing Stud
11	—48122	Condenser, 16 Mf. 250 V.		—47865	Glass Dial Face (579)
12	G2 —34002	Condenser, .0001 Mf. Mica		—48134	Glass Dial Face (6579)
13	G2 —34002	Condenser, .0001 Mf. Mica	MG32—47861	—47861	Escutcheon and Reflector Assy.
14	—30323	Condenser, .01 Mf. 200 V.		—47765	Escutcheon only
15	—32380	Condenser, .05 Mf. 200 V.		—48018	Reflector only
16	—25435	Condenser, .003 Mf. 400 V. (579 only)		—48135	No. 3—56 x 3/16" Screws—Escutcheon Mtg. (579 only) (FS-58)
16	—28619	Condenser, .006 Mf. 400 V. (5579 and 6579)		—48167	Escutcheon Mtg. Bracket (6579 only)
17	G1 —34002	Condenser, .00025 Mf. Mica	S —80	—80	No. 4 x 3/8" Screw—Escutcheon Brkt. Mtg. (6579 only) (FS-58)
18	—34018	Resistor, 200,000 Ohms 1/2 W.		—48168	No. 3—56 x 1 1/16" Screw—Escutcheon Mtg. (6579 only) (FS-58)
19	—21453	Resistor, 40,000 Ohms 1/2 W.		—48341	Push Button (5)
20	—28589	Resistor, 350 Ohms 1/2 W.		—46953	Knob (2) (579 only)
21	—30137	Resistor, 3,500 Ohms 1/2 W.		—48165	Knob (2) (6579 only)
22	—22196	Resistor, 20,000 Ohms 1/2 W.		—48734	Station Call Letter Sheet
23	—21454	Resistor, 1 Megohm 1/2 W.		—48747	Celluloid Cover—Call Letters
24	—26577	Resistor, 3 Megohms 1/2 W.		—48110	Cabinet—Mottled Brown—B-579-A
25	—23785	Resistor, 500,000 Ohms 1/2 W.		—46242	Shipping Carton—9GA Cabinet
26	—34883	Resistor, 2 Megohms 1/2 W.		—48346	Rubber Foot—9GA Cabinet
27	—21454	Resistor, 1 Megohm 1/2 W.	MG31—48266	—48266	Instruction Book—B-579-A
28	274-PL-8"B"	Spkr., Mfr. Spec. No. 55-PWS-17 (579)		9EJ	Instruction Envelope Assy. (579)
	—48002	Output Transformer (579)		—48351	Cabinet—Wood—B-6579-D
	274-PL-8"K"	Spkr., Mfr. Spec. No. 51-WM-1 (579)		—48890	Shipping Carton—9EJ Cabinet
	—48568	Output Transformer (579)		—30409	No. 8—32 x 1/4" Screw—Chassis Mtg. (6579) (FS-58)
	492-PJ-3"R"	Speaker, Mfr. Spec. No. F-5733 (5579)		—48354	Flat Washer—Chas. Mtg. (6579) (FS-58)
	—48619	V. C. and Cone Assy. (5579)	MG31—48270	—48270	Instruction Booklet (6579)
	—43978	Cardboard Ring—Cone Mtg. (5579)			Instruction Envelope Assy. (6579)
	—48620	Output Transformer			
	392-PL-9"B"	Speaker, Mfr. Spec. No. 503-PRW-1 (6579)			
	—48336	Output Transformer (6579)			
	—51208	Tube Shield			
	—48315	Ground Clip—For Tube Shield			
29	G1 —26719	"A" and "C" Terminal Assy.	MG12—47980	—47980	<b>MISCELLANEOUS MECH. PARTS</b>
	—46729	Socket—8 Prong—No Marking	MG10—48267	—48267	<b>MODEL 5579 ONLY</b>
30	—48328	Sw. and Vol. Control (1 Meg.) (579, 6579)		—48249	Dial Support Bracket
	—48336	Sw. and Vol. Control (1 Meg.) (5579)		—46020	Guide Cord and Idler Sup. Brkt. Assy.
	—47979	Chassis Mounting Strap		—48187	Dial Glass
		<b>PUSH BUTTON UNIT PARTS</b>		—48084	L. H. Clip—Dial Glass Mtg.
	G38 —45683	Push Button Tuning Unit (With Gang)		—48032	R. H. Clip—Dial Glass Mtg.
	U —49662	Push But. Tun. Unit (Without Gang)	G12 —43564	—43564	Cushion—Dial Glass Mtg. (Rubber)
	G56 —45683	Riveted Key Assy.	G22 —41582	—41582	Pointer—Dial Hand
	—50542	Lock Clip—Station Setting		—50590	Pulley and Hub Assy. (On Gang)
	—45717	Screw—Station Setting		—46056	Drive Cord (43 3/4" Long)
	—50607	Spring—Key Return		—43542	Spring—Drive Cord Tension
	G31 —47880	Rocker Bar and Gear Assy.	G31 —41582	—41582	Drive Shaft and Pulley
	—50561	No. 6—40 x 1/8" Screw—Rocker Bar Bearing		—46848	Bracket—Drive Shaft Mtg.
	—51146	Bronze Spring—Rocker Bar Bearing		—46290	Guide Cord (14" Long)
	—50547	Key Plate—Rear Slide Adj.		—45580	Spring—Guide Cord Tension
	—50588	Adjusting Clip (Heart Shaped) (4)		—45620	Cord Clamp
	—45646	Adjusting Clip (Hooked End) (1)		—6495	Rubber Grommet—P. B. Unit Mtg.
	—48022	R. H. P. B. Unit Mtg. Brkt. (5579 only)	G4 —38621	—38621	Headed Bushing—P. B. Unit Mtg.
	—48023	L. H. P. B. Unit Mtg. Brkt. (5579 only)	G5 —38621	—38621	No. 8—32 x 1/16" Screw—P. B. Unit Mtg.
	MG18—47860	R. H. P. B. Unit Mtg. Brkt. (579, 6579 only)	G6 —38621	—38621	Green Speaker Wire and Tip Jack
	MG19—47860	L. H. P. B. Unit Mtg. Brkt. (579, 6579 only)		9EQ	Red Speaker Wire and Tip Jack
	G1 —48424	Light Guard Assy. (Push Button Keys)		—47831	Blue Speaker Wire and Tip Jack
		<b>MISCELLANEOUS MECH. PARTS</b>		—48043	Cabinet—Model B-5579-M
		<b>MODELS 579, 6579 ONLY</b>		—48539	Shipping Carton
	—47875	Dial Background (FS-71)		—48558	Escutcheon—Dial Opening
	—47930	Pointer—Dial Hand (FS-77)		—47740	No. 3 x 1/4" Phillips Hd. Screws—Escutcheon Mtg.
	—43542	Bracket—Drive Shaft Mtg.		—47960	Felt Strip
	—47969	Drive Shaft and Pulley		—48349	Speaker Cloth
	—50590	Drive Cord Tension Spring		—48750	Knob
G20 —41582	—41582	Drive Cord (42 3/4" Long)	MG31—48268	—48268	Instruction Booklet
	—46848	Guide Cord Tension Spring		—48748	Station Call Letter Sheets
G30 —41582	—41582	Guide Cord (9 1/2" Long)		—48748	Celluloid Cover—Call Tabs
				—48899	Instruction Envelope Assy.
				—45579	Screws—Chassis Mtg.
				—2046	Flat Washer—Chassis Mtg.
				N —8	Shakeproof Washer—Speaker Mtg.
				O —8	No. 8—32 Nut—Speaker Mtg.
					Flat Washer—Speaker Mtg.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	90	45	-1.5	—	—
1A6	Oscillator-Modulator	2.0	90	45	-1.5	55	-2 to -5
34	I-F Amplifier	2.0	90	45	-1.5	—	—
1B5/25S	Detector and A-F Amplifier	2.0	90	—	-1.5	—	—
950	Output	2.0	90	90	-13.5	—	—

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 950 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 1A6 Osc.Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely out of mesh.

(c) Turn the volume control of the receiver full on.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on the 1st I-F

transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(h) Repeat operations (e) and (f) for more accurate adjustments.

(i) Set the signal generator to 600 kilocycles.

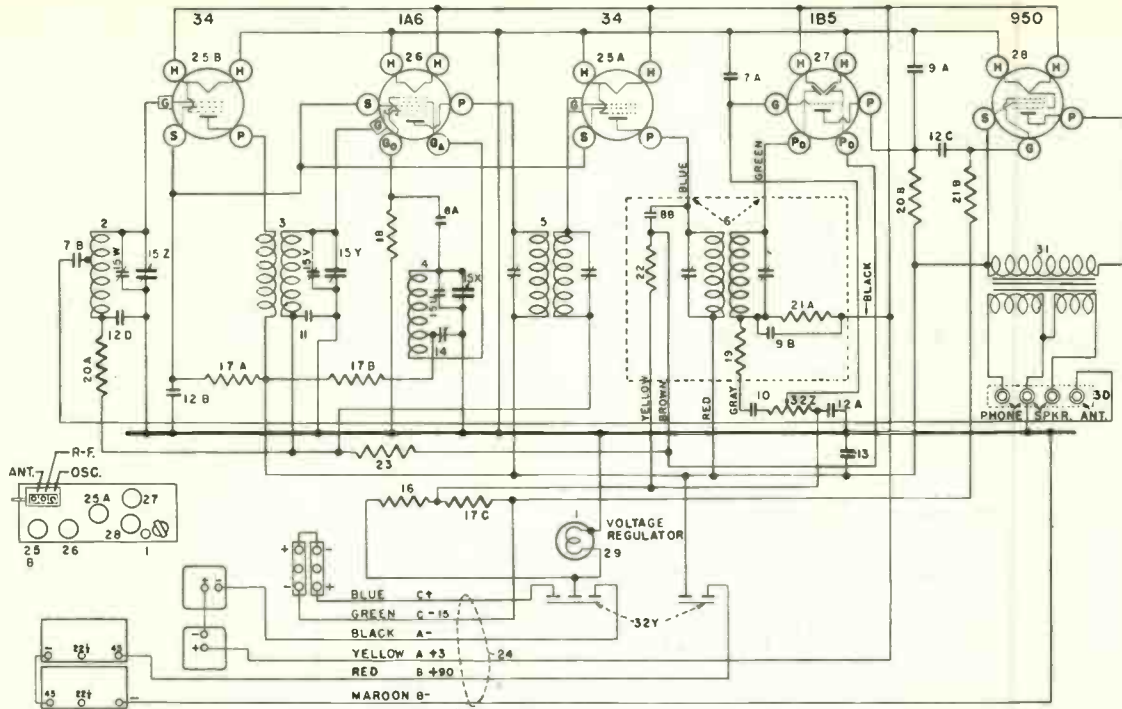
(j) Tune-in this signal with the station selector for maximum reading on the output meter.

(k) Adjust the series trimmer, item 14, while rocking the tuning condenser back and forth slightly until no further improvement in output can be obtained.

(l) Return the signal generator to 1400 kilocycles and repeat operations (g) and (h).

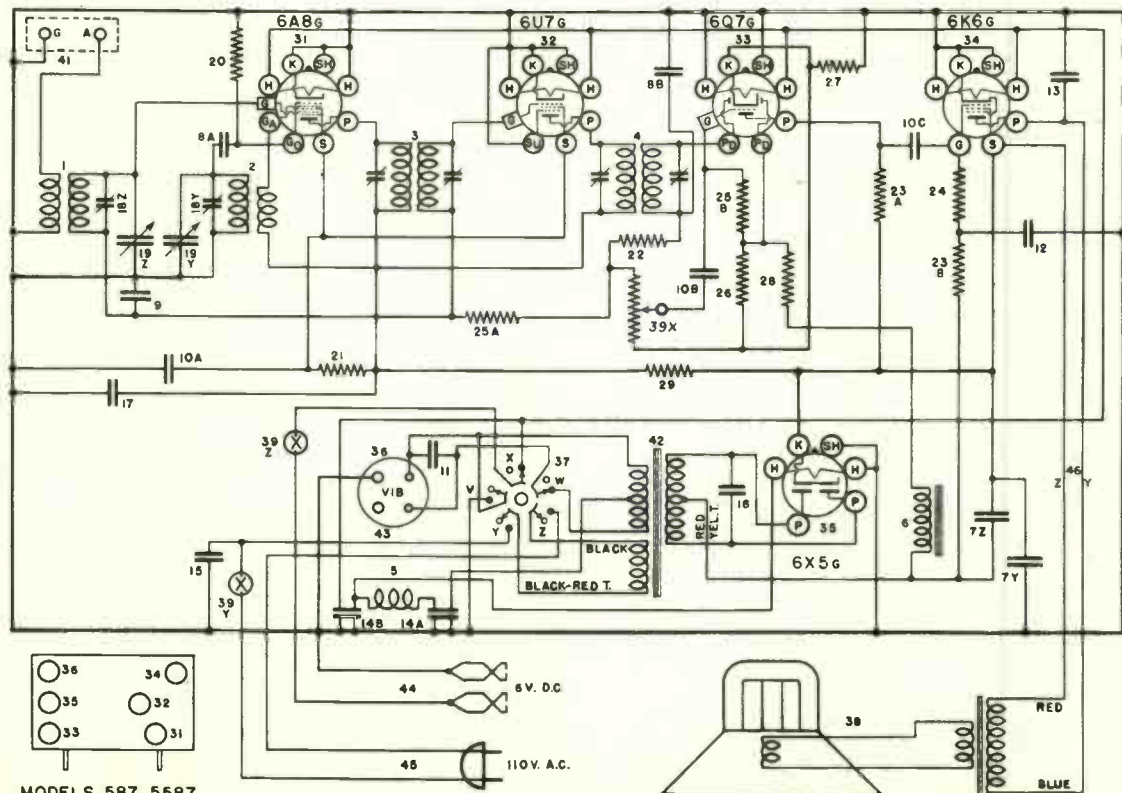
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —42105A	Voltage Regulator Tube	23	—35927	Resistor 2 Megohm 1/4 W.
2	G117—32000	Ant. Coil	24	MG36—42101	Battery Cable Assembly
3	G85 —32001	R-F Coil	25AB	G31 —28807	Socket Type 34
4	G106—32002	Osc. Coil	26	G55 —28807	Socket Type 1A6
5	G35 —32005	1st I-F Assembly	27	G91 —28807	Socket Type 1B5
6	G31 —32005	2nd I-F Assembly (contains Items 8B, 9B, 19, 21A, 22)	28	G94 —28807	Socket Type 950
7AB	G5 —34002	Condenser .00005 Mf. 200 V.	29	W —42106	Socket Volt. Regulator
8AB	G2 —34002	Condenser .0001 Mf. 200 V.		W —40911	Tube Shield (Small)
9AB	G1 —34002	Condenser .00025 Mf. 200 V.		W —26974B	Tube Shield (Large)
10	W —36541	Condenser .02 Mf. 160 V.	31	G58 —24628	Out-Put Transformer
11	W —35936	Condenser .05 Mf. 200 V.	32Z		Vol. Cont. 1 Megohm
12AB			32Y		Battery Switch
CD	W —27216	Condenser .06 Mf. 200 V.	30	MG3 —42101	Spk., Phone and Ant. Term. Assembly
13	W —29910A	Condenser .25 Mf. 200 V.		W —42119	Battery Clamp ("A" Batt.)
14	—40769	Condenser (Osc. Series Trimmer)		W —42123	Battery Clamp ("C" Batt.)
15	G55 —33002	3 Sect. Var. Tuning Cond. Gang		MG8 —42101	Case Assembly less End Covers
	W —42162	Dial (Calibrated Disc.)		MG4 —42101	Rear Cover
	W —42122	Bearing Support Bracket		MG9 —42101	Front Cover Assembly
	W —42141	Sprocket Shaft Assembly		W —42195	Carrying Handle
	B —41315A	Sprocket Hub Assembly		W —42178	Handle Fastener
	W —42160	Drive Chain		W —5558	Phone Tip Jack (only)
	W —42120	Take Up Spring (Chain)		W —42179	Knob (Vol. Cont.)
	W —40486	Dial Mtg. Screw		W —35252A	Knob (Sta. Sel.)
	W —22514	Resistor 750 Ohm 1/2 W.		W —42217	Head-Phones
16				MG2 —42102	Antenna Assembly
17A				243PS2	Speaker
BC	—36318	Resistor 15,000 Ohm 1/4 W.		MG22—42102	Speaker Case only
18	—36761	Resistor 40,000 Ohm 1/4 W.		B —42507	Speaker Grille
19	—35600	Resistor 100,000 Ohm 1/4 W.		W —1500G	Speaker Cord
20AB	—35601	Resistor 300,000 Ohm 1/4 W.		—42201	Chassis Mtg. Screws
21AB	—36322	Resistor 500,000 Ohm 1/4 W.			
22	—35602	Resistor 1 Megohm 1/4 W.			



MODEL 586 262 KC. I-F

WIRING DIAGRAM—MODEL 586



MODELS 587, 5587  
455 Kc. I.F.

WIRING DIAGRAM—MODELS 587 and 5587

**SOCKET VOLTAGE READINGS TAKEN ON 117.5 VOLT A. C. POWER SUPPLY**

Tube	Function	H	P	S	Su	K	G	Ga
6A8G	Oscillator-Modulator	6.3	192	94	-	0	-	192
6U7G	I.-F. Amplifier	6.3	192	94	0	0	-	-
6Q7G	Det., AVC, 1st A. F.	6.3	72	-	-	-2.5	-4.0*	-
6K6G	Output	6.3	195	205	-	0	-20.**	-
6X5G	Rectifier	6.3	-	-	-	205	-	-

**SOCKET VOLTAGE READINGS TAKEN ON 6 VOLT STORAGE BATTERY**

Tube	Function	H	P	S	Su	K	G	Ga
6A8G	Oscillator-Modulator	6.0	131	62	-	0	-	131
6U7G	I.-F. Amplifier	6.0	131	62	0	0	-	-
6Q7G	Det., AVC, 1st A. F.	6.0	47	-	-	-1.1	-2.7*	-
6K6G	Output	6.0	132	139	-	0	-12.**	-
6X5G	Rectifier	6.0	-	-	-	131	-	-

\* Measured across item 26.  
 \*\* Measured from junction of items 6 and 23B to chassis.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the trimmer condensers located on the 2nd I. F. transformer, item 4—fig. 2, for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I. F. transformer, item 3—fig. 2, for maximum output.

**Aligning The R-F Amplifier.**

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the antenna terminal of the receiver.

(b) Set the signal generator to 1725 kilocycles.

(c) With the condenser gang rotated to the minimum capacity position, adjust the "OSC" SHUNT TRIMMER so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune-in the 1400 kilocycle signal, in the region of 140 on the dial, for maximum output.

(f) Adjust the "ANT" SHUNT TRIMMER for maximum output. NOTE: Do not readjust the "OSC" SHUNT TRIMMER.

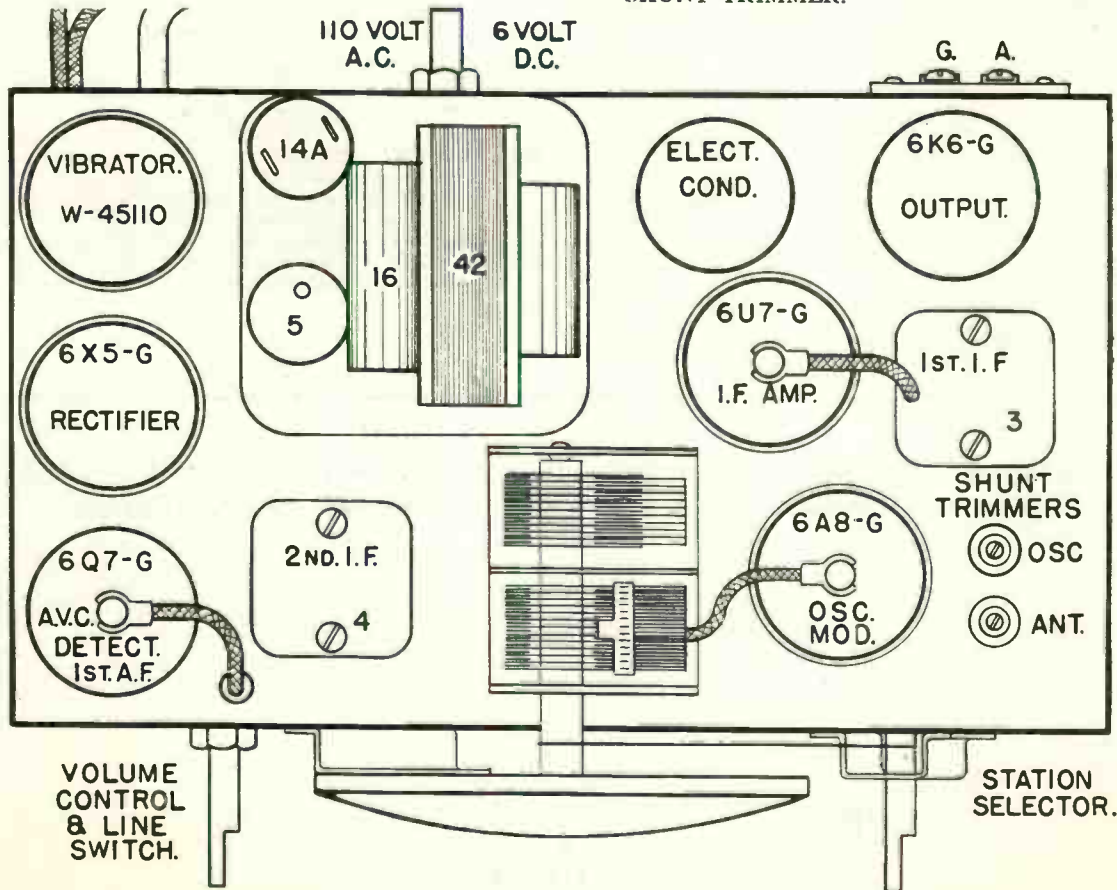


Fig. 2—Top View Models 587 and 5587

**PARTS LIST—MODELS 587 and 5587**

Figures in first column refer to parts			Diagrams.		
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G154-32000	Ant. Coil, 1725-540 Kc.	23A	—35601	Resistor, 300,000 Ohm 1/4 W. Ins.
2	G156-32002	Osc. Coil, 1725-540 Kc.	23B	—35601	Resistor, 300,000 Ohm 1/4 W. Ins.
3	G173-32004	1st I-F., 455 Kc.	24	—36322	Resistor, 500,000 Ohm 1/4 W. Ins.
4	G174-32004	2nd I-F., 455 Kc.	25A	—36688	Resistor, 3 Megohm 1/4 W. Ins.
5	G26-28067	"A" Filter Choke	25B	—36688	Resistor, 3 Megohm 1/4 W. Ins.
6	G23-29535	"B" Filter Choke	26	W-23012A	Resistor, 40 Ohm 3/4 W. Flex.
7	W-44769A	Condenser, Dual 6 Mf. 250 V. (587 only)	27	W-25357	Resistor, 75 Ohm 3/4 W. Flex.
7	W-44868A	Condenser, Dual 8 Mf. 250 V. (5587 only)	28	W-27504	Resistor, 100 Ohm 1/2 W. Flex.
8A	G1-34002	Condenser, .00025 Mf. Molded	29	W-23907	Resistor, 750 Ohm 1 1/2 W. Flex.
8B	G1-34002	Condenser, .00025 Mf. Molded	31	G156-36400	Socket, 6A8 Type
9	W-36541	Condenser, .02 Mf. 160 V.	32	G171-36400	Socket, 6U7 Type
10A	W-28621	Condenser, .02 Mf. 200 V.	33	G160-36400	Socket, 6Q7 Type
10B	W-28621	Condenser, .02 Mf. 200 V.	34	G172-36400	Socket, 6K6 Type
10C	W-28621	Condenser, .02 Mf. 200 V.	35	G168-36400	Socket, 6X5 Type
11	W-35936	Condenser, .05 Mf. 200 V.	36	G105-28807	Socket, Vibrator
12	W-24049C	Condenser, .1 Mf. 200 V.		W-40911	Tube Shield
13	W-35758	Condenser, .008 Mf. 400 V.	37	W-45028	A. C.—D. C. Switch (Change Over)
14A	W-50161	Condenser, .5 Mf. 120 V.	38	274-PL-18"U"	Speaker, Spec. 5-PA-4 (587 only)
14B	W-50161	Condenser, .5 Mf. 120 V.		—44537	V. C. and Cone Assy. (274-PL-18"U")
15	W-30805	Condenser, .01 Mf. 400 V.		—45295	Output Transformer (274-PL-18"U")
16	W-50170	Condenser, .01 Mf. 1,000 V.	38	474-PJ-2"M"	Speaker, Spec. 1-D-1282
17	W-37173	Condenser, .25 Mf. 300 V.		—45551	Cone Assembly (474-PJ-2"M")
18	W-37986A	2 Section Shunt Trimmer Cond. Assy.		—45552	Output Trans. (474-PJ-2"M")
19	G46-33001	2 Section Var. Tuning Condenser (587 only)	39Z		Ring, Cone Mtg. (474-PJ-2"M")
	B-44981A	Dial Face (587 only)	39Y		(6 V. D. C. Switch (On-Off))
	W-44285	Dial Mask, Paper (587 only)	39X		{ 110 V. A. C. Switch (On-Off)
	W-44001A	Ring—Dial Support (587 only)	41	G1-26719	Volume Control
	W-44267	Dial Mask (587 only)	42	G19-32769	Ant. and Gnd. Terminal Assy.
	B-45033	Support—Dial Face (587 only)	43	W-50130	Power Transformer
	W-43550A	Dial Hand (587 only)	44	W-45110	Trans. Shield
	W-40486	Screw—Hand Mtg.		W-44948	Vibrator, 6 Volt
	W-44989	Spring—Cord Tension (587 only)		G3-34903	Battery Cable Assy.
	W-41582	Drive Cord		—34904	Battery Clip (Pos.)
	W-45030	Bracket—Drive Shaft Mtg.	45	B-44004	Battery Clip (Neg.)
	W-45031	Drive Shaft (587 only)	46Z	G1-45078	Power Cord and Plug (A. C.)
	W-43549	Ring—Shaft Retaining	46Y	G2-45078	Red Speaker Lead (5587 only)
19	G47-33001	2 Section Var. Tuning Condenser (5587 only)	47		Blue Speaker Lead (5587 only)
	B-41994A	Dial Face (5587 only)		G20-45022	Vib. Shield Assy.
	W-44085B	Dial Mask (5587 only)		G19-45022	Switch Shield Assy.
	W-44084	Ring—Dial Support (5587 only)		7MD	Cabinet (5587 only)
	C-44082E	Support Bracket—Dial (5587 only)		7AF	Cabinet (587 only)
	W-44299	Dial Hand (5587 only)	W-44432		Knob (1)
	G1-43564	Pulley and Hub Assy. (5587 only)	W-44381B		Knob (2)
	W-43542B	Bracket—Drive Shaft (5587 only)		—44268A	Escutcheon (587 only)
	W-44134A	Drive Shaft (5587 only)	B-44226B		Escutcheon (5587 only)
	W-43561	Spring—Cord Tension (5587 only)	W-45056		Rubber Mtg. Foot (5587 only)
20	—35928	Resistor, 60,000 Ohm 1/4 W. Ins.	W-43553		Rubber Mtg. Foot (587 only)
21	—24990	Resistor, 25,000 Ohm 1/2 W. Carb.	B-45231		Bottom Mtg. Plate (5587 only)
22	—35600	Resistor, 100,000 Ohm 1/4 W. Ins.			

*Twenty-five years ago the Crosley Corporation supplied the service man's need for crystal detectors. It can supply the infinitely greater radio service needs of today's fast moving industry.*

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8-GT	Oscillator-Modulator	6.3	105	65	—	—	-10	105
6K7-GT	I-F Amplifier	6.3	105	65	—	—	—	—
6Q7-GT	Det, AVC, A-F Amplifier	6.3	42	—	—	—	—	—
25L6-GT	Output	25.1	95	105	—	—	—	—
25Z6-GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—

Tuning The I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT. (Leave grid cap in place). Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(d) Adjust the 2nd I-F trimmer condenser, (Fig. 3) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on back flange of the chassis, for maximum output.

Aligning The R-F Amplifier.

Connect output of signal generator through a .0001 mf. condenser to "ANT" lead.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

With 455 kc. input signal from generator, adjust wave trap for minimum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G152-34403	Antenna Lead	W	-35201	3/8" Nut for Volume Control
2	B -46652	Power Cable and Plug	W	-46729	Socket, 8 Prong (No Marking)
3	G185-32000	Antenna Coil		-46912	8BC Cabinet (Brown)
4	G182-32002	Oscillator Coil		-46961	8BD Cabinet (Ivory)
5	G207-32004	1st I.F. Transformer		-47082	8BE Cabinet (Red)
6	G206-32004	2nd I.F. Transformer		-45828C	8BC Cabinet Back
7	G3 -34002	Condenser, .0005 Mf. Molded		-45829C	8BD Cabinet Back
8	W -45780B	Condenser, .02 Mf. 160 V. Paper		-45794C	8BD Cabinet Back
9A } 9B }	G62 -33001	2 Section Gang { Antenna Section Oscillator Section	W	-45852A	Baffle Board
	W -46660	Condenser Mounting Bracket	W	-46888A	8BD Grille Cloth
10	G2 -34002	Condenser, .0001 Mf. Molded	W	-46910	8BC and 8BE Grille Cloth
11	W -45780B	Condenser, .02 Mf. 160 V. Paper		-46884	8BD and 8BE Tuning Knob (Black)
12	W -45782B	Condenser, .05 Mf. 120 V. Paper		-45824A	8BD and 8BE Volume Control Knob (Black)
13	W -45810B	Condenser, .006 Mf. 200 V. Paper		-46639	8BC Tuning Knob (Brown)
14	G2 -34002	Condenser, .0001 Mf. Molded		-46638A	8BC Volume Control Knob (Brown)
15A } 15B }	W -46398	Condenser, 16 Mf. 125 V. Elect.		-46417	8BC Push Buttons (Brown)
	W -45780B	Condenser, 16 Mf. 125 V. Elect.		-50617	8BD and 8BE Push Buttons (Black)
16	W -45780B	Condenser, .02 Mf. 160 V. Paper		-50841	8BC Call Letter Sheet
17	W -45817B	Condenser, .05 Mf. 160 V. Paper		-46887	8BD and 8BE Call Letter Sheet
18	-35928	Resistor, 60,000 Ohm 1/4 W. Ins.	W	-50551A	Call Letter Covers (5 in Envelope)
19	-36688	Resistor, 3 Megohm 1/4 W. Ins.	W	-45930C	Rubber Foot (4 Req.)
20	-21876	Resistor, 10,000 Ohm 1/4 W. Carb.	W	-45931A	Cabinet Mounting Screw and Foot
21	-35928	Resistor, 60,000 Ohm 1/4 W. Ins.		-46637	Instructions
22	-46497	Resistor, 11 Megohm 1/4 W. Carb.	G14	-45683	Push Button Unit Assembly Complete
23	-36322	Resistor, 500,000 Ohm 1/4 W. Ins.	G26	-45683	Riveted Key Assembly
24	-35601	Resistor, 300,000 Ohm 1/4 W. Ins.	G27	-45683	Rocker Plate Assembly
25	W -41759	Resistor, 140 Ohm 1/2 W. Flex.	W	-50542C	Key Clip (Lock Clamp)
26	281-BL-5-"B"	Speaker, Spec. 55WA24	W	-50547	Key Plate (Rear Guide)
	W -45900B	Speaker Support Bracket	W	-50607C	Key Return Spring
	-6876	Speaker Bracket Screws	W	-50561	No. 6-40 x 1/8" Screw (Rocker Plate Bearing)
	-46644	No. 10-32 x 3/8" H.H. Screw		-31388	No. 8-32 x 1/4" Washer Head Screw
	L10	Lock Washer		-45717	Adjusting Screw
	-46682	Cone and V. C. Assembly		-2046	No. 8 Shakeproof Washer
	-46686	Field Coil	B	-46880	220 V. Power Cord 300 Ohm
	-46687	Output Transformer			
	-46685	Cardboard Ring			
27A } 27B }	-46633	Volume Control, 1 Meg.			
	W -45789A	Power Switch			
28	G184-32004	Volume Control Bracket			
		Wave Trap (455 Kc.)			

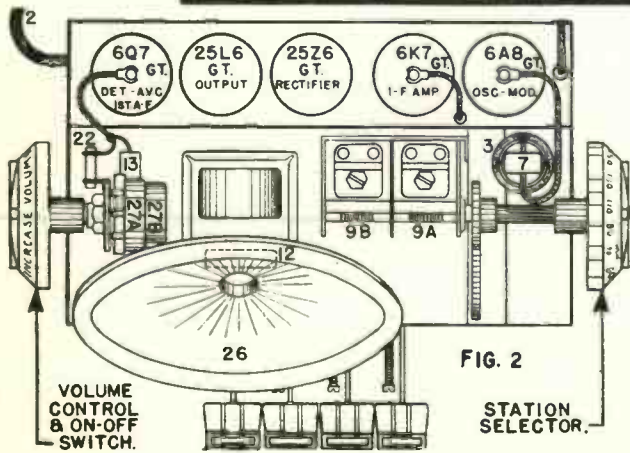
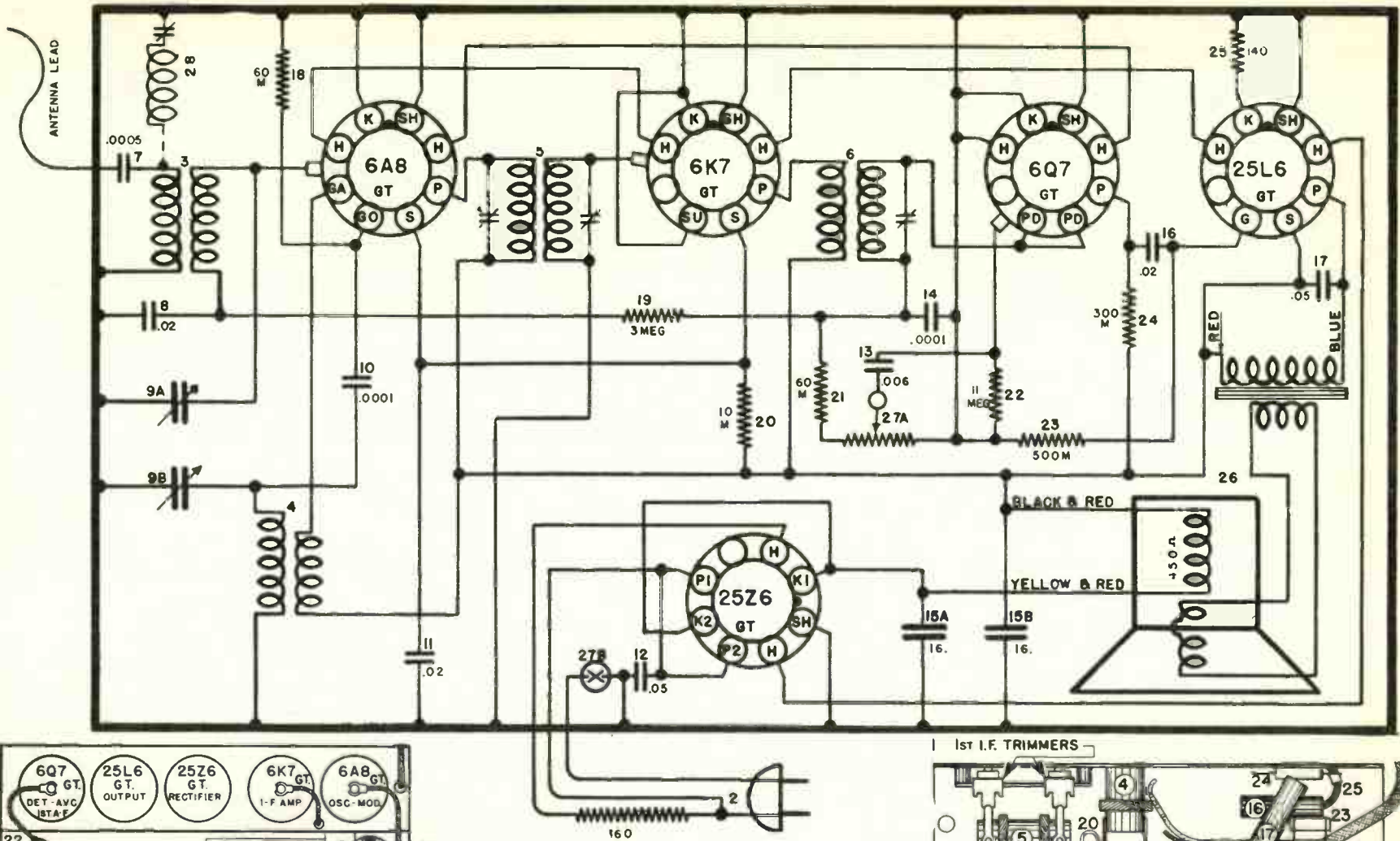
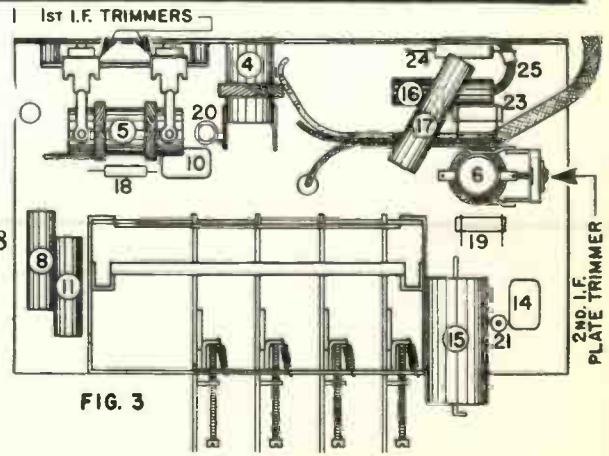


FIG. 1—WIRING DIAGRAM—MODEL 588



TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5U	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 20—350 Ohms.

Power Output Approximately 500 M.W.

"A" Battery Drain = 350 M.A. @ 1.5 volts.

"B" Battery Drain = 15 M.A. @ 90 volts.

GND. = Ground. N.C. = No Connection. J.B. = Junction Block. G. = Grid.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1Q5G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and band switch to B. C. position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead of the signal generator to the ANT. terminal of the receiver through a 250 ohm carbon resistor and the ground lead to the "GND" terminal.

(b) Set signal generator to 18.3 megacycles.

(c) Turn tuning condenser gang so plates are completely out of mesh, turn the volume control on full, the tone control to treble and the band switch to S. W. hand.

(d) Adjust S. W. Oscillator trimmer condenser for maximum output.

(e) Set signal generator to 18.0 megacycles.

(f) With the manual tuning knob tune-in the 18. megacycle signal for maximum output. Then adjust the S. W. Antenna trimmer condenser for maximum output.

NOTE: Make sure the short wave band is aligned on the fundamental frequency (18 megacycles) and not the image frequency by increasing the signal generator output and tuning in the image frequency (approx. 17.1 mc. on the dial). If receiver is correctly aligned the image will be heard as stated above but will be much weaker than the fundamental.

(g) Repeat operations (b) to (f) for more accurate adjustments.

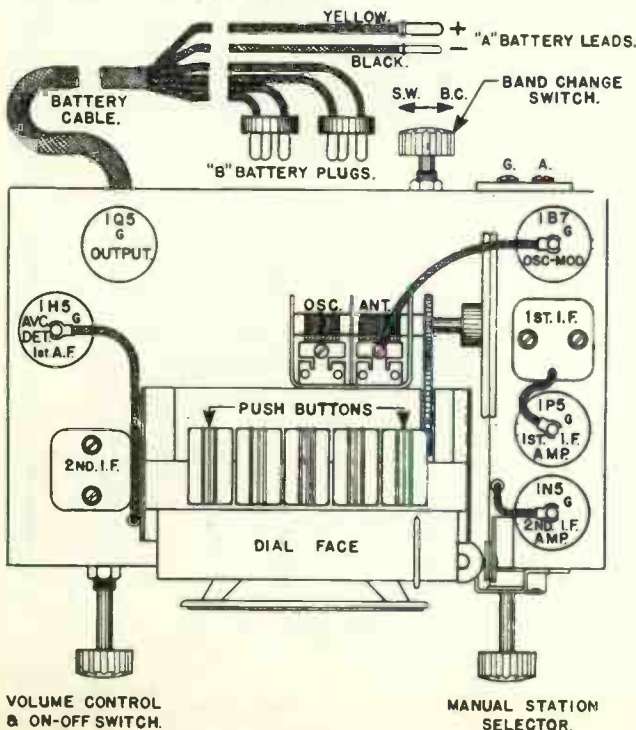


Fig. 2-A—Top View Model 589

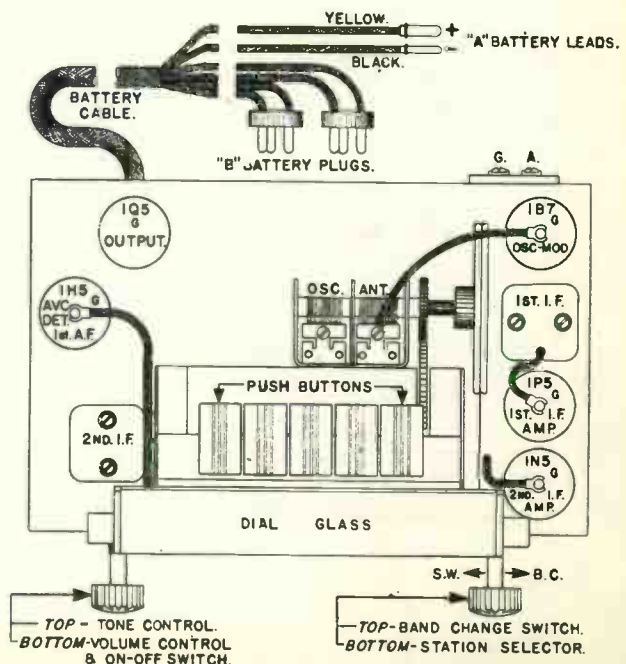


Fig. 2-B—Top View Model 5589



MODELS 589, 5589

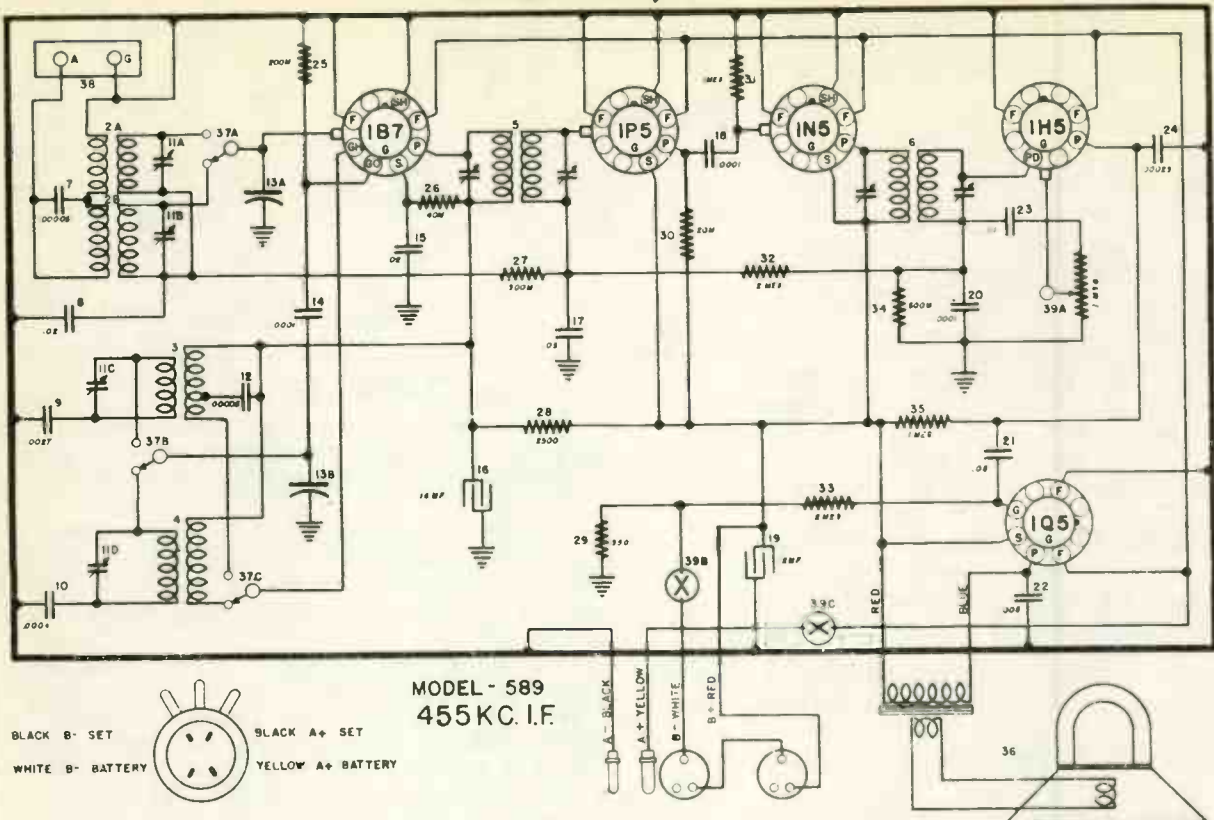


FIG. 1-A—WIRING DIAGRAM—MODEL 589

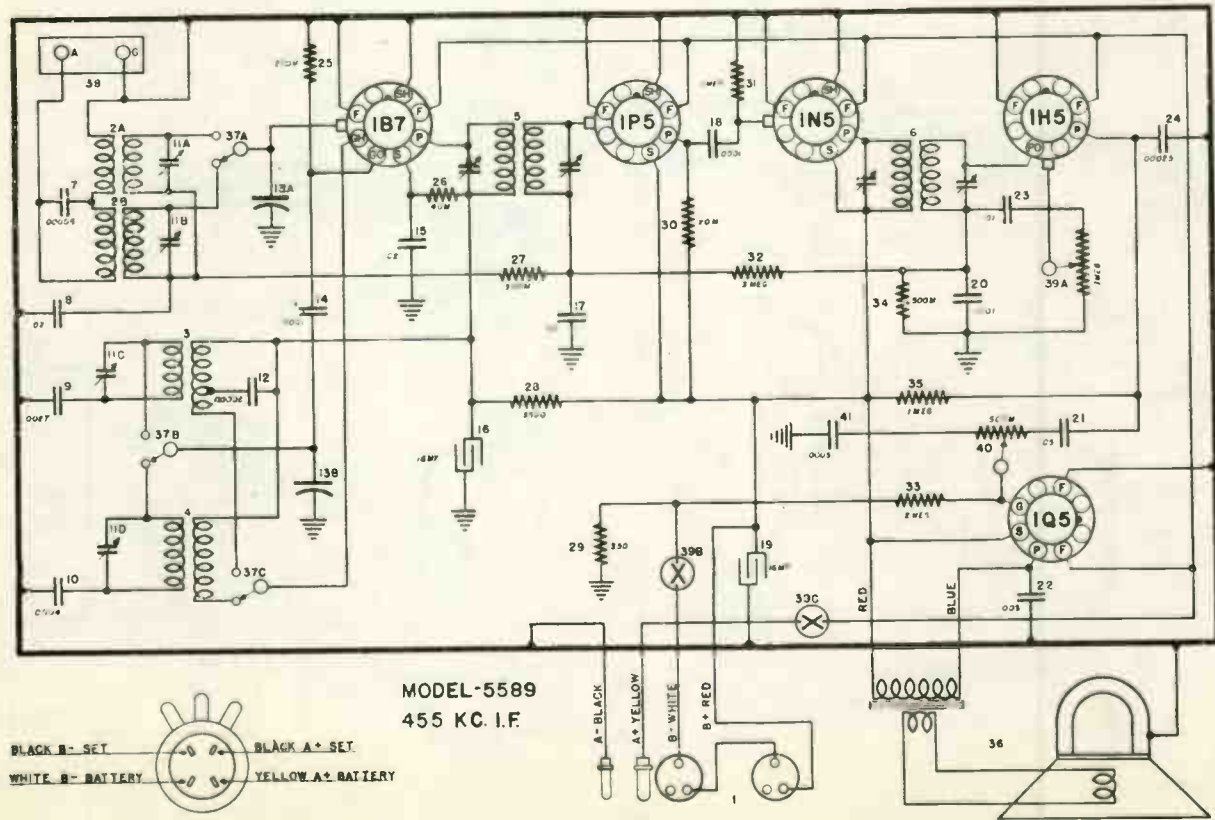


FIG. 1-B—WIRING DIAGRAM—MODEL 5589

**PARTS LIST — MODELS 589 And 5589**

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48312	Battery Cable	MG19	47860	L. H. Mtg. Bracket—P. B. Unit (589)
2	G202-32000	Antenna Coil Assy. A—Short Wave Coil B—Broadcast Coil		—48022	R. H. Mtg. Bracket—P. B. Unit (5589)
3	G205—32002	Short Wave Oscillator Coil		—48023	L. H. Mtg. Bracket—P. B. Unit (5589)
4	G204—32002	Broadcast Oscillator Coil		—45580	Rubber Grommet—P. B. Unit Mtg.
5	G194—32004	1st I-F. Assy.—155 Kc.		—45620	Headed Bushing—P. B. Unit Mtg.
6	G195—32004	2nd I-F. Assy.—155 Kc.		—6495	No. 8—32 x 7/16" Screw—P. B. Unit Mtg.
7	G5—34002	Condenser, .00005 Mf. Mica		—47875	<b>DIAL PARTS MODEL 589</b>
8	—28621	Condenser, .02 Mf. 200 V.		—47930	Bracket—Dial Background (FS-71)
9	G11—34005	Condenser, .0027 Mf. Mica	MG20	47860	Pointer—Dial Hand (FS-77)
10	G18—34002	Condenser, .0004 Mf. Mica		—43542	Idler Pulley and Bracket Assy.
11	—41274	Condenser, 4 Sect. Shunt Trim. Assy.		—47969	Bracket—Drive Shaft Mtg.
12	G5—34002	Condenser, .00005 Mf. Mica	G20	41582	Drive Shaft and Pulley Assy.
13	G80—33001	Condenser, Var. Tuning Gang		—50590	Drive Cord (42 3/4")
14	G2—34002	Condenser, .0001 Mf. Mica	G30	41582	Spring—Drive Cord Tension
15	—28621	Condenser, .02 Mf. 200 V.		—46848	Guide Cord (9 1/2") Pointer
16	—48122	Condenser, 16 Mf. 250 V.	G1	48424	Spring—Guide Cord Tension
17	—35936	Condenser, .05 Mf. 200 V.		—48409	Light Guard—Felt and Bracket Assy.
18	G2—34002	Condenser, .0001 Mf. Mica		—48113	Light Guard—Felt only
19	—48122	Condenser, 16 Mf. 250 V.	MG32	47861	Glass Dial Face
20	G2—34002	Condenser, .0001 Mf. Mica		—48018	Escutcheon Assy.
21	—32380	Condenser, .05 Mf. 200 V.		—48167	Glass Reflector—Call Letter Tab
22	—28619	Condenser, .006 Mf. 200 V. (589)	S	80	Escutcheon Mounting Bracket
22	—25435	Condenser, .003 Mf. 400 V. (5589)		—48168	No. 4 x 3/8" Screw—Escutcheon Brkt. Mtg. (FS-58)
23	—30323	Condenser, .01 Mf. 200 V.		—48341	No. 3—56 x 1 1/16" Screw—Escutcheon Mtg. to Brkt. (FS-58)
24	G1—34002	Condenser, .00025 Mf. Mica		—48341	Push Button
25	—34018	Resistor, 200,000 Ohms 1/2 W.			<b>DIAL PARTS MODEL 5589</b>
26	—21453	Resistor, 40,000 Ohms 1/2 W.	MG12	47980	Support Bracket (FS-71) Dial Glass
27	—23785	Resistor, 500,000 Ohms 1/2 W.		—47994	Glass Dial
28	—30137	Resistor, 3,500 Ohms 1/2 W.		—48187	R. H. Clip—Dial Glass Mtg.
29	—28589	Resistor, 350 Ohms 1/2 W.		—46020	L. H. Clip—Dial Glass Mtg.
30	—22196	Resistor, 20,000 Ohms 1/2 W.		—48084	Rubber Cushion—Dial Glass
31	—21454	Resistor, 1 Megohm 1/2 W.		—48032	Pointer—Dial Hand
32	—26577	Resistor, 3 Megohms 1/2 W.	G12	43564	Pulley and Hub Assy.
33	—34883	Resistor, 2 Megohms 1/2 W.	MG20	47860	Idler Pulley and Bracket Assy.
34	—23785	Resistor, 500,000 Ohms 1/2 W.		—43542	Bracket—Drive Shaft Mtg.
35	—21454	Resistor, 1 Megohm 1/2 W.		—46056	Drive Shaft and Pulley Assy.
36	392-PL-9"B"	Speaker, Mfr. Spec. No. 503-PRW-1 (589)	G22	41582	Drive Cord (43 3/4")
	—48336	Output Transformer		—50590	Spring—Drive Cord Tension
	492-PJ-3"R"	Speaker, Mfr. Spec. No. F-5733 (5589)	G31	41582	Guide Cord (14") Pointer
	—48619	V. C. and Cone Assy. (5589)		—46848	Spring—Guide Cord Tension
	—43978	Cardboard Ring—Cone Mtg. (5589)		—46290	Clamp—Drive Cord
	—48620	Output Transformer (5589)		—48043	Escutcheon—Dial Opening
37	—48333	Band Change Switch		—48539	No. 3 x 1/4" Phillips Hd. Screw—Escutcheon Mtg. (FS-58)
	—49009	Bracket—Band Change Switch Mtg.		—48431	Push Button
38	G1—26719	A. and G. Terminals			<b>MISCELLANEOUS PARTS</b>
39	—48328	Vol. Cont. and Switch (1 Meg.) (589)		9GC	Cabinet—Wood (B-589-A)
	—49336	Vol. Cont. and Switch (1 Meg.) (5589)		—48142	Shipping Carton—9GC Cabinet
40	—49337	Tone Control (1/2 Meg.) (5589)		—48165	Knob (2) (589)
41	G3—34002	Condenser, .0005 Mf. Mica (5589)		—47603	Knob (1) (B. S.) (589)
	—46729	Tube Socket—8 Prong—No Marking		—48900	No. 8—32 x 3/4" Screw—Chassis Mtg. (589)
	—51208	Tube Shield		—30409	Washer—Chassis Mtg. (589)
	—48315	Clip—Tube Shield Ground		—48734	Station Call Sheet (589)
	—50325	"C" Washer—Extension Shaft Retaining (5589 only)		—48747	Celluloid Cover—Call Tab (589)
	—48026	Felt Spacer—Extension Shaft (5589 only)		—48357	Instruction Booklet (589)
G2	—44470	Toggle Arm—Band Switch Shaft (5589 only)	MG31	48272	Instruction Envelope Assy. (589)
G6	—44470	Toggle Arm—Extension Shaft (5589 only)		9ER	Cabinet (B-5589-M)
	—47999	Extension Shaft—Band Switch (5589 only)		—47831	Shipping Carton—9ER Cabinet
G40	—45683	P. B. Tuning Unit Assy.—With Gang		—47960	Knob (4) (5589)
	—49691	P. B. Tuning Unit Assy.—Without Gang		—45579	Washer—Chassis Mounting (5589)
G56	—45683	Riveted Key Assy.		—48899	No. 8—32 x 7/8" Screw—Chassis Mtg. (5589)
	—50542	Lock Clip—Toggle		—48750	Station Call Letter Sheet (5589)
	—45717	Screw—Station Setting		—48748	Celluloid Cover—Call Tab (5589)
	—50607	Spring—Key Return		—48360	Instruction Booklet (5589)
G31	—47880	Rocker Bar and Gear Assy.	MG31	48274	Instruction Envelope Assy. (5589)
	—50561	No. 6—40 x 1/8" Screw—Rocker Bar Bearing		—49284	Short Wave Station Chart
	—51146	Bronze Spring—Rocker Bar Bearing		—49070	"A" and "B" Battery Pack No. CR-28
	—50547	Key Plate—Rear Slide Adj.			
	—50588	Adjusting Clip—Key (Heart Shaped)			
	—45646	Adjusting Clip—Key (Hooked End)			
MG18	—47680	R. H. Mtg. Bracket—P. B. Unit (589)			

CHASSIS MODEL 596

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8G	Oscillator-Modulator	6.3	115	65	—	3.8	115	Neg.
6K7G	I-F Amplifier	6.3	115	115	3.8	3.8	—	—
6Q7G	Det and A-F Amplifier	6.3	25	—	—	1.2	—	—
25A6G	Output	25.0	115	115	—	0	—	—
25Z6G	Rectifier	25.0	—	—	—	115	—	—

Power output approximately 1.8 watts.  
 Power consumption approximately 50 watts.  
 Voltage drop across speaker field 125 volts.  
 All readings taken on 117.5 volt A. C. power supply.  
 All readings except filaments will be approximately 10% lower on 117.5 volts D. C.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers located on the rear of the receiver chassis for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers located on the rear of the receiver chassis for maximum reading on the output meter.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the station selector slightly for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —29784B	Flexible Antenna		W —41014B	Brkt. Dial Mtg., R. H.
2AB	W —4099B	Dial Light Bulb		W —41013B	Brkt. Dial Mtg., L. H.
	G6 —27134	Dial Light Socket		W —40486	Screw—Pointer Disc Mtg.
3	G116—32000	Ant. Coil	20	W —35467	Resistor 220 Ohm ½W. Flexible
4	G116—32002	Osc. Coil	21	—36760	Resistor 20,000 Ohm ¼W.
5	G104—32004	1st I-F Coil (only)	22	—36318	Resistor 15,000 Ohm ¼W.
	W —21541C	Ring—Coil Retaining	23AB	—35601	Resistor 300,000 Ohm ¼W.
	W —26891	Insulating Washer (Coil)	24	—36322	Resistor 500,000 Ohm ¼W.
	W —25024B	Shield—Coil	25AB	—35602	Resistor 1 Megohm ¼W.
6		Same as Item No. 5	26	W —41000	Resistor 44 Ohm C. T. Candohm
7	G4 —28859	Filter Choke	27	247BL9 "B"	Speaker
8AB	W —36541	Condenser .02 Mf. 160 V.		—42928	V. C. and Cone Assembly above Spk.
				—42929	Output Trans. above Spk.
9	W —24049C	Condenser .1 Mf. 200 V.	28Z	—42446	{ Vol. Cont. 500,000 Ohm
10	W —29910A	Condenser .25 Mf. 200 V.	28Y		{ Line Switch
11	W —32780B	Condenser .05 Mf. 400 V.	29	B —40999	Power Cord and Plug. 100 Ohm 12W.
12	W —35936	Condenser .05 Mf. 200 V.	30	G156—36400	Socket—Type 6A8
13	W —23191A	Condenser .01 Mf. 200 V.	31	G151—36400	Socket—Type 6K7
14	G3 —34002	Condenser .0005 Mf. 200 V.	32	G160—36400	Socket—Type 6Q7
15	W —28620	Condenser .003 Mf. 200 V.	33	G161—36400	Socket—Type 25A6
16AB	G1 —34002	Condenser .00025 Mf. 200 V.	34	G162—36400	Socket—Type 25Z6
17AB	W —42439	Condenser 30 Mf. 150 V.		W —27981A	Tube Shield
18AB	W —37075	I-F Trimmer Cond. (Dual Unit)	35	W —41958	Condenser 50 Mf. 25 V.
19	G22 —33001	2 Gang Var. Tuning Cond.	36	—35928	Resistor 60,000 Ohm ¼W.
	W —40633B	Bearing Support Bracket		B —40590B	Escutcheon
	W —41112B	Sprocket (Small) Driver		—42376	Screws, Escutcheon Mtg.
	B —41113	Sprocket (Large) Driver		W —41019A	Knob
	W —41227	Chain—Drive		W —35863	Grille Cloth
	W —41610	Spring—Take Up		—6AD	Cabinet
	W —42608	Dial (Calibrated) Glass			
	W —40632C	Pointer Disc			

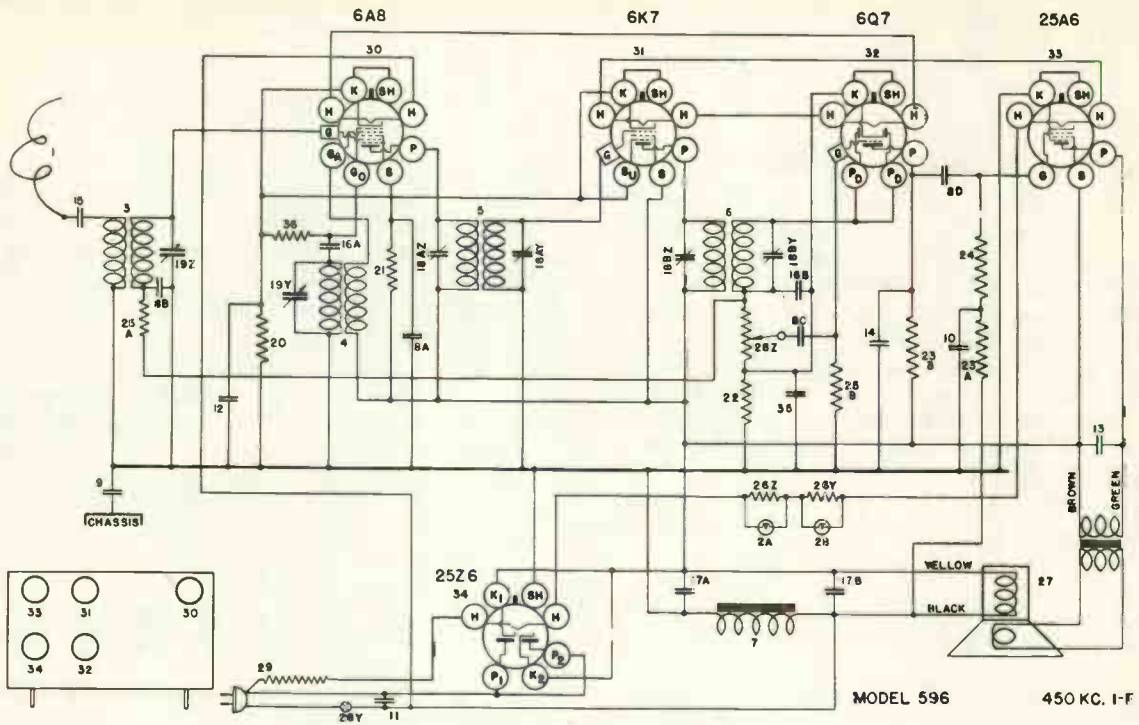


FIG. 1—WIRING DIAGRAM—MODEL 596

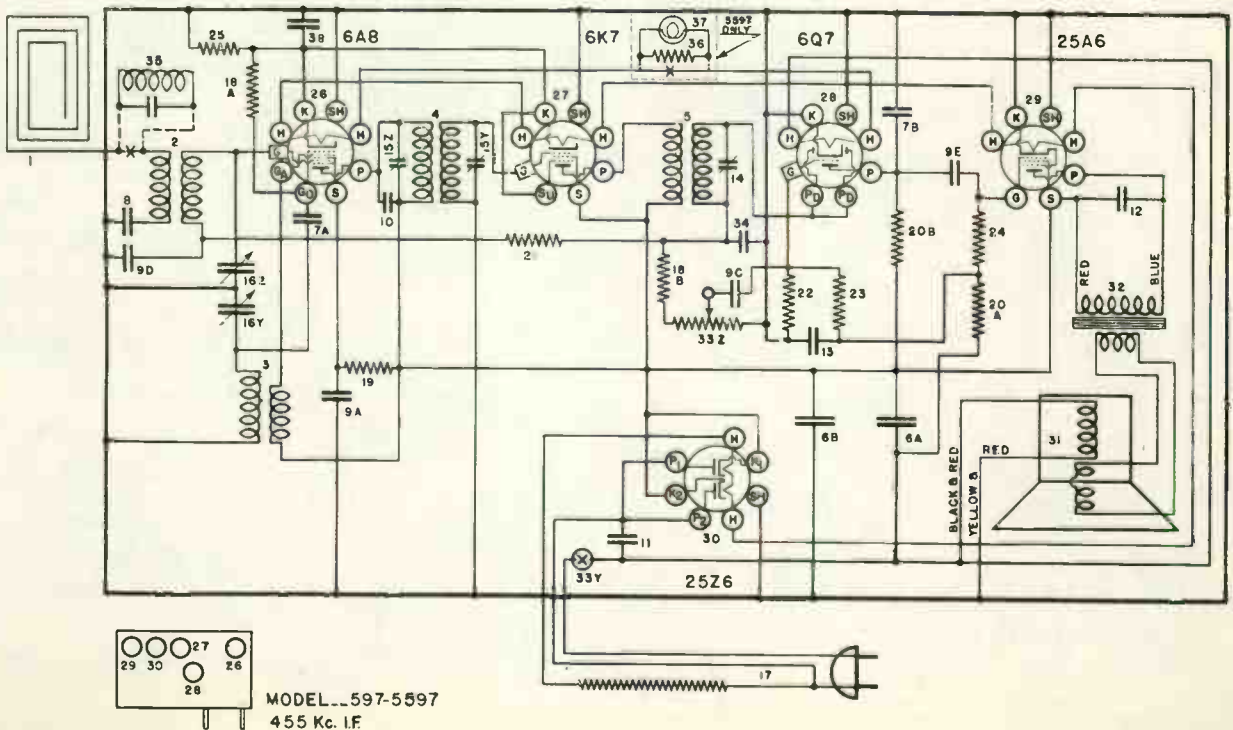


FIG. 1—WIRING DIAGRAM—MODEL 597 and 5597

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8	Oscillator-Modulator	6.3	105	65	—	3	-10	105
6K7	I-F Amplifier	6.3	105	105	0	3	—	—
6Q7	Det, AVC, A-F Amplifier	6.3	50	—	—	0	—	—
25A6	Output	25.1	100	105	—	0	—	—
25Z6	Rectifier	25.1	117.5	—	—	110	—	—

Tuning The I-F Amplifier To 455 Kilocycles.

(a) Disconnect the antenna roll from the receiver and connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condenser, Item 14, located beneath the edge of speaker field, for maximum

reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, located on back flange of the chassis, for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

Aligning The R-F Amplifier.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Note: Do not readjust the "OSC" trimmer.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —31765C	Ant. Roll	20A	—21455	Resistor, 300,000 Ohm 1/3 W. Carb.
2	G163—32000	Ant. Coil	20B		See Item 39
3	G155—32002	Osc. Coil	21	—26577	Resistor, 3. Megohm 1/3 W. Carb.
4	G168—32004	1st I-F	22	—21454	Resistor, 1. Megohm 1/3 W. Carb.
5	G167—32004	2nd I-F	23	—37584	Resistor, 11. Megohm 1/3 W. Carb.
6A	W —44935	Condenser, 30 Mf. 125 V.	24	—34020	Resistor, 250,000 Ohm 1/3 W. Carb.
6B	W —44935	Condenser, 30 Mf. 125 V.	25	W —25357	Resistor, 75 Ohm 3/4 W. Flex.
7A	G 2—34002	Condenser, .0001 Mf. Molded	26	G156—36400	Socket Type 6A8
7B	G 2—34002	Condenser, .0001 Mf. Molded	27	G151—36400	Socket Type 6K7
8	W —26571	Condenser, .0005 Mf. 200 V.	28	G160—36400	Socket Type 6Q7
9A	W —28621	Condenser, .02 Mf. 200 V.	29	G161—36400	Socket Type 25A6
9C	W —28621	Condenser, .02 Mf. 200 V.	30	G162—36400	Socket Type 25Z6
9D	W —28621	Condenser, .02 Mf. 200 V.	31	—270BL6"O"	Speaker Spec. No. 3-101
9E	W —28621	Condenser, .02 Mf. 200 V.		—45174	Cone & V.C. Assy. (For Above
10	G 5—34002	Condenser, .00005 Mf. Molded		—45175	Ring (Cone Mtg.) (Speaker
11	W —23615	Condenser, .05 Mf. 400 V.	32	G 21—29535	Output Transformer
12	W —28619	Condenser, 006 Mf. 200 V.	33	—44920A	Vol. Cont. (1 Meg.), & Line
13	W —24049C	Condenser, .1 Mf. 200 V.			Switch
14	W —44142	Condenser, 2nd I-F Plate Trim-	34	G 1—34002	Condenser .00025 Mf. Molded
		mer.	35	G182—32004	Wave Trap
15	W —44882	Condenser, 1st I-F Trimmer Assy.	36	W —44396	Resistor 40 Ohm 3 1/2 W. Flex 5597
16	G 45—33001	2 Sect. Var. Tuning Cond.	37	W —44337	Bulb 6-8 V. Dial Light 5597
	B —44801A	Dial Face (Glass)		G 6—27134	Dial Light Socket Assy. 5597
	W —50173A	Pointer		W —45313	D. L. Socket Mtg. Brkt. 5597
	W —2045	Washer (Pointer Lock)	38	W —27216	Condenser .05 Mf. 200 V.
	W —40486	Screw (Pointer Mtg.)		—7F	Cabinet (Black) 597
	W —44810C	Dial Support		W —44934	Knob—Black 597
	W —44811	Ring (Dial Glass Support) 597		G 1—45281	Grille & Baffle Assy. 597
	W —45342	Ring (Dial Glass Support) 5597		—7FB	Cabinet (Brown) 597
	W —44809C	Drive Shaft		W —45242	Knob—Brown 597
	W —44808A	Bracket Drive Shaft		G 1—45281	Grille & Baffle Assy. 597
	—41582	Drive Cord		—7FA	Cabinet (Ivory) 5597
	W —43561	Spring—Cord Tension		W —45324	Knob 5597
	W —43549	Ring—Drive Shaft Retaining		G 1—45281	Grille & Baffle Assy. 5597
17	B —44917B	Power Cord & Plug (160 Ohm) 597 Only		W —45282	Shield—Heat Reflector
	B —45491B	Power Cord & Plug (140 Ohm) 5597 Only		B —45505	Back—7FB Cab.
				B —44885A	Back—7F Cab.
18A	—35928	Resistor, 60,000 Ohm 1/4 W. Ins.	39	B —45506	Back—7FA Cab.
18B	—35928	Resistor, 60,000 Ohm 1/4 W. Ins.		—23403	Resistor, 150,000 Ohm 1/3 W. Carb.
19	—22831	Resistor, 15,000 Ohm 1/3 W. Ins.			

## MODEL 598 VANITY

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G	
6K7-GT	R-F Amplifier	6.3	110	110	2.5-25	2.5-25	—	
6J7-GT	Detector	6.3	20	7	6	—	—	
25L6-GT	Output	25.1	98	110	6	—	—	
25Z6-GT	Rectifier	25.1	117 A.C.	—	135	—	—	
W-46416	Ballast	Approx. 54.7 Drop A.C.						—

### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6-GT Output tube. Be sure the output meter is protected from DC by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an AC operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 Mf. condenser to the antenna lead

on the receiver. The ground lead of the generator should be connected through a .001 Mf. condenser to the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 Kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 Kc. signal is heard. The gang does not have to tune through this signal.

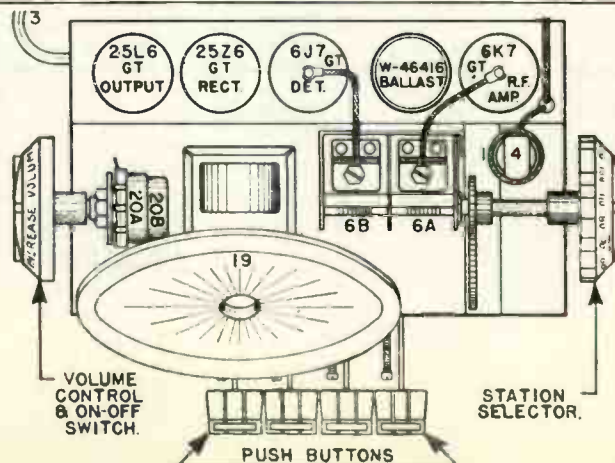
(e) Set the generator to 1400 Kc.

(f) Tune the set to the 1400 Kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G187-32000	Antenna Coil	W	-50512C	Key Clip (Lock Clamp)
2	G107-32001	R. F. Coil		-45717	Adjusting Screw
3	B -45784	Power Cord and Plug	G27	-45683	Rocker Plate Assembly
4	G3 -34002	Condenser, .0005 Mf. Molded	W	-50561	1/8" No. 6 x 40 Screw (Rocker Plate Bearing)
5	W -45780B	Condenser, .02 Mf. 160 V. Paper	W	-50517	Key Plate (Rear Guide)
6A } 6B }	G63 -33001	Variable Condenser (Antenna Section R. F. Section)	W	-50607C	Spring (Push Button Slide)
	W -46660	Variable Condenser Mounting Bracket		-45553B	Push Button
	W -45902	Cord Clamp		-46724	Dial Knob
7	W -45782B	Condenser, .05 Mf. 120 V. Paper		-45825A	Knob, V. C.
8	G3 -50640	Condenser Assembly		-50841	Call Letter Sheet
9	W -45781B	Condenser, .25 Mf. 160 V. Paper	W	-50551B	Celluloid Cover
10	W -45780B	Condenser, .02 Mf. 160 V. Paper		-46723	Instructions
11A } 11B }	W -46398	Condenser, 16 Mf. 125 V. Elect.		-45818D	Cabinet (8BB) Brown
	W -45780B	Condenser, 16 Mf. 125 V. Elect.		-46881	Cabinet (8BD) Ivory
12	W -45780B	Condenser, .02 Mf. 160 V. Paper	W	-45853	Grille Cloth
13	W -45817B	Condenser, .05 Mf. 160 V. Paper	W	-45930C	Rubber Mounting Foot
14	-24990	Resistor, 25,000 Ohm 1/2 W. Carbon	W	-45931A	Mounting Screw and Foot
15	-37583	Resistor, 2 1/2 Megohm 1/2 W. Carbon	W	-45852A	Baffle Board
16	-23785	Resistor, 500,000 Ohm 1/2 W. Carbon		-45828C	Cabinet Back (8BB)
17	-23785	Resistor, 500,000 Ohm 1/2 W. Carbon		-45829C	Cabinet Back (8BD)
18	W -41759	Resistor, 140 Ohm 1/2 W. Flex.		-46259	Cabinet Assembly Complete (8BB) Brown
19	281-BL-5-"H"	Speaker, Spec. S-5252-J-5		-46961	Cabinet Assembly Complete (8BD) Ivory
	W -45900B	Speaker Support Bracket	B	-46880	220 V. Power Cord 300 Ohm
	W -46416	Ballast Tube			
20A } 20B }	-45786	Volume Control Power Switch			
	W -45789A	Volume Control Bracket			
	W -46729	Socket, 8 Prong			
	G14 -45683	Push Button Unit Assembly			
	G26 -45683	Key and Toggle Assembly			



311

MODELS 598, 599

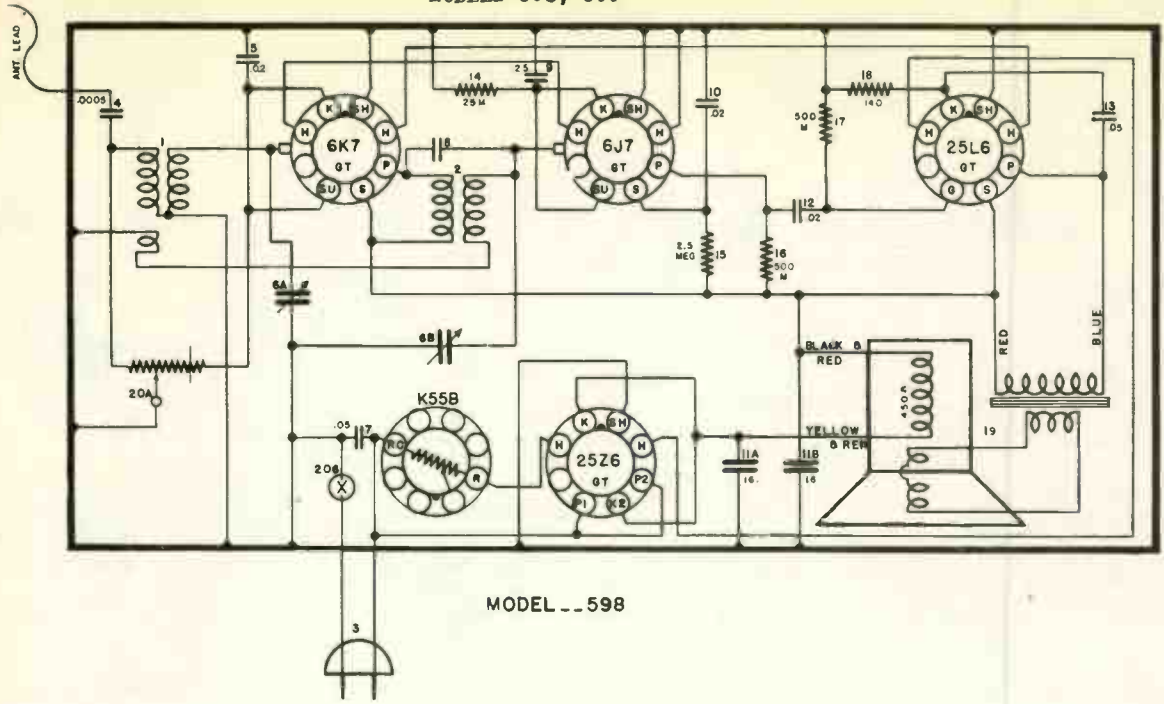
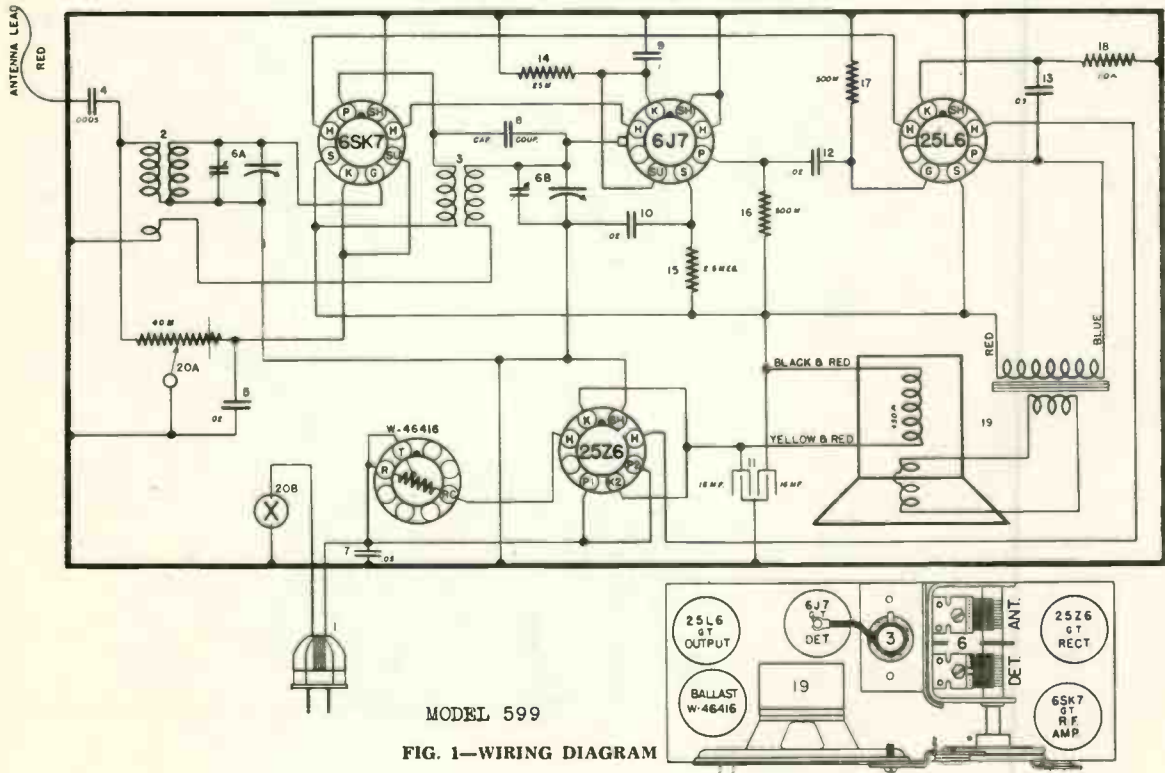


FIG. 1—WIRING DIAGRAM—MODEL 598



## CHASSIS MODEL 599

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Su	G
6 SK7	R-F Amplifier	6.3	97	98	2.5-25	2.5-25	—
6 J7GT	Detector	6.3	20	10	7	—	—
25 L6GT	Output	25	85	98	6	—	—
25 Z6GT	Rectifier	25	—	—	126	—	—
W-46416	Ballast	55 Volts A. C.					

Power output approximately 2 watts.

Power consumption at 117.5 volts line 45 watts (A.C.).

All readings except filaments will be approximately 10% lower on 117.5 D. C.

Drop across field 28 volts.

### CONNECTING OUTPUT METER

Connect the one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT Output tube. Be sure the output meter is protected from D.C. by connecting a condenser (.1 mfd. or larger —NOT electrolytic) in series with one of the leads.

### ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power line, therefore when using an A.C. operated signal generator for alignment the following precaution should be taken.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead on the receiver. The ground lead of the generator should be connected through a .001 mf. condenser to

the chassis.

(b) Open the gang condenser all the way.

(c) Set the generator to 1725 kilocycles.

(d) Adjust the trimmer condensers on the gang until the 1725 kc. signal is heard. The gang does not have to tune through this signal.

(e) Set the generator to 1400 kc.

(f) Tune the set to the 1400 kc. signal, then alternately adjust the trimmers on the gang until no further improvement can be noticed on the output meter.

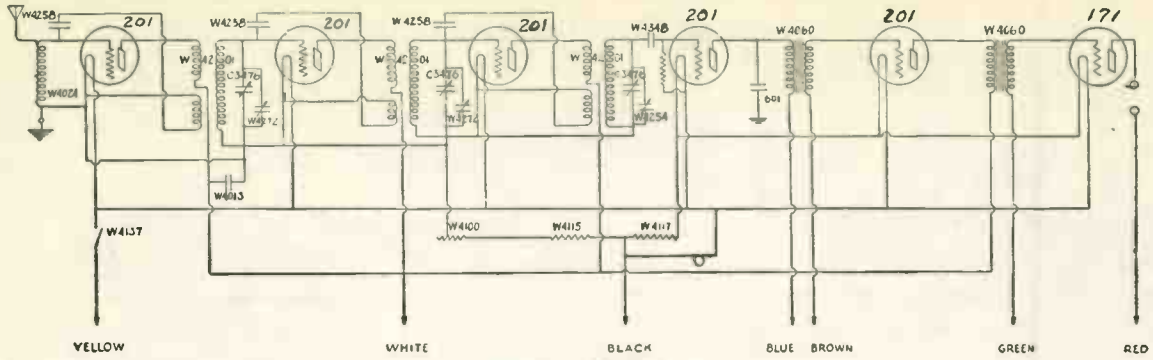
**NOTE:** Always use the lowest signal generator output that will give a reasonable indication on the output meter.

Keep the two grid leads as far as possible from each other.

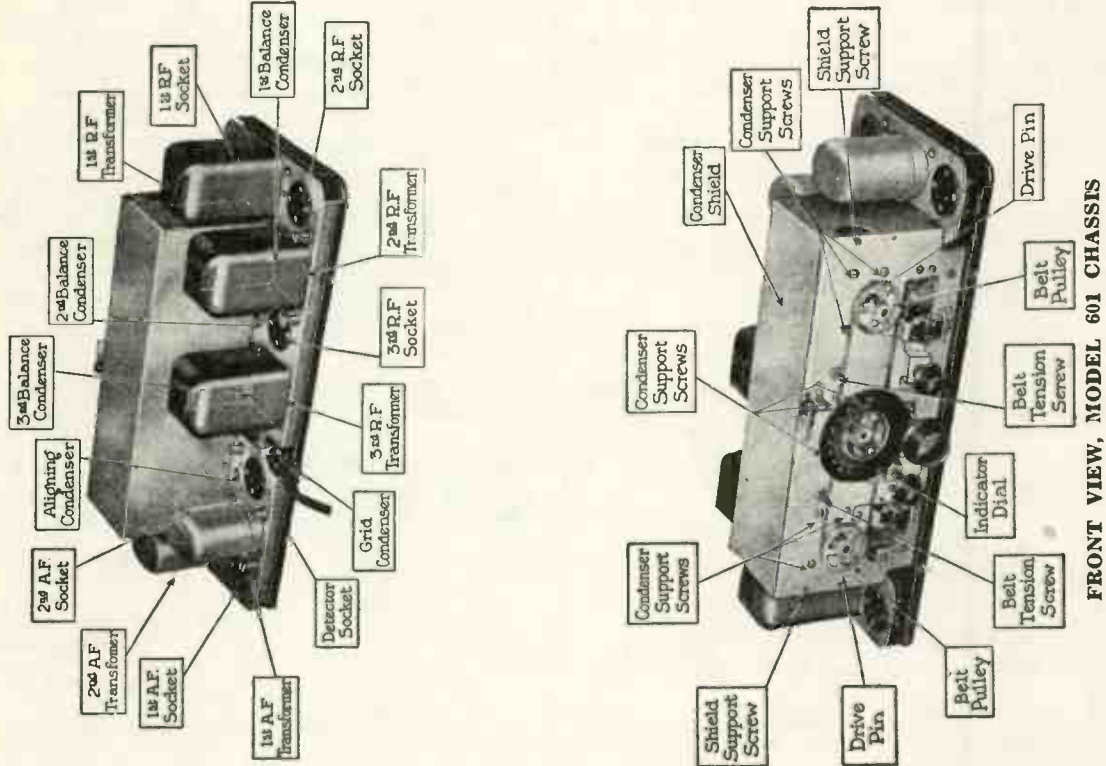
Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1	B —45784	Power Cable and Plug	18	W —45965	Resistor, 110 Ohms ½W. Flex.
	G199—32000	Antenna Coil	19	284BL3"K"	Speaker, Spec. No. 41-W-5
3	G109—32001	R. F. Coil		B —128	No. 6—32 x ¼" Bind. Hd. Mach. Screw (Speaker)
4	G3 —34002	Condenser, .0005 Mf. Molded		—48345	Voice Coil and Cone Assembly
5	W —45780B	Condenser, .02 Mf. 160 V. Paper		—48355	Field Coil, 450 Ohms
6A } 6B }	G78 —33001	2 Sect. Gang Condenser { Ant. Sect. R. F. Sect.		—48365	Output Transformer
	G17 —43564	Pulley and Hub Assembly		—48366	Cardboard Ring
	MG9—47825	Dial Back Assembly		W —46729A	8 Prong Socket (No Marking)
	W —23877	Set Screw (Pulley and Hub Assembly)	20A } 20B }	—48320	Volume Control, 40,000 Ohms
	G18 —41582	Drive Cord (27 Inches Long)		W —46662	Power Switch
	—47559A	Drive Shaft		W —46416	¾" Pal Nut (Volume Control)
	W —47557A	Drive Shaft Bracket		W —47833	Ballast Tube
	—6876	No. 6—32 x ¼" W. H. Mach. Screw (Drive Shaft Bracket)		W —46921	Dial Glass
	W —46087	Drive Spring		9EA	Speed Nut (2 Req.) (Dial Glass)
	W —46290	Drive Cord Clamp		9EB	Cabinet, Mottled Brown
	G26 —41582	Guide Cord (8 Inches Long)		9EC	Cabinet, Ivory
	W —46848	Guide Cord Spring		9EBA	Cabinet, Red
	W —47582	Dial Pointer		9EAA	Cabinet, Tan
	B —128	No. 6—32 x ¼" Bind. Hd. Mach. Screw (Dial Back) (2 Req.)		—47598A	Cabinet, Blue
	N —5062	No. 6—32 Hex. Nut (Dial Back) (1 Req.)		—47600A	9EA Cabinet Back
	—2118	No. 6 Int. Shkp. Washer (Dial Back) (1 Req.)		—47572	9EB, 9EC, 9EBA, 9EAA Cabinet Back Carton
7	W —45782B	Condenser, .05 Mf. 120 V. Paper		B —130	No. 6—32 x ¾" Oval Hd. Screw (2 Req.) (Cabinet Back)
8	G3 —50640	Condenser Capacity Coupling (Twisted Wire)		G172—34403	Antenna Lead
				—46880	Resistance Cable (For 220 V. Operation)
9	W —50105	Condenser, .1 Mf. 160 V. Paper		—47608	Knob, 9E (2 Req.)
10	W —45780B	Condenser, .02 Mf. 160 V. Paper		—44934	Knob, 9EB, 9EC, 9EBA, 9EAA (2 Req.)
11	W —46398	Condenser, 16.-16. Mf. 125 V. Elect.		—47842	Instructions
12	W —45780B	Condenser, .02 Mf. 160 V. Paper			
13	W —50065	Condenser, .03 Mf. 160 V. Paper			
14	—24990	Resistor, 25,000 Ohms ½W. Carb.			
15	—37583	Resistor, 2½ Megohms ¼W. Carb.			
16	—23785	Resistor, 500,000 Ohms ¼W. Carb.			
17	—23785	Resistor, 500,000 Ohms ¼W. Carb.			



# MODELS 601, 602



CIRCUIT OF MODEL 601



FRONT VIEW, MODEL 601 CHASSIS

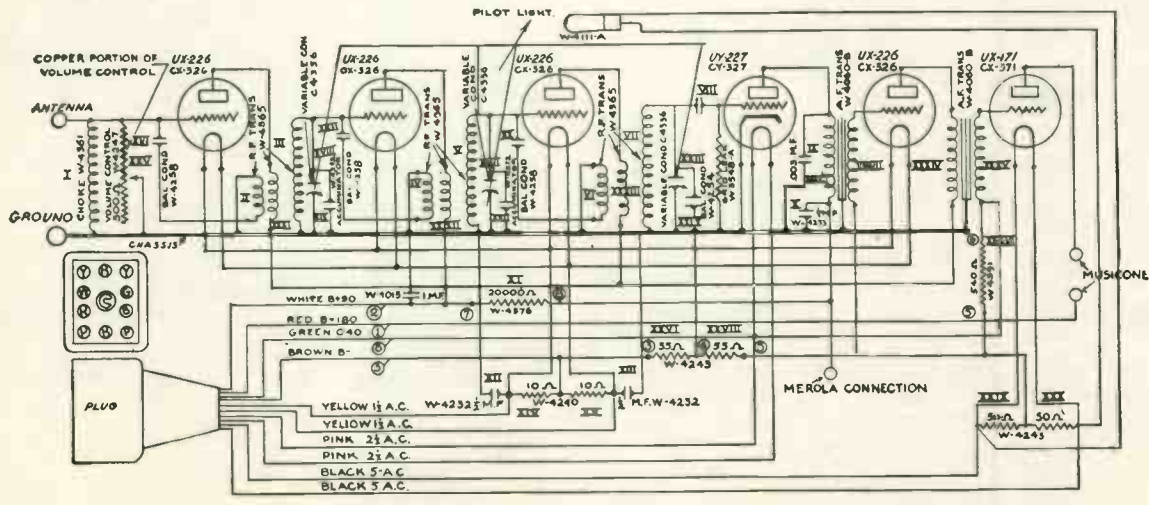


FIG 1 602 CIRCUIT

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	55	-5	—	—
1A6	Osc.-Mod.	2.0	135	55	-5	135	-5 to -10
34	I-F Amplifier	2.0	135	55	-5	—	—
1B5	Diode Detector and A-F Amplifier	2.0	75	—	-5	—	—
30	A-F Amplifier	2.0	135	—	-3.0	—	—
19	Double Tri. Output	2.0	135	—	-1.0	—	—

CONNECTING OUTPUT METER

Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control and the sensitivity control knobs to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output.

(f) Adjust the "R-F" trimmer condenser, No. 14Z, Fig. 2, for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

(i) Repeat operations (f) and (g) for more accurate adjustments.

(j) Turn the band selector switch to the left (High Frequency Band).

(k) Set the signal generator to 3500 kilocycles.

(l) Adjust the station selector to 3.5 on the dial.

(m) Adjust the "R-F" trimmer condenser, No. 14Y, Fig. 2, for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G76—32000	Ant. Coil only		—37158	Dial Glass
	W —30802A	Coil Shield	16	C —37106B	Battery Cable
	W —30026A	Retaining Ring	17	W —31008	Speaker Cable
2	G48—32004	1st I. F. Assm.	18	— 5370A	Resistor, 20,000 Ohm 1 W.
3	G69—32004	2nd I. F. Assm.	19	—21453	Resistor, 40,000 Ohm ¼ W.
4	G47—32002	Osc. Coil only	20	—21237A	Resistor, 60,000 Ohm ¼ W.
	W —25025B	Coil Shield	21A	—23403	Resistor, 150,000 Ohm ¼ W.
	W —25200	Coil Socket	21B	—23403	Resistor, 150,000 Ohm ¼ W.
	W —26891	Insulator Ring	22A	—23785	Resistor, 500,000 Ohm ¼ W.
	W —21541C	Retaining Ring	22B	—23785	Resistor, 500,000 Ohm ¼ W.
5	G53—32001	R. F. Coil only	23	—21454	Resistor 1. Megohm ¼ W.
	W —30802A	Coil Shield	24	—26577	Resistor, 3. Megohm ¼ W.
	W —30026A	Retaining Ring	25	W —21452	Resistor, 1100. Ohm Flex ¾ W.
6A	G2 —34002	Condenser, 0.0001 Mfd.	26	G9 —28807	Socket, 30
6B	G2 —34002	Condenser, 0.0001 Mfd.	27A	G31—28807	Socket, 34
7Z	W —26152A	Condenser, 0.0001 Mfd.	27B	G31—28807	Socket, 34
7Y		Condenser, 0.00015 Mfd.	28	G55—28807	Socket, 1A6
8Z	W —31158	Condenser, 0.006 Mfd. 400 V.	29	G91—28807	Socket, 1B5
8Y		Condenser, 0.006 Mfd. 400 V.	30	G44—28807	Socket, 19
9A	W —30323	Condenser, 0.01 Mfd. 200 V.		W —26973B	Shield Base (1)
9B	W —30323	Condenser, 0.01 Mfd. 200 V.		W —26974B	Tube Shield (1)
10	W —28621	Condenser, 0.02 Mfd. 200 V.	31	—42MS4	Speaker, Console Model
11A	W —24049B	Condenser, 0.1 Mfd. 200 V.		—32MS4	Speaker, Table & Conolette
11B	W —24049B	Condenser, 0.1 Mfd. 200 V.	32Z		Band Change Switch
12	W —29910A	Condenser, 0.25 Mfd. 200 V.	32Y	—37108A	
13	W —30321A	Condenser, 1.0 Mfd. 160 V.	32X		
14Z	G22—33009	Condenser, B. C. Trimmer R. F.	33Z		
14Y		Condenser, H. F. Trimmer R. F.	33Y	W —37109A	Sensitivity Control
15Z			34	G1 —26719	On-Off Switch
15Y	G42—33002	3 Section Tuning Cond. Gang	35	G26—24628	Ant. Gnd. Terminal
15X			36	—37110A	Audio Transformer
	—36148B	Dial Drive Assm.	37	G3 —23300	Volume Control
	W —36160D	Dial Drive Mtg. Bracket		B —35917	Resistor, 372 Ohm (Air Cell)
	B —36151A	Dial Face		D —28	Escutcheon
	—37156	Pointer		W —37339	Escutcheon Screw (3)
	—37157	Pointer Screw		W —37339	Knob (Large) (2)
				W —37341	Knob (Small) (2)

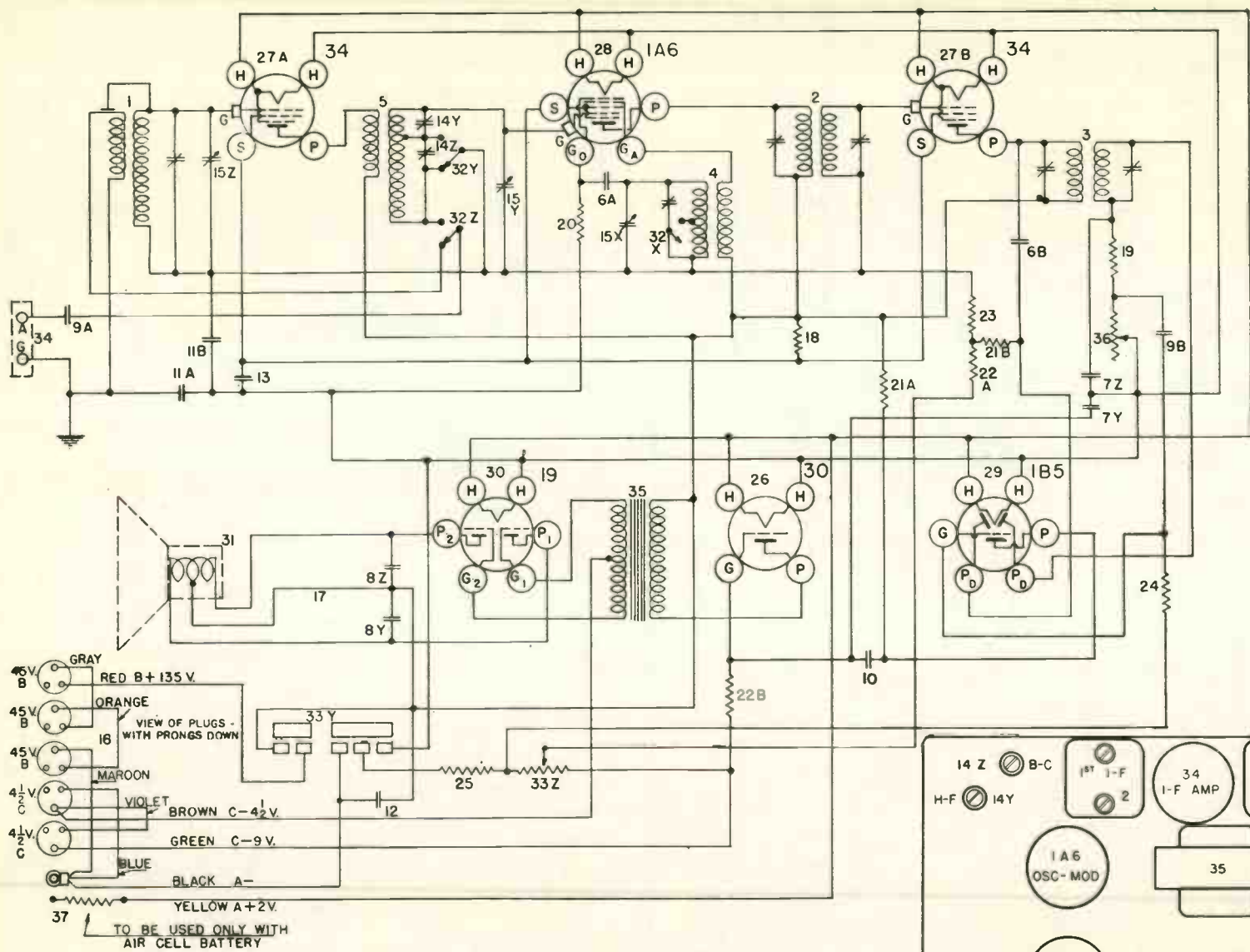


FIG. 1—WIRING DIAGRAM—MODEL 605

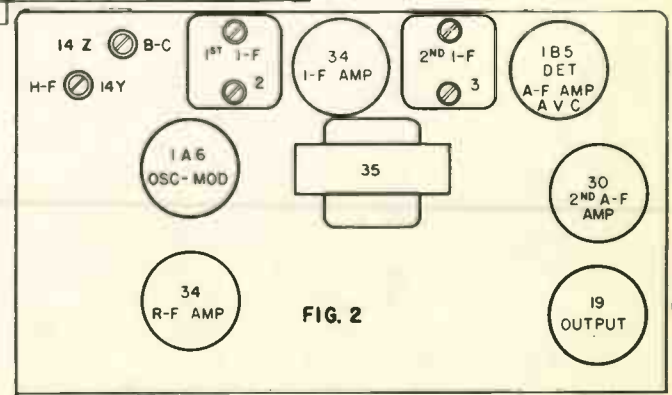


FIG. 2



## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6A7	Osc.Mod.	6.5	95	45	—	0	3.0	-5	80
6D6	1st I. F.	6.5	95	95	3.5	0	3.5	—	—
6D6	2nd I. F.	6.5	95	95	3.5	0	3.5	—	—
6B7	Det. & A. F.	6.5	25	20	—	—	1.5	—	—
43	Output	26.0	90	95	—	-20	0	—	—
25Z5	Rectifier	26.0	117.5 A. C.						

**Connecting Output Meter.**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 output tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filaments and the screen prong will be next to the plate prong. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Peaking I. F. Stages at 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**

(b) Turn the tuning condenser rotor plates until they are completely meshed.

(c) Turn the band selector switch to the short wave band (extreme left hand position).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmer for the 3rd I. F. transformer (Item No. 27, Fig 2) for maximum output.

(f) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output.

(g) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

**2. Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)**

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.

(b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.

(c) Turn the band selector switch to the broadcast band (extreme right hand position).

(d) Set the signal generator at 1720 kilocycles.

(e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output. (Fig. 2).

(f) Set the signal generator at 1400 kilocycles.

(g) Tune-in the 1400 kilocycles signal with the station selector.

(h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.

(i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

(j) Set the signal generator to 600 kilocycles.

(k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

(l) Adjust the oscillator series trimmer, (Fig. 2) while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.

**3. Peaking R. F. Circuits—Police Band (1650 to 4750 K. C.)**

(a) Turn the band selector switch to the police band (middle position).

(b) Set the signal generator to 4000 kilocycles. (4.0 megacycles).

(c) Turn the station selector to 4 on the police band.

(d) Adjust the oscillator parallel trimmer (P. Band) for maximum output.

(e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

**4. Peaking R. F. Circuits—Short Wave Band (5.3 to 15 Meg.)**

(a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.

(b) Turn the band selector switch to the short wave band (left hand position).

(c) Set the signal generator to 15 megacycles.

(d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.

(e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.

(f) Turn the station selector to 15 on the dial (S-W Band).

(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.

NOTE: Check on the adjustment of the S-W Band oscillator parallel trimmer as follows:

1. Increase the signal generator output not more than ten times.

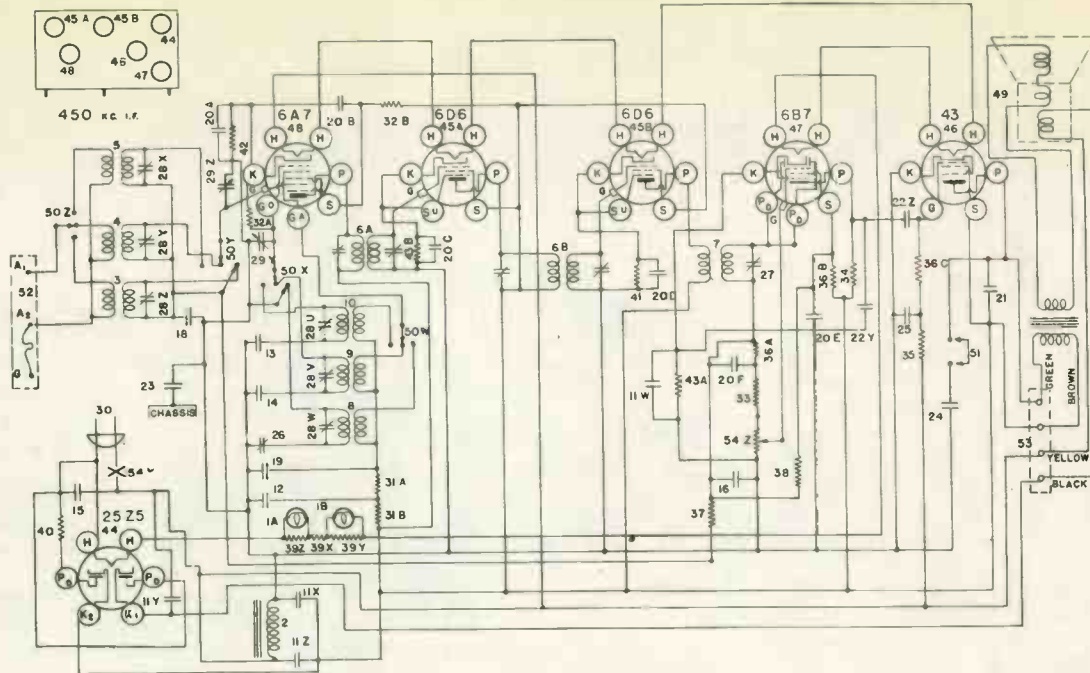
2. Try to tune-in the 15 megacycles signal with the station selector at approximately 14 on the dial.

3. If the 15 megacycle signal can be heard at approximately 14 and 15 both on the dial the oscillator parallel trimmer has been aligned on the correct frequency. It should be noted, however, that the signal tuned in at 15 on the dial should be much stronger than the signal heard at 14. If this condition is not found it will be necessary to repeat operation (g).

(h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.

(i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then retune the station selector for maximum output.

(j) Repeat the two operations in (i) as many times as necessary to obtain the maximum output.



Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4-27134	Dial Light Socket	30	B-33906A	Cable & Plug (Power Supply)
1B	G4-27134	Dial Light Socket	31A	-31094	Resistor, 4.500 Ohms
2	G3-28859	Choke, 8 Henry	31B	-31094	Resistor, 4.500 Ohms
3	G39-32000	Ant. Coil B C Band	32A	-21453	Resistor, 40,000 Ohms
4	G43-32000	Ant. Coil P Band	32B	-21453	Resistor, 40,000 Ohms
5	G56-32000	Ant. Coil S W Band	33	-21237A	Resistor, 40,000 Ohms
6A	G43-34004	1st I. F. Trans.	34	-23403	Resistor, 150,000 Ohms
6B	G44-34004	2nd I. F. Trans.	35	-21455	Resistor, 300,000 Ohms
7	G13-32004	3rd I. F. Trans.	36A	-23785	Resistor, 500,000 Ohms
8	G34-32002	Osc. Coil B C Band	36B	-23785	Resistor, 500,000 Ohms
9	G35-32002	Osc. Coil P Band	36C	-23785	Resistor, 500,000 Ohms
10	G32-32002	Osc. Coil S W Band	37	-21454	Resistor, 1 Megohm
11Z		Condenser, 25 Mfd. 125 Volt	38	-33490	Resistor, 10 Megohm
11Y	W-31992	Condenser, 8 Mfd. 125 Volt	39Z		Resistor, 26.7 Ohms
11X		Condenser, 16 Mfd. 100 Volt	39Y	W-35979	Resistor, 26.7 Ohms
11W		Condenser, 13 Mfd. 25 Volt	39X		Resistor, 80 Ohms
12	W-35980	Condenser, 5 Mfd. 75 Volt	40	W-24537	Resistor, 60 Ohms
13	G12-34000	Condenser, 0.004725 Mfd.	41	W-28589	Resistor, 350 Ohms
14	G7-34000	Condenser, 0.00145 Mfd.	42	W-22514	Resistor, 750 Ohms
15	W-30805	Condenser, 0.01 Mfd. 400 Volt	43A	W-27503	Resistor, 1400 Ohms
16	G2-34002	Condenser, 0.0001 Mfd.	43B	W-27503	Resistor, 1400 Ohms
17			44	G51-28807	Socket 25Z5
18	W-32379	Condenser, 0.02 Mfd. 200 Volt	45A	G75-28807	Socket 6D6
19	W-32378	Condenser, 0.01 Mfd. 400 Volt	45B	G75-28807	Socket 6D6
20A	W-28621	Condenser, 0.02 Mfd. 200 Volt	46	G30-28807	Socket 43
20B	W-28621	Condenser, 0.02 Mfd. 200 Volt	47	G48-28807	Socket 6B7
20C	W-28621	Condenser, 0.02 Mfd. 200 Volt	48	G47-28807	Socket 6A7
20D	W-28621	Condenser, 0.02 Mfd. 200 Volt	W-35772		Tube Shield Half
20E	W-28621	Condenser, 0.02 Mfd. 200 Volt	W-35773		Tube Shield Cap
20F	W-28621	Condenser, 0.02 Mfd. 200 Volt	W-35774		Tube Shield Base
21	W-30323	Condenser, 0.01 Mfd. 200 Volt	49	314 BL	Speaker, (Table Model)
22Z	W-30322A	Condenser, 0.006 Mfd. 200 Volt	414 CL		Speaker, (Console Model)
23	W-24048B	Condenser, 0.00017 Mfd. 200 Volt	50Z		Band Change Switch
24	W-36072	Condenser, 0.035 Mfd. 200 Volt	To	B-35935	
25	W-29910A	Condenser, 0.25 Mfd. 200 Volt	50W		
26	G10-33005	Trimmer Condenser	51	W-35937	Tone Control Switch
27	G11-33005	Trimmer Condenser	52	G27-26719	Ant. Gnd. Terminal Board
28Z			53	G5-31128	Speaker Terminal Board
28Y	W-35951	3 Gang Trim. Cond. 3-25 Mmf.	54Z	36052	Volume Control, 500,000 Ohms
28X			54Y		On-Off Switch
28W			W-34628		Speaker Terminal Board Cover
28V	W-35951	3 Gang Trim. Cond. 3-25 Mmf.	W-34627		Speak Term. Bd. Cov. Insulator
28U			W-37340		Knob (Pointer Notch)
28T			W-37339		Knob
28S			W-33528C		Escutcheon
28R	G13-33001	2 Gang Var. Tuning Condenser	W-33984		Escutcheon Gasket
28Q	G29-32088	Dial Drive Assembly	D-28		Escutcheon Screws
28P	W-37198	Dial Hand	W-36312		Band Change Plate
28O	W-32293	Dial Hand Nut	W-36309		Band Ch. Indicator (Celluloid)
28N	C-35946	Dial Indicator	W-28760B		Escutcheon Pins

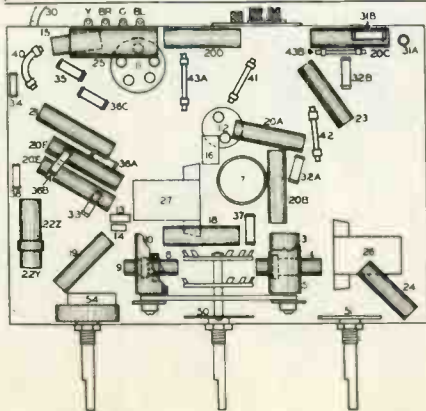


Fig. 3—Bottom View 615

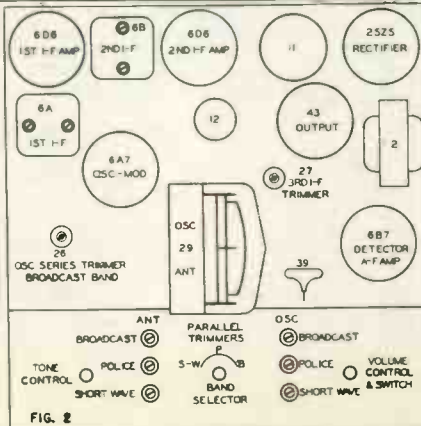


FIG. 2

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Go	Ga
6A8-G	Osc.-Modulator	6.3	240	—	95	—	0	4.5	-5 to -30	115
6K7-G	I-F Amplifier	6.3	240	—	95	4.5	0	4.5	—	—
6H6-G	Diode Detector	6.3	0	—	—	—	0	—	—	—
6F5-G	A-F Amplifier	6.3	150	—	—	—	0	1.5	—	—
6N6-G	Output	6.3	220	240	—	—	0	0	—	—
5Z4-MG	Rectifier	4.9	310	—	—	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

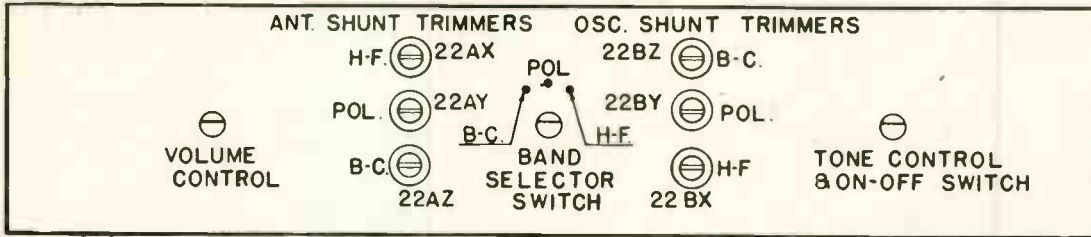
(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

Aligning R-F Amplifier.

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

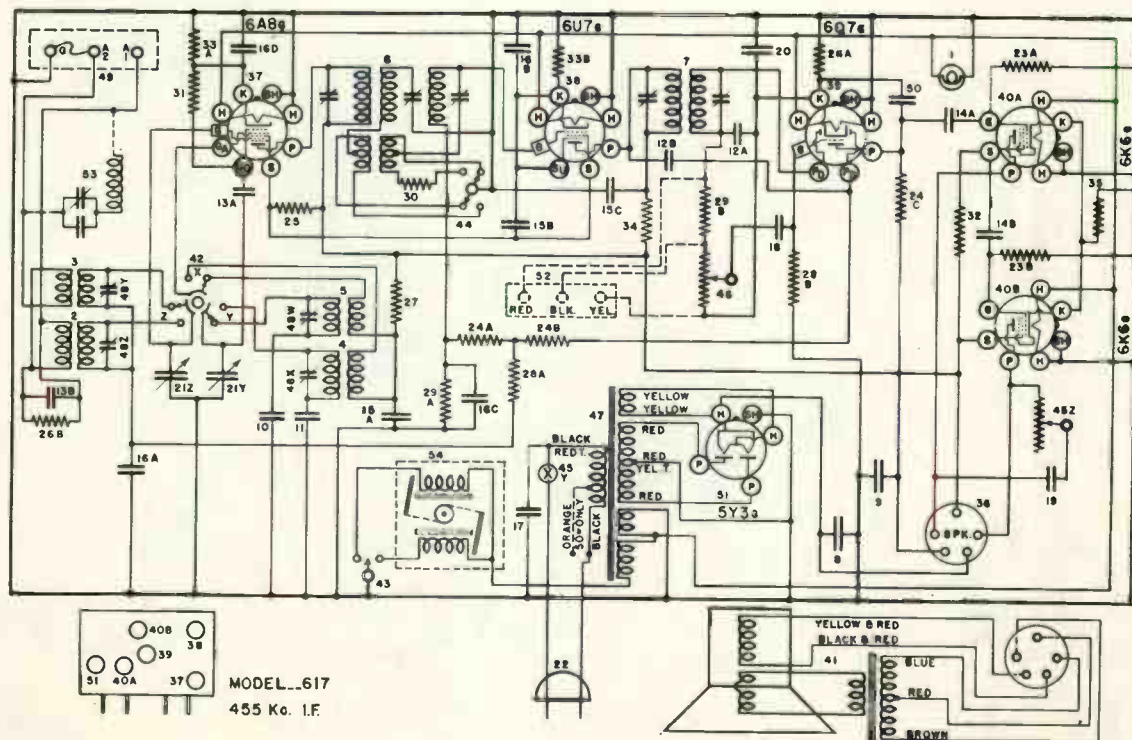
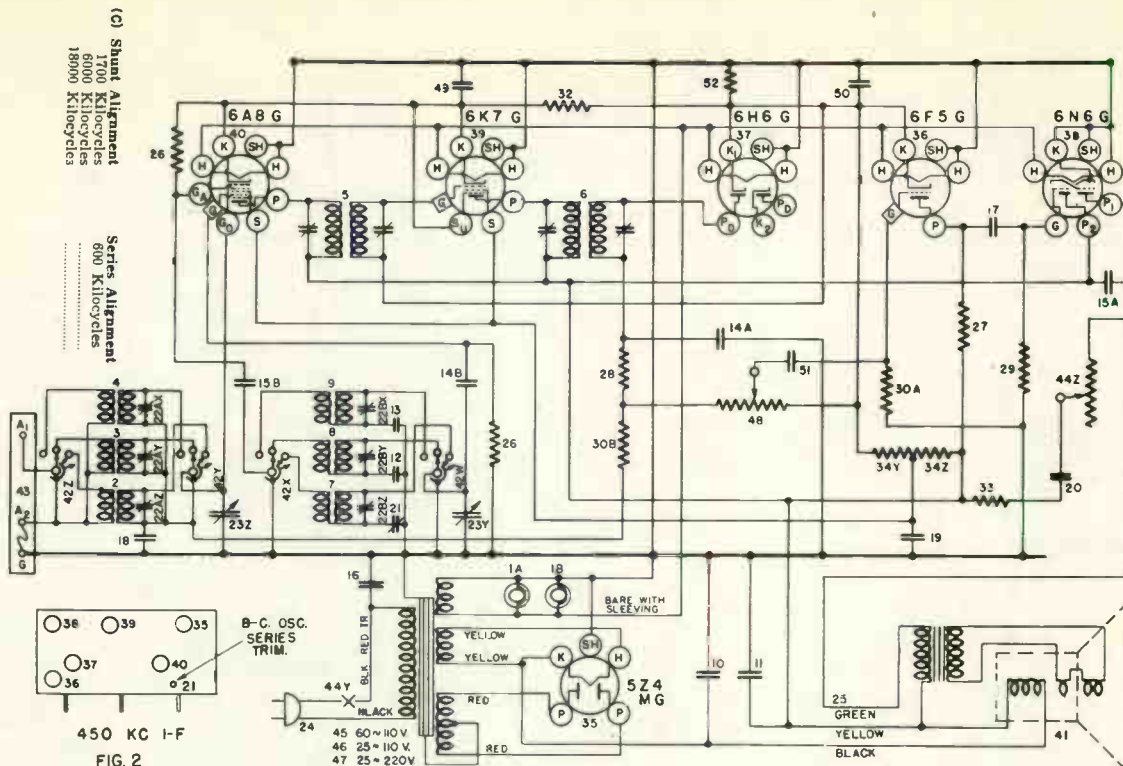
(a) Adjust the "Osc" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the ad-

(b) To align the series trimmer (Item 21, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output.



Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1A	W -37922	Bulb Dial Light	28	-21455	Resistor 300,000 Ohm, 1/4 W.
1B	W -37922	Bulb Dial Light	29	-23785	Resistor 500,000 Ohm, 1/4 W.
	G3 -37965	Dial Light Socket Assembly	30A	-36688	Resistor 3 Megohm 1/4 W.
2	G104 -32000	Ant. Coil B. C. B.	30B	-36688	Resistor 3 Megohm 1/4 W.
3	G103 -32000	Ant. Coil Pol. B.	31	-36952	Resistor 30,000 Ohm, 1 W.
4	G105 -32000	Ant. Coil H. F. B.	32	W -21964	Resistor 165 Ohm, 3/4 W.
5	G99 -32004	1st I-F Assembly	33	W -27503	Resistor 1400 Ohm, 3/4 W.
6	G100 -32004	2nd I-F Assembly	34Z	W -32301	Candohm { 10,000 Ohm 15,000 Ohm
7	G91 -32002	Osc. Coil B. C. B.	34Y		
8	G92 -32002	Osc. Coil Pol. B.			
9	G93 -32002	Osc. Coil H. F. B.	35	G166 -36400	Socket 5Z4
10	W -36055	Condenser 35 Mfd. 400 V.	36	G158 -36400	Socket 6F5
11	W -36057	Condenser 40 Mfd. 300 V.	37	G155 -36400	Socket 6H6
12	G7 -34007	Condenser 1750Mmfd. Pol. Osc. Series	38	G165 -36400	Socket 6N6
13	G8 -34007	Condenser 4350Mmfd. H.-F. Osc. Series	39	G151 -36400	Socket 6K7
14A	G2 -34002	Condenser 0.0001 Mfd.	40	G156 -36400	Socket 6A8
14B	G2 -34002	Condenser 0.0001 Mfd.	W	-40911	Tube Shield
15A	W -35139	Condenser 0.004 Mfd. 400 V.	W	-27981A	Tube Shield Base
15B	W -35139	Condenser 0.004 Mfd. 400 V.			
16	W -30805	Condenser 0.01 Mfd. 400 V.	41	-40971	Speaker Spec. 332-BJ-3
17	W -30488	Condenser 0.02 Mfd. 400 V.			
18	W -35936	Condenser 0.05 Mfd. 200 V.	42Z		
19	W -24049B	Condenser 0.1 Mfd. 200 V.	to		
20	W -22688	Condenser 0.1 Mfd. 400 V.	42W		
21	-40769	Condenser B-C Osc. Series Trimmer	43		
22AZ			44W		
to	W -35951	3 Section Ant. Shunt Trimmers	43	G27 -26719	Ant & Grd. Terminal Board
22AX			44Z		Tone Control (100,000 Ohm)
22BZ			44Y		On-Off Switch
to	W -35951	3 Section Osc. Shunt Trimmers	45	G12 -28500	Power Transformer 60 Cy. 110 V.
22BX			46	G13 -28500	Power Transformer 25 Cy. 110 V.
23Z	G21 -33001	2 Section Var. Tuning Cond. Gang.	47	G14 -28500	Power Transformer 25 Cy. 220 V.
23Y	MG27 -40762	Dial Drive Assembly	48	-37967	Volume Control (1 Meg.)
	C -40930	Dial Glass	49	W -29910A	Condenser 0.25 Mfd. 200 V.
	W -40804	Dial Glass Cushion	50	W -28621	Condenser 0.02 Mfd. 200 V.
24	B -33906A	Power Cord & Plug	51	W -35758	Condenser 0.008 Mfd. 400 V.
25	G3 -35696	Speaker Cable	52	W -25357	Resistor 75 Ohms, 3/4 W.
26	-40757	Resistor 50,000 Ohm, 1/4 W.	B	-40839	Escutcheon Ring
27	-35930	Resistor 200,000 Ohm, 1/4 W.	W	-28760A	Escutcheon Pin
			W	-37339	Knob (3)
			W	-40192B	Knob (1)
			W	-36117	Rubber Mtg. Foot





TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det, AVC & AF Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18.	—	—
5Y3G	Rectifier	5.0	—	—	280	—	—

Tuning The I-F Amplifier To 455 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the Broadcast Band.
- (d) Turn the Local-Distance switch to the "Distance" position.
- (e) Set the signal generator to 455 kilocycles.
- (f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**
- (g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer.

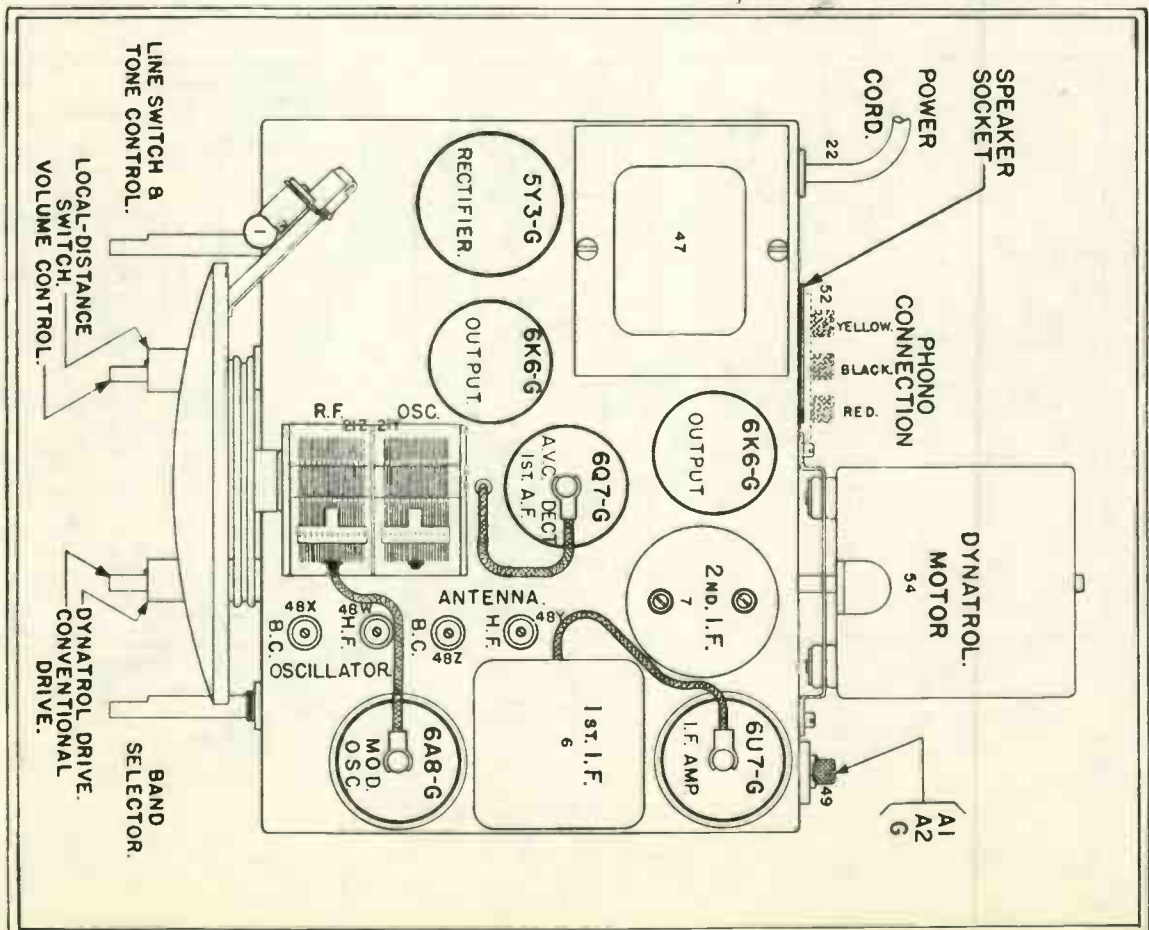


Fig. 2 Top View Model 617

## MODEL 617

### DYNATROL MOTOR

Should either vibrator unit of the Dynatrol motor need readjustment, the following procedure should be followed:

(a) Loosen the adjusting nut until the drive shaft can be rotated freely between the thumb and forefinger. The gap between the armature and "E" laminations should be approximately 3/16".

(b) With the motor running, tighten the adjusting nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an unstable condition will be reached wherein a slight change may result in a locked motor.

(c) Check the time required for the dial pointer to travel from each end of the dial to the other. The adjusting screws should be set so that approximately eight seconds are required in each direction.

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	W —43567	Dial Light Bulb	29B	—33474	Resistor 120,000 Ohm 1/3 W. Carb.
	G6 —44363	D. L. Socket Assy.	30	—42401B	Resistor 99 Ohm 1/4 W. Ins.
2	G148 —32000	Ant. Coil B-C.	31	—21237A	Resistor 60,000 Ohm 1/3 W. Carb.
3	G142 —32000	Ant. Coil H-F.	32	—44009	Resistor 3,000 Ohm 1/4 W. Ins.
4	G145 —32002	Osc. Coil B-C.	33A	W —25937	Resistor 275 Ohm 1/2 W. Flex.
5	G144 —32002	Osc. Coil H-F.	33B	W —25937	Resistor 275 Ohm 1/2 W. Flex.
6	G161 —32004	1st I-F Trans. 455 Kc.	34	W —23013	Resistor 2,000 Ohm 1/4 W. Flex.
7	G166 —32004	2nd I-F Trans. 455 Kc.	35	W —21965	Resistor 375 Ohm 1 W. Flex.
8	W —44438A	Condenser 40 Mf. 300 V.	36	G103 —28807	Socket Speaker
9	W —44012	Condenser 16 Mf. 250 V.	37	G156 —36400	Socket Type 6A8
10	G16 —34000	Condenser 3800 Mmf. H-F. Osc. Series	38	G171 —36400	Socket Type 6U7
11	G14 —34002	Condenser 400 Mmf. B-C. Osc. Series	39	G160 —36400	Socket Type 6Q7
12A	G2 —34002	Condenser .0001 Mf. Molded	40A	G172 —36400	Socket Type 6K6
12B	G2 —34002	Condenser .0001 Mf. Molded	40B	G172 —36400	Socket Type 6K6
13A	G13 —34002	Condenser .000035 Mf. Molded		W —40911	Tube Shield
13B	G13 —34002	Condenser .000035 Mf. Molded	41	—465BP15"M	Speaker M'fg. Spec. 1-D-1197
14A	W —23142	Condenser .02 Mf. 400 V.		—45186	V. C. & Cone Assy.
14B	W —23142	Condenser .02 Mf. 400 V.		—45187	Field Coil (750 Ohm)
15A	W —28621	Condenser .02 Mf. 200 V.		—45188	Output Transformer
15B	W —28621	Condenser .02 Mf. 200 V.		—44681	Spk. Plug
15C	W —28621	Condenser .02 Mf. 200 V.	42	—44955	Band Selector Switch
16A	W —36541	Condenser .02 Mf. 160 V.	43	G2 —44476	Dynatrol Switch
16B	W —36541	Condenser .02 Mf. 160 V.		G5 —44470	Toggle Arm (Dynatrol Sw.)
16C	W —36541	Condenser .02 Mf. 160 V.	44	—44796	Local-Distance Switch
16D	W —36541	Condenser .02 Mf. 160 V.		G4 —44470	Toggle Arm & Clamp Assem.
17	W —30805	Condenser .01 Mf. 400 V.	45	—44024B	Tone Control & Line Switch
18	W —30323	Condenser .01 Mf. 200 V.	46	—44467	Volume Control (1 Meg.)
19	W —23615	Condenser .05 Mf. 400 V.	47	—44695	Power Trans. 110 V. 60 Cy.
20	W —34712	Condenser .25 Mf. 160 V.		—44697	Power Trans. 110 V. 50 Cy.
21	G42 —33001	2 Section Var. Tuning Cond.		—44696	Power Trans. 110 V. 25 Cy.
	W —44790	Dial Face (Glass)		—44698	Power Trans. 220 V. 50 Cy.
	W —44035B	Dial Mask		—44694	Power Trans. 220 V. 25 Cy.
	W —44299	Dial Hand (Pointer)	48	W —41247A	4 Sect. Shunt Trimmer Assy.
	W —40486	Pointer Mtg. Screw	49	G27 —26719	Ant.-Gnd. Terminal Assy.
	C —44687A	Support—Dial Glass	50	G3 —34002	Condenser .0005 Mf. Molded
	W —44084A	Ring—Glass Support	51	G173 —36400	Socket Type 5Y3
	—41582	Drive Cord	52	G39 —26719	Phono. Terminal Assy.
	W —43561	Tension Spring	53	G170 —32004	Wave Trap Assy.
	G1 —43564	Pulley & Hub Assy.	54	G3 —44416	Dynatrol Motor
	MG19 —44575	Shaft & Coupling Assy.		W —45218	Vibrator Drive Unit (Left or Right)
	W —44479A	Bracket—Drive Shaft		W —44317A	Pulley (Dyn. Motor)
	W —44480A	Sleeve, Drive Shaft		W —43622	Felt Washer
	W —44004	Line Cord & Plug		W —44382	Friction Spring (Shaft)
22	B —44004	Line Cord & Plug		W —44319	Toggle Hook (Belt)
23A	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		—7593	Tubing 3/8" (For Hook)
23B	—23785	Resistor 500,000 Ohm 1/3 W. Carb.		W —44701C	Grommet (Tension)
24A	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —24074	Adjusting Nut
24B	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44384A	Rubber Pad (Rebound)
24C	—33344C	Resistor 400,000 Ohm 1/3 W. Carb.		W —44745	Clamp Plate (Belt)
25	—24990	Resistor 25,000 Ohm 1/3 W. Carb.		W —43552	Clamp Spk. Plug
26A	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		—7N	Cabinet
26B	—24814	Resistor 7,000 Ohm 1/3 W. Carb.		W —44685A	Call Letter Clip
27	—21876	Resistor 10,000 Ohm 1/3 W. Carb.		W —44866	Call Letter Magn. Lens
28A	—26577	Resistor 3 Megohm 1/3 W. Carb.		—45264	Call Letter List
28B	—26577	Resistor 3 Megohm 1/3 W. Carb.		W —44431	Knob Local-Distance
29A	—33474	Resistor 120,000 Ohm 1/3 W. Carb.		—44387B	Knob Dynatrol Motor
				—44386	Knob Sta. Select.-Vol. Cont.
				W —44432	Knob Band Select.—T. C. & Line Switch
				B —44869A	Escutcheon
				C —44972A	Cabinet Back
				—44819	Grille Cloth

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det, AVC & AF Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18.	—	—
5W4	Rectifier	5.0	—	—	295	—	—

**Tuning I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh.
- (c) Turn the band selector switch to the Broadcast Band.
- (d) Turn the Local-Distance switch to the "Distance" position.
- (e) Set the signal generator to 455 kilocycles.
- (f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.
- (g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.
- (h) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.
- (i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

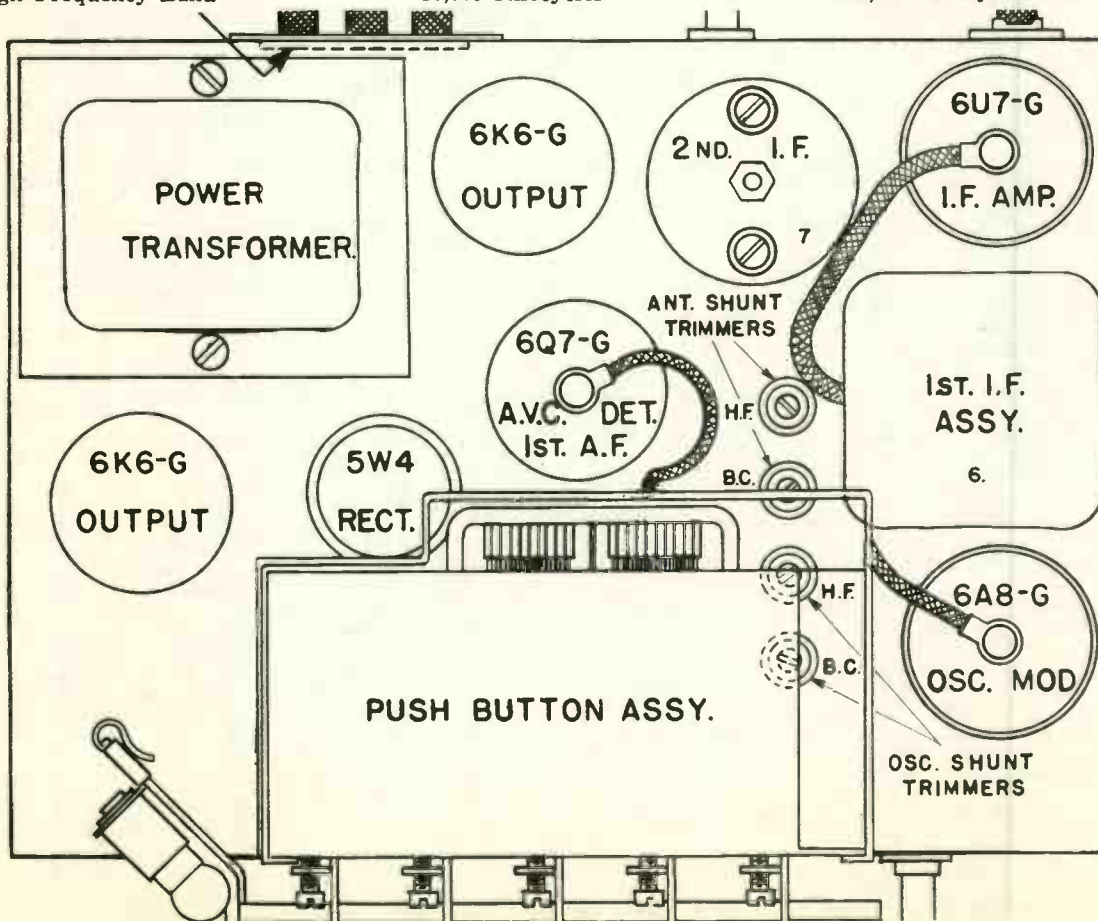
When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

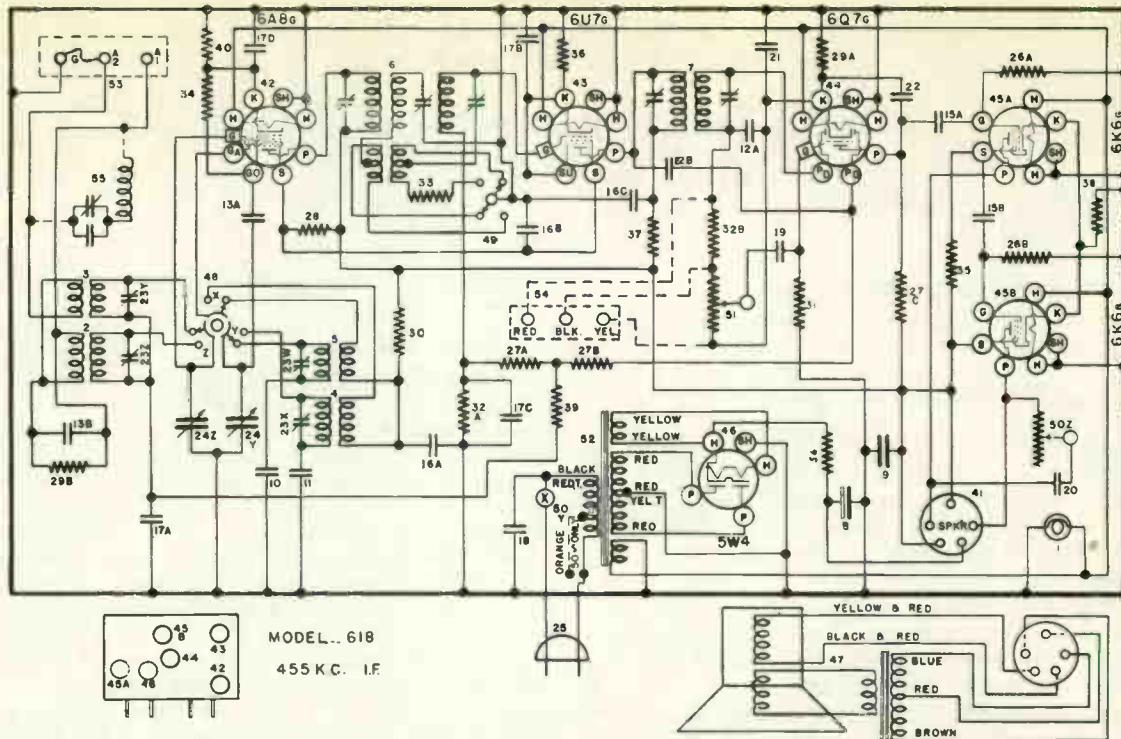
(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band	Minimum Capacity Signal	Shunt Alignment Signal
High Frequency Band	1,725 Kilocycles	1,400 Kilocycles
	18,300 Kilocycles	18,000 Kilocycles



MODEL 618



MODEL 618  
455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -43567	Dial Light Bulb	33	-42401B	Resistor, 99 Ohm 1/4 W. Ins.
2	G2 -45398	D. L. Socket Assy.	34	-21237A	Resistor, 60,000 Ohm 1/4 W. Carb.
3	G148 -32000	Ant. Coil, H-F.	35	-44009	Resistor, 3,000 Ohm 1/4 W. Ins.
4	G145 -32002	Osc. Coil, B-C.	36	W -25037	Resistor, 275 Ohm 1/4 W. Flex.
5	G144 -32002	Osc. Coil, H-F.	37	W -29013	Resistor, 2,000 Ohm 1/4 W. Flex.
6	G161 -32004	1st I-F. Ass'y.—455 Kc.	38	W -21965	Resistor, 375 Ohm 1/4 W. Flex.
7	G166 -32004	2nd I-F. Ass'y.—455 Kc.	39	-21451	Resistor, 1 Megohm 1/4 W. Carb.
8	W -44438A	Condenser, 40 Mf. 300 V.	40	W -28106	Resistor, 500 Ohm 1/4 W. Flex.
9	W -44012	Condenser, 16 Mf. 250 V.	41	G103 -28807	Socket Speaker
10	G16 -34002	Condenser, 3,800 Mmf. H-F. Osc. Series	42	G156 -36400	Socket, Type 6A8
11	G14 -34002	Condenser, 400 Mmf. B-C. Osc. Series	43	G171 -36400	Socket, Type 6U7
12A	G2 -34002	Condenser, .0001 Mf. Molded	44	G160 -36400	Socket, Type 6Q7
12B	G2 -34002	Condenser, .0001 Mf. Molded	45A1B	G172 -36400	Socket, Type 6R6
13A	G13 -34002	Condenser, .000035 Mf. Molded	46	G187 -36400	Socket, Type 5W4
13B	G13 -34002	Condenser, .000035 Mf. Molded	47	W -40911	Tube Shield
14	None	None		465BP15"MM"	Speaker, 3/4 In. Spec. 1-D-1197
15A	W -23142	Condenser, .02 Mf. 400 V. Tub.		-45186	Cone and V. C. Assy.
15B	W -23142	Condenser, .02 Mf. 400 V. Tub.		-45187	Field Coil (750 Ohm, 75 M. A.)
16A	W -28621	Condenser, .02 Mf. 200 V. Tub.		-45188	Output Transformer
16B	W -28621	Condenser, .02 Mf. 200 V. Tub.	48	-44681	Speaker Plug
16C	W -28621	Condenser, .02 Mf. 200 V. Tub.	49	-44955	Band Selector Switch
17A	W -36541	Condenser, .02 Mf. 160 V. Tub.		-44796	Local-Distance Switch
17B	W -36541	Condenser, .02 Mf. 160 V. Tub.	50	MG17 -44573	Arm, Sleeve and Clamp Assy.
17C	W -36541	Condenser, .02 Mf. 160 V. Tub.		-44024B	Tone Control and Switch
17D	W -36541	Condenser, .02 Mf. 160 V. Tub.	51	-44467	Volume Control (1 Meg.)
18	W -30805	Condenser, .01 Mf. 400 V. Tub.	52	-44625	Power Trans., 60 Cy.-110 V.
19	W -30323	Condenser, .01 Mf. 200 V. Tub.		-44697	Power Trans., 50 Cy.-110 V.
20	W -23615	Condenser, .05 Mf. 400 V. Tub.		-44698	Power Trans., 50 Cy.-220 V.
21	W -34712	Condenser, .25 Mf. 160 V. Tub.		-44696	Power Trans., 25 Cy.-110 V.
22	C3 -34002	Condenser, .0005 Mf. Molded		-44694	Power Trans., 25 Cy.-220 V.
23W		H-F. Osc. Trimmer	53	G17 -26719	Ant. and Gnd. Terminal Assy.
23X		B-C. Osc. Trimmer (Temp. Compensated)	54	G29 -26719	Phone Terminal Assy.
23Y	W -45715	H-F. Ant. Trimmer	55	G170 -32004	Wave Trap (455 Kc.)
23Z		B-C Ant. Trimmer	56	W -45798	Resistor, 75 Ohm 1/4 W. Flex.
24	G12 -33001	2 Section Gang Cond.			
	B -45670	Dial Face (Glass)			
	W -44085B	Dial Mask (Metal Disc)			
	W -44084A	Ring (Cardboard Support)			
	W -45688	Bracket (Dial Mounting)			
	W -45690	Right Angle (Bracket Mtg.)			
	W -44299	Dial Hand (Pointer)			
	W -40486	Screw—Dial Hand Mtg.			
	W -2045	Int. Shakeproof Washer (Pointer)			
	W -45641	Pointer Shaft			
	W -50325A	Retaining Ring (Pointer Shaft)			
	G10 -43564	Pulley and Hub Assy. (Pointer Shaft)			
	G11 -43564	Pulley, Gear and Hub Assy.			
	W -45632	Spring (Double Gear Takeup)			
	MG29 -45607	Brkt. and Pulley Assy. (Gang Mtg.)			
	W -44500A	Bearing Plate (Drive Shaft)			
	W -43542B	Mtg. Brkt. (Drive Shaft)			
	W -45686A	Drive Shaft			
	W -43549	Retaining Ring (Drive Shaft)			
	W -44701C	Grommet (On Drive Shaft)			
	W -41582	Drive Cord—35' Req.			
	W -50573A	Tension Spring (Drive Card)			
25	B -44004	Power Cord			
26A	-23785	Resistor, 500,000 Ohm 1/4 W. Carb.			
26B	-23785	Resistor, 500,000 Ohm 1/4 W. Carb.			
27A	-33344C	Resistor, 400,000 Ohm 1/4 W. Carb.			
27B	-33344C	Resistor, 400,000 Ohm 1/4 W. Carb.			
27C	-33344C	Resistor, 400,000 Ohm 1/4 W. Carb.			
28	-24990	Resistor, 25,000 Ohm 1/4 W. Carb.			
29A	-24814	Resistor, 7,000 Ohm 1/4 W. Carb.			
29B	-24814	Resistor, 7,000 Ohm 1/4 W. Carb.			
30	-21876	Resistor, 10,000 Ohm 1/4 W. Carb.			
31	-26577	Resistor, 3 Megohm 1/4 W. Carb.			
32A	-33474	Resistor, 10,000 Ohm 1/4 W. Carb.			
32B	-33474	Resistor, 10,000 Ohm 1/4 W. Carb.			

PUSH BUTTON PARTS

Part No.	Description
G2 -45683	Push Button Unit Assy.
G30 -45683	Key and Toggle Assy.
W -32642A	Key Clip (Lock Clamp)
W -45718	Screw (Lock Clamp)
W -50607	Return Spring
G31 -45683	Rocker Plate Assy.
W -50561	1/4" No. 40 Screw (Rear Plate Bearing)
W -50547	Rear Guide Plate
W -45646A	Adjust. Clip (Front—5 Req.)
W -45889A	Push Button
W -50551A	Celluloid Cover
B -44960	R. H. Mtg. Plate
B -44961	L. H. Mtg. Plate
7NA	Cabinet
W -41019	Extruded Rubber Spacer (Chassis Mtg.)
-41023	Headed Bushing (Chassis Mtg.)
W -41387B	Knob (Large—Tuning)
W -44431	Knob (Large—Loc. Dist.)
W -44386B	Knob (Small—Tuning and Vol. Cont.)
W -44432	Knob (Small—Tone Cont. and Band Sw.)
-44614	Bushing for 44387B Knob
B -44869A	Escutcheon
B -44626B	Push-Button Escutcheon
W -56549	Call Letter Sheet
W -45693	Bracket—P. B. Unit Support
W -28880A	Thumb Screw

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Go	Ga
6A8-G	Osc.-Modulator	6.3	265	—	100	—	0	5.0	0	140
6K7-G	I-F Amplifier	6.3	265	—	120	6.2	0	6.2	—	—
6J7-G	Det. & A-F Amplifier	6.3	0	—	75	2.6	0	2.6	—	—
6C5-G	2nd. A-F Amplifier	6.3	140	—	—	—	0	10.0	—	—
6N6-G	Output	6.3	270	255	—	—	0	2.3	—	—
5Z4-MG	Rectifier	4.9	350	—	—	—	—	—	—	—

**Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output (Fig. 2).

(e) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place.

(f) Close the middle trimmer (Tert. Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw).

(g) Adjust the top trimmer on the 1st. I-F transformer for maximum output.

(h) Adjust the bottom trimmer on the 1st I-F transformer for maximum output.

(i) Transfer the signal generator output lead from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom trimmer of the 1st I-F transformer. **DO NOT READJUST THE TOP TRIMMER.**

(k) Adjust the middle trimmer of the 1st I-F transformer by opening condenser until maximum output is

obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers.

(b) To align the series trimmers (29Y-29Z Fig. 4) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	2500 Kilocycles
18000 Kilocycles	.....

**SHUNT TRIMMERS**

	Ant.	Osc.	
High-Frequency	27A	27B	High-Frequency
Police	28Z	28X	Police
Broadcast	28Y	28W	Broadcast

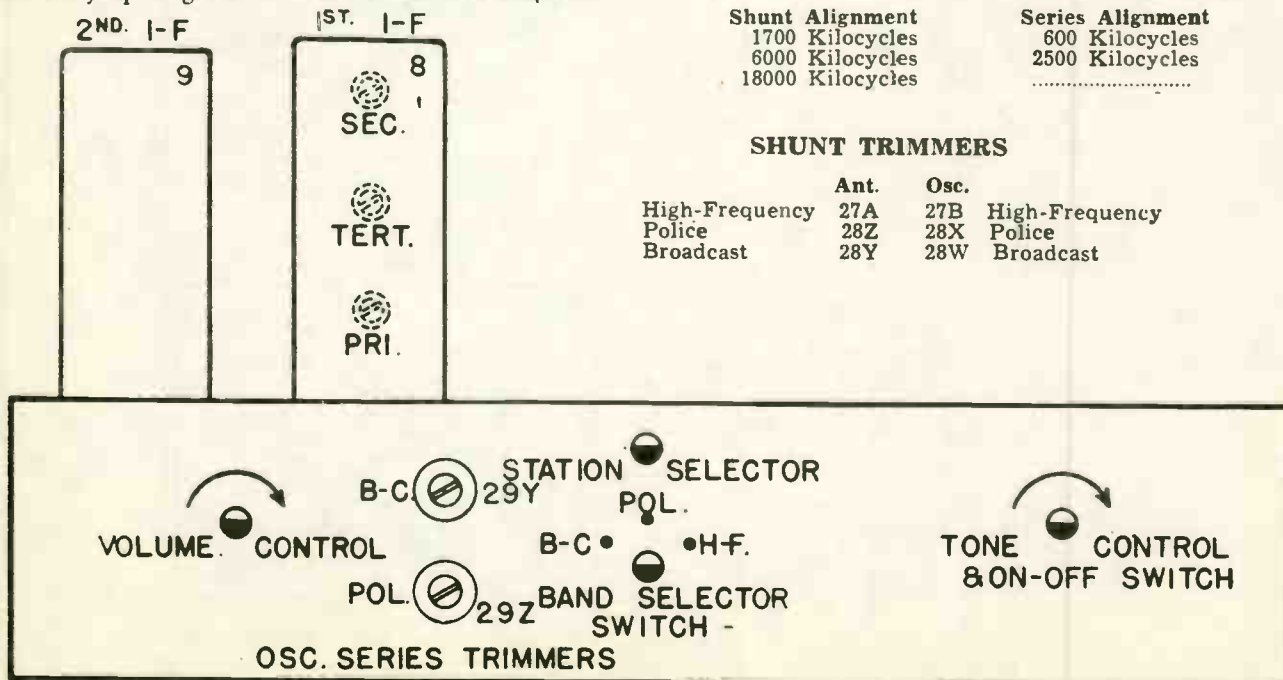
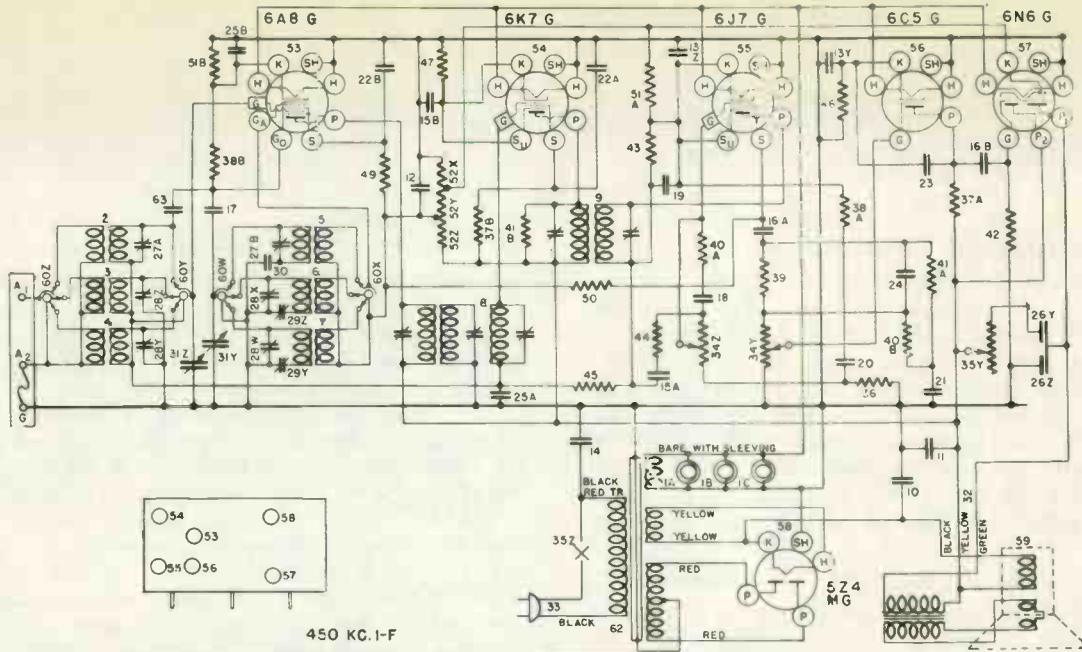


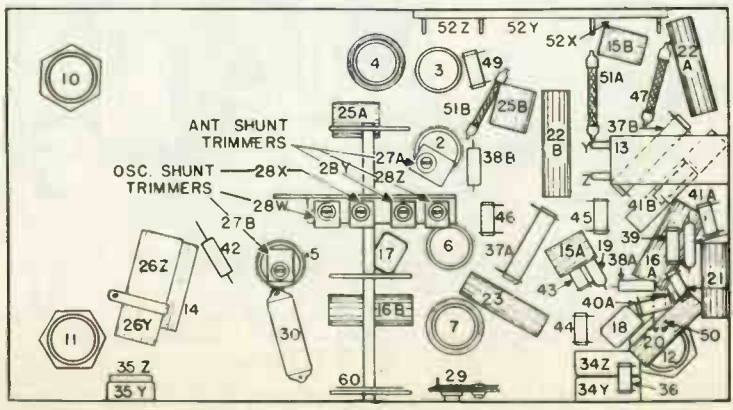
Fig. 4 • Front View 626

MODEL 626



Figures in first column refer to parts in Diagram.

Item	Part No.	Description	Item	Part No.	Description
1A	W 37922	Bulb, Dial Light	38A	30751	Resistor, 10,000 Ohm, 1/2 W., Insul
1B	W 37922	Bulb, Dial Light	38B	30751	Resistor, 10,000 Ohm, 1/2 W., Insul
1C	W 37922	Bulb, Indicator Light	39	31451	Resistor, 1 Megohm, 1/2 W.
2	G92 33000	Coil, Ant. 6000-18000 Kc.	10A	34033	Resistor, 250,000 Ohm, 1/2 W.
3	G90 33000	Coil, Ant. 1800-6000 Kc.	10B	34033	Resistor, 250,000 Ohm, 1/2 W.
4	G91 33000	Coil, Ant. 540-1800 Kc.	11A	32560	Resistor, 750,000 Ohm, 1/2 W.
5	G84 32002	Coil, Osc. 6000-18000 Kc.	11B	32560	Resistor, 750,000 Ohm, 1/2 W.
5	G83 32002	Coil, Osc. 1800-6000 Kc.	12	36322	Resistor, 500,000 Ohm, 1/2 W.
7	G82 32002	Coil, Osc. 540-1800 Kc.	13	32341	Resistor, 400,000 Ohm, 1/2 W.
8	G101 32000	Coil, 1st I-F Assm.	14	32303	Resistor, 150,000 Ohm, 1/2 W.
9	G102 32000	Coil, 2nd I-F Assm.	15	37213	Resistor, 1.5 Megohm, 1/2 W.
10	W 30055	Condenser, 35 mfd., 400 V.	16	21875	Resistor, 10,000 Ohm, 1/2 W.
11	W 30057	Condenser, 10 mfd., 300 V.	17	22514	Resistor, 750 Ohm, 1/2 W., Flex.
12	W 40327	Condenser, 50 mfd., 150 V.	19	2231	Resistor, 15,000 Ohm, 1/2 W.
13Z	W 37778	Condenser, 12 mfd., 25 V.	20	21875	Resistor, 100,000 Ohm, 1/2 W.
14	W 30805	Condenser, 12 mfd., 25 V.	51A	29106	Resistor, 500 Ohm, 1/2 W., Flex.
15A	W 30541	Condenser, 01 mfd., 400 V.	51B	29106	Resistor, 500 Ohm, 1/2 W., Flex.
15B	W 30541	Condenser, 02 mfd., 160 V.	52Z	37829A	Resistor, 10,000 Ohm
16A	W 32780B	Condenser, 05 mfd., 100 V.	52Y	37829A	Resistor, 25,000 Ohm
16B	W 32780B	Condenser, 05 mfd., 100 V.	52X	37829A	Resistor, 50 Ohm
17	G1 34002	Condenser, 00025 mfd., (molded)	53	G156 33400	Socket 6A8
18	G6 34002	Condenser, 00025 mfd., (molded)	54	G151 33400	Socket 6K7
19	G22 34002	Condenser, 0001 mfd., (molded)	55	G157 33400	Socket 6J7
20	W 30323	Condenser, 01 mfd., 200 V.	56	G152 33400	Socket 6C5
21	W 37908	Condenser, 017 mfd., 200 V.	57	G165 33400	Socket 6N6
22A	W 23142	Condenser, 02 mfd., 400 V.	58	G154 33400	Socket 5Z4
22B	W 27540	Condenser, 02 mfd., 400 V.	59	35016	Speaker, Spac. 3/2 C J 3
23	G5 34002	Condenser, 00004 mfd., (molded)	60	323061	Switch, 2 Sec. Band Selector
24	W 35836	Condenser, 05 mfd., 200 V.	61	G27 25719	Terminal Board, Ant. & Grid.
25A	W 35836	Condenser, 05 mfd., 200 V.	62	G15 28500	Transformer, Power 110-02 Cy.
25B	W 35836	Condenser, 05 mfd., 200 V.	G16	28500	Transformer, Power 110-25 Cy.
26Z	W 3102	Condenser, 001 mfd., 400 V.	G17	28500	Transformer, Power 220-25 Cy.
26Y	W 37954	Condenser, 05 mfd., 400 V.	W 27941A	Base, Tube Shield	
27A	W 37954	Condenser, 11-F Ant. Shunt Trim.	W 49534	Belt Drive	
27B	W 37954	Condenser, 11-F Ant. Shunt Trim.	W 22334	Cable, Indicator Control	
28Z	W 37954	Condenser, 10L Ant. Shunt Trim.	49537	Coupling, Flexible Drive	
28Y	W 37954	Condenser, 10L Ant. Shunt Trim.	MC30	40905	Dial Assembly, Complete
28X	W 37822A	Condenser, 11-C Ant. Shunt Trim.	C	37894	Escutcheon, Cabinet
29Z	W 37954	Condenser, 10L Osc. Shunt Trim.	C	40929	Face, Glass Dial
29Y	W 37954	Condenser, 10L Osc. Shunt Trim.	W 43365	Gasket, Escutcheon Felt	
30	G31 30006	Condenser, 11-C Osc. Series Trim.	W 40185	Hand, Long	
31Z	G17 34000	Condenser, 11-C Osc. Series Trim.	W 41145	Hand, Short	
31Y	G19 39001	Condenser, 0053 mfd., 11-F Osc.	W 37339	Knob, 3 required	
32	G4 35806	Cable, Speaker	W 49192B	Knob, 1 required	
33	B 33906A	Cable & Plug, Power Supply	W 37808	Lens, Dial	
34Z	W 37907	Vof Cont., 1st A-F Control, 7 Meg.	W 37909	Pulley, Indicator Cable	
34Y	W 37907	Vof Cont., 2nd A-F Control, 7 Meg.	W 40911	Shield, Tube	
35Y	W 37908	Control, Tone	W 40570	Shield, Dial Light	
35Z	W 37908	Control, Tone	G3	37905	Socket, Indicator & Dial Light
36	W 21455	Resistor, 300,000 Ohm, 1/2 W.	B	37894A	Spring, Escutcheon Retaining
37A	W 5469A	Resistor, 100,000 Ohm, 1/2 W.	B	37897	Spring, Dial Lens Retaining
37B	W 5469A	Resistor, 100,000 Ohm, 1/2 W.	46715	Mask Dial	



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	175	80	—	—	175	—
6U7G	I-F Amplifier	6.3	175	80	—	—	—	—
6P5G	Detector—A. V. C.	6.3	—	—	—	—	—	—
6F5G	1st. A-F Amplifier	6.3	105	—	—	—	—	—
6K6G	Power Output	6.3	160	170	—	-14.5	—	—
2W3	Rectifier	2.2	—	—	230	—	—	—

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 4, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For both bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band  
Short-Wave Band

Minimum Capacity Signal  
1,725 Kilocycles  
7,000 Kilocycles

Shunt Alignment Signal  
1,400 Kilocycles  
6,000 Kilocycles

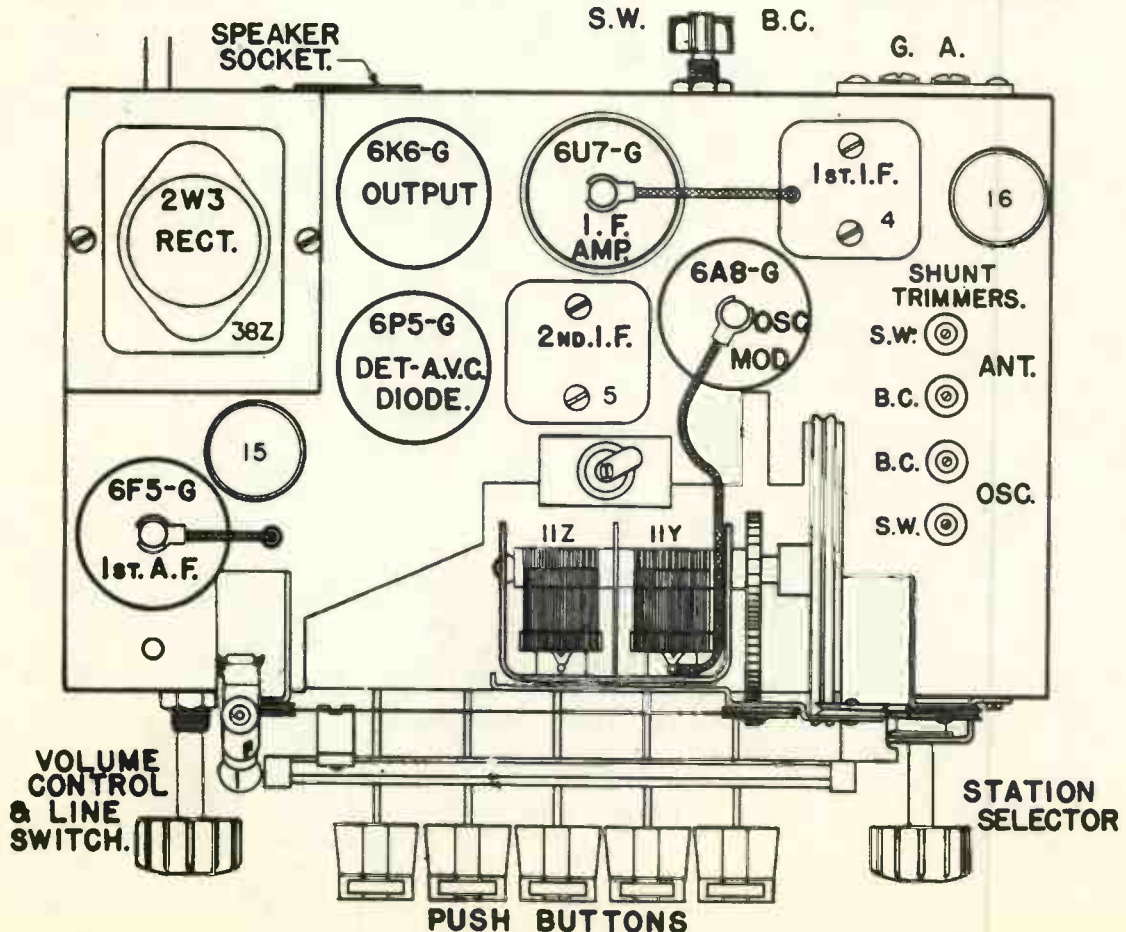
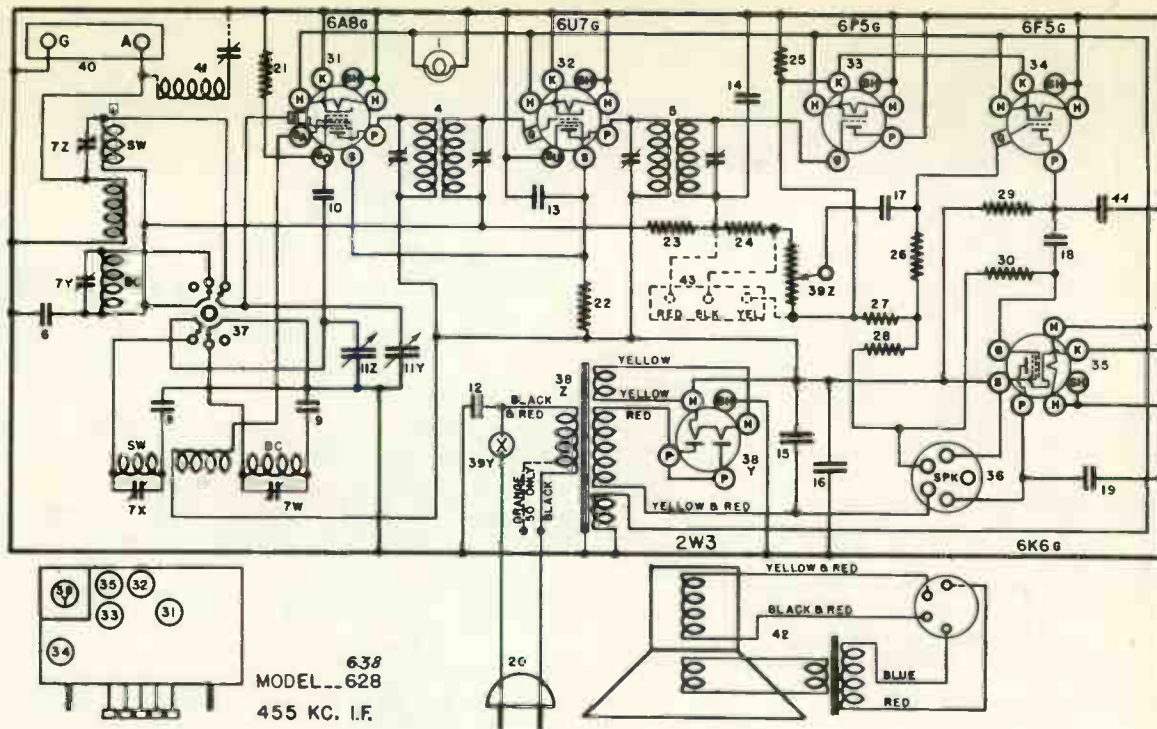


Fig. 2 Top View—Model 628—638—5628

MODELS 628, 638, 5638



MODEL 638  
455 KC. I.F.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light 6-8 Volt		-45940	Power Trans., 50 Cycle, 220 V.
	G12 -45398	Dial Light Socket	39Z	-45864	Vol. Cont., 1 Meg. (628-5628)
2	G174 -32000	Antenna Coil, B-C and S-W.	39Y		Line Switch
3	G175 -32002	Oscillator Coil, B-C and S-W.	39Z	-46314	Vol. Cont., 1 Meg. (638)
4	G185 -32004	1st I-F Assy., 455 Kc.	39Y		Line Switch
5	G188 -32004	2nd I-F Assy., 455 Kc.	40	G1 -26719	A.-G. Terminal Assy.
6	W -36541	Condenser, .02 Mf., 160 V.	41	G193 -32004	455 Kc. Wave Trap
7	W -41247A	4 Section Trimmer Assy.	42	279-BP-12"U"	Speaker
8	G13 -34005	Condenser, .0014 Mf., Molded	43	G41 -26719	Output Transformer
9	G18 -34002	Condenser, .0004 Mf., Molded	44	G7 -34002	Phono. Terminal Assy.
10	G5 -34002	Condenser, .00005 Mf., Molded		G3 -45683	Condenser, .0004 Mf., Molded
11	G55 -33001	2 Section Gang Condenser		G11 -45683	Push Button Unit (628-5628)
	C -45747	Glass Dial Face (628-638)		G32 -45683	Push Button Unit (638)
	W -46872	Glass Dial Face (5628)			Riveted Key & Toggle (628-5628)
	W -46397	Dial Hand (Pointer)		G26 -45683	Riveted Key & Toggle (638)
	B -45743B	Dial Support Bracket	W -50542C		Key Lock Clamp
	W -45904	L. H. Dial Mtg. Clip	W -45717		1 7/16 6x32 Lock Clamp Screw
	W -45985	R. H. Dial Mtg. Clip	W -50607B		Spring, Key Return
	W -46037A	Dial Lock Guide	G22 -45683		Rocker & Gear Segment Assy.
	W -45786C	Felt Strip	W -50561		1/2 6x40 Screw (Rocker Plate Bearing)
		Manual Drive Shaft (628-5628)	W -50588B		Adjusting Clip
	W -46056	Manual Drive Shaft (638)	-46242		Rubber Foot (628-5628)
	W -43542B	Mounting Bracket Drive Shaft			
	G12 -43564	Pulley & Hub Assy.			
	G2 -41682	Drive Cord			
	W -50607B	Cord Tension Spring			
	W -46290	Drive Cord Clamp			
12	W -30805	Condenser, .01 Mf., 400 V.	W -8AA		Cabinet (Brown)
13	W -28621	Condenser, .02 Mf., 200 V.	W -43552		Clamp, Speaker Plug
14	G1 -34002	Condenser, .00025 Mf., Molded	W -45937		Knob, Band Switch
15	W -44012	Condenser 16 Mf., 250 V., Elec.	-45771		Knob, V. C. & Tuning
16	W -45968	Condenser 16 Mf., 250 V., Elec.	-50841		Station Call List
17	W -28619	Condenser, .008 Mf., 200 V.	W -45553B		Push Button
18	W -28621	Condenser, .02 Mf., 200 V.	W -50551A		Celluloid Call Letter Cover
19	W -34647	Condenser, .008 Mf., 400 V.			
20	B -45769	Power Cord and Plug			
21	-36761	Resistor, 40,000 Ohm, 1/4 W.	-8G		Cabinet (Wood Has Inlays)
22	-33390	Resistor, 30,000 Ohm, 1/3 W.	-8K		Cabinet (Wood)
23	-26577	Resistor, 3 Megohm, 1/3 W.	-46399C		Escutcheon
24	-21875	Resistor 100,000 Ohm, 1/3 W.	D-30		Screws Escutcheon Mtg.
25	WAS-A	1/2 W. Resistor from 6P5 Cathode to Gnd. (Deleted)	-46407		Knob, Band Switch
26	60 Ohm	Resistor, 11 Megohm, 1/3 W.	-46408		Knob, V. C. & Tuning
27	WAS-A	1/2 W. Resistor from 6P5 Cathode to Junction of Items 26 and 28 (Deleted)	-50841		Station Call List
	40 Ohm	Resistor, 375 Ohm, 1 W (was 275 Ohm)	W -50551A		Celluloid Cover
28	W -21965	Resistor, 375 Ohm, 1 W (was 275 Ohm)	-46417		Push Button
29	-21455	Resistor, 300,000 Ohm, 1/3 W.			
30	-23785	Resistor, 500,000 Ohm, 1/3 W.			
31	G178 -36400	Socket, 8 Prong			
32	G178 -36400	Socket, 8 Prong	W -50551A		Call Letter Cover
33	G178 -36400	Socket, 8 Prong	-50617		Push Button
34	G178 -36400	Socket, 8 Prong			
35	G178 -36400	Socket, 8 Prong			
	W -40911	Tube Shield	-45910		Instructions (628)
36	G103 -28807	Socket, Speaker Plug	-46326		Instructions (638)
37	-45901	Band Switch	-46897		Instructions (5628)
38	-45903	Power Trans., 80 Cycle, 110 V.			
39	-45939	Power Trans., 50 Cycle, 110 V.			



## CHASSIS MODEL 629

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	G <sub>o</sub>
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

#### Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

#### Aligning R-F Amplifier.

When aligning the R. F. amplifier the output lead from the signal generator is connected to the antenna lead of the receiver, a 200 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

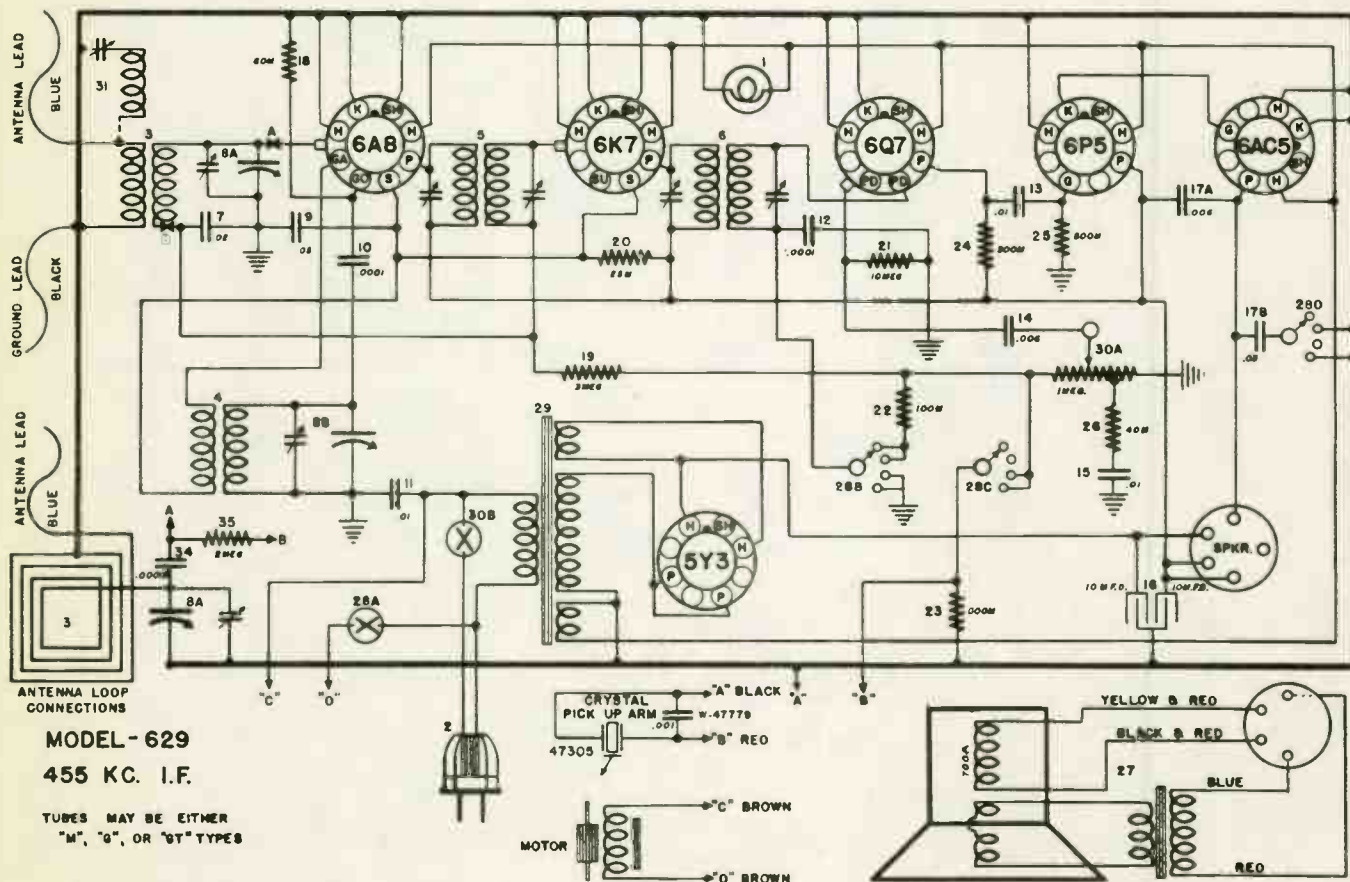
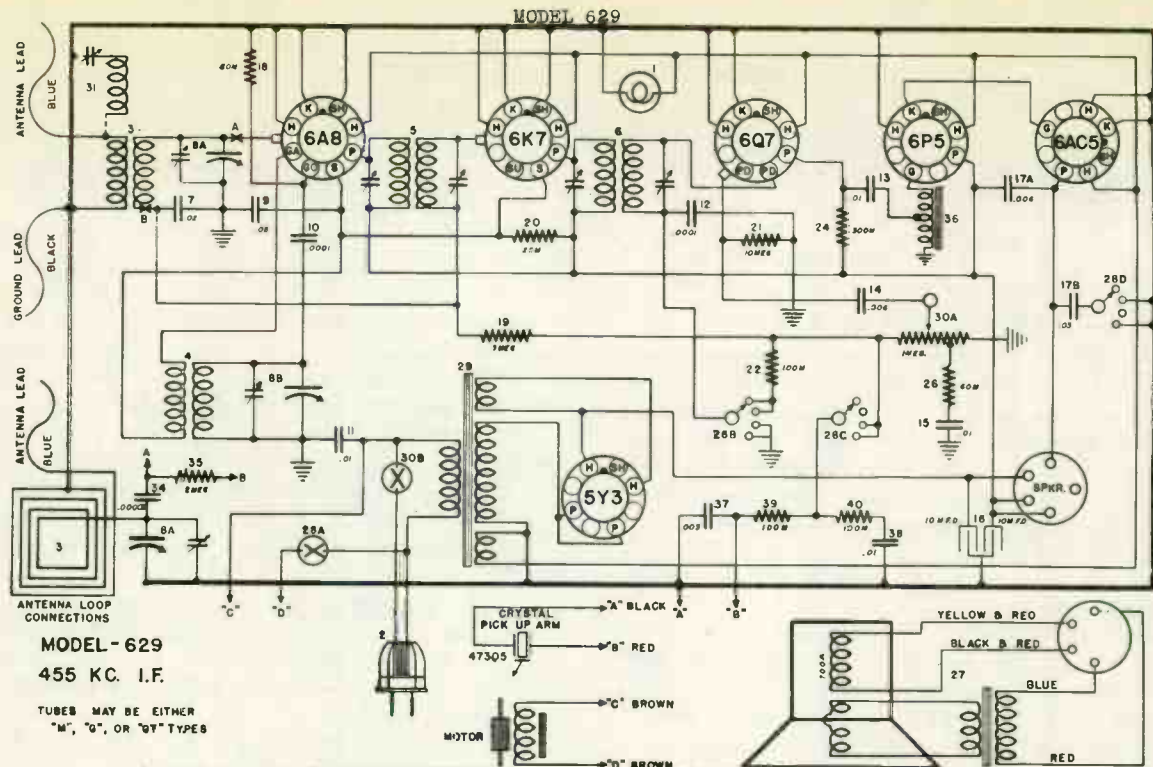


FIG. 1-A—WIRING DIAGRAM—MODEL 629—FIRST SERIES



ELECTRICAL PARTS	
1	W -37922 Dial Light, 6-8 Volt
	G13 -45398 Dial Light Socket Assy.
2	B -45769A Power Cord and Plug
3	G186 -32000 Antenna Coil
	CR -48821 Loop Antenna Assy.
	G6 -48821 Antenna Support Assy.
	-49060 Loop Support Block
4	G184 -32002 Oscillator Coil
	G290 -32004 1st I-F. Assy. (455 Kc.)
5	G188 -32004 2nd I-F. Assy. (455 Kc.)
6	W -28621 Condenser, .02 Mf. 200 V.
7	W -28621 2 Section Gang Condenser
8	G76 -33001 Condenser, .05 Mf. 200 V.
9	W -27216 Condenser, .0001 Mf. Molded
10	G2 -34002 Condenser, .01 Mf. 400 V.
11	W -30805 Condenser, .0001 Mf. Molded
12	G2 -34002 Condenser, .01 Mf. 400 V.
13	W -23191A Condenser, .006 Mf. 160 V.
14	W -34713 Condenser, .01 Mf. 400 V.
15	W -23191A Condenser, .01 Mf. 400 V.
16	W -47256 Condenser, 10-10 Mf. 400 V.
17A	W -35011 (Condenser, .006 Mf. 160 V.)
17B	(Condenser, .03 Mf. 160 V.)
18	-35828 Resistor, 60,000 Ohms 1/2W.
19	-36688 Resistor, 3 Megohms 1/2W.
20	-6706 Resistor, 25,000 Ohms 1W.
21	-33480 Resistor, 10 Megohms 1/2W.
22	-35600 Resistor, 100,000 Ohms 1/2W.
23	-36322 Resistor, 500,000 Ohms 1/2W.
24	-35601 Resistor, 300,000 Ohms 1/2W.
25	-36322 Resistor, 500,000 Ohms 1/2W.
26	-36761 Resistor, 40,000 Ohms 1/2W.
27	480-BP-15-"Z" Speaker, Mfg. Spec. No. ERL327
	480-BP-15-"M" Speaker, Mfg. Spec. No. 1-D-1549
	480-BP-15-"R" Speaker, Mfg. Spec. No. F-5759
	480-BP-15-"B" Speaker, Mfg. Spec. No. 80103
	462-CP-11-"M" Speaker, Mfg. Spec. No. 1-D-971
28	B -47745 Tone-Phono-Radio Switch
29	-47703 Power Trans., 110 V. 60 Cycle
	-48518 Power Trans., 110 V. 50-60 Cycle
	-48519 Power Trans., 220 V. 50-60 Cycle
	W -46019 Power Trans. Support Strip
30	W -47783A Vol. Cmt. (1 Meg.) and Line Switch
31	G193 -32004 455 Kc. Wave Trap (Not on Loop Modals)
32	None
33	None
34	G5 -34002 Condenser, .00005 Mf. Mica
35	-35927 Resistor, 2 Megohms 1/2W.
DIAL PARTS	
	-47807 Dial Glass (1725-540 Kc.)
D	-48976 Dial Glass (Loop 535-1620 Kc.)
W	-45875A Dial Glass Cushion (2)
C	-46661 Dial Glass Support Bracket
W	-46020 Dial Glass L. H. Mtg. Clip
W	-48187 Dial Glass R. H. Mtg. Clip
	-45890A Dial Hand (Pointer)
	-46035 Dial Hand Guide
W	-48381A Drive Shaft
W	-45878A Shaft Mtg. Bracket
G29	-41582 Drive Cord (40.5 Inches)
G12	-43564 Pulley and Hub Assy.
W	-46087 Spring—Drive Cord Tension
W	-48294 Pulley (Drive Shaft)
W	-47285 Washer (Drive Shaft)
W	-48382 Spring (Pulley Friction)
PUSH BUTTON TUNING PARTS	
G39	-45683 Push Button Unit
W	-50642E Lock Clamp
W	-50561 Rocker Plate Bearing Screw
W	-50567 Key Setting Screw
G57	-45683 Key and Toggle Assy.
G22	-45683 Rocker Plate and Gear Assy.
W	-50607C Spring—Key Return
	-46841A Push Button
W	-46065 Rubber Grommet (Brit. Front Mtg.)
	-44023 Headed Bushing (Brit. Front Mtg.)
W	-45580 Rubber Grommet (Brit. Rear Mtg.)
	-45620 Headed Bushing (Brit. Rear Mtg.)
	-47822 Station Call Letter Tab
W	-50551B Call Letter Cover (Celluloid)
RECEIVER MOUNTING PARTS	
W	-45764D Chassis Bottom Strap
C	-47758B Chassis Bottom Cover
B	-47706A R. H. Receiver Mtg. Bracket
B	-47707A L. H. Receiver Mtg. Bracket
W	-47728 Decorative Washer (Receiver Mtg.)
	-47761 Phillips Oval Hd. Screw (Receiver Mtg.)
	-46953 Knob (1) (Tuning)
	-47327 Knob (2) (V. C. and Phono-Radio Sw.)
MG31	-47771 Instruction Envelope Assy.
	-49135 Instruction Booklet
SPEAKER MOUNTING PARTS	
W	-47721 No. 8—32x1" Sw. Hd. Sokr. Mtg. Screw
N	-8 No. 8—32 Nut (Spkr. Mtg.)
	-2046 No. 8 Lockwasher (Spkr. Mtg.)
W	-47741 Speaker Plate
W	-47217 Grommet (Plate Mtg.) (3)
W	-46461 Headed Bushing (Plate Mtg.)
W	-47740A Speaker Dust Cloth
W	-47710 Plate Shock Pad
RECORD PLAYER PARTS	
	-47787 Phono Motor, 110 V. 60 Cy. (Alliance)
	-46172 Turntable—For 47787 Motor only
	-48415 Turntable Rubber Drive Pulley (47787 Motor only)
	-48455 Phono Motor—110 V. 50-60 Cycle (Webster) Assy.
	-49596 Phono Motor—110 V. 50-60 Cycle only (Webster)
	-49597 Phono Motor—220 V. 50-60 Cycle only (Webster)
	-49539 Turntable—For 49596 and 49597 only
	-49542 Turntable Rubber Drive Pulley (Webster)
	-49346 Stud and Link—Drive Pulley Mtg.
	-49543 Hair Pin Spr.—Drive Pulley Retainer
	-48458 Motor Shaft Pulley (60 Cy. Operation)
	-48459 Motor Shaft Pulley (50 Cy. Operation)
	-47755 Phono Mounting Plate
	-46065 Rubber Grommet—Mtg. Plate
	-46461 Headed Bushing—Mtg. Plate
	-37953 Flat Washer—Motor Mtg.
	-48364 Screw—Phono Plate Mtg.
	-48980 Pickup (Tone Arm)
	-47328 Shakeproof Washer—Pickup Mtg.
	-47329 Nut—1/4"—32—Pickup Mtg.
	-48977 Crystal Cartridge only
	-47322 Needle Screw
	-49647 Tone Arm—Casting only
	-49646 Mtg. Stud and Pivot Bracket only
	-49645 Pivot Spring Assy. only
	-47305 Pickup (Tone Arm)
	-47327 Flat Washer—Pickup Mtg.
	-47328 Shakeproof Washer—Pickup Mtg.
	-47329 Nut—1/4"—32—Pickup Mtg.
	-47325 Crystal Cartridge only
	-47324 Needle Screw
	-47326 Arm and Pivot—Assy. only
	-47333 Pickup Rest Bracket
	-47788 Rest Bracket Spacer Block
	-7662 Screw (No. 8—1/4") Bracket Mtg.
	-47724 Rubber Rest (Tone Arm)
	-47335 Rubber Locking Ring (Tone Arm Rest)
W	-47791 Needle Cups
W	-47790 Cup Cover
W	-46364 Chrome Tip Needle
	9FM1 Cabinet
	-47772 Shipping Carton (9FM Cab.)
	-47773 Cabinet Back
	-46464 Thumb Screw—Back Mtg.
	-48415 Lid (Finished Cabinet)
	-48066 Handle—For Cabinet Lid
	-13004H Hinge—For Cabinet Lid
	-13004S Support Bracket—Cabinet Lid
CHANGES INCORPORATED IN SECOND SERIES (Compare Wiring Diagrams Fig. 1A and Fig. 1B)	
	-36322 500,000 Ohm Resistor, Deleted, Replace by Item 36
	-36322 500,000 Ohm Resistor, Deleted, Replace by Item 36
	-47779 Cond., .001 Mf. Across Pickup, Deleted
	-51374 Input Choke (AuCo)
	-25435 Condenser, .003 Mf. 400 V.
	-23191 Condenser, .01 Mf. 400 V.
	-35600 Resistor, 100,000 Ohms 1/2W.
	-35600 Resistor, 100,000 Ohms 1/2W.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	C	Ga	K
6A7	Osc-Mod	6.3	220	80	—	0	-4 to -10	105	2.5
6D6	I. F. Amplifier	6.3	220	105	3.3	0	—	—	3.3
76	Diode Detector	6.3	—	—	—	—	—	—	0
6D6	A. F. Amplifier	6.3	20	20	0	1.0	—	—	0
42	Output	6.3	210	220	—	8.0	—	—	0
80	Rectifier	4.9	220	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 60 Watts.

1. Peaking I. F. Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Turn the tuning condenser rotor plates until they are completely meshed.

(c) Turn the band selector switch to the short wave band (extreme left hand position).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

2. Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.

(b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.

(c) Turn the band selector switch to the broadcast band (extreme right hand position).

(d) Set the signal generator at 1720 kilocycles.

(e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output.

(f) Set the signal generator at 1400 kilocycles.

(g) Tune-in the 1400 kilocycles signal with the station selector.

(h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.

(i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

(j) Set the signal generator to 600 kilocycles.

(k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output dial.

(l) Adjust the oscillator series trimmer, while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.

3. Peaking R. F. Circuits—Police Band (1700 to 5000 K. C.)

(a) Turn the band selector switch to the police band (middle position).

(b) Set the signal generator to 5000 kilocycles. (5.0 megacycles).

(c) Turn the station selector to 5 on the police band.

(d) Adjust the oscillator parallel trimmer (P. Band) for maximum output.

(e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

4. Peaking R. F. Circuits—Short Wave Band (5.4 to 15 Meg.)

(a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.

(b) Turn the band selector switch to the short wave band (left hand position).

(c) Set the signal generator to 15 megacycles.

(d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.

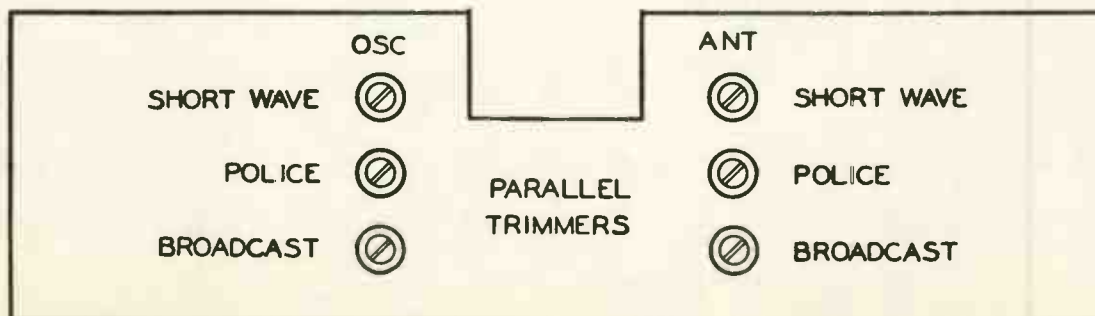
(e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.

(f) Turn the station selector to 15 on the dial (S-W Band.)

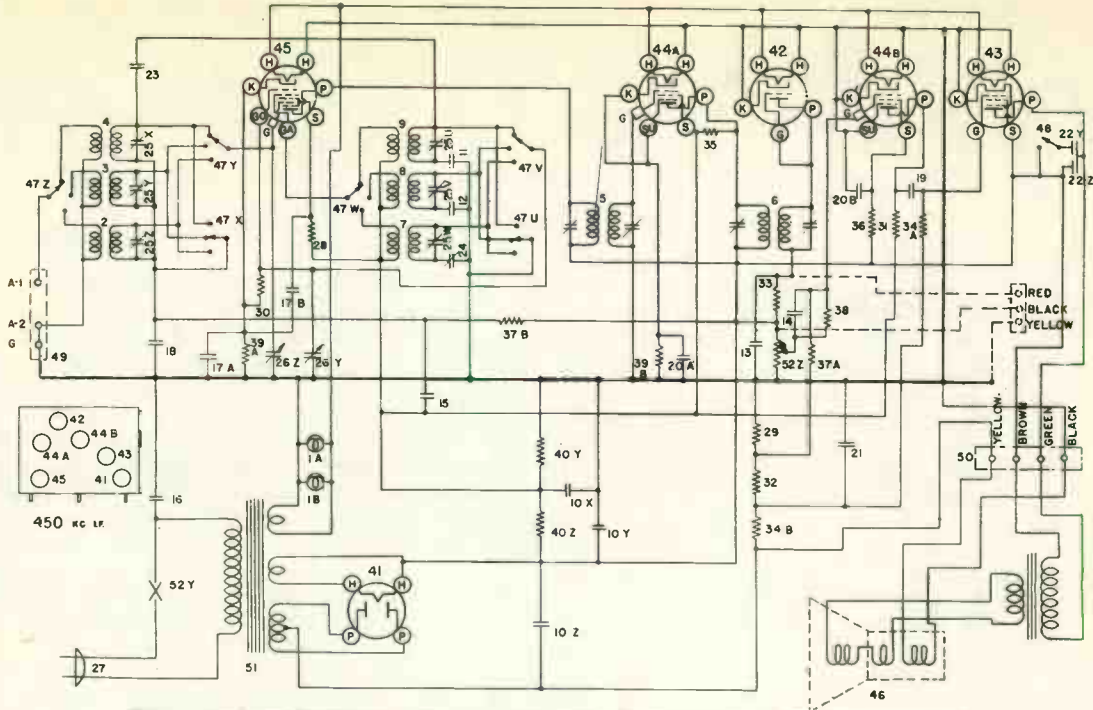
(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.

(h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.

(i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then re-tune the station selector for maximum output.



MODEL 635



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 -27134	Dial Light Bracket Assembly.	32	-34018	Resistor, 200,000 Ohms.
1B	G4 -27134	Dial Light Bracket Assembly.	33	-21455	Resistor, 300,000 Ohms.
2	G39 -32000	Coil, Ant. Trans. 540-1725 Kc.	34A	-23785	Resistor, 500,000 Ohms.
3	G43 -32000	Coil, Ant. Trans. 1.7-5.2 Mc.	34B	-23785	Resistor, 500,000 Ohms.
4	G40 -32000	Coil, Ant. Trans. 5.3-15.5 Mc.	35	-21454	Resistor, 1 Megohm.
5	G39 -32004	Coil, 1st. I. F. Trans.	36	-26577	Resistor, 2 Megohm.
6	G4 -31927	Coil Shield Assembly.	37A	-26577	Resistor, 3 Megohm.
7	G38 -32004	Coil 2nd. I. F. Trans.	37B	-26577	Resistor, 3 Megohm.
8	G4 -31927	Coil Shield Assembly.	38	-26578	Resistor, 5 Megohm.
9	G34 -32002	Coil, Osc. 540-1725 Kc.	39A	W -25937	Resistor, 275 Ohm, 1/4 Watt.
10	G35 -32002	Coil, Osc. 1.7-5.2 Mc.	39B	W -25937	Resistor, 275 Ohm, 1/4 Watt.
11	G32 -32002	Coil, Osc. 5.3-15.5 Mc.	40Z	W -35963	Resistor, 8,500 Ohm, 3 Watt.
10Z		Condenser, 8 Mfd. 450 Volts.	40Y	W -35963	Resistor, 25,000 Ohm, 3 Watt.
10Y	B -30059-C	Condenser, 8 Mfd. 450 Volts.	41	G6 -28807	Socket, 80.
10X		Condenser, 8 Mfd. 250 Volts.	42	G80 -28807	Socket, 76.
11	G12 -34000	Condenser, 4725 Mmf.		W -35774	Shield Base.
12	G7 -34000	Condenser, 1450 Mmf.		W -35772	Shield Half (2 used).
13	G2 -34002	Condenser, 0.0001 Mfd. 200 Volt.		W -35280	Shield Cap.
14	W -28619	Condenser, 0.006 Mfd. 200 Volt.	43	G25 -28807	Socket, 42.
15	W -32378	Condenser, 0.01 Mfd. 400 Volt.	44A	G75 -28807	Socket, 6D6.
16	W -30805	Condenser, 0.01 Mfd. 400 Volt.	44B	G75 -28807	Socket, 6D6.
17A	W -28621	Condenser, 0.02 Mfd. 200 Volt.		W -35774	Shield Base.
17B	W -28621	Condenser, 0.02 Mfd. 200 Volt.		W -35772	Shield Half (2 used)
18	W -32380	Condenser, 0.05 Mfd. 200 Volt.		W -35773	Shield Cap.
19	W -27216	Condenser, 0.05 Mfd. 200 Volt.	45	G47 -28807	Socket, 6A7
20A	W -24049B	Condenser, 0.1 Mfd. 200 Volt.		W -35774	Shield Base.
20B	W -24049B	Condenser, 0.1 Mfd. 200 Volt.		W -35772	Shield Half (2 used).
21	W -30321A	Condenser, 1.0 Mfd. 160 Volt.		W -35773	Shield Cap.
22		Condenser, 0.006 Mfd. 400 Volt.	46	B -3188L	Speaker.
22Z		Condenser, 0.006 Mfd. 400 Volt.		W -35935	Switch, Band Change.
22Y	W -35011	Condenser, 0.03 Mfd. 400 Volt.	47	B -35935	Switch, Band Change.
23	G49 -34403	Condenser, 1.0 Mmf.	48	W -35937	Switch, Tone Control.
24	G10 -33005	Condenser, Var. 540-1725 Kc.	49	G16 -26719	Terminal, Ant.-Grd.
25			50	G5 -31128	Terminal, Speaker.
25Y	W -35951	Trimmer Condenser Assembly.	51	G8 -28500	Transformer, Power, 60 Cy., 110 Volt.
25X				G9 -28500	Transformer, Power, 25 Cy., 110 Volt.
25W				G10 -28500	Transformer, Power, 25 Cy., 220 Volt.
25U	W -35951	Trimmer Condenser Assembly.		-35938	Volume Control, 1 Megohm.
25V			52Z	W -36492	On-Off Switch.
25Z				W -36831A	Knobs.
26	B -35025	Condenser, Variable Tuning Gang.		B -36560	Knob (Tail).
26Y				W -36563	Escutcheon.
27	G29 -32086	Dial Drive Assembly.		C -35946	Glass.
28	B -33905	Cord, Power Supply.		W -37198	Dial Hand.
29	-35934	Resistor, 6,500 Ohms.		W -32293	Dial Hand Nut.
29	-22831	Resistor, 15,000 Ohms.			
30	-21454	Resistor, 40,000 Ohms.			
31	-21875	Resistor, 100,000 Ohms.			

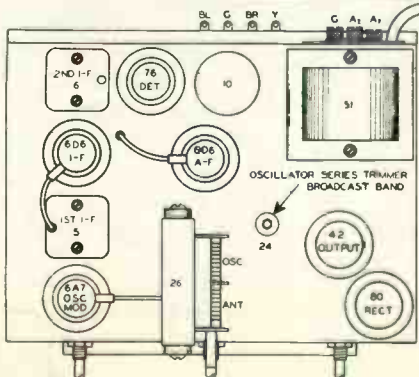


Fig. 2. Top View 635

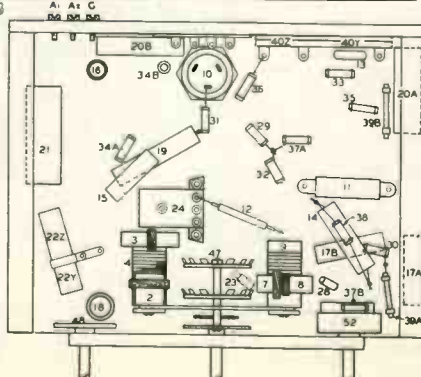


Fig. 3. Bottom View 635

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	180	105	—	1.5	—	—
6A7	Oscillator-Mod.	6.0	180	95	—	3.5	120	-8.Q
6B7	I-F Amp.-Diode Det.	6.0	180	95	—	3.0	—	—
15	A-F Amplifier	2.0	130	80	—	—	—	—
15	Audio Driver	2.0	180	—	—	—	—	—
19	Twin Output	2.0	180	—	—	—	—	—

"A" Battery Drain Approximately 2.8 Amperes at 6.0 Volts.  
Power Output Approximately 2 Watts.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust the trimmers located on top of the 1st I-F transformer for maximum output.

2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal at both the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (Illus. Nos. 68, 28Z and 28Y top view, Fig. 2) set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kc.	600 Kc.
6.0 Mc.	2.0 Mc.
18.0 Mc.	6.0 Mc.

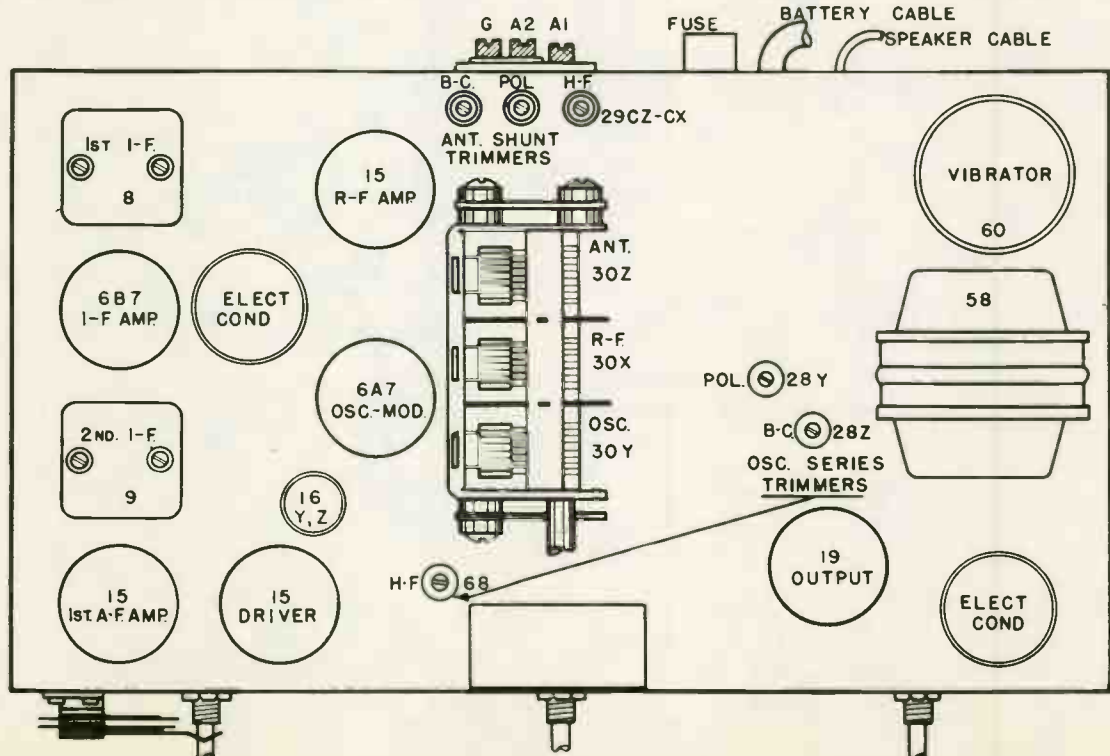


Fig. 2. Top View 636

MODEL 636

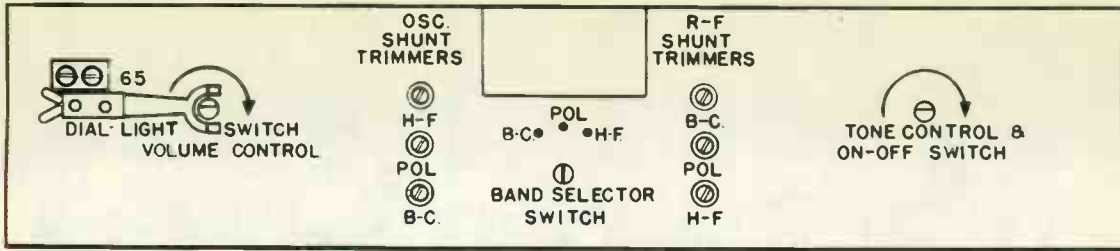


Fig. 4. Front View 636

PARTS LIST—MODEL 636

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light	39	-34020	Resistor 250,000 Ohm 1/4 W. Ins.
	G3 -37965	Dial Light Bracket Assembly	40	-36321	Resistor 400,000 Ohm 1/4 W. Ins.
2	G18 -28067	Choke—L-F. "A" Filter	41A	-36322	Resistor 500,000 Ohm 1/4 W. Ins.
3	G1 -24234	Choke—H-F. "B" Filter	41B	-36322	Resistor 500,000 Ohm 1/4 W. Ins.
4	G44 -24628	Choke—L-F. "B" Filter	42	-36688	Resistor 3 Megohm 1/4 W. Ins.
5	G110 -32000	Ant. Coil B-C-B.	43	-26578	Resistor 5 Megohm 1/4 W. Car.
6	G111 -32000	Ant. Coil Pol.-B.	44	W -41202	Resistor 15 Ohm 1. W. Flexible
7	G112 -32000	Ant. Coil H-F-B.	45	W -21965	Resistor 375 Ohm 1. W. Flexible
8	G106 -32004	1st. I-F Assembly	46	W -36176	Resistor 1.3 Megohm 1/4 W. Ins.
9	G105 -32001	2nd I-F Assembly	47	W -35581	Resistor 1000 Ohm 3/4 W. Flexible
10	G98 -32002	Osc. Coil B-C-B.	48A	G88 -28807	Socket Type 15
11	G99 -32002	Osc. Coil Pol.-B.	48B	G88 -28807	Socket Type 15
12	G107 -32002	Osc. Coil H-F-B.	48C	G88 -28807	Socket Type 15
13	G76 -32001	R-F. Coil B-C-B.	49	G44 -28807	Socket Type 19
14	G77 -32001	R-F. Coil Pol.-B.	50	G92 -28807	Socket Type V1B
15	G78 -32001	R-F. Coil H-F-B.	51	G47 -28807	Socket Type 6A7
16Z			52	G48 -28807	Socket Type 6B7
16Y	W -37778	Condenser 12. Mf. 25 V. Electrolytic	W	-37981A	Tube Shield Base
17A	W -36057	Condenser 40. Mf. 300 V. Electrolytic	W	-40911	Tube Shield
17B	W -36057	Condenser 40. Mf. 300 V. Electrolytic	53	-42PJ-4	Speaker Spec. R-8000 B1
18A	W -38433	Condenser .5 Mf. 160 V. Tubular		-41452	Speaker Cone Assy. (Mtg. Ring 41459)
18B	W -38433	Condenser .5 Mf. 160 V. Tubular		-41455	Speaker Output Transformer for Above Speaker
19	W -37173	Condenser .25 Mf. 300 V. Tubular	54	C -40910	Band Selector Switch
20	G3 -34000	Condenser .002200 Mica	55	G27 -26719	Ant. & Gnd. Terminal Assembly
21	G2 -34002	Condenser .0001 Molded	56Z		Tone Control
22A	G1 -34002	Condenser .00025 Molded	56Y	-41627	On-off Switch
22B	G1 -34002	Condenser .00025 Molded	57	G47 -24628	Audio Transformer
23	W -37214	Condenser .001 Mf. 1000 V. Oil Sealed	58	G4 -31618	Power Transformer
24A	W -36541	Condenser .02 Mf. 160 V.	59	W -28621	Condenser .02 Mf. 200 V.
To			60	W -37216	Vibrator
24G	W -36541	Condenser .02 Mf. 160 V.		W -37225	Vibrator Cover
25	W -35139	Condenser .004 Mf. 400 V.		W -33312A	Vibrator Sleeve
26	W -22688	Condenser .1 Mf. 400 V.	61	-37967	Volume Control 1 Megohm.
27	W -32780	Condenser .05 Mf. 400 V.	62	W -28621	Condenser .02 Mf. 200 V.
28	-37874	Double Osc. Series Trimmer	64	W -25435	Condenser .003 Mf. 400 V.
29	W -35951A	3 Section Shunt Trimmer Cond. Assy.	65	W -41068A	Dial Light Switch
30	G50 -33002	3 Section Var. Tuning Condenser	66	G8 -34000	Condenser .0015 Mf. Mica
	MG43 -41118	Dial Assembly Complete	67	W -24049B	Condenser .1 Mf. 200 V.
	D -41629	Dial	68	-41369	H-F. Osc. Series Trimmer
	-41135	Mask	69A	-35602	Resistor 1. Megohm Ins.
	-40185	Long Hand	69B	-35602	Resistor 1. Megohm Ins.
	-41145	Short Hand	70	W -31103	10 Amp. Fuse
	-41157	Drive Belt	W	-33310A	Fuse Cover
	-40537	Coupling Unit	W	-34223	Cover Insulator
	-40486	Pointer Screw	G2	-33339	Fuse Panel Assembly
	-40638	Indicator Control Cable	W	-4072	Thumb Screw
31	MG21 -41118	Battery Cable & Clips	C	-37894	Escutcheon Ring
	-34903	Pos. (+) Clip	B	-37896A	Escutcheon Retaining Ring
	-34904	Neg. (-) Clip	W	-40365	Escutcheon Felt
32	G8 -35696	Speaker Cable	B	-37898	Escutcheon Glass
33	-38428	Resistor 1500 Ohm 1/4 W. Ins.	B	-41659	Escutcheon Glass Retaining Ring
34	-36317	Resistor 10,000 Ohm 1/4 W. Ins.	W	-40192B	Tail Knob (1)
35A	-37485	Resistor 15,000 Ohm 1/2 W. Car.	W	-41605	Knob (2)
35B	-37485	Resistor 15,000 Ohm 1/2 W. Car.	W	-41221	Upper } V. C. & Dial Light Switch
36	-33390	Resistor 30,000 Ohm 1/4 W. Car.	W	-41222	Lower }
37	-40757	Resistor 50,000 Ohm 1/4 W. Ins.			
38	-35929	Resistor 150,000 Ohm 1/4 W. Ins.			

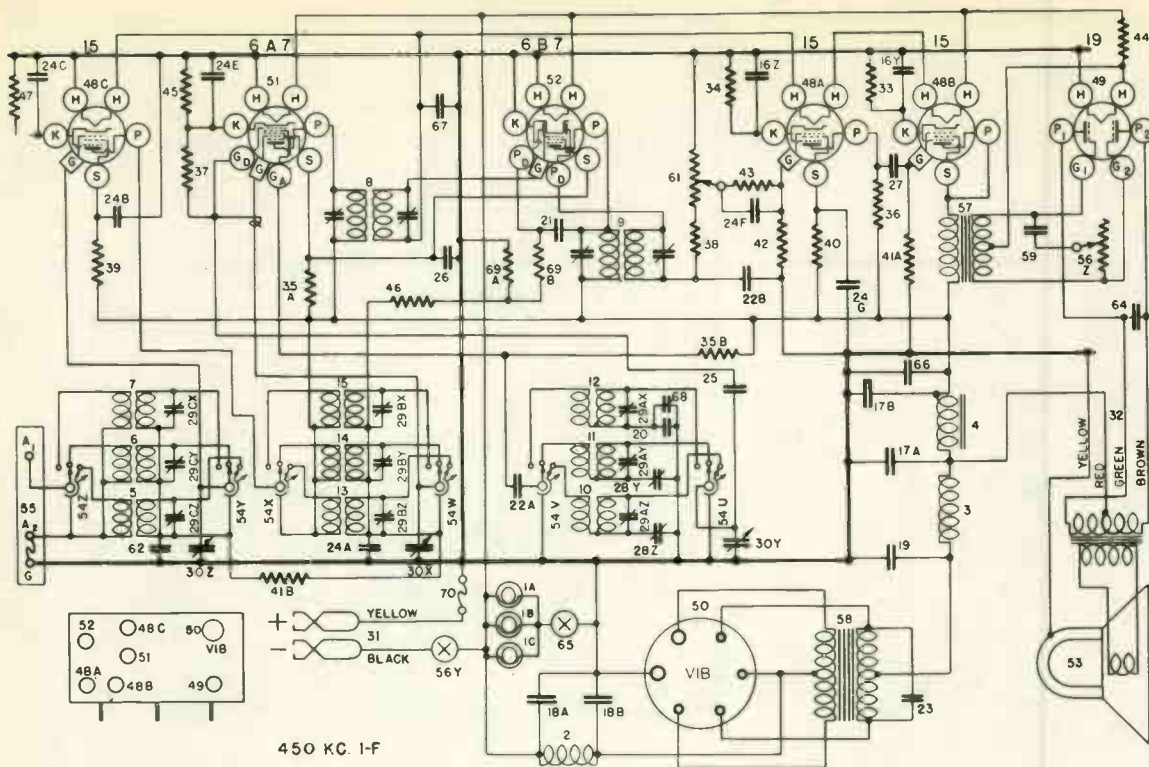


FIG. 1—WIRING DIAGRAM—MODEL 636

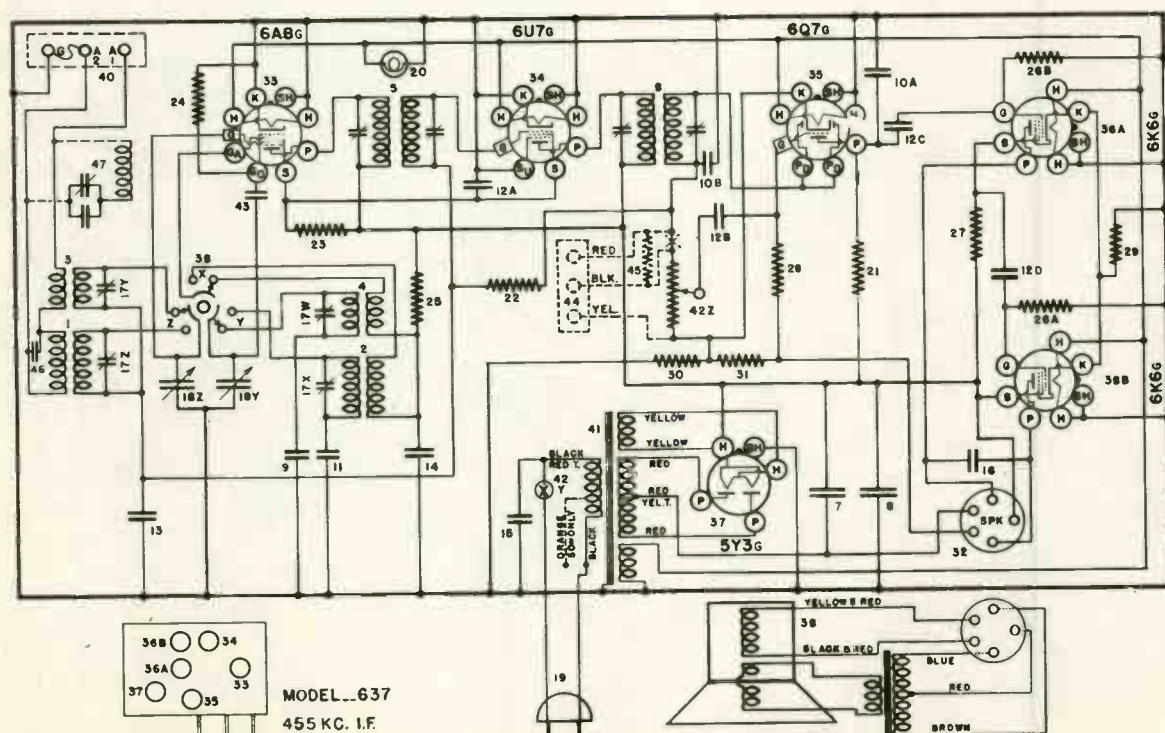


FIG. 1—WIRING DIAGRAM—MODEL 637

## CHASSIS MODEL 637

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	210	120	0	-15	190
6U7G	I-F Amplifier	6.3	210	120	0	—	—
6Q7G	Det, AVC & A-F Amp.	6.3	90	—	-3	—	—
6K6G	(2) Output	6.3	205	210	20	—	—
5Y3G	Rectifier	5.0	—	—	215	—	—

Power output approximately 4.5 watts.

Power consumption approximately 60 watts at 11.5 volts.

Voltage drop across speaker field 60 volts.

#### Tuning I-F Amplifier to 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

#### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer.

#### (C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
High Frequency Band

Minimum Capacity Signal  
1,725 Kilocycles  
18,300 Kilocycles

Shunt Alignment Signal  
1,400 Kilocycles  
18,000 Kilocycles

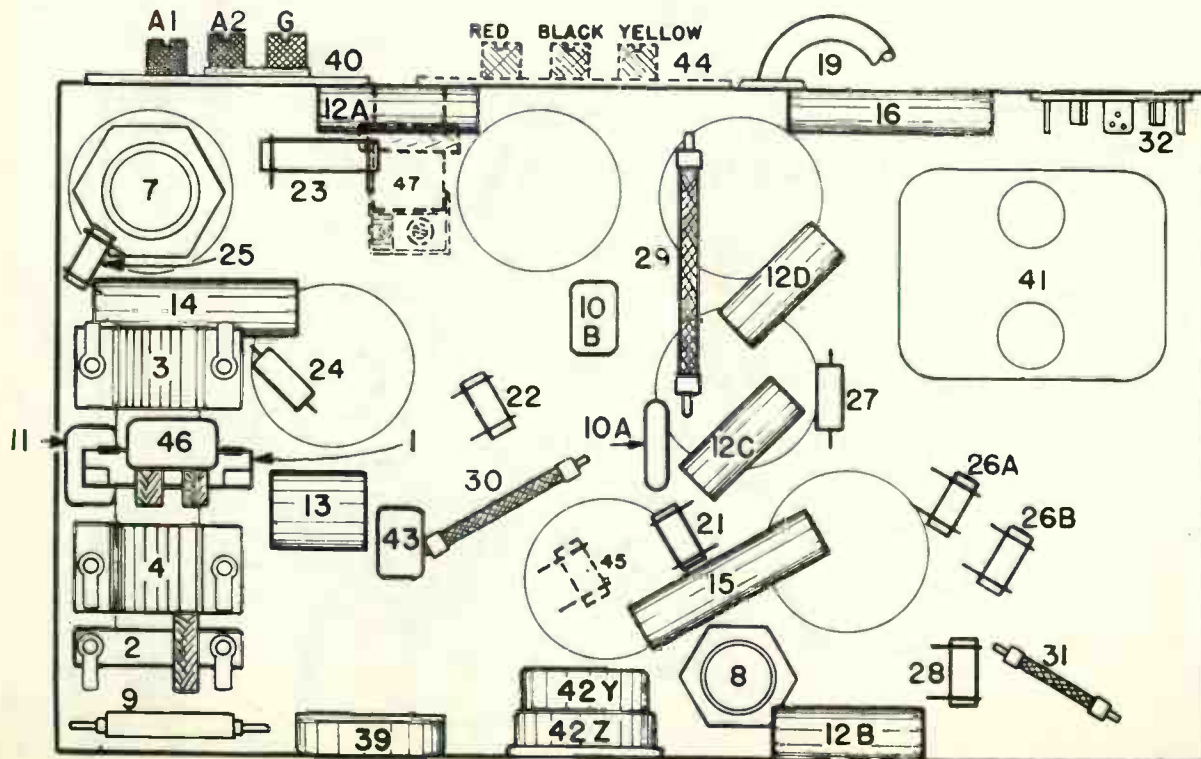


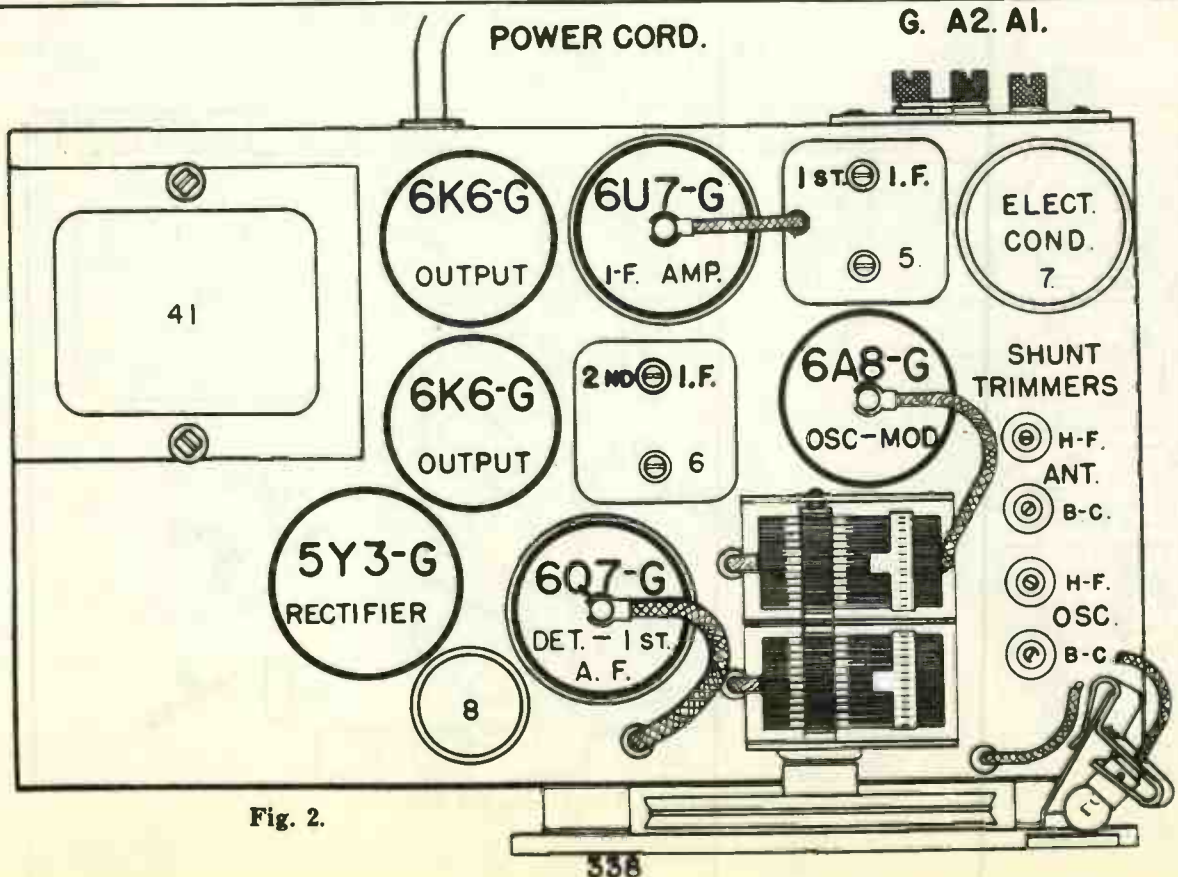
Fig. 3 Bottom View—Model 637



## PARTS LIST—MODEL 637

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G143-32000	Ant. Coil, B-C.	25	-30137	Resistor, 3,500 Ohm 1/3 W. Carbon
2	G145-32002	Osc. Coil, B-C.	26A	-33344	Resistor, 400,000 Ohm 1/4 W. Carbon
3	G142-32000	Ant. Coil, H-F.	26B	-33344	Resistor, 400,000 Ohm 1/4 W. Carbon
4	G144-32002	Osc. Coil, H-F.	27	-44009	Resistor, 3,000 Ohm 1/4 W. Ins.
5	G156-32004	1st I-F. Assy.	28	-34883	Resistor, 2 Megohm 1/2 W. Carbon
6	G157-32004	2nd I-F. Assy.	29	W -43462	Resistor, 375 Ohm 2 1/2 W. Flex.
7	W -36057B	Condenser, 40 Mf. 300 V.	30	W -23012A	Resistor, 40 Ohm 1/4 W. Flex.
8	W -41081	Condenser, 16 Mf. 250 V.	31	W -37631	Resistor, 32 Ohm 1/2 W. Flex.
9	G16 -34000	Condenser, 3,800 Mmf. (H-F. Osc. Series)	32	G103-28807	Socket—Speaker
10A	G1 -34002	Condenser, .00025 Mf. Molded	33	G156-36400	Socket, Type 6A8
10B	G1 -34002	Condenser, .00025 Mf. Molded	34	G171-36400	Socket, Type 6U7
11	G14 -34002	Condenser, .0004 Mf. (B-C. Osc. Series)	35	G160-36400	Socket, Type 6Q7
12A	W -28621	Condenser, .02 Mf. 200 V.	36AB	G172-36400	Socket, Type 6K6
12B	W -28621	Condenser, .02 Mf. 200 V.	37	G173-36400	Socket, Type 5Y3
12C	W -28621	Condenser, .02 Mf. 200 V.		W -40911	Tube Shield
12D	W -28621	Condenser, .02 Mf. 200 V.	38	W -43552	Spk. Plug Clamp
13	W -36541	Condenser, .02 Mf. 160 V.		365BP12"M"	Speaker—Spec. 1-D-1089
14	W -23615	Condenser, .05 Mf. 400 V.		-44542	V. C. and Cone Assy. } Used on
15	W -30805	Condenser, .01 Mf. 400 V.		-44273	Field Coil } on
16	W -28619	Condenser, .006 Mf. 200 V.		-44274	Output Trans. } 365BP12"M"
17	W -41247A	4 Sect. Shunt Trimmer Assy.	39	W -43448A	Cardboard Ring } Spk.
18	G42 -33001	2 Sect. Gang. Cond.	40	G27 -26719	Band Switch
	W -44343D	Dial Face (Glass)	41	-44356	Ant. and Gnd. Terminal
	W -44085B	Dial Mask		-44359	Pwr. Trans., 60 Cy.—110 V.
	C -44379A	Support Brkt. (Dial Glass)		-44360	Pwr. Trans., 50 Cy.—110 V.
	W -44084A	Support Ring (Dial Glass)		-44357	Pwr. Trans., 50 Cy.—220 V.
	W -43542B	Drive Shaft Bracket		-44358	Pwr. Trans., 25 Cy.—110 V.
	W -44134	Drive Shaft		-44358	Pwr. Trans., 25 Cy.—220 V.
	W -43549	Retaining Ring (Shaft)	42	-43449A	Vbl. Cont. (1/2 Meg.) and Switch
	G1 -43564	Pulley and Hub Assy.	43	G13 -34002	Cond., .000035 Mf. Molded
	W -44299	Pointer	44	G37 -26719	Phono-Terminal Board
	W -40486	Screw FS 20 (Pointer Mtg.)	45	-21875	Res., 100,000 Ohm 1/2 W. Used only on Sets with Phono-Terminals
	W -43561	Tension Spring	46	G5 -34002	Cond., .00005 Mf. Molded
	W -41582	Drive Cord (18 1/4")	47	G165-32004	Wave Trap Assy. (460 Kc.)
19	B -44004	Pwr. Cord and Plug		7E	Cabinet
20	W -43567	Dial Light, 6-8 V.		B -44226B	Escutcheon
	G5 -44363	Light Socket Assy.		W -44381B	Knob (3 Req.)
21	-21455	Resistor, 300,000 Ohm 1/4 W. Carbon		W -43553	Rubber Mtg. Foot
22	-26577	Resistor, 3 Megohm 1/4 W. Carbon			
23	-37485	Resistor, 15,000 Ohm 1/2 W. Carbon			
24	-35928	Resistor, 60,000 Ohm 1/4 W. Ins.			



## CHASSIS MODEL 639

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

Voltage drop across speaker field 44 volts.

Maximum power output approximately 5 watts.

Power consumption at 117.5 volts approximately 85 watts with phono operating.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

### CONNECTING OUTPUT METER

Connect one side of the output meter to the plate of the 6AC5G Output tube and the other to the plate of the 6P5G. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Check operations (d) and (e) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

### Aligning R. F. Amplifier.

When aligning the R. F. amplifier the output lead from the signal generator is connected to the antenna lead of the receiver. a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

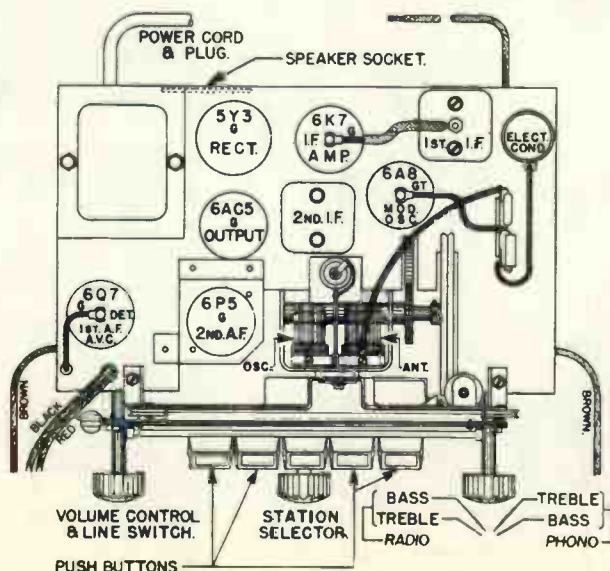
(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the **MINIMUM CAPACITY SIGNAL** (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the **SHUNT ALIGNMENT** signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

If any of the circuits have been re-adjusted it may be necessary to reset the push buttons.

### (C) SIGNAL INPUT FREQUENCIES

Minimum Capacity Signal  
1,725 Kilocycles



**Fig. 2—Top View Model 639**  
**339**

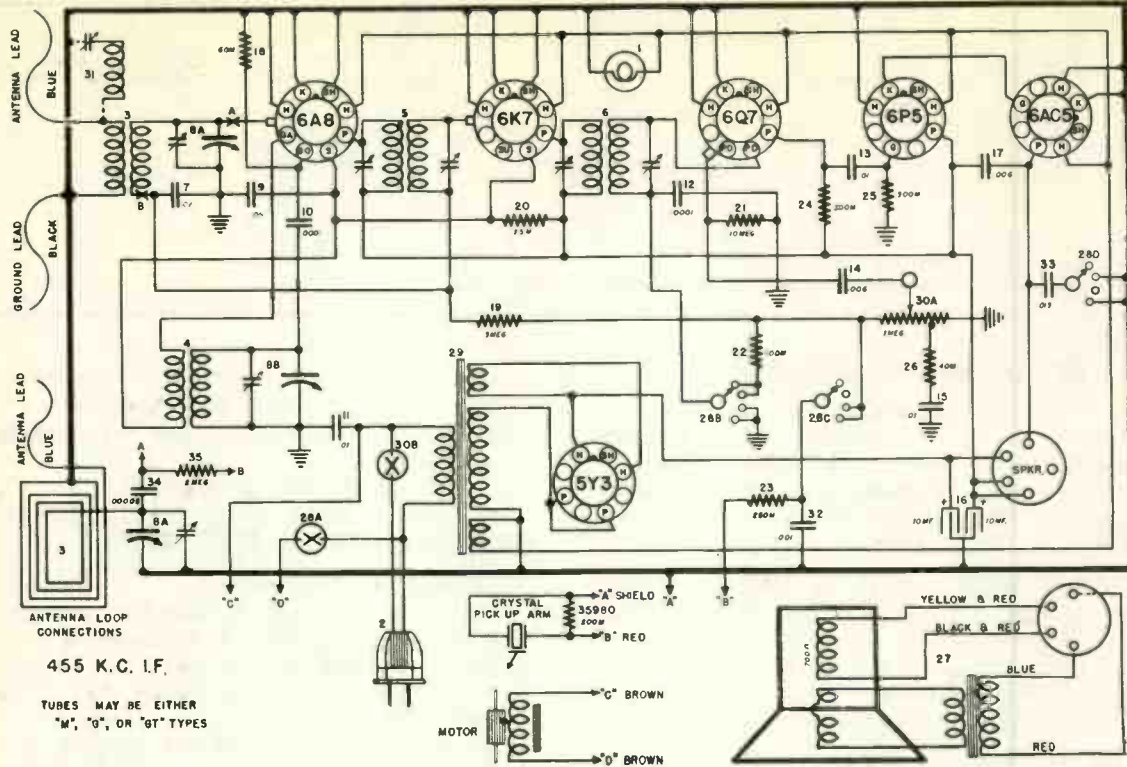


FIG. 1—WIRING DIAGRAM—MODEL 639

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light, 6-8 Volt	G57	—45683	Key and Toggle Assy.
2	G13 —15398	Dial Light Socket Assy.	G22	—45683	Rocker Plate and Gear Assy.
3	B —45769A	Power Cord and Plug	W	—50607C	Spring—Key Return
4	G186 —32030	Antenna Coil	W	—46811A	Push Button
5	G184 —32002	Oscillator Coil	W	—46065	Rubber Grommet (Brkt. Front Mtg.)
6	G230 —32004	1st I. F. Assy. (455 Kc.)	W	—44023	Headed Bushing (Brkt. Front Mtg.)
7	G188 —32004	2nd I. F. Assy. (455 Kc.)	W	—45580	Rubber Grommet (Brkt. Rear Mtg.)
8	W —28621	Condenser, .02 Mf. 200 V.	W	—45620	Headed Bushing (Brkt. Rear Mtg.)
9	G76	2 Section Gang Condenser	W	—47822	Station Call Letter Tabs
10	W —27216	Condenser, .05 Mf. 200 V.	W	—50651B	Call Letter Cover (Celluloid)
11	G2 —34002	Condenser, .0001 Mf. Molded	<b>RECEIVER MOUNTING PARTS</b>		
12	W —30805	Condenser, .01 Mf. 400 V.	W	—45764D	Chassis Bottom Strap
13	G2 —34002	Condenser, .0001 Mf. Molded	C	—47581B	Chassis Bottom Cover
14	W —23191A	Condenser, .01 Mf. 400 V.	B	—47705A	R. H. Receiver Mtg. Bracket
15	W —34713	Condenser, .06 Mf. 160 V.	B	—47707A	L. H. Receiver Mtg. Bracket
16	W —23191A	Condenser, .01 Mf. 400 V.	W	—47728	Decorative Washer (Receiver Mtg.)
17	W —47256	Condenser, 10-10 Mf. 400 V.	W	—47761	Phillips Oval Hd. Screw (Receiver Mtg.)
18	W —28619	Condenser, .006 Mf. 300 V.	W	—46833	Knob (1) (Tuning)
19	W —35928	Resistor, 60,000 Ohms 1/2 W.	W	—47927	Knob (2) (V. C. and Phono-Radio Sw.)
20	W —36688	Resistor, 3 Megohms 1/2 W.	MG23	—48001	Instruction, Env. Assy.
21	W —6706	Resistor, 25,000 Ohms 1 W.	<b>SPEAKER MOUNTING PARTS</b>		
22	W —33490	Resistor, 10 Megohms 1/2 W.	W	—47721	No. 8—32 x 1" Sw. Hd. Spkr. Mtg. Screw
23	W —35600	Resistor, 100,000 Ohms 1/2 W.	N	—8	No. 8—32 Nut (Spkr. Mtg.)
24	W —38976	Resistor, 250,000 Ohms 1/2 W.	W	—2016	No. 8 Lockwasher (Spkr. Mtg.)
25	W —35601	Resistor, 300,000 Ohms 1/2 W.	W	—47731	Speaker Plate
26	W —36322	Resistor, 500,000 Ohms 1/2 W.	W	—47217	Grommet (Plate Mtg.) (3)
27	W —36761	Resistor, 40,000 Ohms 1/2 W.	W	—46461	Headed Bushing (Plate Mtg.)
	480-BP-15—"Z"	Speaker, Mfg. Spec. No. EBL327	W	—47740A	Speaker Dust Cloth
	480-BP-15—"M"	Speaker, Mfg. Spec. No. 1-D-1549	W	—47710	Plate Shock Pad
	480-BP-15—"R"	Speaker, Mfg. Spec. No. P-5739	<b>RECORD CHANGER PARTS LIST</b>		
	480-BP-15—"B"	Speaker, Mfg. Spec. No. 801Q3	W	—48453A	Record Changer, 110 V. 60 Cycle
	462-CP-11—"M"	Speaker, Mfg. Spec. No. 1-D-971	W	—4831A	Record Changer, 220 V. 50 Cycle
28	B —47745	Tone-Phono-Radio Switch	W	—48545	Motor, 110 V. 60 Cycle
	—48518	Power Trans., 110 V. 50-60 Cycle	W	—48546	Motor, 220 V. 50 Cycle
	—48519	Power Trans., 220 V. 50-60 Cycle	W	—48543	Tone Arm Assy.
	—47843	Power Trans., 110 V. 60 Cycle	W	—48542	Crystal Unit
29	W —46019	Power Trans. Support Strip	W	—48550	Needle Screw
30	W —47783A	Vol. Cont. (1 Meg.) and Line Switch	W	—48549	Record Brush
31	G193 —33004	455 Kc. Wave Trap (Not on Loop Models)	W	—48537	60 Cycle Motor Drive Pulley
32	W —47779	Condenser, .001 Mf. 160 V.	W	—48396	50 Cycle Motor Drive Pulley
33	W —30251	Condenser, .015 Mf. 400 V.	W	—48548	Intermediate Pulley
<b>DIAL PARTS</b>					
	D —48976	Dial Glass	W	—47728	Dec. Hd. Washer (1)
	W —45875A	Dial Glass Cushion (2)	W	—48449	Headed Bushing (Base Mtg.)
	C —46661	Dial Glass Support Bracket	W	—48736	Rubber Grommet (Base Mtg.)
	W —46020	Dial Glass L. H. Mtg. Clip	W	—48460	Phillips Hd. Screw (Base Mtg.)
	W —48187	Dial Glass R. H. Mtg. Clip	W	—44725	Flat Washer (Base Mtg.)
	W —45890A	Dial Hand (Pointer)	N	—10	No. 10 Nut (Base Mtg.)
	W —46035	Dial Hand Guide	W	—48770	Motor Cover
	W —48381A	Drive Shaft	W	—47791	Needle Cups
	W —45878A	Shaft Mtg. Bracket	W	—47790	Cup Cover
	G29 —41582	Drive Cord (40.5 Inches)	W	—46364	Chrome Tip Needle
	G12 —43564	Pulley and Hub Assy.	—9FP	Cabinet	
	W —46087	Spring—Drive Cord Tension	—48370	Shipping Carton (9FP Cab.)	
	W —48294	Pulley (Drive Shaft)			
	W —47265	Washer (Drive Shaft)			
	W —48382	Spring (Pulley Friction)			
<b>PUSH BUTTON TUNING PARTS</b>					
	G39 —45683	Push Button Unit			
	W —50542E	Lock Clamp			
	W —50561	Rocker Plate Bearing Screw			
	W —50567	Key Setting Screw			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6D6	R-F Amp.	6.3	31.5	32	0	0	—	—	0
6A7	Osc.-Mod.	6.3	32.0	20	—	0	2	32	0
6D6	I-F Amp.	6.3	32.0	32	0	0	—	—	0
85	Det. & A-F Amp.	6.3	32.0	—	—	0	—	—	0
48	Output	25.0	31.5	32	—	0	—	—	5.7
48	Output	25.0	31.5	32	—	0	—	—	5.7

Measured on 32 Volt D-C Line.

Current Drain Approximately 1.35 Amperes at 32 Volts.

**SENSITIVITY CONTROL**

The sensitivity control, Illus. No. 35, is a low resistance potentiometer. One end is connected through a condenser to the antenna lead and the other end is connected to the cathodes of the R-F and Osc-Mod tubes. The moving arm is connected to the chassis. When the knob is turned toward the left it simultaneously decreases the resistance across the primary of the antenna coil and increases the grid bias on the R-F and Osc-Mod tubes. This has the effect of decreasing the sensitivity of the receiver and increasing the selectivity. Since the sensitivity of the R-F and I-F amplifiers is simultaneously decreased, it serves as a control of overall oscillations which sometimes develop with abnormally high line voltage.

**GROUND CIRCUIT**

DO NOT ground the chassis except through the use of the "Gnd" terminal. This terminal is separated from the chassis by a series condenser in order to prevent a short circuit when operating the receiver on a 32 volt line with the positive side grounded.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if an adjustment is found necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate of one of the type 48 output tubes and connect the other terminal to the plate of the other 48 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first prong to the left of the filament prongs. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Peaking I-F Stages at 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. **KEEP THE OUTPUT LEAD FROM THE SIGNAL GENERATOR AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.**

(b) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(c) Set the signal generator to exactly 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely meshed.

(e) Turn the band selector switch to the left. (Short Wave).

(f) Adjust the line voltage to 32 volts.

(g) Turn the volume control and the sensitivity control all the way to the right.

(h) With the signal generator set to the lowest usable output level adjust the I-F trimmer condensers for maximum signal output.

NOTE: The I-F trimmers are located on top of the I-F transformers, Fig. 2, and may be adjusted with an insulated screw driver. Always make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency.

**2. Aligning R-F Circuits—Broadcast Band (540-1570 K. C.)**

(a) Turn the band selector switch to the right hand position. (Broadcast Band).

(b) Rotate the tuning condenser until the rotor plates are completely out of mesh.

(c) Connect the antenna terminal of the signal generator to the receiver antenna terminal through a .00025 mfd., mica, series condenser.

(d) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(e) Set the signal generator to approximately 1575 kilocycles.

(f) Adjust the "Osc." section (rear section) of the tuning condenser gang for maximum signal output. (Fig. 2.)

(g) Set the signal generator to 1400 kilocycles.

NOTE: If electrical interference causes an excessive reading on the output meter, making alignment difficult, it can be reduced by connecting a 5 to 10 mfd., paper, condenser between the ground terminal of the receiver and the chassis frame.

(h) Tune in the 1400 kilocycle signal with station selector for maximum output.

NOTE: Do not disturb the setting of the oscillator trimmer (rear section) as this is adjusted at 1575 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(i) Adjust the "R-F" parallel trimmer of the condenser gang for maximum output.

(j) Adjust the "Ant." parallel trimmer of the condenser gang for maximum output.

(k) Repeat operations (h), (i) and (j) until no further improvement in output can be made.

**3. Aligning R-F Circuits—Short Wave (1570-4000 K. C.)**

(a) Set the signal generator to 2500 kilocycles.

(b) Turn the band selector switch to the left. (Short Wave).

(c) Tune in the 2500 kilocycle signal with the tuning condenser for maximum output.

(d) Adjust the R-F short wave padding condenser, Illus. No. 15Y for maximum output.

(e) Adjust the Ant. short wave padding condenser, Illus. No. 15Z for maximum output.

MODEL 645

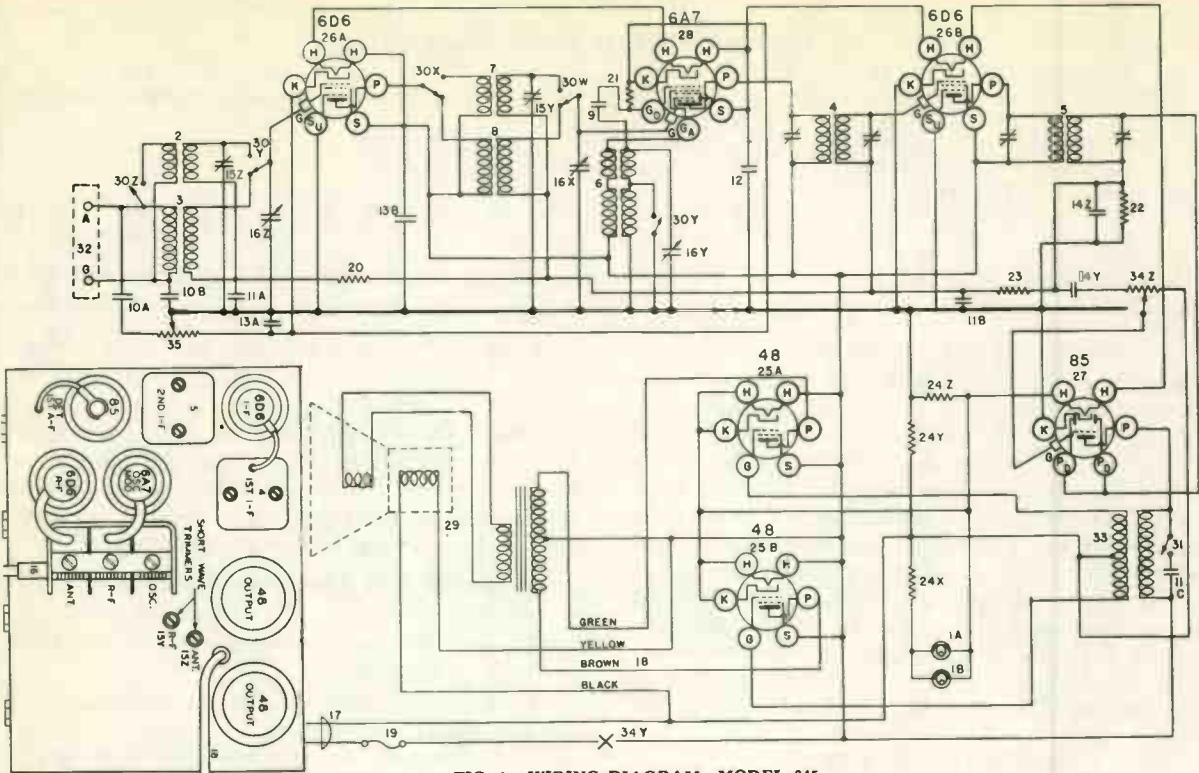


FIG. 1. WIRING DIAGRAM—MODEL 645

Figures in first column refer to parts shown in diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 - 27134	Dial Light Bracket Assm.	MG21-38630	Dial Drive Assm.	
1B	G4 - 27134	Dial Light Bracket Assm.	C - 36629	Dial Face	
2	G54-32000	Ant. Coil H-F (only)	W - 37198	Dial Hand	
	W - 25025B	Coil Shield	W - 32293	Dial Hand Nut (2)	
3	W - 25200	Coil Socket	B - 34332	Power Supply Cord	
	W - 26891	Insulating Washer	G2 - 35696	Speaker Cable	
	W - 21541C	Retaining Ring	W - 7983A	Fuse, (3 Amp Cart)	
	G55-32000	Ant. Coil L-F (only)	G1 - 33339	Fuse, Panel Assm.	
4	W - 30802A	Coil Shield	W - 33310A	Fuse Cover	
	W - 30026	Retaining Ring	W - 34223	Cover Insulator	
	G62-32004	1st I. F. Trans. Assm.	-35600	Resistor, 100,000 Ohms ¼ W.	
	G63-32004	2nd I. F. Trans. Assm.	-21453	Resistor, 40,000 Ohms ¼ W.	
5	G43-32002	Osc. Coil H. F. & L. F. (only)	-21454	Resistor, 1 Megohm ¼ W.	
	W - 25025B	Coil Shield	23	26577	
	W - 25200	Coil Socket	24Z	W - 38704	
	W - 26891	Insulating Washer	24Y	W - 38704	
6	W - 21541C	Retaining Ring	24X	W - 38704	
	G32-32001	R. F. Coil H. F. (only)	25A	G33-23807	
	W - 25024B	Coil Shield	25B	G33-28807	
	W - 25200	Coil Socket	26A	G75-23807	
7	W - 26891	Insulating Washer	26B	G75-28807	
	W - 21541C	Retaining Ring	27	G27-28807	
	G52-32001	R. F. Coil L. F. (only)	28	G47-28807	
	W - 30802A	Coil Shield	29	W - 35772	
8	W - 30877B	Insulating Washer	W - 35773	Tube Shield Cap (3)	
	W - 30026	Retaining Ring	W - 35774	Tube Shield Base (3)	
	G1 - 34002	Condenser, 0.00025 mfd.	328CJ-4M	Speaker, (Table)	
	W - 30323	Condenser, 0.01 mfd. 200 V.	428CJ-4M	Speaker, (Console)	
10A	W - 30323	Condenser, 0.01 mfd. 200 V.	30Z	W - 36753	
10B	W - 30323	Condenser, 0.01 mfd. 200 V.	To	W - 36753	
11A	W - 28621	Condenser, 0.02 mfd. 200 V.	30V	W - 36753	
11B	W - 28621	Condenser, 0.02 mfd. 200 V.	31	W - 38755A	
11C	W - 28621	Condenser, 0.02 mfd. 200 V.	32	G26-28719	
12	W - 27216	Condenser, 0.05 mfd. 200 V.	33	MG14-38630	
13A	W - 24049A	Condenser, 0.1 mfd. 200 V.	34Z	A. F. Transformer	
13B	W - 24049A	Condenser, 0.1 mfd. 200 V.	342	Volume Control	
14Z	W - 30322A	Condenser, 0.00017 mfd. 200 V.	-36686A	On-Off Switch	
14Y	W - 30322A	Condenser, 0.00017 mfd. 200 V.	-36687	Sensitivity Control	
15Z	G5 - 33008	2 Section R. F. & Ant. H. F. Trim.	B - 33528C	Escutcheon	
16Z	G5 - 33008	2 Section R. F. & Ant. H. F. Trim.	W - 33984	Escutcheon Gasket	
18Y	G39-33002	3 Section Gang Condenser	D - 28	Escutcheon Screws (4)	
16X	G39-33002	3 Section Gang Condenser	W - 37339	Knob (3)	
			W - 37341	Knob (2) Small	

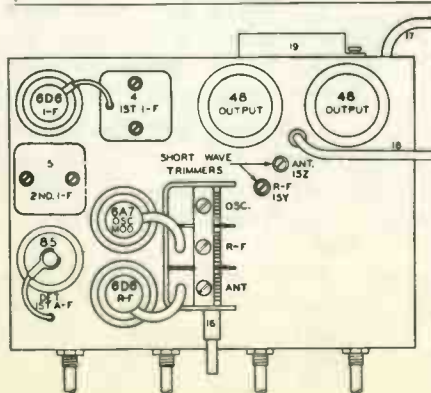


Fig. 2. Top View 645

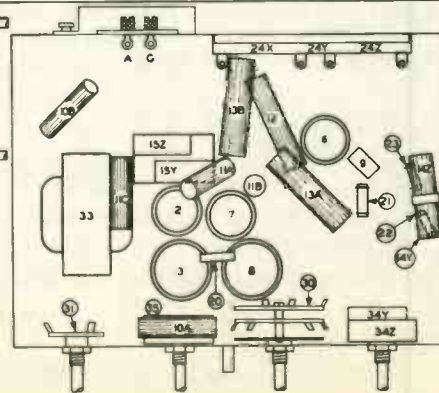


Fig. 3. Bottom View 645

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	0	—	—
1C6	Osc-Modulator	2.0	135	65	0	70	-2 to -10
34	I-F Amplifier	2.0	135	65	0	—	—
1B5	Diode & A-F Amp.	2.0	90	—	0	—	—
30	Driver	2.0	132	—	-9	—	—
19	Output	2.0	130	—	-4.5	—	—

Power output approximately 1.6 watts.

"A" battery drain approximately .62 amperes at 2 Volts.

"B" battery drain approximately 12 to 30 milliamperes depending on setting of Volume Control.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1C6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the "H-F" position.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**2. Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" (A1) terminal of the receiver through a .00025 mfd. condenser.

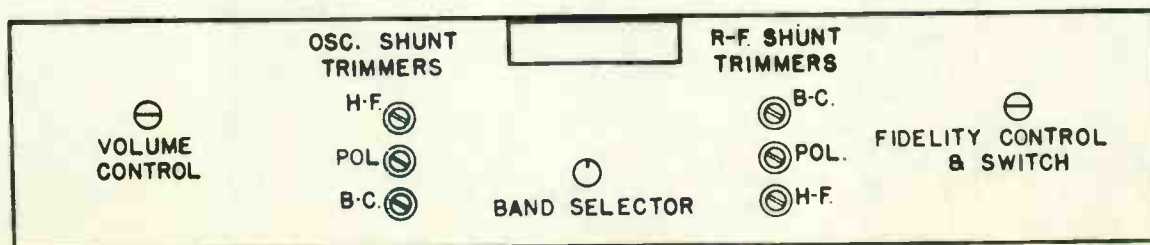
Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC," "R-F" and "ANT"

tune trimmers in the order given, for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. **NOTE:** When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency.

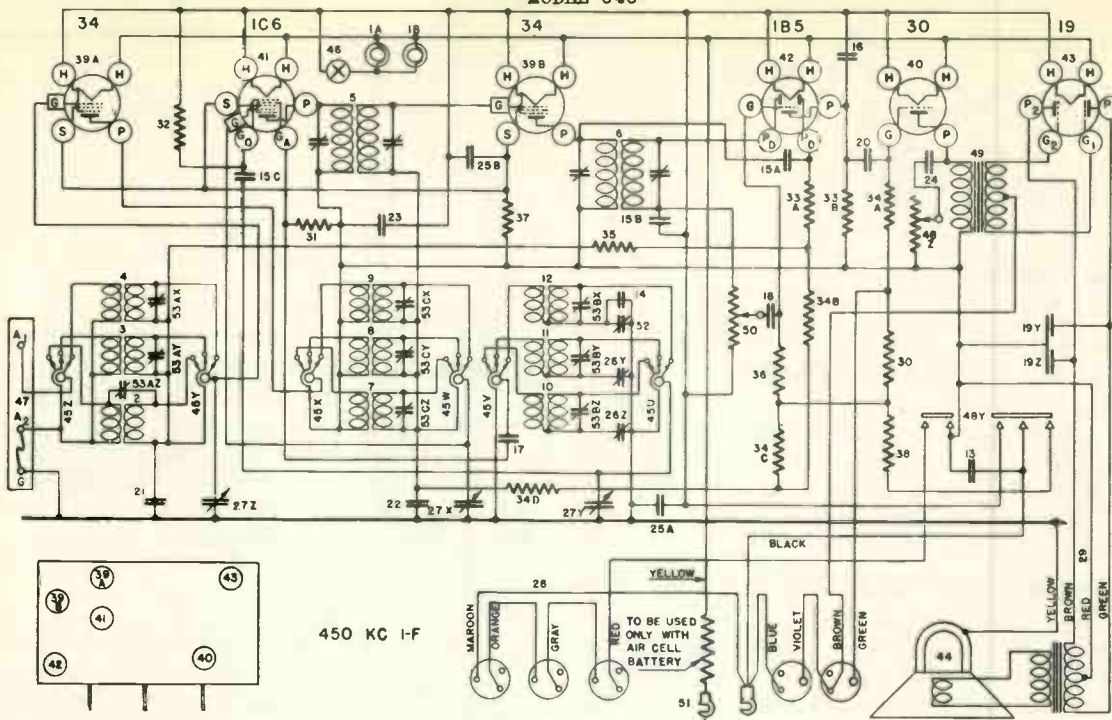
To adjust the "series" trimmers, Illus. Nos. 52, 26Z and 26Y, set the signal generator to the frequency indicated and then tune-in the signal with the station selector for maximum output. While adjusting each "series" trimmer rock the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

Shunt Alignment	Series Alignment
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	2000 Kilocycles
18 Megacycles	6 Megacycles



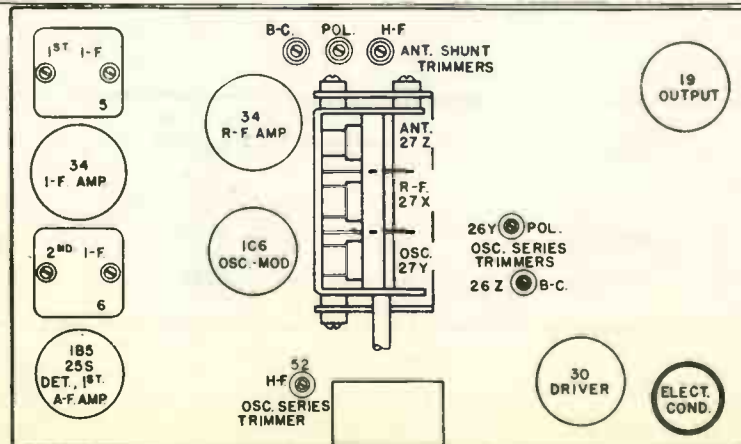
Front View 646

MODEL 646



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W -37188	Dial Light	31	-21876	Resistor 10000 Ohm 1/4 W.
1B	W -37188	Dial Light	32	-36761	Resistor 40000 Ohm 1/4 W.
2	G6 -27134	Light Bracket Assembly	33A	-35928	Resistor 60000 Ohm 1/4 W.
3	G110 -32000	Ant. Coil—B-C-B.	33B	-35928	Resistor 60000 Ohm 1/4 W.
4	G111 -32000	Ant. Coil—Pol-B.	34A	-36322	Resistor 500000 Ohm 1/4 W.
5	G126 -32000	Ant. Coil—H-F-B.	34B	-36322	Resistor 500000 Ohm 1/4 W.
6	G111 -32001	1st I-F Assembly	34C	-36322	Resistor 500000 Ohm 1/4 W.
7	G46 -32004	2nd I-F Assembly	34D	-36322	Resistor 500000 Ohm 1/4 W.
8	G98 -32002	Osc. Coil—B-C-B.	35	-35927	Resistor 2 Megohm 1/4 W.
9	G109 -32002	Osc. Coil—Pol-B.	36	-36688	Resistor 3 Megohm 1/4 W.
8	G100 -32002	Osc. Coil—H-F-B.	37	-37377	Resistor 20000 Ohm 1/4 W.
10	G76 -32001	R-F Coil—B-C-B.	38	W -22180	Resistor 1650 Ohm 1/4 W. Flex.
11	G89 -32001	R-F Coil—Pol-B.	39A	G31 -28807	Socket Type 34
12	G91 -32001	R-F Coil—H-F-B.	39B	G31 -28807	Socket Type 34
13	W -37628	Condenser 30 Mfd. 300 V. Electrolytic	40	G39 -28807	Socket Type 30
14	G7 -34007	Condenser 1750 Mmfd. Mica.	41	G84 -28807	Socket Type IC6
15A	G2 -34002	Condenser Molded .0001 Mfd.	42	G91 -28807	Socket Type 1H5
15B	G3 -34002	Condenser Molded .0005 Mfd.	43	G44 -28807	Socket Type 19
16	W -35139	Condenser Tubular .004 Mfd. 400 V.	44	W -26974B	Tube Shield
17	W -28619	Condenser Tubular .006 Mfd. 200 V.	W	-26973B	Tube Shield Base
18	W -31158	Condenser Tubular .006 Mfd. 400 V.	45	-42P4	Speaker R-8000 B-1
19Z	W -31158	Condenser Tubular .006 Mfd. 400 V.	W	-41452	Cone Assembly
19Y	W -28621	Condenser Tubular .02 Mfd. 200 V.	W	-41455	Output Trans.
20	W -32379	Condenser Tubular .02 Mfd. 200 V.	W	-41459	Cone Mtg. Ring
21	W -36541	Condenser Tubular .02 Mfd. 160 V.	C	-40910	Band Selector Switch
22	W -30498	Condenser Tubular .05 Mfd. 400 V.	45Z	to	
23	W -29910A	Condenser Tubular .25 Mfd. 200 V.	45U	W -41068A	Switch, Dial Light
24	W -29910A	Condenser Tubular .25 Mfd. 200 V.	46	G27 -26719	Ant. & Grd. Terminal Assembly
25A	W -29910A	Condenser Tubular .25 Mfd. 200 V.	47	48Y	Battery Switch
25B	W -29910A	Condenser Tubular .25 Mfd. 200 V.	48Z	-41368	Tone Control
26Z	-37874	B-C Osc. Series Trimmer	49	G49 -24628	Audio Transformer
26Y	-37874	Pol. Osc. Series Trimmer	50	-37967	Volume Control
27	G50 -33002	3 Section Var. Tuning Condenser	51	G3 -23300	Resistor .372 Ohm (Air Cell)
	-42429	Dial Drive Unit	52	W -41369	Condenser H-F-Osc. Series Trimmer
	-41220	Dial Glass	53	W -35951	3 Section Shunt Trimmer Assembly
	-12680	Pointer	54	G85 -28807	Ballast Tube Socket
	-41582	Drive Cable	W	-29591	Cond. .0005 Mfd. 400 V
	-41584	Coupling Unit	B	-40839	Escutcheon
	-41584	Coupling Unit	W	-28760A	Escutcheon Pin
	-11587	Pointer Screw	W	-41221	Knob, Station Selector
	-42338	Dial Mask	W	-41222	Knob, Dial Light
28	B -11762	Battery Supply Cable Assembly	W	-40192B	Knob, V. C. & T. C.
	C -41972	Harness for B-11762	W	-41224	Knob, Band Selector Sw.
29	G8 -35696	Speaker Cable	W	-43282	Ballast Tube
30	-37121	Resistor 5000 Ohm 1/4 W.			



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	145	85	0	-10	135
6U7G	I-F Amplifier	6.3	145	85	0	—	—
6Q7G	AVC, Detector & A. F. Amplifier	6.3	70	—	-2	—	—
25A6G	Output	25.0	130	145	0	—	—
25Z6G	Rectifier	25.0	110 (P1)	—	145 (K1)	—	—
W-44338	Ballast			Variable			

Power output approximately 2.5 watts.

Power consumption approximately 55 watts at 117.5 volts AC or 45 watts at 117.5 volts DC.

Voltage drop across speaker field 50 volts.

All voltage readings given above except filaments will be approximately 40% less if set is measured on 117.5 volt DC power supply.

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the antenna terminal "A1" on the rear of the chassis. Connect the ground lead from the signal generator to the GROUND TERMINAL "G" on the receiver chassis. DO NOT CONNECT THE GROUND LEAD FROM THE SIGNAL GENERATOR DIRECTLY TO THE RECEIVER CHASSIS. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the left (American Broadcast Band) and turn the volume control to the right "ON."

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmer condensers located on top of the 2nd I-F transformer (Fig. 2) for maximum reading on the output meter.

(e) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERA-

TOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

**Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 100 muf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 400 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch is set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C), is heard. It is not necessary that the receiver tune through this signal.

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE "OSC" TRIMMER.

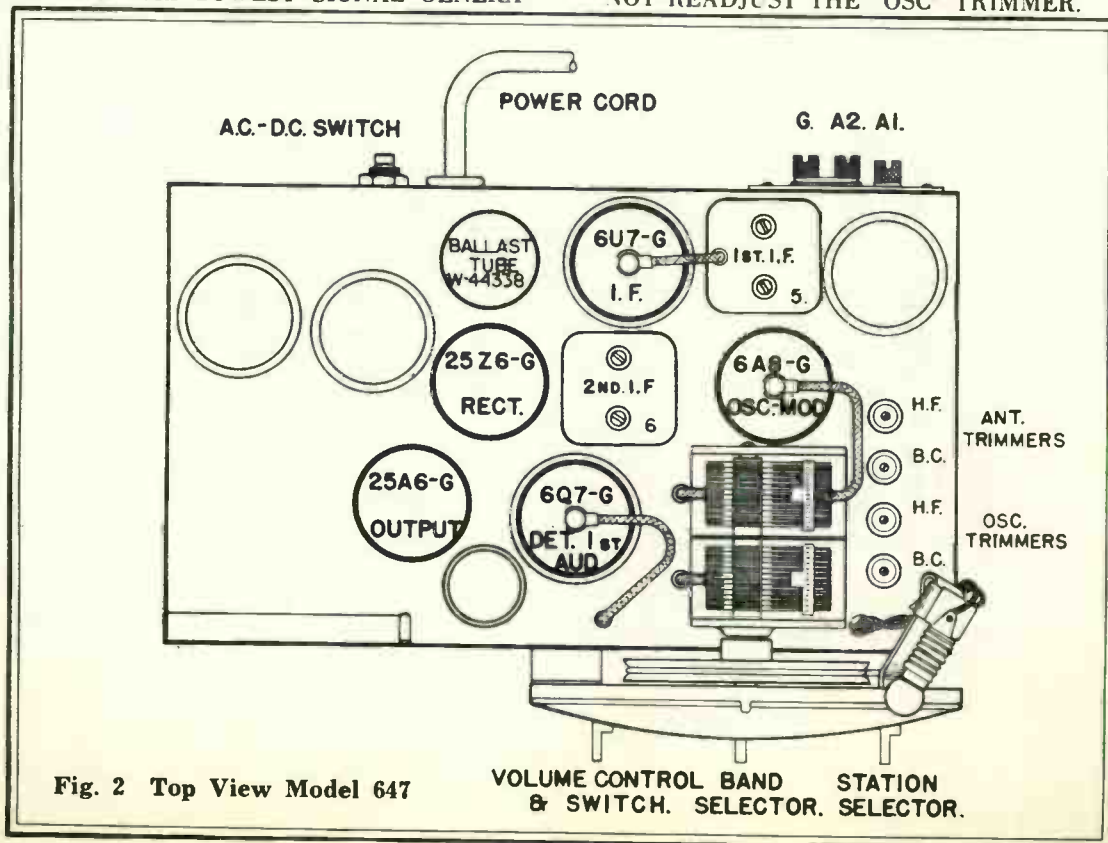


Fig. 2 Top View Model 647



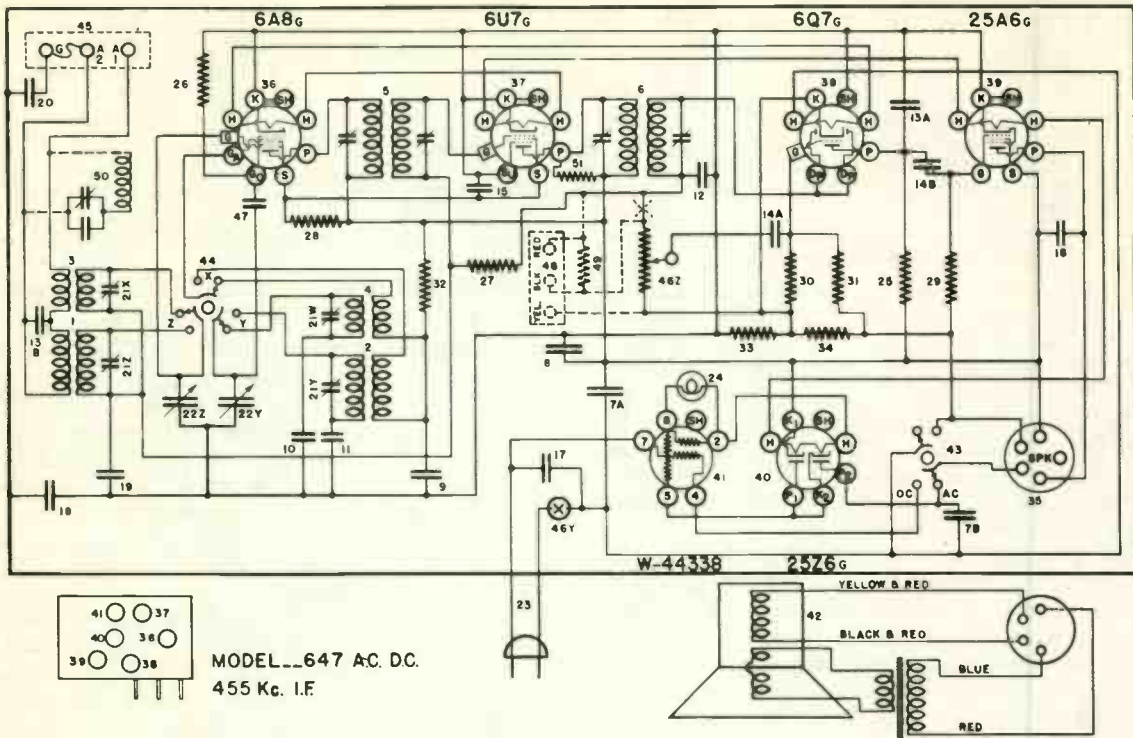


FIG. 1—WIRING DIAGRAM—MODEL 647

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description		
1	G143-32000	Ant. Coil B. C.	29	-33344	Resistor 400,000 Ohm		
2	G145-32002	Osc. Coil B. C.	30	-37590	Resistor 750,000 Ohm		
3	G142-32000	Ant. Coil H. B.			1/3 W. Carb.		
4	G144-32002	Osc. Coil H. F.	31	-37584	Resistor 11 Megohm		
5	G158-32004	1st I-F Assy.			1/3 W. Carb.		
6	G157-32004	2nd I-F Assy.	32	-31093	Resistor 2700 Ohm		
7A	W -40325	Condenser 50 Mf. 150 V.			1/3 W. Carb.		
7B	W -40325	Condenser 50 Mf. 150 V.	33	W -37287	Resistor 20 Ohm 1/2 W. Flex.		
8	W -36057B	Condenser 40 Mf. 300 V.	34	W -43462	Resistor 375 Ohm		
9	W -41081	Condenser 16 Mf. 250V.			2 1/4 W. Flex.		
10	G18 -34000	Condenser 3800 Mmf.	35	G103-28807	Socket Speaker		
11	G14 -34002	Condenser .0004 Mf.	36	G156-36400	Socket Type 6A8		
12	G1 -34002	Condenser .00025 Mf.	37	G171-36400	Socket Type 6U7		
13A	G2 -34002	Condenser .0001 Mf.	38	G160-36400	Socket Type 6Q7		
13B	G2 -34002	Condenser .0001 Mf.	39	G161-36400	Socket Type 25A6		
14A	W -24621	Condenser .02 Mf. 200 V.	40	G182-36400	Socket Type 25Z6		
14B	W -28621	Condenser .02 Mf. 200 V.	41	G180-36400	Socket W-44338 Ballast		
15	W -35936	Condenser .05 Mf. 200 V.			Tube Shield		
16	W -30323	Condenser .01 Mf. 200 V.	42	W -40911	Speaker Soc. No. 1-D-1088		
17	W -25191A	Condenser .01 Mf. 200 V.			V. C. &		
18	W -24049C	Condenser .1 Mf. 200 V.			Lone Assy. } Used		
19	W -35541	Condenser .02 Mf. 160 V.			Field Coil } on		
20	G3 -34002	Condenser .0005 Mf.			Output } Trans.		
21	W -41247A	4 Sect. Shunt Trim. Assy			346BP12"M" } Spk.		
22	G42 -33001	2 Sect. Var. Tuning Cond.			Cone Mtg. } Ring		
	-44679A	Dial Face (Glass)			-43672		
	C -44293	Support Brkt. (Dial Glass)			W -43552	Spk. Plug Clamp	
	W -44084A	Support Ring (Dial)	43	W -43468	A.C.-D.C. Switch		
	W -43542B	Bracket—Drive Shaft			W -42709	Lock Brkt (AC-DC Switch)	
	W -43549	Retaining Ring (Dr. Shaft)			W -43448A	Band Switch	
	W -44134A	Drive Shaft			44	Ant. & Gnd. Term. Assy.	
	G1 -43504	Pulley & Hub. Assy.			45	Volume Cont. 500,000 Ohm	
	W -44289	Pointer			46Y	Line Switch	
	W -40486	Screw FS20 (Pointer Mtg.)			47	G13 -34002	Condenser .000035 Mf.
	W -43561	Tension Spring			48	G37 -26719	Phono. Terminal Assy.
	W -44085B	Dial Mask			49	-21875	Resistor 100,000 Ohm 1/3 W.
	-41582	Drive Cord			B -44226B	Escutcheon	
	W -42666	Insulating Bushing (Shaft)			W -44381B	Knob—(3 Req.)	
	B -44004	Cord & Plug			W -43563	Rubber Mtg. Foot	
23	W -44337	Dial Light 6-8 V.			7EA	Cabinet	
	G6 -27134	Dial Light Socket			B -44375B	Back—Cabinet	
24	W -34018	Resistor 200,000 Ohm			G165-32004	Wave Trap	
		1/3 W. Carb.	50		W -23785	Resistor 500,000 Ohm	
26	-35928	Resistor 60,000 Ohm	51			1/3 W. Carb.	
		1/2 W. Ins.					
27	-26577	Resistor 3 Megohm					
		1/3 W. Carb.					
28	-22831	Resistor 15,000 Ohm					
		1/3 W. Carb.					

(C) SIGNAL INPUT FREQUENCIES

American Broadcast Band	Minimum Capacity	Shunt Alignment
High Frequency Band	1,725 Kilocycles	1,400 Kilocycles
	18,300 Kilocycles	18,000 Kilocycles

CHASSIS NO. 648 (Super Sextette)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6U7G	I-F Amplifier	6.3	105	70	—	—	—	—
6Q7G	Det. AVC, A-F Amplifier	6.3	35	—	—	—	—	—
25A6G	Output	25.1	100	105	—	6	—	—
25Z6G	Rectifier	25.1	117.5 A.C.	—	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop						

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

Tuning The I-F Amplifier To 455 Kilocycles

- (a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8-G, leaving grid cap in place.
- (b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust the 2nd I-F trimmer condensers, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

Aligning The R-F Amplifier.

Connect output of signal generator through a .0001 condenser to the antenna lead of receiver.

- (a) Set the signal generator to 1725 kilocycles.
  - (b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.
  - (c) Set the generator to 1400 kilocycles.
  - (d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
  - (e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.
- NOTE: Do not readjust the "OSC" trimmer.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —4099B	Dial Light, 6-8 Volt		W —46967A	Speaker Support Bracket
	G6 —27134	Dial Light Bracket Assembly		—6876	No. 6—32 x 1/4" Washer H. M. Screw
2	B —45784	Power Cable and Plug		N —5062	No. 6—32 H. H. Nut
3	G185—32000	Antenna Coil		W —20800	No. 6 Shakeproof Washer
4	G182—32002	Oscillator Coil		L —10	Lock Washer
5	G208—32004	1st I.F. Transformer		R —181	No. 10—32 x 1/8" Ro. H. M. Screw
6	G209—32004	2nd I.F. Transformer		W —4318B	Spacer
7	G3 —34002	Condenser, .0005 Mf. Molded	27A		Volume Control (1 Meg.)
8	W —45780B	Condenser, .02 Mf. 160 V. Paper	27B	—46847	Power Switch
9A	G66 —33001	2 Section Gang (Antenna Section Oscillator Section)		W —46668	3/8" Nut
9B				G178—36400	8 Prong Socket (No Marking)
	W —46753	Var. Con. Mtg. Plate		W —46773	Ballast Tube
	—6416	No. 8—32 x 1/8" W. H. M. Screw		W —40911	Tube Shield
	C —46815A	Dial Glass	28	G184 —32004	Wave Trap
	W —46921	Speed Nut (2 Req.)	29	G6 —34002	Condenser, .000025 Mf. 200 V. Molded
	MG12—46750	Dial Back Plate Assembly		—46894	8AK Cabinet (Brown)
	W —46831A	Dial Pointer		—46909	8AH Cabinet (Ivory)
	G13 —41582	Drive Cord (30 Inches)		—47081	8AG Cabinet (Red)
	G4 —41582	Guide Cord (9 Inches)		—46842A	8AK Cabinet Back
	W —46848	Guide Cord Spring		—46876A	8AH Cabinet Back
	W —46087	Drive Cord Spring		—46990A	8AG Cabinet Back
	G15 —43564	Pulley and Hub Assembly		B —128	Screws for Mounting Back (4 Req.)
	W —23877	Set Screw for Drive Pulley (2 Req.)		—46816	Rubber Bottom Mtg. Screw (4 Req.)
	W —46290	Cord Clamp			<b>PUSH BUTTON PARTS</b>
	W —43542B	Drive Shaft Bracket		G33 —45683	Push Button Unit Complete
	—45746	Drive Shaft		G26 —45683	Key Assembly
	—45808	P. K. Screw for Bracket (2 Req.)		W —50542C	Key Clip (Lock Clamp)
	O-8	Flat Washer		W —45646B	Adjusting Clip (3 Req.)
10	G2 —34002	Condenser, .0001 Mf. Molded		W —50547	Key Plate
11	W —45780B	Condenser, .02 Mf. 160 V. Paper		W —50588B	Adjusting Clip (1 Req.)
12	W —45782B	Condenser, .05 Mf. 120 V. Paper		W —50607C	Spring (Key Return)
13	W —45810B	Condenser, .006 Mf. 160 V. Paper		W —50561	No. 6—40 x 1/8" Bearing Screw (Rocker Plate)
14	G2 —34002	Condenser, .0001 Mf. Molded		—2016	No. 8 Shakeproof Washer
15A	W —46398	Condenser, 16 Mf. 125 V. Elect.		G62 —45683	Rocker Plate Assembly
15B					—46841A
16	W —45780B	Condenser, .02 Mf. 160 V. Paper		—46879A	Push Button (8AH and 8AG) (Black)
17	W —45817B	Condenser, .05 Mf. 160 V. Paper		—46887	Call Letter Sheet (8AH and 8AG)
18	—21237A	Resistor, 60,000 Ohm 1/2 W. Carbon		—50841	Call Letter Sheet (8AK)
19	—36688	Resistor, 3 Megohm 1/2 W. Carbon		W —50551	Call Letter Cover (5 in Envelope)
20	—21876	Resistor, 10,000 Ohm 1/2 W. Carbon		—46840A	Instructions
21	—21237A	Resistor, 60,000 Ohm 1/2 W. Carbon		—46953	Knob (8AK) (Brown)
22	—46497	Resistor, 11 Megohm 1/2 W. Carbon		—44552	Knob (8AH and 8AG) (Black)
23	—23785	Resistor, 500,000 Ohm 1/2 W. Carbon			
24	—21455	Resistor, 300,000 Ohm 1/2 W. Carbon			
25	W —41759	Resistor, 140 Ohm 1/2 W. Flex.			
26	281-BL-7-"B"	Speaker, Spec. 55WA43 (450 Ohm)			
	—47290	Speaker Cone and V. C. Assembly			
	—46686	Field Coil (450 Ohm 60 M. A.)			
	—46687	Output Transformer			
	—46685	Cardboard Ring, Cone Mtg.			

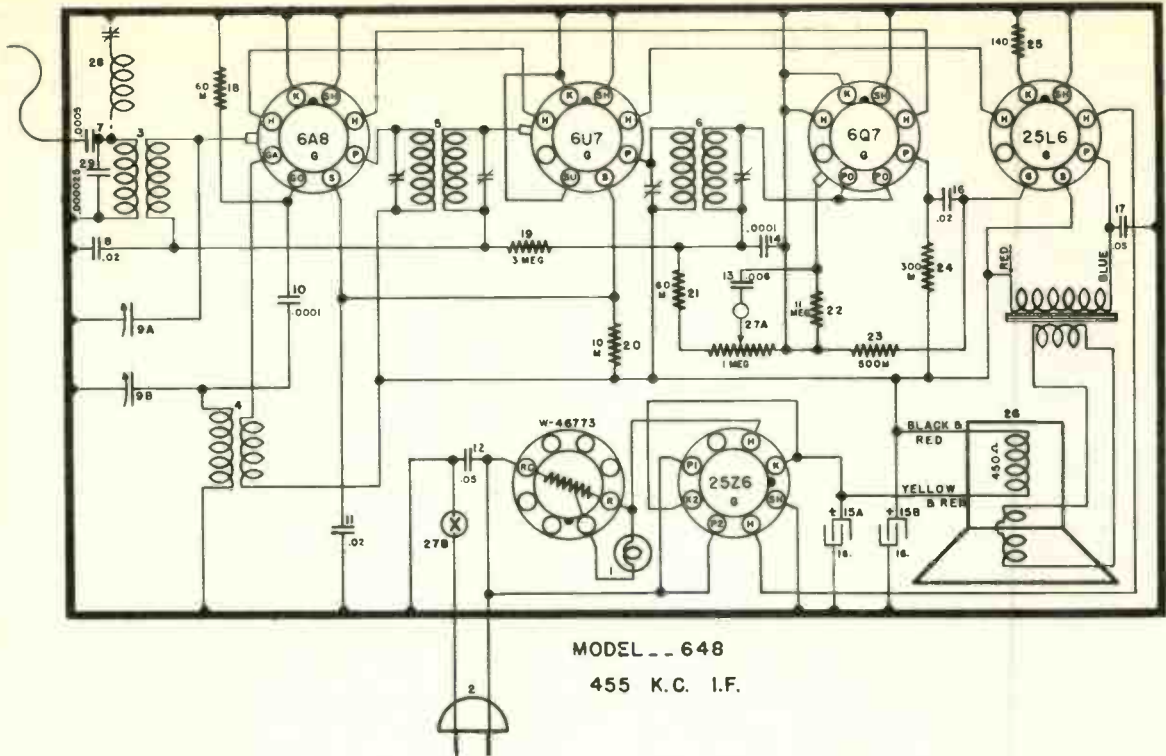


FIG. 1—WIRING DIAGRAM—MODEL 648

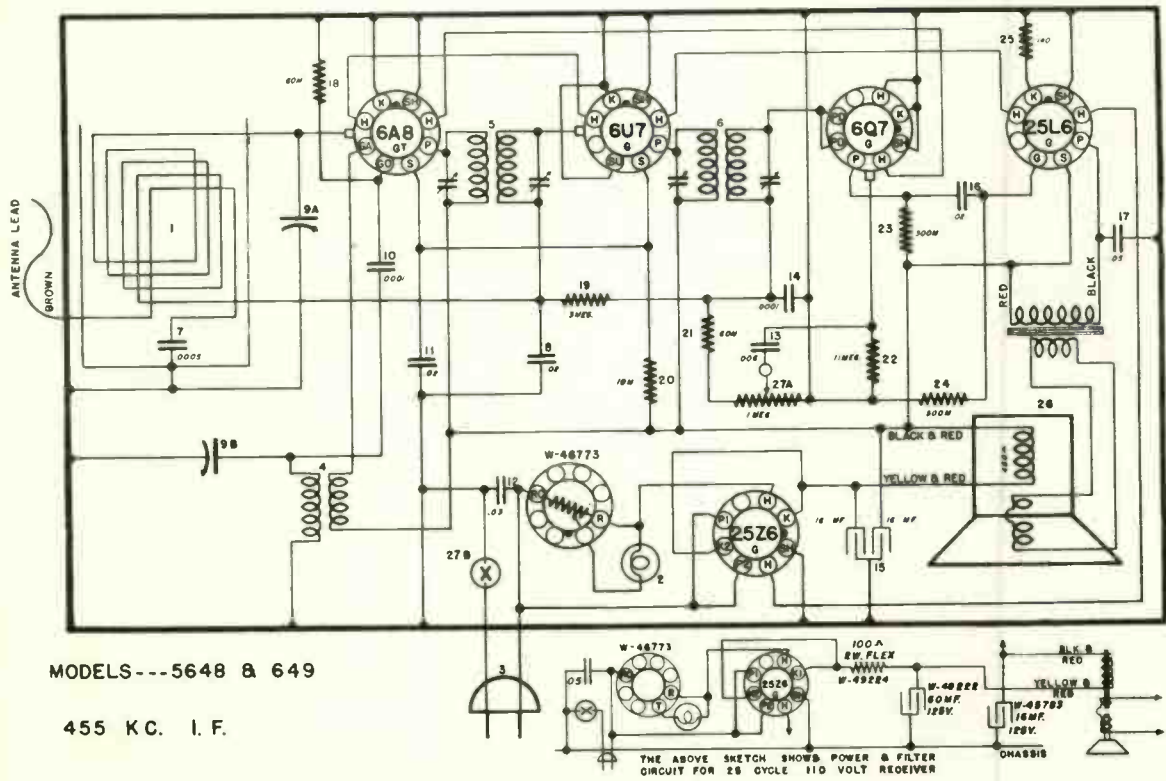


FIG. 1—WIRING DIAGRAM—MODEL 5648—649

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105
6U7G	I-F Amplifier	6.3	105	70	—	—	—	—
6Q7G	Det, AVC, A-F Amplifier	6.3	35	—	—	—	—	—
25L6G	Output	25.1	100	105	—	6	—	—
25Z6G	Rectifier	25.1	117	5 A.C.	—	132	—	—
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop						

Tuning the I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, located on chassis between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

Aligning the R-F Amplifier Model 5648

Connect output lead of signal generator through a .0001 mf. condenser to the antenna lead of the receiver.

(a) Set signal generator to 1550 kilocycles.

(b) With the condenser gang open all the way, adjust the "OSC" section of the gang for maximum signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune in the 1400 kc. signal with the manual tuning knob.

(e) Adjust the trimmer condenser on the "ANT" section of the gang for maximum signal.

Aligning the R-F Amplifier Model 649

Connect output of signal generator through a .0001 mf. condenser to the antenna lead of receiver.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1 -47539	Loop Antenna (5648 only)	W	-46662	3/8" Pal Nut
1	G2 -47673	Loop Antenna (649 only)	G33	-45683	Push Button Unit Assembly
2	W -4099B	Dial Light Bulb, 6-8 Volt	G26	-45683	Riveted Key Assembly (4 Req.)
	G6 -27134	Dial Light Bracket Assembly	G62	-45683	Rocker Plate Assembly
4	G194-32002	Oscillator Coil (5648 only)	W	-50542E	Key Clip (4 Req.)
4	G182-32002	Oscillator Coil (649 only)	W	-45646B	Adjusting Clip (1 Req.)
5	G208-32004	1st I-F. Transformer	W	-50547	Key Plate
6	G209-32004	2nd I-F. Transformer	W	-31388	Key Plate Holding Screw (2 Req.)
7	G3 -34002	Condenser, .0005 Mf. Molded	W	-45717	No. 6-32 x 1 1/4" Fil. Hd. Adjusting Screw
8A	G66 -33001	2 Section Var. Tun. Cond. { Antenna Section	W	-50588B	Adjusting Clip (4 Req.)
8B	W -46738	2 Section Trimmer Condenser { Oscillator Section	W	-50607C	Key Return Spring
	MG12-46750	Riveted Dial Back Plate Assembly	W	-50561	No. 6-40 x 1 1/8" Fil. Hd. Screw (Rocker Plate Bearing)
	G15 -43564	Pulley and Hub Assembly			No. 8 Shakeproof Washer (Key Plate)
	W -23877	No. 8-32 x 3/8" Set Screw (2 Req.)	MG31	-48658	Instruction Envelope Assy. (Models 649A and 649D)
	W -45746	Drive Shaft	MG32	-48656	Instruction Envelope Assy. (Models 649B, 649C, 649E and 649F)
	W -43542B	Drive Shaft Bracket	MG31	-47362	Instruction Envelope Assy. (Models C-5648A and C-5648D)
	W -45808	No. 8 x 1/2" H. H. P. K. Screw (Drive Shaft Brkt.)	MG32	-47362	Instruction Envelope Assy. (Models C-5648B and C-5648C)
	W -46831A	Dial Pointer			-8AK Cabinet
	G13 -41582	Drive Cord, 30"			-8AH Cabinet, Ivory
	G4 -41582	Guide Cord, 9"			-8AG Cabinet, Red
	W -46087	Drive Cord Spring			-9FA Cabinet
	W -46848	Guide Cord Spring			-9FB Cabinet, Blue
	W -46290	Drive Cord Clamp			-9FC Cabinet, Tan
	C -47547	Dial Glass			-47583 Carton (8AK, 8AH, 8AG, 9FB, 9FC) (5648 only)
	W -46921	Speed Nut (Dial Glass)			-47584 Carton (8FA) (5648 only)
	W -48741	Dial Glass Clip (Lower) (9FA only)			-46841A Push Buttons (8AK, 9FA) (4 Req.)
	W -48742	Dial Glass Clip (Upper) (9FA only)			-46879A Push Buttons (8AH, 8AG, 9FB, 9FC) (4 Req.)
	W -48743	No. 3 x 1/4" Rd. Hd. Machine Screw (3 Req.) (Dial Glass Clip)			-46953 Knob (8AK) (2 Req.)
	W -40911	Tube Shield			-44552 Knob (8AH, 8AG, 9FB, 9FC) (2 Req.)
	W -46773	Ballast Tube	W	-47483	Knob (9FA) (2 Req.)
	W -36639	Grid Clip			-47545 Instructions
	W -27981A	Tube Shield Base			-47863 Call Letters (8AK, 9FA)
	W -30175	Trimmer Condenser Spacer			-47859 Call Letters (8AH, 8AG, 9FB, 9FC)
9	G178-36400	8 Prong Socket (No Marking)			-50551B Call Letter Covers
	G2 -34002	Condenser, .0001 Mf. Molded	MG19	-47410	Cabinet Back Assembly (8AK)
10	W -45780B	Condenser, .02 Mf. 160 Volts Paper	MG20	-47410	Cabinet Back Assembly (8AH, 8AG, 9FB, 9FC)
11	W -45782B	Condenser, .05 Mf. 120 Volts Paper	MG22	-47410	Cabinet Back Assembly (9FA)
12	W -45780B	Condenser, .02 Mf. 160 Volts Paper	G1	-47539	Antenna Loop Assembly
13	W -45810B	Condenser, .006 Mf. 200 Volts Paper			-46880 Resistance Cord for 220 Volt Operation
14	G2 -34002	Condenser, .0001 Mf. Molded			-6889 No. 8-32 x 3/8" W. H. Mach. Screw (Chassis Mtg.) (4 Req.) (9FA Cab.)
15	W -46398	Condenser, 16 Mf. Elect. { 60 Cycle only			-20881 No. 6 x 3/8" Rd. Hd. Wood Screw (Cabinet Back) (4 Req.) (9FA Cab.)
	W -49222	Condenser 60 Mf. Elect. { 25 Cycle only			-46816 No. 8 x 3/8" Rubber Bott. Mach. Screw (Chassis Mtg.) (4 Req.) (8AK, 8AH, 8AG, 9FB, 9FC)
16	W -45783	Condenser 16 Mf. Elect. { 25 Cycle only	B	-128	No. 6-32 x 1/4" Binding Hd. Mach. Screw (Cabinet Back) (4 Req.) (8AK)
17	W -45780B	Condenser .02 Mf. 160 Volts Paper	W	-48758	Trimont Stud (4 Req.) (Cabinet Back)
18	W -45817B	Condenser, .05 Mf. 160 Volts Paper			-46838 Carton (8AK, 8AG, 8AH, 9FB, 9FC) (649 only)
19	-21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.			-47412 Carton (9FA) (649 only)
20	-36688	Resistor, 3 Megohms 1/4 Watt Carb.			-49414 Instructions (649 only)
21	-21876	Resistor, 10,000 Ohms 1/4 Watt Carb.	B	-47418	Cabinet Back (9FA) (649 only)
22	-21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.			-46842B Cabinet Back (8AK) (649 only)
23	-46497	Resistor, 11 Megohms 1/4 Watt Carb.			-46990A Cabinet Back (8AH, 8AG, 9FB, 9FC) (649 only)
24	-21455	Resistor, 300,000 Ohms 1/4 Watt Carb.	C	-46815A	Dial Glass (649 only)
25	-23785	Resistor, 500,000 Ohms 1/4 Watt Carb.	W	-30409	Flat Washer (Chassis Mt.) (649 only)
	W -41759	Resistor, 140 Ohms 1/4 Watt Flex.			
26	W -49224	Resistor, 100 Ohms 2 Watt Flex. (25 Cycle only)			
	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
	-47290	V. C. and Cone Assembly			
	-46686	Field Coil, 450 Ohms 60 M. A.			
	-46687	Output Transformer	B	-46842B	Cabinet Back (8AK) (649 only)
	-46685	Cardboard Ring			-46990A Cabinet Back (8AH, 8AG, 9FB, 9FC) (649 only)
26	281-BL-7-"K"	Speaker, Spec. 5-IV-2	C	-46815A	Dial Glass (649 only)
	-47166	V. C. and Cone Assembly	W	-30409	Flat Washer (Chassis Mt.) (649 only)
	-47170	Field Coil, 450 Ohms 60 M. A.			
	-47171	Output Transformer			
	-47169	Cardboard Ring			
27A		Volume Control, 1 Megohm			
27B	-46847	Line Switch			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6A8	Osc-Mod	6.3	220	80	—	0	-4 to -10	105	2.5
6K7	I. F. Amplifier	6.3	220	105	3.3	0	—	—	3.3
6H6	Diode Detector	6.3	—	—	—	—	—	—	0
6K7	A. F. Amplifier	6.3	20	20	0	1.0	—	—	0
6F6	Output	6.3	210	220	—	8.0	—	—	0
5Z4	Rectifier	4.9	220	—	—	—	—	—	—

1. Tuning I. F. Amplifier to 450 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.
- (b) Turn the tuning condenser rotor plates until they are completely meshed.
- (c) Turn the band selector switch to the short wave band (extreme left hand position).
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output. (Fig 2).
- (f) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

2. Aligning R. F. Amplifier—Broadcast Band (540 to 1700 Kc.)

- (a) Connect the output of the signal generator through a .00025 mfd: condenser to the "Ant" terminal of the receiver.
- (b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.
- (c) Turn the band selector switch to the broadcast band (extreme right hand position).
- (d) Set the signal generator at 1720 kilocycles.
- (e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output.
- (f) Set the signal generator at 1400 kilocycles.
- (g) Tune-in the 1400 kilocycle signal with the station selector.
- (h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.
- (i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

- (j) Set the signal generator to 600 kilocycles.
- (k) Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

3. Aligning R. F. Amplifier—Police Band 1700 to 5200 Kc.)

- (a) Turn the band selector switch to the police band (middle position).
- (b) Set the signal generator to 5000 kilocycles. (5.0 megacycles).
- (c) Turn the station selector to 5 on the police band.
- (d) Adjust the oscillator parallel trimmer (P. Band) for maximum output. (Fig. 4).
- (e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

4. Aligning R. F. Amplifier—Short Wave Band 5.4 to 15 Meg.)

- (a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.
- (b) Turn the band selector switch to the short wave band (left hand position).
- (c) Set the signal generator to 15 megacycles.
- (d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.
- (e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.
- (f) Turn the station selector to 15 on the dial (S-W Band.)
- (g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid

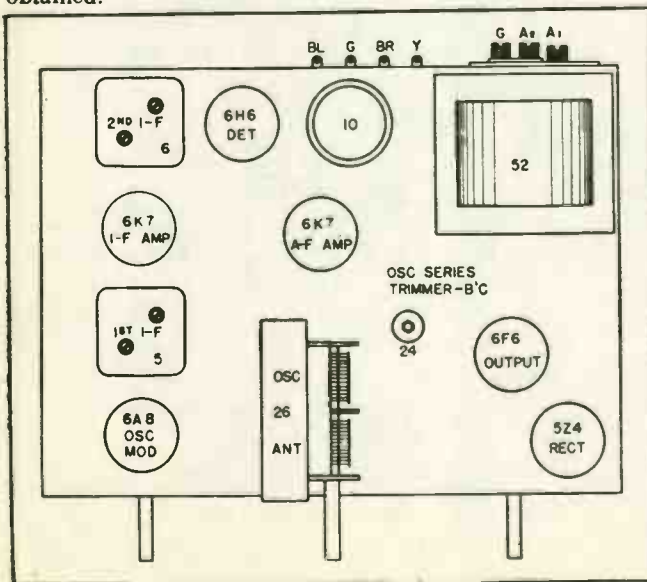


Fig. 2. Top View 655

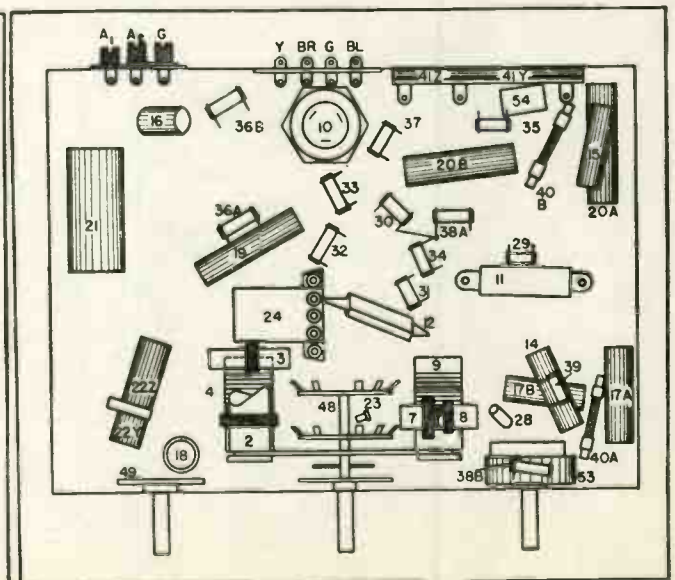
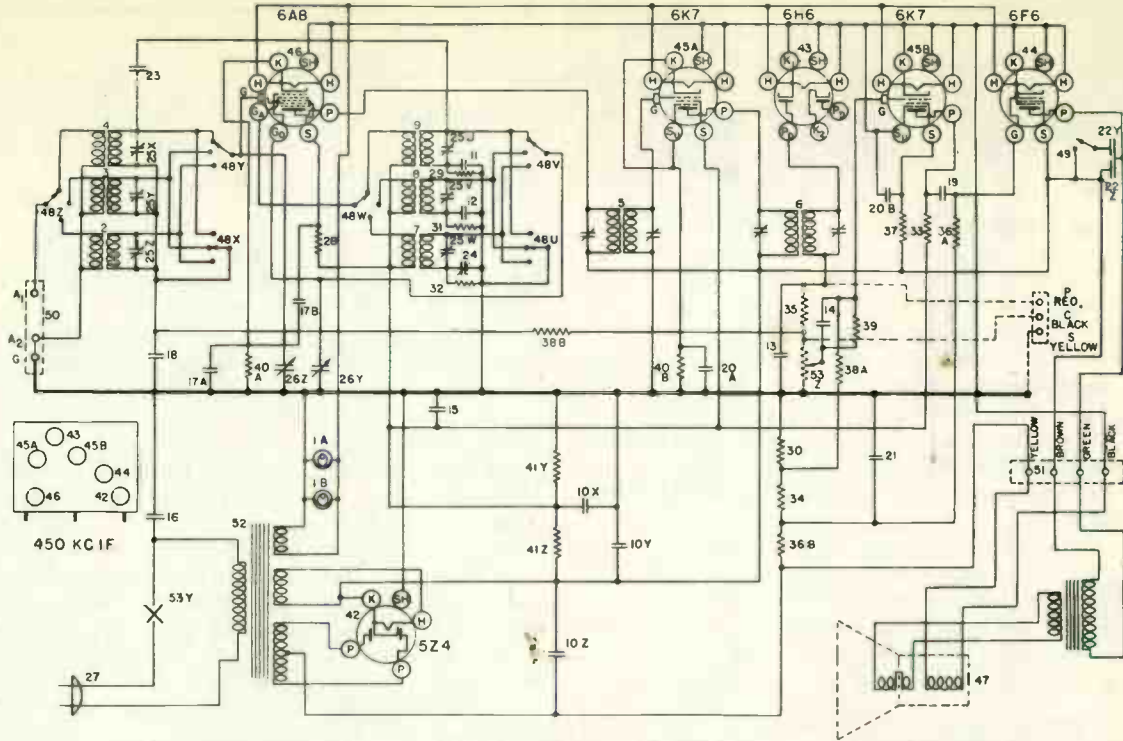


Fig. 3. Bottom View 655

MODEL 655



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 -27134	Dial Light Assm.	31	-24990	Resistor, 25,000 Ohm
1B	G4 -27134	Dial Light Assm.	32	-21453	Resistor, 40,000 Ohm
2	G39 -32000	Ant. Coil only 540-1725 Kc.	33	-21875	Resistor, 100,000 Ohm
3	G43 -32000	Ant. Coil only 1.7-5.2 Mc.	34	-34018	Resistor, 200,000 Ohm
4	G40 -32000	Ant. Coil only 5.3-15.5 Mc.	35	-21455	Resistor, 300,000 Ohm
5	G59 -32004	1st I. F. Trans. Assm.	36A	-23785	Resistor, 500,000 Ohm
6	G38 -32004	2nd I. F. Trans. Assm.	36B	-23785	Resistor, 500,000 Ohm
7	G34 -32002	Osc. Coil only 540-1725 Kc.	37	-34863	Resistor, 2.0 Megohm
8	G35 -32002	Osc. Coil only 1.7-5.2 Mc.	38A	-26577	Resistor, 3.0 Megohm
9	G48 -32002	Osc. Coil only 5.3-15.5 Mc.	38B	-26577	Resistor, 3.0 Megohm
10Z		Condenser, 8 mfd. 450 V.	39	-26578	Resistor, 5.0 Megohm
10Y	B -30059C	Condenser, 8 mfd. 450 V.	40A	-25937	Resistor, 275 Ohms (Flex)
10X		Condenser, 8 mfd. 450 V.	40B	-25937	Resistor, 275 Ohms (Flex)
11	G12 -34000	Condenser, 4725 mmf.	41Z	W -35963	Resistor, 8,500 Ohms
12	G7 -34000	Condenser, 1450 mmf.	41Y		Resistor, 25,000 Ohms
13	G2 -34002	Condenser, 0.0001 mfd. 200 V.	42	G154-36400	Socket, 5Z4
14	W -28619	Condenser, 0.008 mfd. 200 V.	43	G155-36400	Socket, 6F6
15	W -32378	Condenser, 0.01 mfd. 400 V.	44	G153-36400	Socket, 6F6
16	W -30805	Condenser, 0.01 mfd. 400 V.	45A	G151-36400	Socket, 6K7
17A	W -28621	Condenser, 0.02 mfd. 200 V.	45B	G151-36400	Socket, 6K7
17B	W -28621	Condenser, 0.02 mfd. 200 V.	46	G156-36400	Socket, 6A8
18	W -32380	Condenser, 0.05 mfd. 200 V.	47	31BBL-18M	Speaker, (Table Model)
19	W -27216	Condenser, 0.05 mfd. 200 V.		41BCL-22M	Speaker, (Console Model)
20A	W -24049B	Condenser, 0.1 mfd. 200 V.	48U		
20B	W -24049B	Condenser, 0.1 mfd. 200 V.	To	B -35935	Band Change Switch
21	W -30321A	Condenser, 1.0 mfd. 160 V.	48Z		
22Z	W -35011	Condenser, 0.008 mfd. 400 V.	49	W -35937	Switch Tone Control
22Y		Condenser, 0.03 mfd. 400 V.	50	G27 -26713	Terminal Board Ant—Grd.
23	G49 -34403	Condenser, 1.0 mmf.	51	G5 -31128	Terminal Board Speaker
24	G10 -33005	Condenser, B. C. Series Padder	W	-34628	Term. Board Cover (Speaker)
25Z			W	-34627	Term. Board Cover Insulator
25Y	W -35951	3 Section Ant. Trimmer Cond.	52	G8 -28500	Power Trans. 60 Cy. 110 V.
25X			G9	-28500	Power Trans. 23 Cy. 110 V.
25W			G10	-28500	Power Trans. 25 Cy. 220 V.
25V	W -35951	3 Section Osc. Trimmer Cond.	53Z		Volume Control & On-Off Switch
25U			53Y	-35938	
26Z	G13 -33001	Var. Tuning Cond. Gang	54	G1 -34002	Condenser, 0.00025 mfd.
26Y	G29 -32088	Dial Assm. Complete	B	-33528C	Escutcheon
27	W -37198	Dial Hand	W	-33984	Escutcheon Gasket
28	W -32293	Dial Hand Nut (2)	D	-28	Escutcheon Screw (4)
29	B -33903A	A. C. Cord & Plug	W	-36312	Band Change Plate
30	-36318	Resistor, 15,000 Ohm (Insul.)	W	-36309	Band Change Indicator
	-36318	Resistor, 15,000 Ohm (Insul.)	W	-28760B	Escutcheon Pins
	-36318	Resistor, 15,000 Ohm (Insul.)	W	-37340	Knob, Band Change
	-36318	Resistor, 15,000 Ohm (Insul.)	W	-37339	Knob (3)

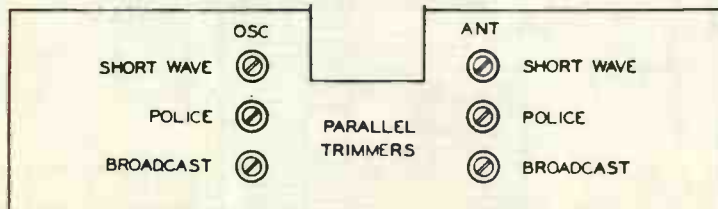


FIG. 4

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P2	S	Su	K	Ga	Go
6A8	Osc-Mod	6.3	275	—	120	—	5	170	-5 to -20
6K7	I. F. Amp.	6.3	275	—	120	4	4	—	—
6H6	Det. & AVC	6.3	0	—	—	—	0	—	—
6F5	A. F. Amp.	6.3	160	—	—	—	2	—	—
6N6	Output	6.3	275	260	—	—	0	—	—
5Z4MG	Rectifier	5.0	—	—	—	—	360	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band

selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (Shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Generator Frequencies.

	Shunt Alignment	Series Alignment
Broadcast Band	1400 Kc.	600 Kc.
High Frequency Band	18000 Kc.	6000 Kc.

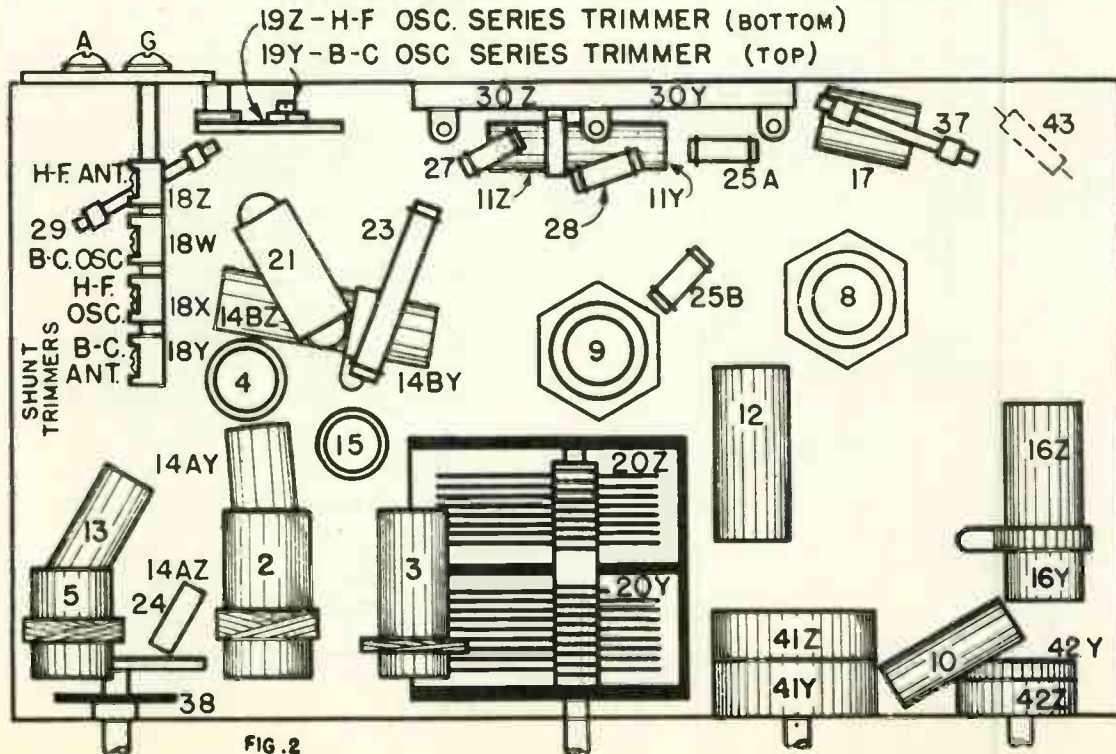
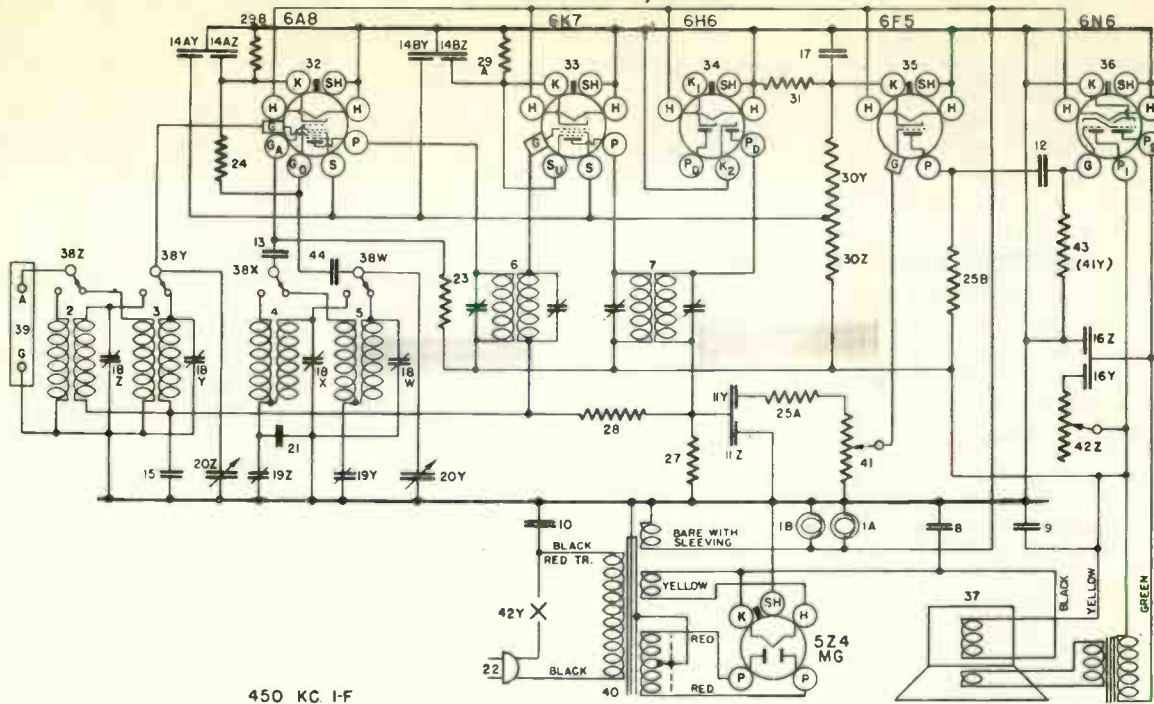


FIG. 2

MODELS 656, 5656



450 KC I-F

FIG. 1.—WIRING DIAGRAM—MODELS 656 AND 5656

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1-AB	W —37922	Bulb, Dial Light	23	—5370-A	Resistor, 20,000 Ohm 1W.
	G3 —37965	Socket Assy., Dial Light	24	—35928	Resistor, 60,000 Ohm 1/4W.
	W —40570	Shield, Dial Light	25A	—23403	Resistor, 150,000 Ohm 1/4W.
2	G118 —32000	Coil, Antenna (5800-18100 Kc.)	25B	—35928	Resistor, 150,000 Ohm 1/4W.
3	G81 —32000	Coil, Antenna (540-1725 Kc.)	27	—33344	Resistor, 400,000 Ohm 1/4W.
4	G108 —32002	Coil, Osc. (5800-18100 Kc.)	28	—37245	Resistor, 1.5 Megohm 1/2W. Flex.
5	G66 —32002	Coil, Osc. (540-1725 Kc.)	29	W —28589	Resistor, 350 Ohm 1/2W. Flex.
6	G71 —32004	Coil Assy., 1st I-F. (450 Kc.)	30Z	W —32301	Resistor, 10,000 Ohm Candohm
7	G72 —32004	Coil Assy., 2nd I-F. (450 Kc.)	30Y	W —32301	Resistor, 15,000 Ohm Candohm
8	W —36055	Cond., .35 Mf. 400V.	31	—37039	Resistor, 165 Ohm 1/2W. Flex.
9	W —36057	Cond., .40 Mf. 300V.	32	G156 —36400	Socket, Type 6A 8
10	W —30805	Cond., .01 Mf. 400V.	33	G151 —36400	Socket, Type 6K7
11Z	W —30322-A	Cond., .00017 Mf. 200V	34	G155 —36400	Socket, Type 6H6
11Y	W —30322-A	Cond., .006 Mf. 200V	35	G158 —36400	Socket, Type 6F5
12	W —32780-B	Cond., .05 Mf. 400V.	36	G165 —36400	Socket, Type 6N6
13	W —32191-A	Cond., .01 Mf. 400V.	37	331BL.9	Speaker ("M"-1-D 116)
14AZ	W —28623	Cond., .02 Mf. 200V.			(Model 656 only)
14AY	W —28623	Cond., .02 Mf. 200V.			
14BZ	W —28623	Cond., .02 Mf. 200V.			
14BY	W —28623	Cond., .02 Mf. 200V.			
15	W —27216	Cond., .05 Mf. 200V.			
15B	W —36541	Cond., .02 Mf. 160V.			
16Y	W —31052	Cond., .05 Mf. 400V.			
16Z	W —31052	Cond., .004 Mf. 400V.			
17	See 15B				
18	W —37241	Cond., 4 Section Trimmer			
19	G31 —33006	Condenser, 2 Section			
20	G17 —33001	Condenser, Var. Tuning			
	Mg35 —40765	Bracket Assy., Dial Support & Spk. Mtg. (656)			
	W —40798	Bracket, L.H., Dial Sup.			
	W —40799	Bracket, R.H., Dial Sup.			
	W —40797	Bracket, (2 Req.), Dial Mtg.			
	B —41979	Dial, Calibrated Glass			
	W —41739	Drive Unit, Dial			
	W —40795-B	Shaft, Hand			
	W —40794	Bracket, Hand Shaft Bearing			
	W —42629	Pointer (Hand), Dial			
	W —40909	Washer (Spring), Hand Shaft			
	W —41611	Ring, Shaft Retaining			
	B —42374	Mask, Metal (Bronze)			
	W —40486	Screw, Pointer Mtg.			
21	G7 —34000	Condenser, 1750 Mmf.			
22	B —33906-A	Cord and Plug, Power			
			23	—37039	Cone Assy. } For above
			24	—42880	Field Coil } Field Coil
			25A	—40275	Output Transformer } Speaker
			25B	—40276	Speaker ("M"-1-D-610)
			27	632CJ3	Speaker ("M"-1-D-610)
			28	—42879	Cone Assy. } For above
			29	—42881	Field Coil } Field Coil
			30Z	G3 —35696	Output Trans. } Speaker
			31	—37247	Speaker Cable, (Model 5656 only)
			32	G1 —26719	Switch, Band Selector
			33	—41978-A	Terminal Board, Antenna & Grd.
			34		Transformer, 110V. 60 Cy. Power
			35	41Z	Volume Control, (3 Meg.)
			36	41Y	Volume Control, (1 Meg.) See Note
			37	42Z	Tone Control, (80,000 Ohm)
			38Z	42Y	Line Switch
			38Y	W —42345	Escutcheon
			38X	D —28	Escutcheon Screws
			38W	W —37339	Knob, V.C.&S.S.
			39	W —37341	Knob, T.C.&B. Sw.
			40	W —42006	Volume Control, (3 Meg.)*
			41	43	Resistor, 300,000 Ohm 1/4W. *(See Note
			42		Cabinet, (Model 656)
			43		Cabinet, (Model 5656)

\*May be used in place of Dual Volume Control.



**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning the I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .0002 mf. condenser to the antenna lead. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B. C.)

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig. 2, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

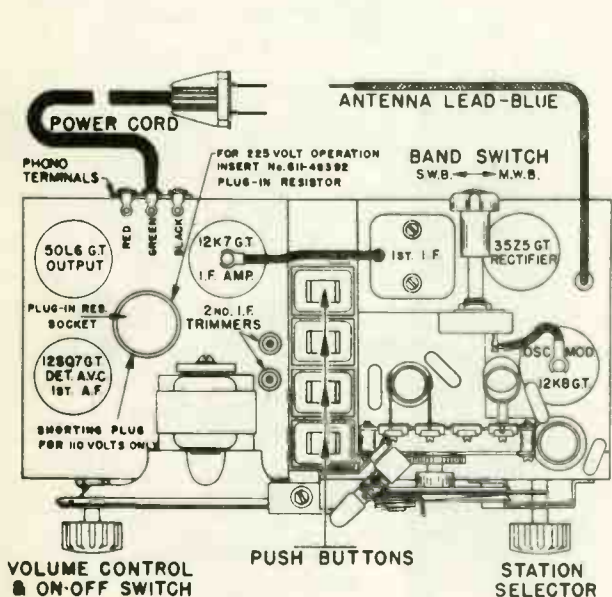


Fig. 2—Top View Model 659

**Aligning the R-F Amplifier.**

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the Medium Wave Band use a .0002 mf. condenser and for the Short Wave Band a 250 ohm carbon resistor instead of the condenser.

The location of the trimmer condensers when viewed from the front of the chassis are: M. W. Osc.—S. W. Osc.—M. W. Ant., and S. W. Ant., (left to right).

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to the Medium Wave Band, adjust the M. W. "OSC" trimmer condenser of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser M. W. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 18.3 megacycles, turn band switch to S. W. position and open gang all the way.

(h) Adjust S. W. "OSC" trimmer condenser for maximum output.

(i) Set signal generator to 18 megacycles.

(j) Tune in 18 mc. signal on receiver, then adjust the S. W. "ANT" trimmer condenser for maximum output.

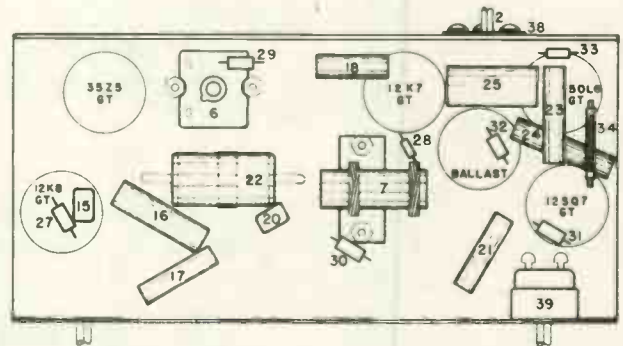


Fig. 3—Bottom View Model 659

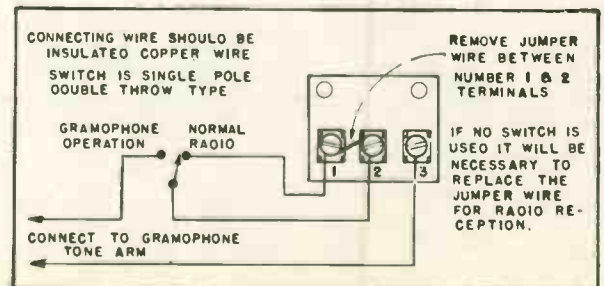
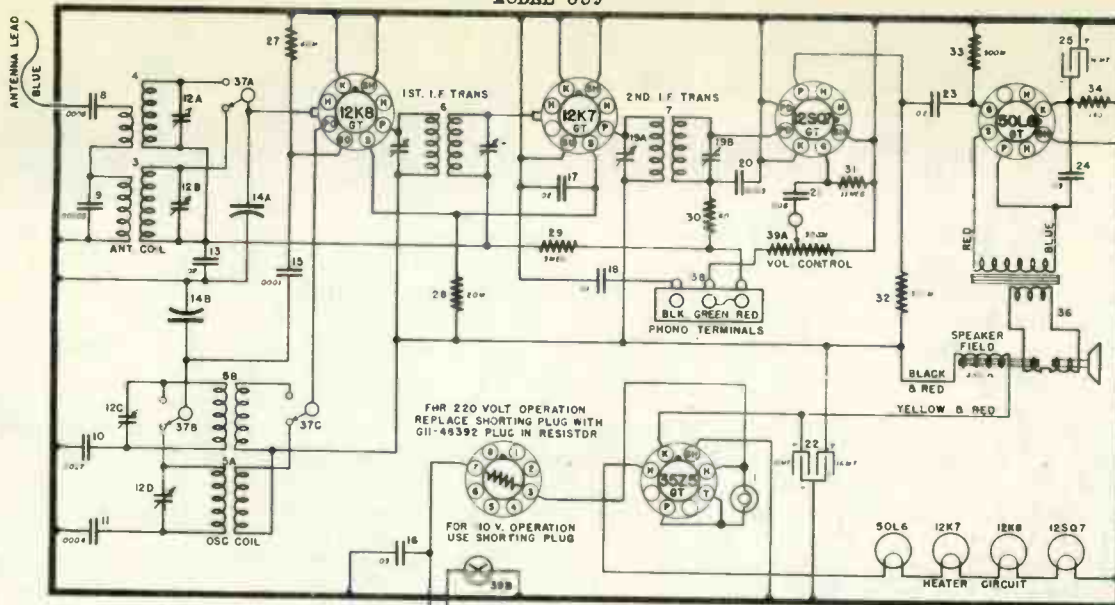


Fig. 4—Gramophone Connections

MODEL 659

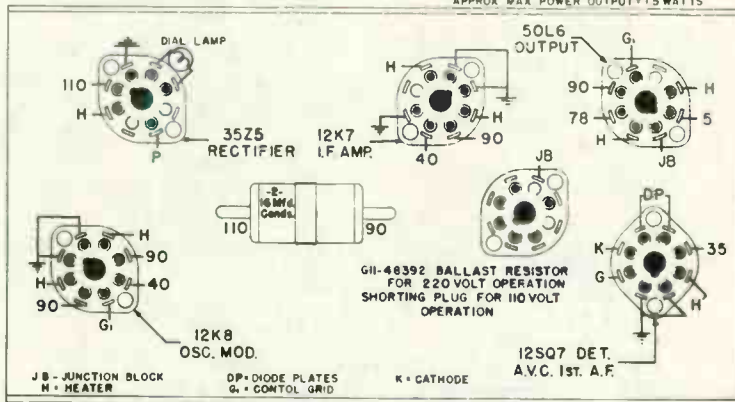


MODEL --- 659

455 KC. I.F.

VOLTAGE READINGS TAKEN BETWEEN SOCKET CONTACT AND CHASSIS, USING A HIGH RESISTANCE VOLTMETER 250V-1000Ω PER VOLT, METER

POWER CONSUMPTION @ 110V = 25 WATTS  
220V = 50 WATTS  
DROP ACROSS SPK FIELD = 20V  
APPROX MAX POWER OUTPUT = 1.5 WATTS



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	44337	Dial Lamp			
	G6-27134	Dial Light Socket and Bracket	39	G52-25719	Phono Terminal Board (1-2-3)
2	45784	Power Cord and Plug		G11-48975	Line Sw. and Vol. Control (1/2 Mgr.)
3	G213-32000	Antenna Coil, 174-567 Meters		G11-48992	220 Volt Ballast Resistor
4	G207-32000	Oscillator Coils Assy.		G12-48947	Shorting Plug (110 Volt Operation)
5	G214-32002	A-174-567 Meter Coil B-16.3-52.6 Meter Coil		G42-15683	P. B. Tuning Unit Assy.
	G237-32004	1st I.F. Assy.—455 Kc.		G26-45683	Riveted Key Assy.
6	G238-32001	2nd I.F. Coil only—455 Kc.		45642	Toggle Lock Clamp
7	G3-34002	Condenser, .0005 Mf. Mica		45717	Screw—Station Setting
8	G5-34002	Condenser, .00005 Mf. Mica		50937	Spring—Key Return
9	G11-34005	Condenser, .0027 Mf. Mica		G62-45683	Rocker Plate and Gear Assy.
10	G14-34002	Condenser, .0004 Mf. Mica		50561	Screw—Rocker Plate Bearing
11	45920	4 Section Shunt Trimmer Assy.		51146	Anti-Rattle Clip
12	36541	Condenser, .02 Mf. 200 V.		46753	Mounting Plate—Tuning Condenser
13	G86-33001	Condenser, 2 Section Variable Tuning		MC12-46750	Dial Back Plate (FS71) Assy.
14	G2-34002	Condenser, .001 Mf. Mica		46831	Pointer (Dial Hand)
15	45782	Condenser, .05 Mf. 120 V.		G15-43564	Pulley and Hub Assy.
16	45780	Condenser, .02 Mf. 160 V.		MC13-46750	Guide Cord and Spring Assy.
17	23191	Condenser, .25 Section—2nd I-F Trimmer		G13-41582	Drive Cord (30" or 76.2 Cm.)
18	46728	Condenser, .0025 Mf. Mica		46087	Spring—Drive Cord Tension
19	G3-34002	Condenser, .006 Mf. 160 V.		46290	Clamp—Drive Cord
20	45810	Condenser, 16-16 Mf. 125 V.		43542	Drive Shaft Mtr. Bracket
21	46398	Condenser, .05 Mf. 160 V.		45746	Drive Shaft
22	45817	Condenser, .05 Mf. 160 V.		48582	Glass Dial
23	45783	Condenser, 16 Mf. 160 V.		48921	Dial Mounting Speed Nut
24	None			8AK	Cabinet—Mottled Brown
25	35928	Resistor, 60,000 Ohms 1/4 W.		8AH	Cabinet—Ivory
26	22196	Resistor, 20,000 Ohms 1/4 W.		8AG	Cabinet—Red
27	36688	Resistor, 3 Megohms 1/4 W.		9FB	Cabinet—Blue
28	35928	Resistor, 60,000 Ohms 1/4 W.		9FC	Cabinet—Tan
29	46197	Resistor, 11 Megohms 1/4 W.		18944	Cabinet Back—Brown
30	35601	Resistor, 300,000 Ohms 1/4 W.		18945	Cabinet Back—Black
31	32785	Resistor, 500,000 Ohms 1/4 W.		48758	Trimount Stud—Back Mounting
32	41759	Resistor, 140 Ohms 1/4 W.		16838	Shipping Carton
33	None			46816	Rubber Foot with Screw
34	281-BLW-7	Speaker		51221	Band Switch Knob—Mottled
35	47497	Bracket—Speaker Mounting		48936	Band Switch Knob—Black
36	48340	Band Change Switch		46240	Station Call Sheet (European)
37	49010	Bracket Assy.—Switch Mtr.		17207	Blank Call Tabs
38	G49-25719	Phono Terminal Board (Red-Green-Black)		30551	Celluloid Call Cover
				46841	Push Button—Brown
				16879	Push Button—Black
				48929	Instruction Booklet

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	P2	S	Su	K	Ga	Go
6A7	Osc-Mod	6.3	235	—	128	—	6.2	154	—5 to —20
6D6	I. F. Amp.	6.3	235	—	128	5.2	5.2	—	—
76	Dector	6.3	0	—	—	—	0	—	—
75	A.F. Amp. & AVC	6.3	110	—	—	—	2	—	—
6B5	Output	6.3	235	222	—	—	0	—	—
5Y3	Rectifier	5.0	—	—	—	—	335	—	—

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned and

then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (Shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

**(b) Signal Generator Frequencies.**

	Shunt Alignment	Series Alignment
Broadcast Band	1400 Kc.	600 Kc.
High Frequency Band	6000 Kc.	1500 Kc.

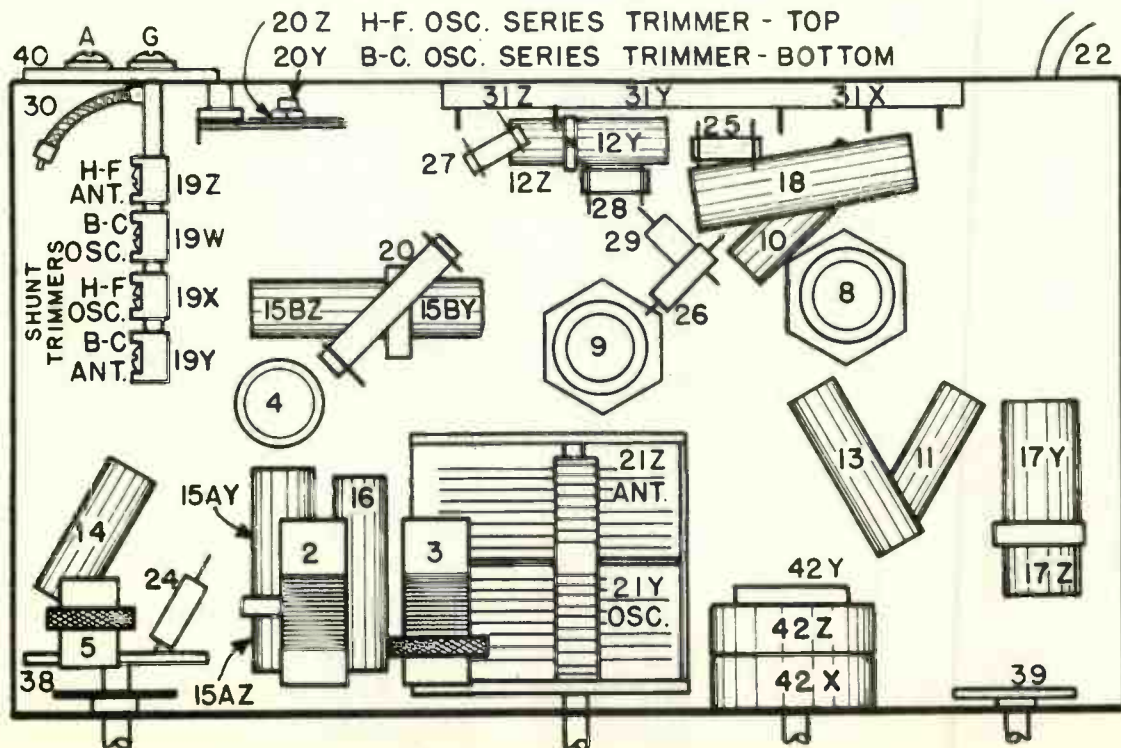


Fig. 3. Bottom View 666

MODELS 666, 5666

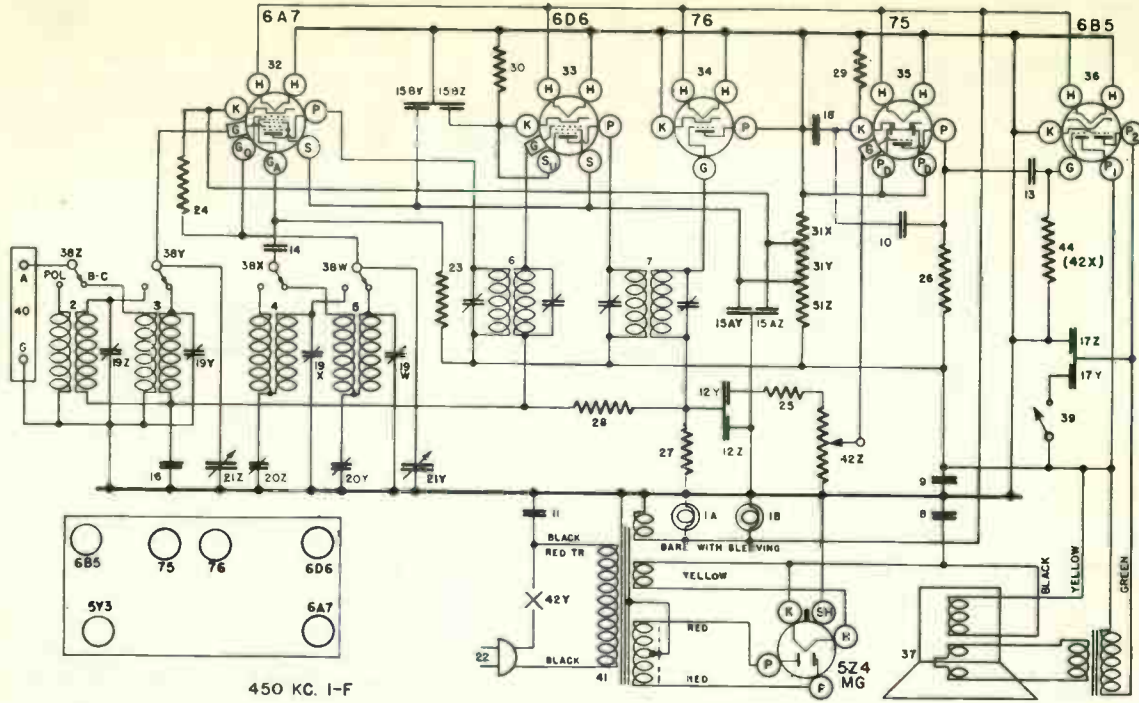


FIG. 1.—WIRING DIAGRAM—MODELS 666 AND 5666

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1	W -37922	6-8 V. Bulb, Dial Light	25	-21875	Resistor, 100,000 Ohm. 1/4 W.
2	G3 -37965	Socket Assy., Dial Light	26	-35929-C	Resistor, 150,000 Ohm. 1/4 W.
3	G81 -32000	Coil, Antenna—2350—7000 Kc.	27	-33314	Resistor, 400,000 Ohm. 1/4 W.
4	G 65 -32002	Coil—2350—7000 Kc., Osc.	28	-37245-C	Resistor, 1.5 Megohm. 1/4 W.
5	G 66 -32002	Coil—540—1725 Kc., Osc.	29	-36316	Resistor, 2,700 Ohm. 1/4 W.
6	G118 -32004	Coil—Assy., 1st I-F.	30	W -28106	Resistor, 500 Ohm. 1/4 W. Flex.
7	G 72 -32004	Coil—Assy., 2nd I-F.	31Z	W -37246	Resistor, 1,000 Ohm
8	W -36055	Cond., 35 Mf. 400 V.	31Y		Resistor, 2,000 Ohm
9	W -36057	Cond. 40 Mf. 300V.	31X		Resistor, 185-185 Ohm
10	W -30270	Cond. .001 Mf. 400V.	32	G47 -28807	Socket—Type 6A7
11	W -30805	Cond. .01 Mf. 400V.	33	G75 -28807	Socket—Type 6D6
12Z	W -30322-A	Cond. .006 Mf.	34	G80 -28807	Socket—Type 76
12Y	W -23615	Cond. .05 Mf. 400V.	35	G41 -28807	Socket—Type 75
14	W -23191-A	Cond. .01 Mf. 400V.	36	G90 -28807	Socket—Type 6B5
15 AZ	W -28623	Cond. .02 Mf. 400V.	W	-27981	Base—Tube Shield
15 AY	W -28623	Cond. .02 Mf. 400V.	W	-40911	Shield—Tube
15 BZ	W -28623	Cond. .02 Mf. 400V.	37	244-BL-9	Speaker, "B" Spec. 50A-2
15 BY	W -28623	Cond. .02 Mf. 400V.		-42928	Cone Assy., For above Speaker
16	W -27216	Cond. .05 Mf. 200V.		-41473	Output Trans., For above Speaker
17 Z	W -31052	Cond. .004 Mf. 400V.		632-CJ-3	Speaker, "M" Spec. 1-D-610
17 Y	W -31052	Cond. .05 Mf. 400V.		-42879	Cone Assy., For above Speaker
18	W -37732	Cond. .3 Mf. 160V.		-42880	Field Coil, For above Speaker
19	W -37241	Cond. 4 Section Trimmer		-42881	Output Trans., For above Speaker
20	G 31 -33006	Cond. Series Trimmers	38	-37247	Switch, Band Sel.
21	G 17 -33001	Cond. Var. Tuning	39	W -26184-A	Switch, Tone Con.
	W -41736	Drive Unit, 8Pt. Disc. Assy.	40	G1 -26719	Terminal Board, Ant. & Grid
	W -41897	Dial-Calibrated Glass	41	-41978	Transformer, 110V.—60 Cy. Power
	W -41737	Mtg. Brkt. Dial Glass R.H.	42Z		Volume Control (3 Meg.) 1st A-F
	W -41738	Mtg. Brkt. Dial Glass L.H.	42Y		Line Switch
	W -41739	Drive Unit	42X		Volume Control (1 Meg.) Output Grid
	B -42617	Dial (Calibrated)		NONE	
	MG-14 -41980	Dial Glass, Mtg. Brkt. R.H.		-35601	Resistor, 300,000 Ohm 1/4 W.
	W -40798	Dial Glass, Mtg. Brkt. L.H.		B	Output Grid to Grd.*
	W -40797-A	Dial Glass Retaining Brkt.		W	Escutcheon, (666)
	W -42629	Pointer—Dial		D	Escutcheon, (5666)
	W -40795	Shaft—Pointer		W	Escutcheon Mtg. Screws
	W -40909	Washer (Spring) Shaft		W	Knob, (2) V.C. & S.S.
	W -41611	Ring Shaft, Retaining		W	Knob, (2) T. C. & B. S. W.
	B -42374-A	Mask (Metal) Dial			Volume Control, 3 Meg.*
	B -33906-A	Cord & Plug—Power			Cabinet Model 666
22	-5370-A	Resistor, 20,000 Ohm. 1W			Cabinet Model 5666
23	-35928	Resistor, 60,000 Ohm 1/4 W			
24					

\*May be used in place of Dual Volume Control.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	Go	Ga
6A8G	Oscillator-Modulator	6.2	170	92	-3*	-6 to -9**	125
6S7G	1st I-F. Amplifier	6.2	150	92	-3*	—	—
6S7G	2nd I-F. Amplifier	6.2	198	92	-2	—	—
6T7G	Det. AVC & 1st A. F.	6.2	100	—	-2	—	—
6K6G	Output	6.2	193	198	-18.5*	—	—
6X5G							

Power consumption approximately 25 watts at 117.5 volts or 5 amperes at 6 volts.  
 Power output approximately 3 watts at 117.5 volts or 2.5 watts at 6 volts D. C.  
 When using a 6 volt storage battery, all voltages will be approximately as given except "H" which will be 6 volts.  
 \*See CIRCUIT DESCRIPTION.  
 \*\*100 to 150 microamperes measured between 60,000 ohm grid lead (item 36) and chassis.

**Tuning the I-F Amplifier to 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal (G) of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right, (ON).
- (c) Turn the band selector switch to the Standard Broadcast Band.
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 3rd I-F transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**Aligning the R-F Amplifier.**

When aligning the R-F amplifier, the output lead from the signal generator is connected to the antenna (A1) terminal of the receiver. For the Broadcast Band, a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Police and Short Wave Bands, a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, paragraph (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (D) is heard. (It is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then, adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the Police and Short Wave bands, care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

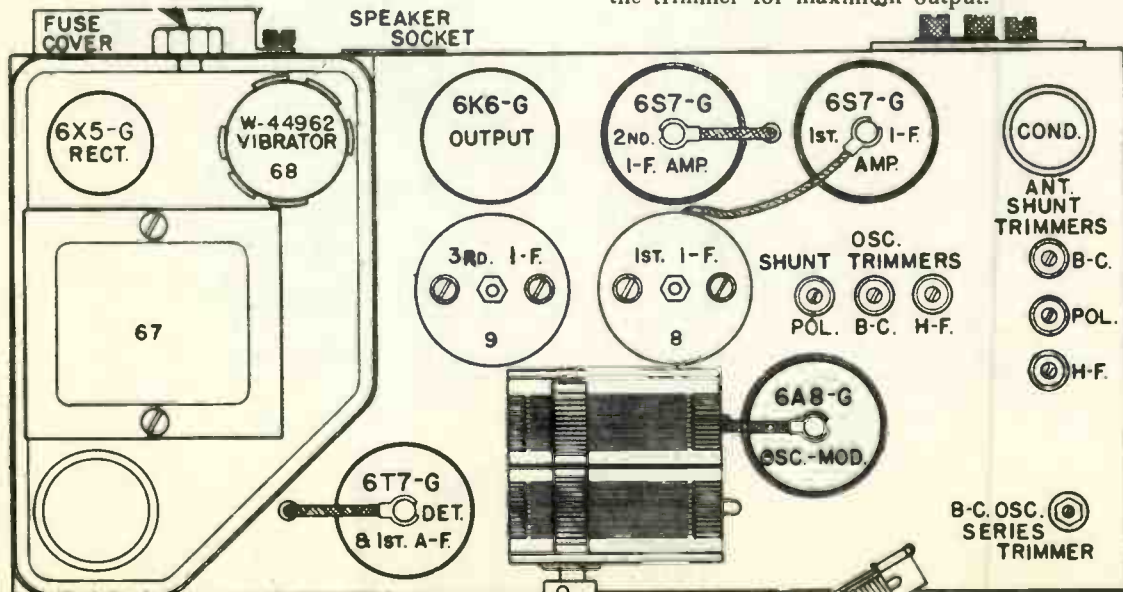
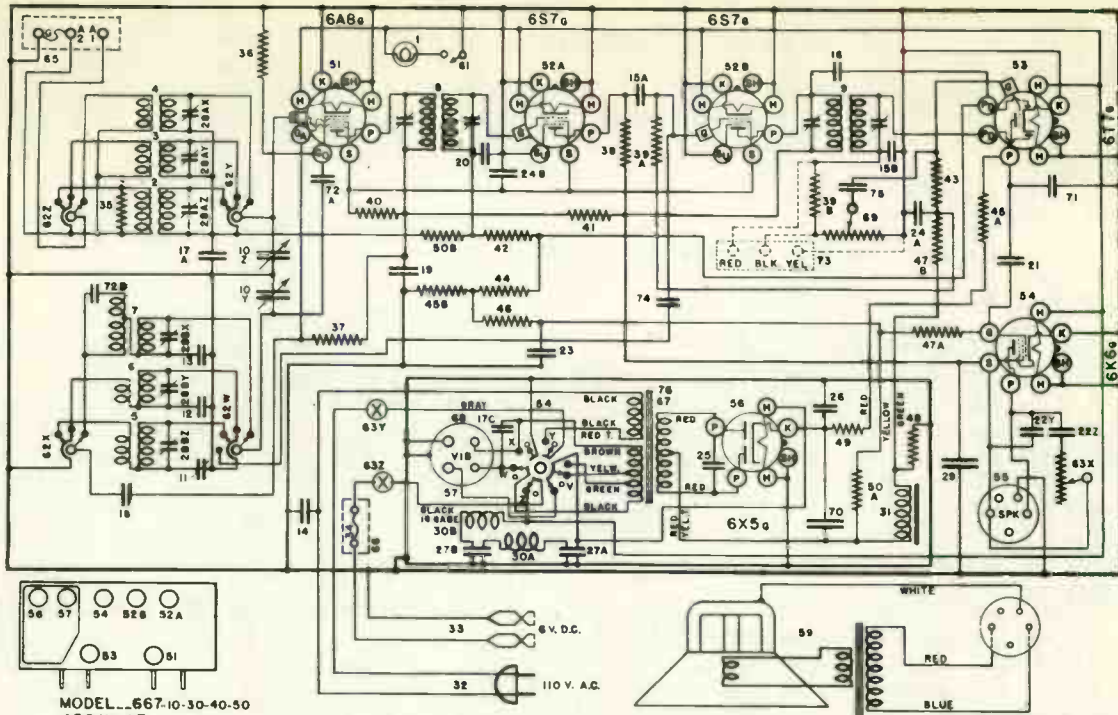


Fig. 2—Top View Model 667



MODEL...667-10-30-40-50  
455 Kc. I.F.

(D) SIGNAL INPUT FREQUENCIES

Standard Broadcast Band  
Police Band  
Short Wave Band

Min. Cap. Signal  
1725 Kilocycles  
8.6 Megacycles  
22.5 Megacycles

Shunt Align.  
1400 Kilocycles  
6.0 Megacycles  
18 Megacycles

Series Align.  
600 Kilocycles

PARTS LIST—MODEL 667

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-44337	Dial Light Bulb, 6-8 V.	41	W-23013	Resistor, 2,000 Ohm 1/2 W. Flex.
2	G6-27134	Dial Light Socket Assy.	42	-34883	Resistor, 2 Megohm 1/2 W. Carb.
3	G157-32000	Ant. Coil, B-C.	43	-26577	Resistor, 3 Megohm 1/2 W. Carb.
4	G158-32000	Ant. Coil, Pol.	44	-37590	Resistor, 750,000 Ohm 1/2 W. Carb.
5	G153-32000	Ant. Coil, H-F.	45A	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.
6	G159-32002	Osc. Coil, B-C.	45B	-35601	Resistor, 300,000 Ohm 1/2 W. Ins.
7	G157-32002	Osc. Coil, Pol.	46	-37245	Resistor, 1.5 Megohm 1/2 W. Carb.
8	G162-32002	Osc. Coil, H-F.	47A	-23785	Resistor, 500,000 Ohm 1/2 W. Carb.
9	G153-32001	1st I-F.—455 Kc.	47B	-23785	Resistor, 500,000 Ohm 1/2 W. Carb.
10	G179-32004	3rd I-F.—455 Kc.	48	W-23012A	Resistor, 40 Ohm 1/2 W. Flex.
	G41-33001	2 Section Gang Condenser	49	W-27504	Resistor, 100 Ohm 1/2 W. Flex.
	B-45009A	Dial Face (6 V.—110 V.)	50A	-35600	Resistor, 100,000 Ohm 1/2 W. Ins.
	B-45009	Dial Face (Export Only)	50B	-35600	Resistor, 100,000 Ohm 1/2 W. Ins.
	C-44964A	Support Brkt.—Dial Glass	51	G156-36400	Socket, Type 6A8
	W-44085B	Metal Mask—Dial	52	G182-36400	Socket, Type 6S7
	W-44084B	Ring—Glass Support	53	G183-36400	Socket, Type 6T7
	W-44299	Pointer	54	G172-36400	Socket, Type 6K6
	W-40486	Screw—Pointer Mtg.	55	G103-28807	Socket Sokr.
	W-43622	Felt Washer	56	G168-36400	Socket, Type 6X5
	G1-43564	Pulley and Hub Assy.	57	G105-28807	Socket, Vib.
	W-41582	Drive Cord (18 in.)	58	W-40911	Tube Shield
	W-43561	Drive Spring (Tension)	59	51PP18" B"	Speaker, Spec. No. 100-PG-4 (Console)
	W-44130A	Drive Shaft	59	31PP18" A"	Speaker, Spec. No. R-6000, M-16 (Table Model)
	W-43549	Ring—Shaft Retaining		-44218	V. C. and Cone Assy.
	W-40769	B-C. Osc. Series Trimmer (Variable)		-44230	Cone Mtg. Ring
11	G23-34000	Pol. Osc. Series Trimmer (Fixed 1,560 Mmf.)		-45701	Output Transformer
12	G20-34000	H-F. Osc. Series Trimmer (Fixed 4,910 Mmf.)	60		
13	W-30805	Condenser, .01 Mf. 400 V.	61	G1-44950	Switch—Dial Light
14	G2-34002	Condenser, .0001 Mf. Molded	62	-44019A	Band Switch
15A	G2-34002	Condenser, .0001 Mf. Molded	63	-44946	Switch—On/Off and Tone Control (100,000 Ohm)
15B	G3-34002	Condenser, .0005 Mf. Molded	64	W-44951	Switch—A. C.—D. C.
16	W-35936	Condenser, .05 Mf. 200 V.	65	G27-26719	Ant. and Grd. Terminal Assy.
17A	W-35936	Condenser, .05 Mf. 200 V.	66	G2-33339	Fuse Panel
17C	W-35936	Condenser, .05 Mf. 200 V.		W-33310A	Fuse Cover
18	W-35139	Condenser, .004 Mf. 400 V.		W-34223	Insulator—Fuse Cover
19	W-22688	Condenser, .1 Mf. 400 V.		W-4972	Thumb Screw—Fuse Cover
20	W-28621	Condenser, .02 Mf. 200 V.		W-44961	Power Trans., 30-80 Cy.—110 V.
21	W-30488	Condenser, .02 Mf. 400 V.		W-44962A	Vibrator (Mtg. Board)
22	W-31052	Condenser, .06 Mf. 400 V.		W-44081	Volume Control (1 Megohm)
22Y	W-31052	Condenser, .06 Mf. 400 V.		W-44990	Condenser, 30 Mf. 250 V.
23	W-34712	Condenser, .25 Mf. 160 V.		G1-34002	Condenser, .00025 Mf. Molded
24A	W-24049C	Condenser, .1 Mf. 300 V.		G5-34002	Condenser, .00005 Mf. Molded
24B	W-24019C	Condenser, .1 Mf. 300 V.		G5-34002	Condenser, .00005 Mf. Molded
25	W-50068A	Condenser, .006 Mf. 1,000 V. (60 Cy.)		G37-26719	Phono. Terminal Assy.
25	W-45473	Condenser, .003 Mf. 1,000 V. (25 Cy.)		W-34002	Condenser, .00005 Mf. Molded
26	W-37173	Condenser, .25 Mf. 300 V.		G13-41461	Condenser, .6014 Mf. 300 V.
27A	W-50161	Condenser, .5 Mf. 120 V.		W-45454	Power Trans., 25 Cy.—125 V.
27B	W-50161	Condenser, .5 Mf. 120 V.		W-45497	Power Trans., 25 Cy.—220 V.
28	W-35951A	3 Section Shunt Trimmer Assy.		W-45498	Power Trans., 50 Cy.—220 V.
29	W-44012	Condenser, 16 Mf. 250 V.		G7C	Cabinet—Table
30A	G25-28067	Choke "A" Filter		7WD	Cabinet—Console
30B	G25-28067	Choke "A" Filter		B-44226B	Escutcheon
31	G22-29535	Choke "B" Filter		W-43553	Rubber Mtg. Foot
32	W-44004	A-C Power Cord and Plug		W-41221	Knob—Station Selector
33	B-44948	Battery Cable and Clips		W-41222	Knob—Dial Light
	W-34903	Battery Clip (Pos.)		W-41605	Knob—Vol. Cont.
	W-34904	Battery Clip (Neg.)		W-41224	Knob—Tone Cont.
34	W-31103	Fuse, 10 Amp.		W-45037	Knob—Band Sw.
35	W-22196	Resistor, 20,000 Ohm 1/2 W. Carb.		W-28601	Knob—A. C.—D. C. Sw.
36	W-21237A	Resistor, 60,000 Ohm 1/2 W. Carb.			
37	W-4921C	Resistor, 10,000 Ohm 1/2 W. Carb.			
38	W-36116	Resistor, 2,700 Ohm 1/2 W. Ins.			
39A	W-21875	Resistor, 100,000 Ohm 1/2 W. Carb.			
39B	W-21875	Resistor, 100,000 Ohm 1/2 W. Carb.			
40	W-23616	Resistor, 15,000 Ohm 1 W. Carb.			

## CHASSIS MODEL 668

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	186	70	—	—	186	-15
6U7G	I-F Amplifier	6.3	186	70	—	—	—	—
6P5G	Detector—A. V. C.	6.3	—	—	—	—	—	—
6F5G	1st A-F Amplifier	6.3	93	—	—	—	—	—
6V6G	Power Output	6.3	180	186	—	-9.5	—	—
5Y3G	Rectifier	5	—	—	—	—	—	—

Voltage drop across speaker field 50 volts, using 396-BP-12 speaker.  
 Maximum power output approximately 3 watts.  
 Power consumption at 117.5 volts approximately 63 watts with phono operating.

### Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

### Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna lead of the receiver. a 100 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh

adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

### SETTING THE PUSH BUTTONS

With a small screw driver or pen knife remove celluloid cover and the call letters. Insert screw driver in the hole in the front of the button and loosen the set screw a turn or two. With the manual tuning knob, tune-in as ACCURATELY AS POSSIBLE the station whose call letters were in the button or that station for which the button is to be set. Then push the button all the way down and while you hold it in that position SECURELY TIGHTEN the set screw. Replace the call letters and call letter cover. Use same procedure in resetting or adjusting the rest of the push buttons.

### (C) SIGNAL INPUT FREQUENCIES

I-F Alignment Signal  
455 Kilocycles

Minimum Capacity Signal  
1,725 Kilocycles

Shunt Alignment Signal  
1,400 Kilocycles

### WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 30).

The wave trap should not be adjusted until all other

adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

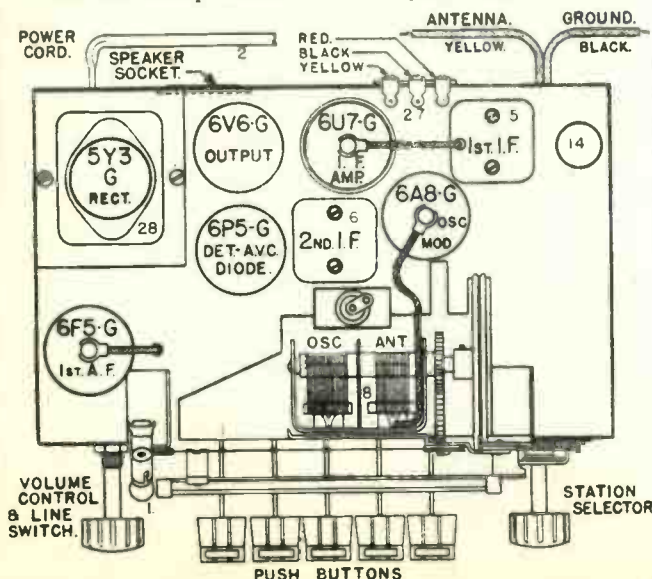


Fig 2—Top View Model 668

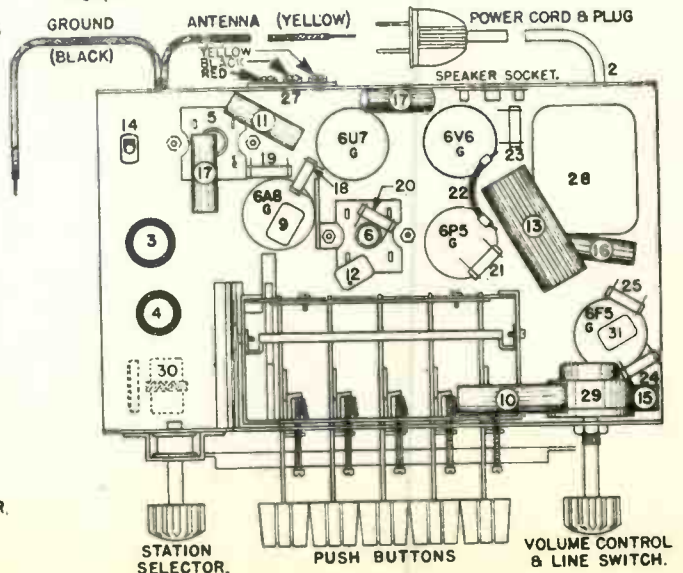
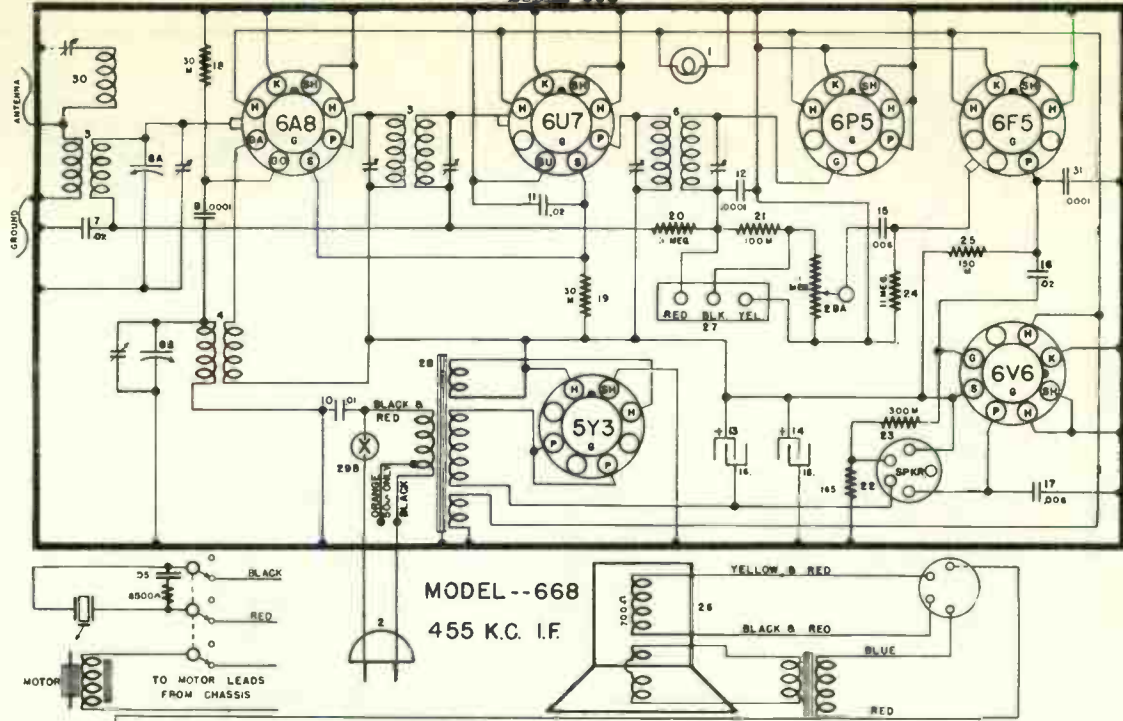


Fig 3—Bottom View Model 668

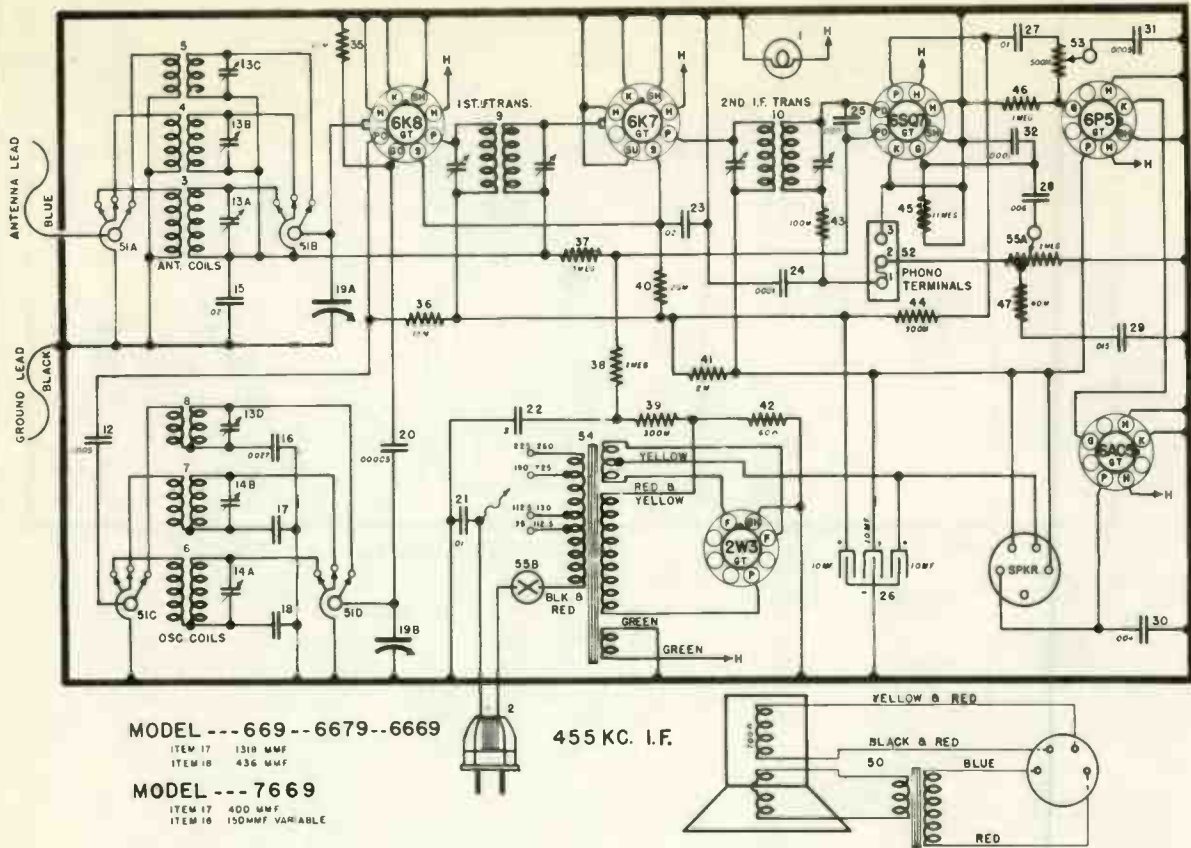
MODEL 668



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light Bulb, 6-8 Volt		-2046	No. 8 Shakeup Washer (Key Plate) (2 Req.)
2	B -45769A	A. C. Power Cable	D -16905C		8NB Cabinet
3	G186 -32000	Antenna Coil	D -16139B		RN Cabinet
4	G184 -32002	Oscillator Coil	N -8		No. 8-32 Hex. Nut (Speaker) (4 Req.)
5	G187 -32004	1st I. F. Transformer	-2046		Int. Shkpf. Washer (Speaker) (4 Req.)
6	G188 -32004	2nd I. F. Transformer	-4499		No. 8-32 x 1/2" W. H. M. Screw (Chassis) (4 Req.)
7	W -28021	Condenser, .02 Mf., 200 V. Paper		-15579	Flat Washer (Chassis) (4 Req.)
8A	G52 -39001	2 Sect. Var. Cond. Antenna Oscillator		-45972	Knob (3 Req.)
8B	G12 -43564	Pulley and Hub Assembly		-43552	Speaker Plug Clamp
	W -23877	No. 8-32 x 1/8" Set Screw (2 Req.)		-15908	No. 8 x 3/4" P. K. Screw (Speaker Plug Clamp)
	G24 -45683	Riveted Mounting Bracket Assembly		-46194	Push Buttons (3 Req.)
	MG14 -45984	Riveted Dial Support Bracket, R. H.	D -165		No. 8 x 1" Oval Hd. Wood Screw (Motor Board)
	MG15 -45984	Riveted Dial Support Bracket, L. H.	W -20754A		Cup Washer (8 Req.) (Motor Board)
	C -46042	Dial Glass		-46118A	Escutcheon
	W -45712B	Dial Glass Cushion	D -30		No. 2 x 3/8" Oval Hd. Screw (Escutcheon) (4 Req.)
	W -45985	Dial Glass Clip, R. H.	D -46180		Cabinet Back
	W -45984	Dial Glass Clip, L. H.	W -46464		No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back) (8 Req.)
	W -46197	Dial Hand		-47863	Call Letter Sheet
	W -16037	Dial Hand Guide	W -50551B		Call Letter Cover
	R -127	No. 6-32 x 3/8" Screw (Dial Hand Guide) (2 Req.)		-16860	Instruction Booklet
		No. 8 x 3/4" P. K. Screw (Dial Glass Clips) (2 Req.)	W -47337		Tone Arm Support (8NB only)
	B -45743B	Dial Support	MG25 -46828		493 Motor Board Assembly
	-46056	Drive Shaft	MG25 -46851		Tone Arm Assembly
	W -13342	Drive Shaft Bracket	MG31 -46828		Switch Assembly
	-45808	No. 8 x 3/4" P. K. Screw (Drive Shaft Bracket)	G146 -34403		Shielded Lead (Switch Assembly)
9	G2 -41582	Drive Cord (41 Inches)	MG45 -46153		Drive Pulley Kit
10	W -46087	Drive Cord Spring	D -46145C		Motor Board
11	W -16290	Cord Clamp	W -46144		Motor Shield
12	G2 -34002	Condenser, .0001 Mf. Molded	S -80		No. 4 x 3/4" Rd. Hd. Wood Screw (Motor Shield) (3 Req.)
13	W -30805	Condenser, .01 Mf. 400 V. Paper	W -46169C		Motor
14	W -28621	Condenser, .001 Mf. Molded	W -33502		Needle Cup (2 Req.)
15	W -46128	Condenser, 16 Mf. 250 V. Elect.	W -33503		Needle Cup Lid (2 Req.)
16	W -45968	Condenser, 15 Mf. 250 V. Elect.		-46148A	Phono-Radio Switch
17	W -28619	Condenser, .006 Mf. 200 V. Paper	R -132		No. 6-32 x 1/2" Rd. Hd. Mach. Screw (Phono-Radio Switch) (2 Req.)
18	W -28621	Condenser, .02 Mf. 200 V. Paper	S -159		No. 8 x 3/4" Rd. Hd. Wood Screw (Motor) (3 Req.)
19	W -34647	Condenser, .006 Mf. 400 V. Paper	W -46172		Turn Table
20	-33380	Resistor, 30,000 Ohms 1/2W. Carb.		-46161	1/2 x 27 Hex. Nut (Turn Table)
21	-33380	Resistor, 30,000 Ohms 1/4W. Carb.	W -46174A		Motor Mounting Bracket
22	-26377	Resistor, 3 Megohms 1/2W. Carb.		-6700C	Hook Up Wire, 18" (Switch Assy.)
23	-21875	Resistor, 100,000 Ohms 1/4W. Carb.		-46300	Rubber Drive Pulley
24	W -21961	Resistor, 165 Ohms 1/2W. Flex.	W -46364		Chromium Tipped Needles
25	-21455	Resistor, 300,000 Ohms 1/4W. Carb.	W -46367		Phono Switch Shield
26	-37584	Resistor, 11 Megohms 1/2W. Carb.	W -46368		Motor Shield
27	-23403	Resistor, 150,000 Ohms 1/4W. Carb.	S -78		No. 4 x 1/2" Rd. Hd. Wood Screw (Motor and Phono Shields) (5 Req.)
28	380BP12"B"	Speaker, Spec. 66-WA-16	W -45817B		Condenser, .05 Mf. 160 V. Paper (Motor Board)
29A	-47308	Speaker Cone Assembly	-23868		Resistor, 6,500 Ohms 1/2W. Carbon (Switch Assembly)
29B	-46693	Field Coil (700 Ohm)	-22323		No. 8 x 1/2" Oval Hd. Wood Screw (Motor Board) (2 Req.)
30	-47309	Output Transformer	W -20754A		Cup Washer (Motor Board) (2 Req.)
31	G103 -28807	Speaker Socket	W -47399		Motor Insulator
	346BP12"M"	Speaker, Spec. 1-D-1088		-47325	Crystal Cartridge
	-44544	Field Coil (900 Ohm)		-47326	Arm and Pivot (Only)
	-44543	Speaker Cone Assembly		-47324	Needle Screw (In Envelope)
	-44545	Output Transformer		-47327	Flat Washer (Bronze)
27	G41 -26719	Phono Terminal Board		-47328	Lock Washer
28	-46843	Power Transformer		-47329	1/2" Mounting Nut
29A	-46124	(Volume Control (1 Megohm)		-47395	Pickup and Tone Arm Assembly
29B	G193 -32004	A. C. Power Switch	W -46991		50 CYCLE OPERATION Rubber Drive Pulley
30	G2 -34002	Wave Trap			
31	G2 -34002	Condenser, .0001 Mf. Molded			
	G7 -45683	Push Button Unit Assembly			
	G23 -45683	Riveted Key Assembly (5 Req.)			
	G22 -45683	Rocker Plate Assembly			
	W -50547	Key Plate			
	-31388	No. 8-32 x 1/8" W. H. M. Screw (Key Plate) (2 Req.)			
	W -50588B	Adjusting Clip (4 Req.)			
	-45646B	Adjusting Clip (1 Req.)			
	W -50561	No. 6-40 x 1/2" Fil. Hd. Screw (Rocker Plate Bearing)			
	W -50542D	Key Clip (5 Req.)			
	-45717	No. 6-32 x 1 1/4" Fil. Hd. Screw (Clamp Spring) (5 Req.)			
	W -50607C	Key Return Spring (5 Req.)			





MODEL --- 669 --- 6679 --- 6669

ITEM 17 1318 MMF  
ITEM 18 436 MMF

MODEL --- 7669

ITEM 17 400 MMF  
ITEM 18 150MMF VARIABLE

1	W-37922	Dial Light, 6-8 v.	36	37485	15,000 ohm $\frac{1}{2}$ w. Carb. Res.
9	G236-32004	1st I.F. Trans.	37	36688	3 meg. $\frac{1}{2}$ w. Ins. Res.
10	G235-32004	2nd I.F. Trans.	38	35602	1 meg. $\frac{1}{2}$ w. Ins. Res.
12	G3-34002	.0005 mfd. Cond., Mica	39	21455	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
13A	W-41247-A	Ant. Trim. Cond.	40	37377	20,000 ohm 1 w. Ins. Res.
13B	W-41247-A	Ant. Trim. Cond.	41	W-23013	2,000 ohm $1\frac{1}{2}$ w. Flex. Res.
13C	W-41247-A	Ant. Trim. Cond.	42	50643	60 ohm $\frac{1}{2}$ w. Wire Wound Res.
13D	W-41247-A	Osc. Trim. Cond.	43	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.
15	W-49487	.02 mfd. 160 v. Cond.	44	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
16	G11-34005	2700 mmf. Cond., Mica	45	37584	11 meg. $1\frac{1}{3}$ w. Carb. Res.
20	G5-34002	50 mmf. Cond., Mica	46	35602	1 meg. $\frac{1}{2}$ w. Ins. Res.
21	W-30805	.01 mfd. 400 v. Cond.	47	36761	40,000 ohm $\frac{1}{2}$ w. Ins. Res.
22	W-49490	.3 mfd. 160 v. Cond.	51	49172-A	Band Chg. Sw.
23	W-28621	.02 mfd. 200 v. Cond.	52	G50-26719	Term. Bd., Phono.
24-25	G2-34002	.0001 mfd. Cond., Mica	54	B-49579	Power Trans. (Semi-Univ.)
26	W-49171	10-10-10 mfd. Elec. Cond.	54	49638	Power Trans. (6669 only)
27	W-49489	.01 mfd. 400 v. Cond.	54A	49204	Power Trans.
28	W-49488	.006 mfd. 400 v. Cond.	54B		Sw. Pri. Tap
29	W-30251	.015 mfd. 400 v. Cond.	54A	49211	Power Trans., 50 cy.110 v.
30	W-35139	.004 mfd. 400 v. Cond.	54B		Sw. Pri. Tap
31	G3-34002	.0005 mfd. Cond., Mica	54A	49212	Power Trans., 50 cy.220 v.
32	G2-34002	.0001 mfd. Cond., Mica	54B		Sw. Pri. Tap
35	21237-A	60,000 ohm $1\frac{1}{3}$ w. Carb. Res.			
<b>6669, 669 ADDENDUM</b>					
14A,B	W-37986-A	Osc. Trim. Cond.	5	G212-32000	Ant. Coil (Foreign)
19A,B	G89-33001	Ant. & Osc. Sect. Var. Cond.	6	G220-32002	Osc. Coil (Broadcast)
50	U-49220	Spkr., 380 BPW-12	7	G219-32002	Osc. Coil (Police)
53	48020-B	500M Tone Control	8	G218-32002	Osc. Coil (Foreign)
55A,B	48019	1 meg. Vol. Cont. & Sw.	17	G15-34005	1318 mmf. Cond., Mica
3	G210-32000	Ant. Coil (Broadcast)	18	G19-34002	436 mmf. Cond., Mica
4	G211-32000	Ant. Coil (Police)			
<b>6679 ADDENDUM</b>					
14A,B	W-37986-A	Osc. Trim. Cond.	5	G212-32000	Ant. Coil (Foreign)
19A,B	G87-33001	Ant. Sect. Var. Cond.	6	G220-32002	Osc. Coil (Broadcast)
50	B-49443	Spkr., 280 BLW-7	7	G219-32002	Osc. Coil (Police)
53	48181-B	500M Tone Control	8	G218-32002	Osc. Coil (Foreign)
55A,B	48170	1 meg. Vol. Cont. & Sw.	17	G15-34005	1318 mmf. Cond., Mica
3	G210-32000	Ant. Coil (Broadcast)	18	G19-34002	436 mmf. Cond., Mica
4	G211-32000	Ant. Coil (Police)			
<b>7669 ADDENDUM</b>					
14A,B	W-46214	Osc. Trim. Cond.	5	G219-32000	Ant. Coil (Foreign)
19A,B	G93-33001	Ant. & Osc. Sect. Var. Cond.	6	G288-32002	Osc. Coil (Weather Band)
50	U-49220	Spkr., 380 BPW-12	7	G227-32002	Osc. Coil (Broadcast)
53	48020-B	500M Tone Control	8	G226-32002	Osc. Coil (Foreign)
55A,B	48019	1 meg. Vol. Cont. & Sw.	17	G14-34002	500 mmf. Cond., Mica
3	G217-32000	Ant. Coil (Weather Band)	18	37917	Trim. Cond.
4	G218-32000	Ant. Coil (Broadcast)			

CHASSIS MODEL 676

TUBE SOCKET VOLTAGE READINGS

Tube		H	P	S	G	Su	K	Ga	Go
6A8G	Oscillator-Modulator	6.3	150	90	—	—	3.0	115	Neg.
6K7G	I-F Amplifier	6.3	150	90	—	3.0	3.0	—	—
6Q7G	Det. & A-F Amp.	6.3	80	—	-3	—	0	—	—
25A6G	Output	25.0	125	150	-16	—	0	—	—
25Z6G	Rectifier	25.0							
W-42520	Ballast Tube								Variable

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh. turn the band selector switch to the right (High Frequency Position) and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum reading on the output meter.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum reading on the output meter.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead

from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each band should be shunt aligned, series aligned (Broadcast Band) and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers. (See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer.

To adjust the "series" trimmer (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Generator Frequencies.

High Frequency Band	Shunt Alignment	Series Alignment
Broadcast Band	1400 Kc.	600 Kc.
	6000 Kc.	

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —4099B	Dial Light Bulb	26AB	W —28589	Resistor 350 Ohm 1/2 W. Flexible
	G6 —27130	Socket—Dial Light	27	—31093	Resistor 2700 Ohm 1/4 W.
2	G124—32000	Ant. Coil B-C-B	28	—24814	Resistor 7000 Ohm 1/4 W.
3	G123—32000	Ant. Coil H-F-B	29	—27024	Resistor 8000 Ohm 1/4 W.
4	G128—32004	1st I-F Assembly	30	—36318	Resistor 15000 Ohm 1/4 W.
5	G129—32004	2nd I-F Assembly	31	—35928	Resistor 60000 Ohm 1/4 W.
6	G118—32002	Osc. Coil B-C-B	32	—35600	Resistor 100,000 Ohm 1/4 W.
7	G117—32002	Osc. Coil H-F-B	33	—35930	Resistor 200,000 Ohm 1/4 W.
8	G2 —34002	Condenser .0001 Mf.	34	—34020	Resistor 250,000 Ohm 1/4 W.
9AB	G1 —34002	Condenser .00025 Mf.	35	—36321	Resistor 400,000 Ohm 1/4 W.
10	W —30325	Condenser .003 Mf.	36	—35602	Resistor 1. Megohm 1/4 W.
11	W —32378	Condenser .01 Mf. 400V.	37	—35927	Resistor 2 Megohm 1/4 W.
12AB	W —36541	Condenser .02 Mf. 160 V.	38	G156—36400	Socket Type 6A8
CD			39	G151—36400	Socket Type 6K7
13AB	W —35936	Condenser .05 Mf. 200 V.	40	G160—36400	Socket Type 6Q7
14	W —32780B	Condenser .05 Mf. 400 V.	41	G161—36400	Socket Type 25A6
15	W —34712	Condenser .25 Mf. 160 V.	42	G162—36400	Socket Type 25Z6
16	W —24049C	Condenser .1 Mf. 200 V.	43	G169—36400	Socket Type Ballast
17	W —30321	Condenser 1. Mf. 160 V.	W —35774		Tube Shield Base
18ZY	G26 —33001	2 Section Var. Tuning Cond. Gang	W —35772		Tube Shield (Half)
	MG15—42502	Dial Assembly (Complete)	W —85773		Tube Shield Cap
	C —42553A	Drive Unit—Dial	44	346BL9 "M"	Speaker Spec. 1-D-667
	B —42481A	Dial (Calibrated)		—41638	Cone Assembly
	W —12494	Dial Hand		—40275	Field Coil
	W —40186	Screw (Hand Mtg.)		—42878	Output Trans.
	—42713A	Band Indic. Dial Assembly	45	—42519	Band Selector Switch
	—43412	Dial Vern.-Indic. Assembly	46Z	—42522	Volume Control
	—43413	Drive Chain	46Y		Line Switch
	—43414	Take-Up Spring	47	W —27216	Condenser .05 Mf. 200 V.
19	W —37241B	4 Section Shunt Trimmer	48	W —42686	Resistor 50 Ohm 1 1/2 W. Flexible
20	—40769	B-C Osc. Series Trimmer	49	W —42701	A. C.—D. C. Switch
21	G21 —34000	H-F Osc. Series Cond.	G111—34403		Ant. Lead Assembly
22AB	W —40325	Condenser 50 Mf. 150 V.	B —42543		Escutcheon and Lens
23	W —36057	Condenser 40 Mf. 300 V.	W —37341		Knob—3 Req.
24	W —41081	Condenser 16 Mf. 250 V.	—6AA		Cabinet
25	B —3390A	Power Cord and Plug			

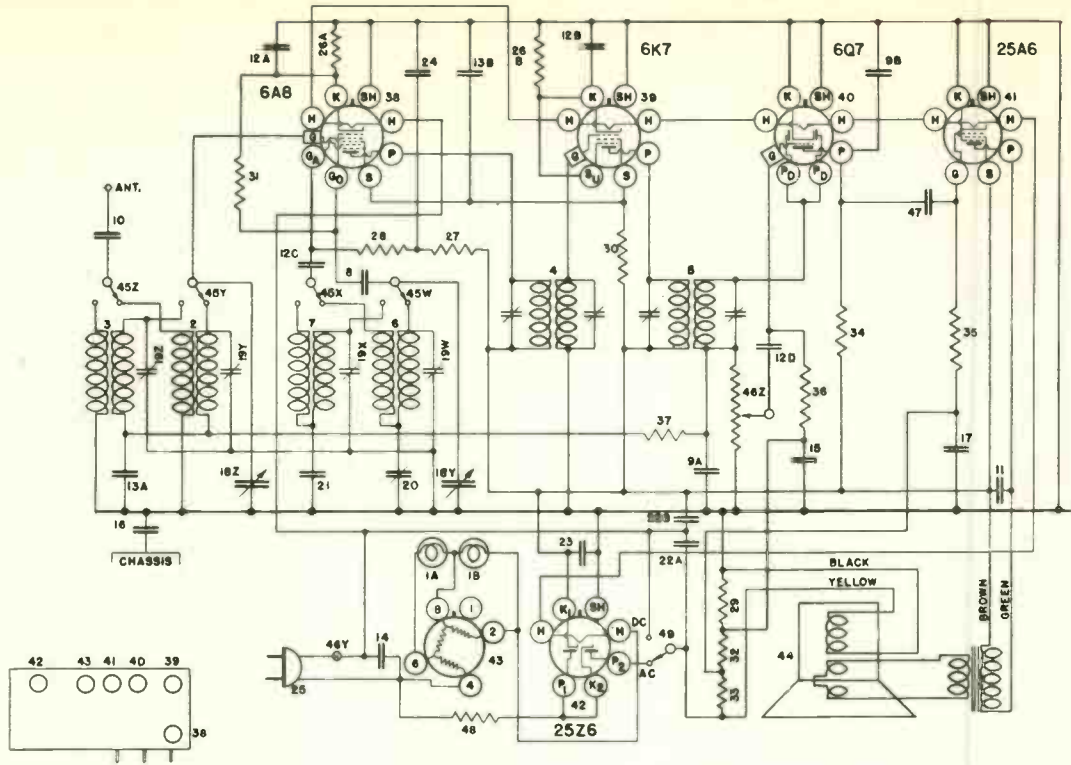


FIG. 1—WIRING DIAGRAM—MODEL 676

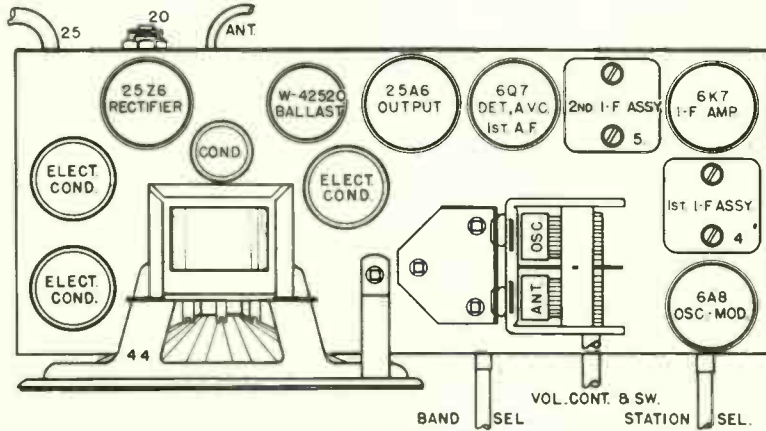


Fig. 2 Top View 676

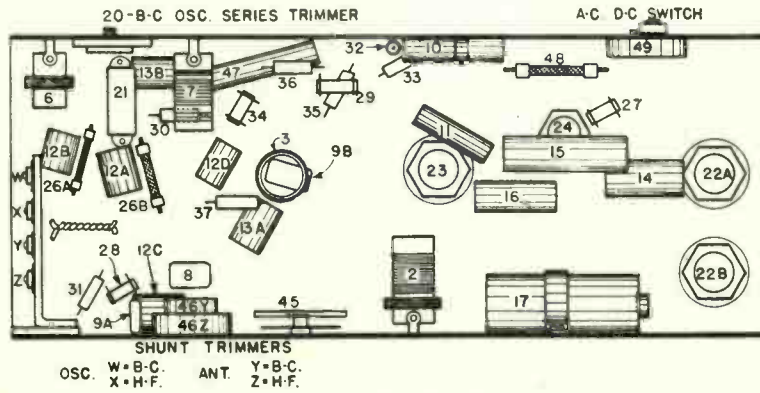


Fig. 3 Bottom View 676

CHASSIS MODEL 677

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	210	120	0	-15	175
6U7G	I-F Amplifier	6.3	210	120	0	—	—
6Q7G	Det, AVC & A-F Amp.	6.3	90	—	-3	—	—
6K6G	(2) Output	6.3	205	210	20	—	—
5Y3G	Rectifier	5.0	—	—	215	—	—

Power output approximately 4.5 watts.  
 Power consumption approximately 60 watts at 11.5 volts.  
 Voltage drop across speaker field 60 volts.

**Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tune control knob to the left (TREBLE).

(c) Turn the band selector switch to the Medium Wave Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 7, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 6, Fig. 2).

**Aligning R. F. Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Long and Medium Wave Bands a 100 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Band a 250 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Long Wave Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "Ant" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

**(D) SIGNAL INPUT FREQUENCIES**

<b>Min. Cap. Signal</b>	<b>Shunt Align.</b>
380 Kilocycles	375 Kilocycles
1,725 Kilocycles	1,400 Kilocycles
18,300 Kilocycles	18,000 Kilocycles

**Series Align.**  
150 Kilocycles

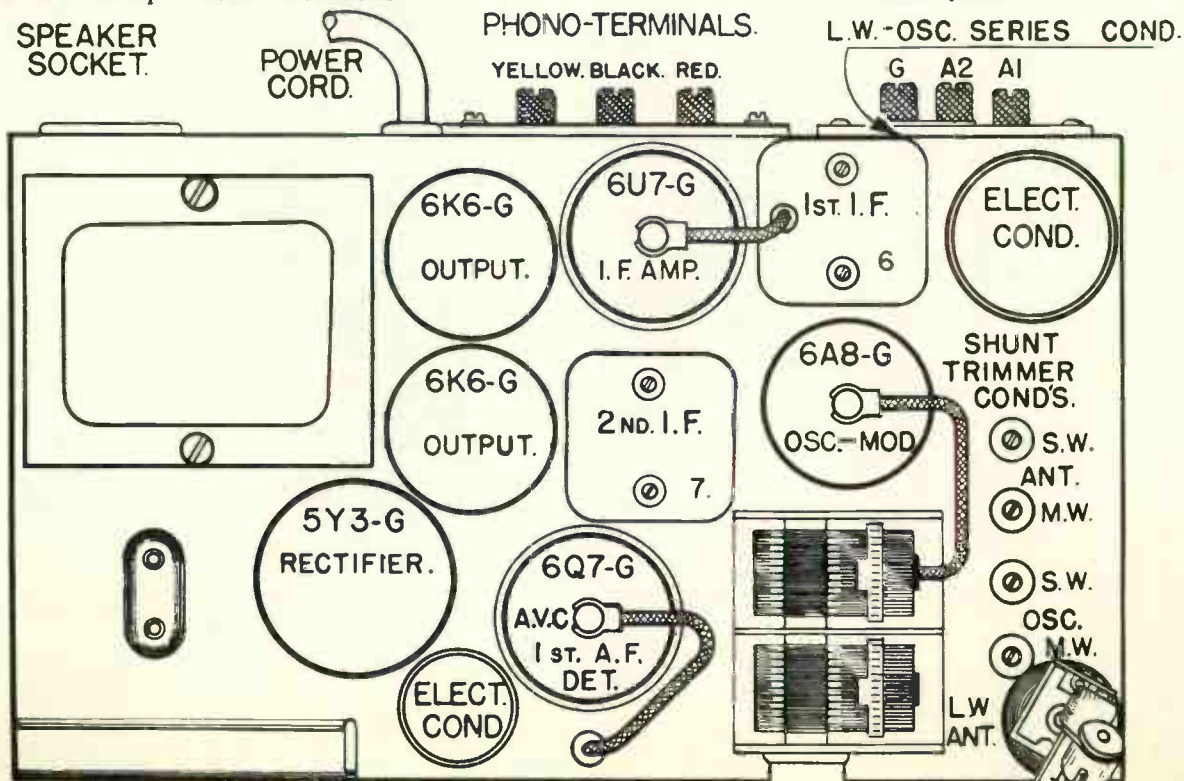
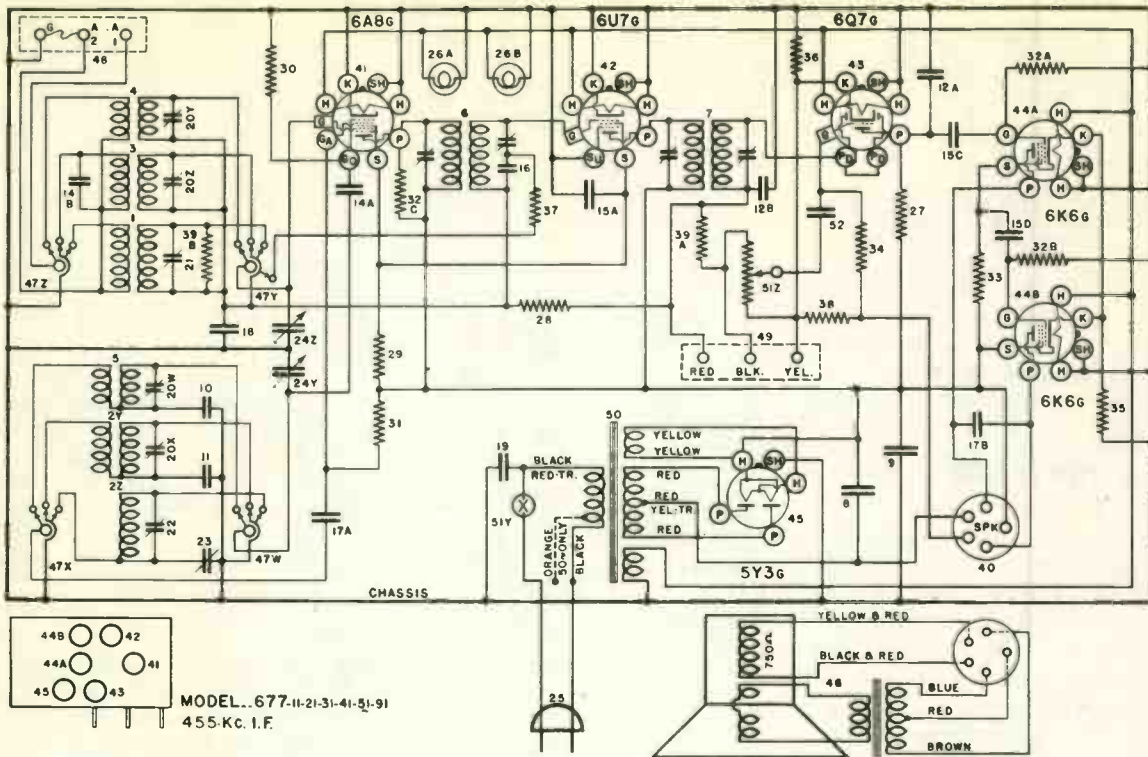


Fig. 2. Top View—Model 677

MODEL 677



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G165-32000	Ant. Coil, L. W.	29	-37485	Resistor, 15,000 Ohm 1/4 W. Carb.
27	G166-32002	Osc. Coil, L. W.	30	-35928	Resistor, 60,000 Ohm 1/4 W. Carb.
2Y		Osc. Coil, M. W.	31	-37474	Resistor, 7,000 Ohm 1/4 W. Carb.
3	G143-32000	Ant. Coil, M. W.	32A	-33344	Resistor, 400,000 Ohm 1/4 W. Carb.
4	G164-32000	Ant. Coil, S. W.	32B	-33344	Resistor, 400,000 Ohm 1/4 W. Carb.
5	G144-32002	Osc. Coil, S. W.	32C	-33344	Resistor, 400,000 Ohm 1/4 W. Carb.
6	G180-32004	1st I-F. Assy.	33	-44009	Resistor, 3,400 Ohm 1/2 W. Ins.
7	G181-32004	2nd I-F. Assy.	34	-34883	Resistor, 2 Megohm 1/4 W. Carb.
8	W-36057B	Condenser, 40 Mf. 300 V.	35	W-43462	Resistor, 375 Ohm 2 1/2 W. Flex.
9	W-41081	Condenser, 16 Mf. 250 V.	36	W-23012A	Resistor, 40 Ohm 1/2 W. Flex.
10	G16-34000	Condenser, 3,800 Mmf. (S. W. Osc. Series)	37	W-35467	Resistor, 220 Ohm 1/4 W. Flex.
11	G14-34002	Condenser, 400 Mmf. (M. W. Osc. Series)	38	W-37631	Resistor, 32 Ohm 1/4 W. Flex.
12A	G1-34002	Condenser, .00025 Mf. Molded	39A	-23403	Resistor, 150,000 Ohm 1/4 W. Carb.
12B	G1-34002	Condenser, .00025 Mf. Molded	39B	-23403	Resistor, 150,000 Ohm 1/4 W. Carb.
13			40	G103-28907	Socket Socr.
14A	G2-34002	Condenser, .0001 Mf. Molded	41	G156-36400	Socket, Type 6A8
14B	G2-34002	Condenser, .0001 Mf. Molded	42	G171-36400	Socket, Type 6U7
15A	W-28621	Condenser, .02 Mf. 200 V.	43	G160-36400	Socket, Type 6Q7
15C	W-28621	Condenser, .02 Mf. 200 V.	44A	G172-36400	Socket, Type 6K6
15D	W-28621	Condenser, .02 Mf. 200 V.	44B	G172-36400	Socket, Type 6K6
16	W-45336	Condenser, .004 Mf. 200 V.	45	G173-36400	Socket, Type 5Y3
17A	W-28619	Condenser, .006 Mf. 200 V.	46 m	365BP12" "M"	Speaker Mfg. Spec. No. 1-D-1089
17B	W-28619	Condenser, .006 Mf. 200 V.		-44542	V. C. and Cone Assy.
18	W-36541	Condenser, .02 Mf. 160 V.		-44273	Field Coil (750 Ohm 60 M. A.)
19	W-30805	Condenser, .01 Mf. 400 V.		-44274	Output Transformer
20	W-41247A	4 Section Shunt Trimmer Assy.		-44682	Socr. Plug
21	W-44655	L. W.-Ant. Shunt Trimmer Cond.		-43674	Cone Mtg. Ring (Cardboard)
22	W-44516	L. W.-Osc. Shunt Trimmer Cond.	47	-45326	Band Change Switch
23	W-40444	L. W.-Osc. Series Trimmer Cond.	48	G27-26719	Ant. and Gnd. Terminal Assy.
24	G42-33001	2 Section Var. Gang Condenser	49	G37-26719	Phono Terminal Assy.
	B-45314	Dial Face (Glass)	50	-44356	Power Trans., 110 V.-60 Cy.
	W-44299	Pointer		-44359	Power Trans., 110 V.-50 Cy.
	W-40486	Screw Pointer Mtg.		-44360	Power Trans., 220 V.-50 Cy.
	W-44085B	Mask (Polished Metal)		-44357	Power Trans., 110 V.-25 Cy.
	C-45406A	Mtg. Bracket (Dial)		-44358	Power Trans., 220 V.-25 Cy.
	W-45405	Ring (Dial Glass Support)		-45366	Power Trans., 40 Cy.-Universal
	G1-43564	Pulley and Hub Assy.	51Z	-43449A	Volume Control, 1/2 Meg.
	W-41582	Drive Cord (18 1/4")	51Y		Line Switch
	W-43561	Cord Tension Spring	52	W-38653B	Condenser, .02 Mf. 200 V.
	W-43542B	Bracket (Drive Shaft)		7EG	Cabinet
	W-44134A	Drive Shaft	B	-44226B	Facutcheon
	W-43549	Retaining Ring (Shaft)	W	-45341	Knob (Band Sw.)
	G3-45398	Dial Light Socket Assy.	W	-44381B	Knob (Vol. Cont. and Station Sel.)
25	W-44004	Power Cord and Plug	W	-43553	Rubber Mtg. Foot
26A	W-43567	Dial Light Bulb (6-8 V.)	W	-45263	Metal Grille Bar
26B	W-43567	Dial Light Bulb (6-8 V.)			
27	W-21455	Resistor, 300,000 Ohm 1/4 W. Carb.			
28	W-26577	Resistor, 3 Megohm 1/2 W. Carb.			

TUBE SOCKET VOLTAGE READINGS									
Tube	Function	H	P	S	Su	K	Go	Ga	
6A8GT	Oscillator-Modulator	6.3	105	70	—	—	-10	105	
6K7GT	I-F Amplifier	6.3	105	70	—	—	—	—	
6SQ7GT	Det, AVC, A-F Amplifier	6.3	35	—	—	—	—	—	
25L6GT	Output	25.1	100	105	—	6	—	—	
25Z6GT	Rectifier	25.1	117.5 A.C.	—	—	132	—	—	
W-46773	Ballast Tube	Approx. 48.4 A.C. Drop							—

Power output approximately 2 watts.  
 Power consumption approximately 48 watts.  
 Voltage drop across speaker field 27 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning The I-F Amplifier to 455 Kilocycles**

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of 6A8GT, leaving grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B.C.).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig. 2, located between Push Button Assembly and speaker field, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier**

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the standard Broadcast Band and special police band use a .0001 mf. condenser and for the short wave band a 250 ohm carbon resistor instead of the condenser.

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to B.C. position, adjust the B.C. "OSC" trimmer condenser of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 110 on the dial for maximum output.

(e) Adjust the trimmer condenser B.C. "ANT" for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 2.5 megacycles and turn band switch to special police band (middle position).

(h) Tune in 2.5 signal on receiver and then adjust POL. "ANT" trimmer condenser (Fig. 2) for maximum output. There is no "OSC" adjustment for this band.

(i) Set signal generator to 18.3 megacycles, turn band switch to S.W. position (left) and open gang all the way.

(j) Adjust S.W. "OSC" trimmer condenser for maximum output.

(k) Set signal generator to 18 megacycles.

(l) Tune in 18 mc. signal on receiver, then adjust the S.W. "ANT" trimmer condenser for maximum output.

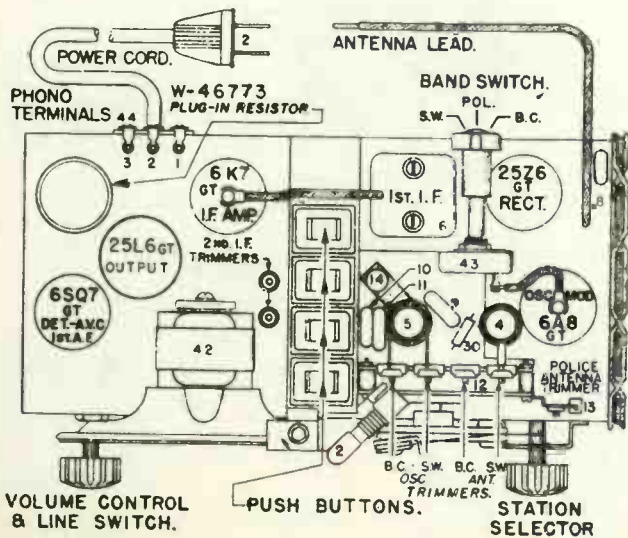


Fig. 2—Top View Model 689

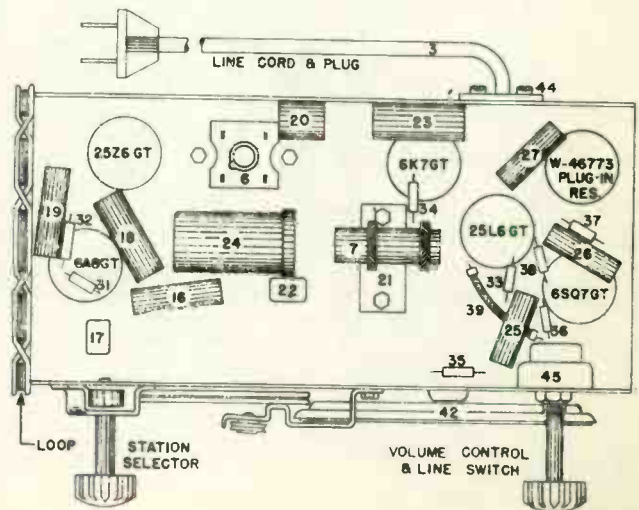
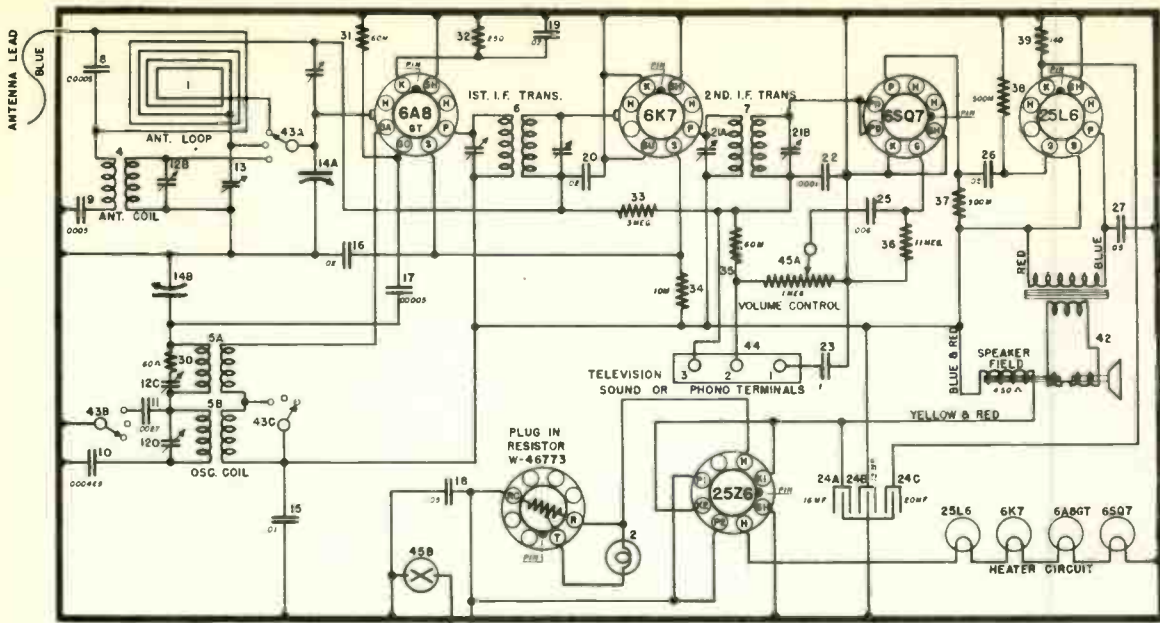


Fig. 3—Bottom View Model 689



MODEL -- 689  
TUBES MAY BE 0 OR GT TYPES EXCEPT 6AB

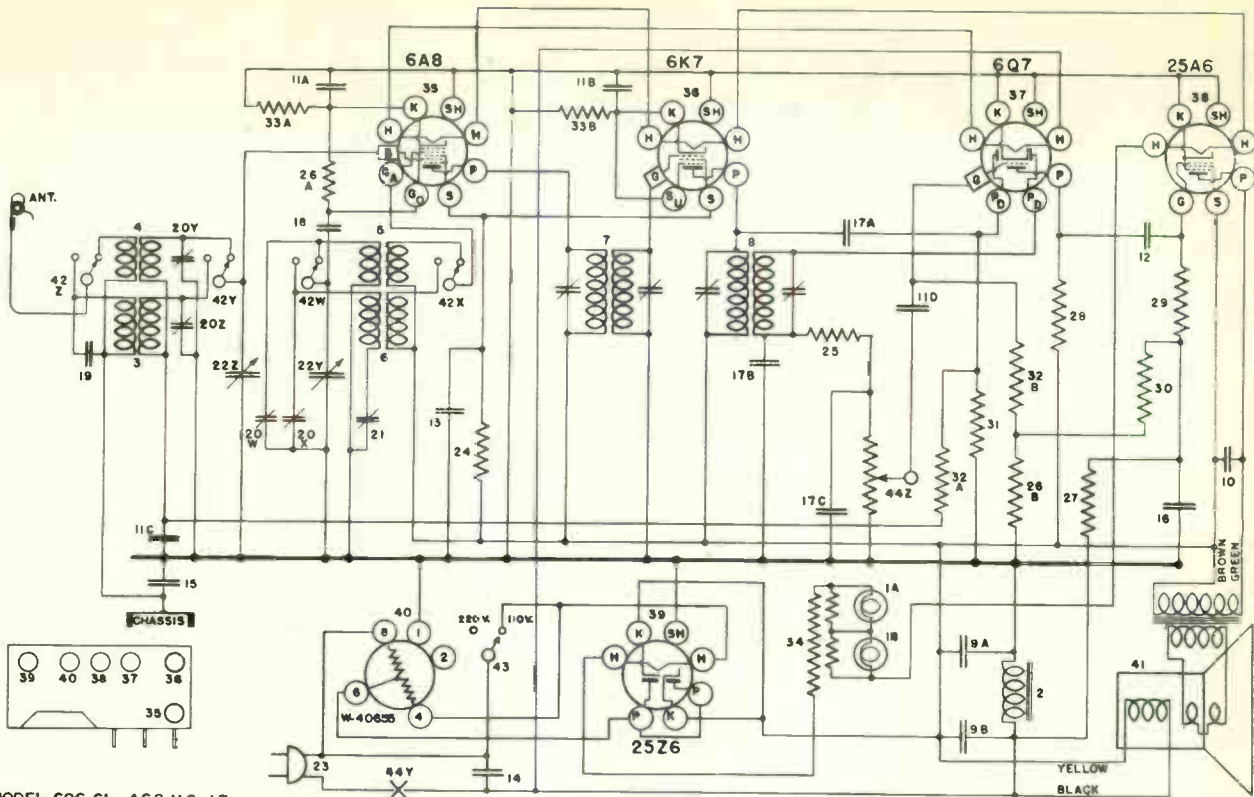
A few of the earlier releases of this model used a 6Q7GT in place of the 6SQ7GT. This change was made to improve performance especially on the short wave band.

455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G9 -47673	Loop Antenna	14	G22 -26719	Phono Terminal Board
2	W -48689	Loop Antenna Bracket	G219 -34403	Wire Assembly (Phono Terminal Board)	
3	W -44337	Dial Light Bulb	W -46947	Volume Control, 1 Megohm	
4	B -31642	Cambric Sleeve (Light Shield)	W -47574	Power Switch	
5	W -45784	Power Cable and Plug	G26 -45683	Spacer (2 Req.) (2nd I-F. Trimmer)	
6	G215 -32006	Foreign Antenna Coil	W -6879	No. 6-32 x 1/2" W. Hd. Screw (2nd I-F. Trimmer)	
5A	G224 -32007	Broadcast Oscillator Coil	C42 -45683	Push Button Unit Assembly	
5B	G206 -32004	Pol. and Foreign Oscillator Coil	G26 -45683	Riveted Key Assembly	
6	G206 -32004	1st. I-F. Transformer Assembly	C62 -45683	Rocker Plate Assembly	
7	G209 -32004	2nd I-F. Transformer (Coil only)	W -50542E	Key Clip (4 Req.)	
8	G5 -34002	Condenser, .00005 Mf. Molded	W -45946B	Adjusting Clip (1 Req.)	
9	G3 -34002	Condenser, .00025 Mf. Molded	W -50588B	Adjusting Clip (3 Req.)	
10	G20 -34002	Condenser, .000465 Mf. Molded	W -50547	Key Plate	
11	G11 -34003	Condenser, .0027 Mf. Molded	W -50970C	Key Return Spring (4 Req.)	
12A	W -41247A	Foreign Antenna B. C. Antenna	W -45717	No. 6-32 x 1 1/4" Fil. Hd. Screw (Station Setting) (4 Req.)	
12B		Foreign Antenna B. C. Oscillator (Foreign Oscillator)	W -50661	No. 8-32 x 1/4" W. Hd. Screw (Key Plate) (2 Req.)	
12C	W -48007	Spacer (2 Req.) (4 Section Trimmer)	W -45806	No. 8 x 1/4" H. H. P. K. Screw (4 Req.)	
12D	W -47126	Trimmer Condenser - Pol. Ant.	G15 -43564	No. 8 Shakeproof Washer (2 Req.)	
13	W -47126	Trimmer Condenser - Pol. Ant.	W -23877	No. 8-32 x 1/8" Set Screw (2 Req.)	
14A	G90 -33001	2 Sect. Var. Condenser - Antenna Section	W -43542B	Drive Shaft Bracket	
14B	MC12 -46750	Dial Back Assembly	W -45746	Drive Shaft	
15	W -45831A	Dial Pointer	W -45806	No. 8 x 1/4" H. H. P. K. Screw (2 Req.) (Drive Shaft Bracket)	
16	C -49294	Dial Glass	W -45087	Drive Cord Spring	
17	G6 -27138	Dial Light Bracket Assembly	W -46390	Drive Cord Clamp	
18	W -45782B	Condenser, .01 Mf. 400 Volta Paper	G4 -41582	Guide Cord, 9"	
19	W -45782B	Condenser, .02 Mf. 120 Volta Paper	W -46848	Guide Cord Spring	
20	W -36541	Condenser, .02 Mf. 150 Volta Paper	W -497E	Cabinet	
21A	W -46738	Trimmer Condenser - 2nd I-F. Transformer	W -46838	Carton	
21B	G2 -34002	Condenser, .0001 Mf. Molded	W -45280	Knob (2 Req.)	
22	W -34049C	Condenser, .1 Mf. 200 Volta Paper	W -45281	Push Button (4 Req.)	
23	W -49326	Condenser, .16 Mf. 140 Volta Elect.	W -46816	No. 8 x 3/4" Rubber Bottom Screw (Chassis Mtg.) (4 Req.)	
24A	W -45810B	Condenser, .02 Mf. 180 Volta Paper	W -16921	Speed Nut (2 Req.)	
24B	W -45817B	Condenser, .05 Mf. 160 Volta Paper	W -4875H	Trimnut Stud (4 Req.)	
25	W -50642	Resistor, 60 Ohms 1/2 Watt Ins.	W -497A	Cyton	
26	W -31274	Resistor, 60,000 Ohms 1/4 Watt Carb.	W -47412	Knob (2 Req.)	
27	W -51045	Resistor, 3 Megohms 1/4 Watt W. W.	W -47453	Push Button (4 Req.)	
28	W -36528	Resistor, 10,000 Ohms 1/2 Watt Carb.	W -6889A	No. 8-32 x 1/4" W. Hd. Screw (Chassis Mtg.) (4 Req.)	
29	W -21257A	Resistor, 60,000 Ohms 1/2 Watt Carb.	W -30409	Flat Washer (Chassis Mtg.) (4 Req.)	
30	W -46497	Resistor, 11 Megohms 1/4 Watt Carb.	W -49442	Cabinet Back	
31	W -21455	Resistor, 300,000 Ohms 1/4 Watt Carb.	W -20881	No. 6 x 3/4" Rd. Hd. Wood Screw (Cabinet Back) (4 Req.)	
32	W -23786	Resistor, 500,000 Ohms 1/4 Watt Carb.	W -48741	Dial Glass Clip, Lower	
33	W -41759	Resistor, 140 Ohms 1/2 Watt Flex.	W -48742	Dial Glass Clip, Upper	
34	W -47200	Cone and V. C. Assembly	W -48743	No. 3 x 1/4" Rd. Hd. Wood Screw (Dial Glass Clip) (3 Req.)	
35	W -46689	Field Coil, 450 Ohms 60 M. A.			
36	W -46687	Output Transformer			
37	W -46889	Cardboard Ring			
38	W -47166	Cone and V. C. Assembly			
39	W -47170	Field Coil, 450 Ohms 60 M. A.			
40	W -47171	Output Transformer			
41	W -47169	Cardboard Ring			
42	W -47497A	Hook and Spraker Bracket			
43A	W -6415	No. 8-32 x 1/4" W. Hd. Screw (Speaker Bracket)			
43B	W -5026	No. 8-32 Hrd. Nut (Speaker Bracket)			
43C	W -20801	No. 8 Shakeproof Washer (Speaker Bracket)			
44	W -19377	Band Change Switch			
45A	W -46962	3/4" Fil Nut (Band Change Switch)			
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USED ON 9PE AND 9PA  
Call Letter Sheet  
Call Letter Cover  
Instruction Booklet  
Phono Instructions  
Short Wave Instructions  
Expander Knobs  
Instruction Envelope Assy.

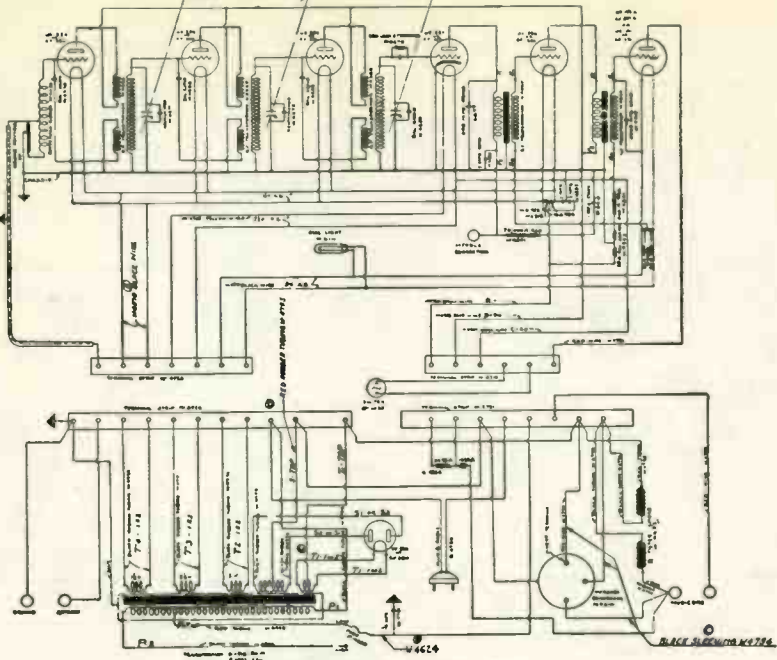


MODEL-696 6L 462 K.C. 1F.

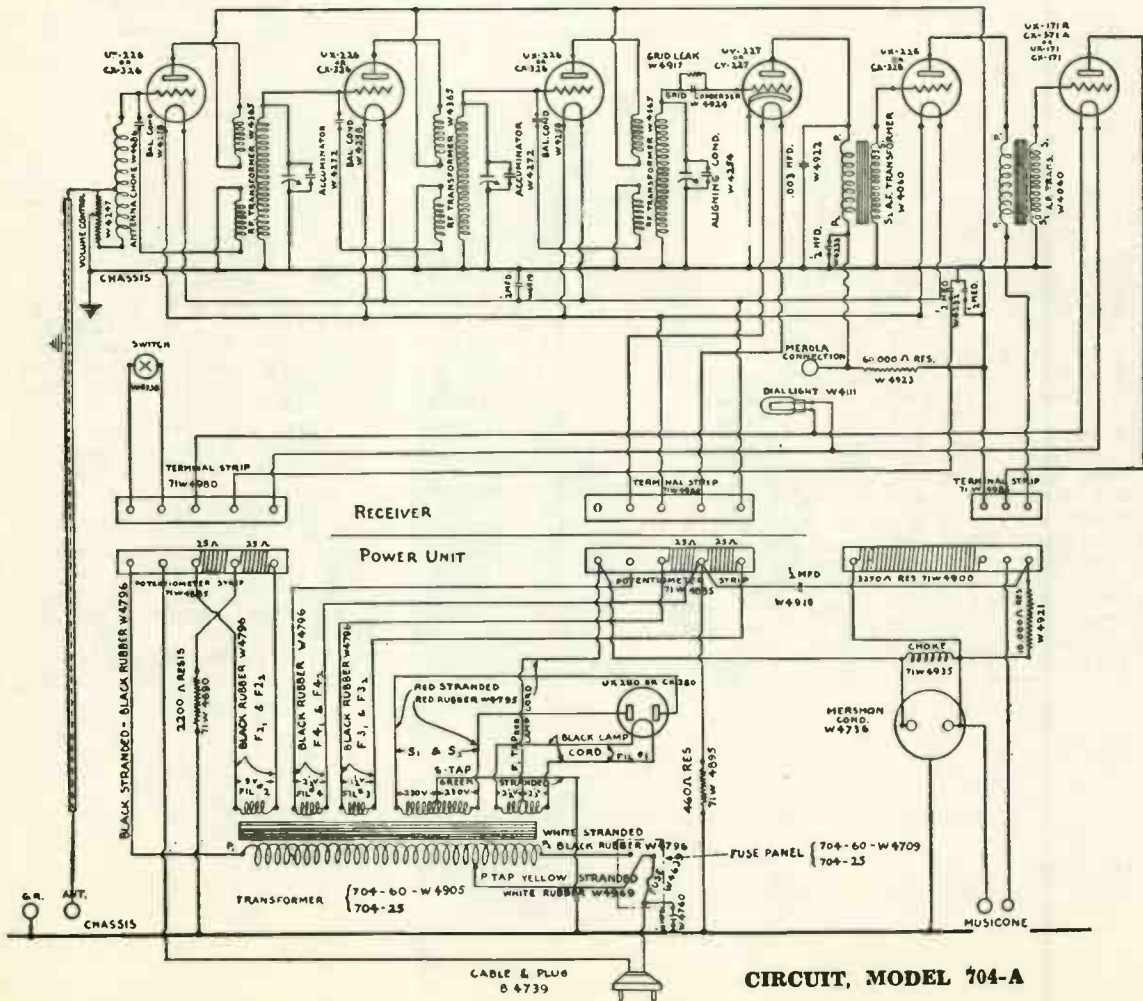
1A, B	W-4099-B	Dial Light, 6.3v.	21	37917	L.F. Osc. Trim. Cond.
2	G4-28859	Choke Hum Filter	22Z	G27-33001	R.F. Var. Tuning Cond.
3	G127-32000	L.F. Ant. Coil	22Y	G27-33001	Osc. Var. Tuning Cond.
4	G128-32000	B.C. Ant. Coil	24	36317	10,000 ohm $\frac{1}{2}$ w. Ins. Res.
5	G128-32002	B.C. Osc. Coil	25	36761	40,000 ohm $\frac{1}{2}$ w. Ins. Res.
6	G127-32002	L.F. Osc. Coil	26A, B	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
7	G135-32004	1st I.F. Trans.	27	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.
8	G136-32004	2nd I.F. Trans.	28	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
9A, B	W-36057	40 mfd. 300 v. Elec. Cond.	29	36322	500,000 ohm $\frac{1}{2}$ w. Ins. Res.
10	W-35139	.004 mfd. 400 v. Cond.	30	38623	750,000 ohm $\frac{1}{2}$ w. Ins. Res.
11		.02 mfd. 160 v. Cond.	31	35602	1 meg. $\frac{1}{2}$ w. Ins. Res.
12	W-28621	.02 mfd. 200 v. Cond.	32A, B	35927	2 meg. $\frac{1}{2}$ w. Ins. Res.
13	W-35936	.05 mfd. 200 v. Cond.	33A, B	28589	350 ohm $\frac{1}{2}$ w. Flex. Res.
14	W-32780-B	.05 mfd. 400 v. Cond.	34	W-40442	Regulating Res.
15	W-31935	.25 mfd. 300 v. Cond.	40	G163-36400	Socket W-40655
16	W-30321-A	1.0 mfd. 160 v. Cond.	41	43132	Spkr., 354 BL-9
17	G1-34002	250 mmf. Cond., Mica	42Z	42519	Ant. Pri. Band Chg. Sw.
18	G2-34002	100 mmf. Cond., Mica	42Y	42519	Ant. Sec. Band Chg. Sw.
19	G6-34002	25 mmf. Cond., Mica	42X	42519	Osc. Tick. Band Chg. Sw.
20Z	37241-B	L.F. Ant. Sec. Trim. Cond.	42W	42519	Osc. Sec. Band Chg. Sw.
20Y	37241-B	B.C. Ant. Sec. Trim. Cond.	43	W-42701	Line Chg. Sw.
20X	37241-B	L.F. Osc. Trim. Cond.	44Z, Y	42522	500,000 ohm Vol. Cont. & Sw.
20W	37241-B	B.C. Osc. Trim. Cond.			



MODELS 704, 704A

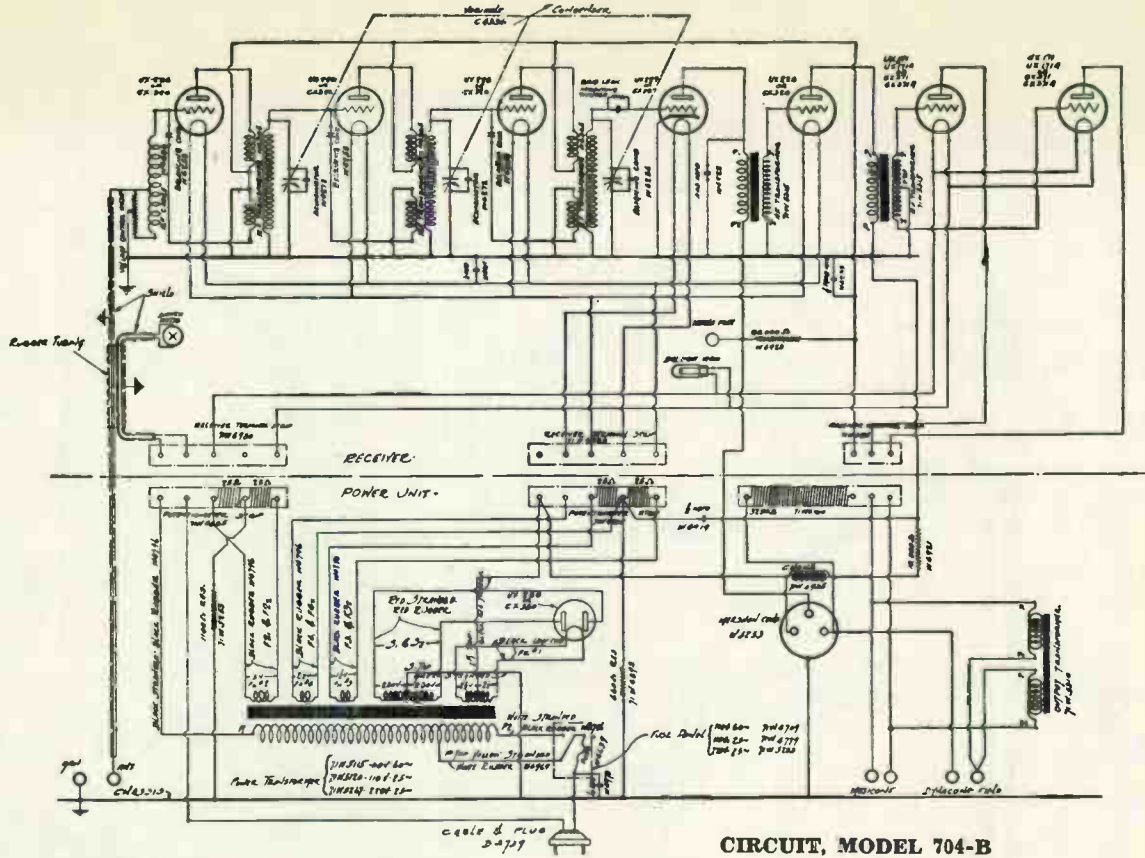


CIRCUIT, MODEL 704

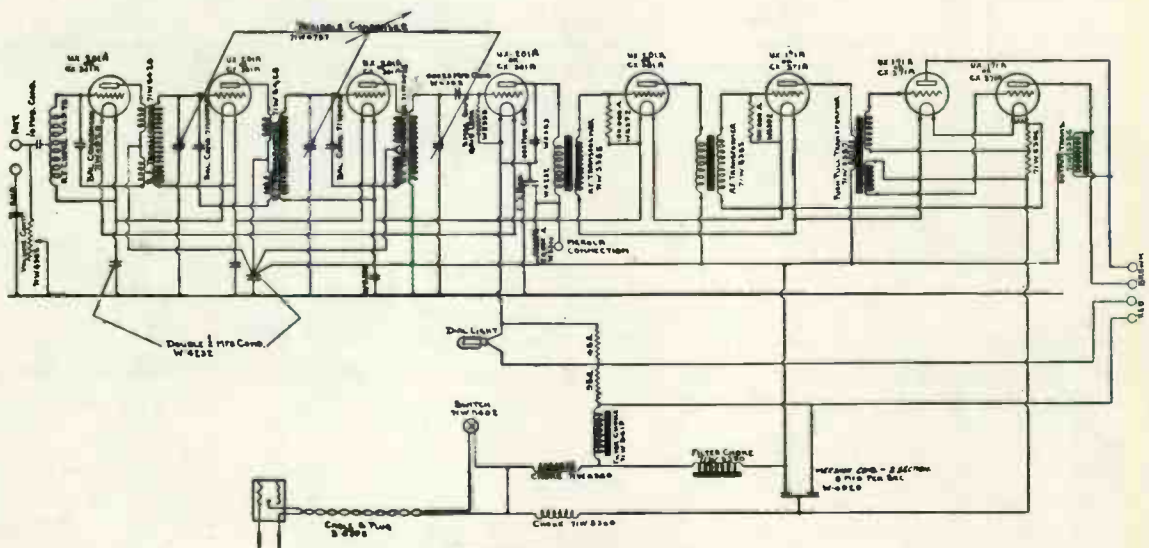


CIRCUIT, MODEL 704-A

MODELS 704B, 705

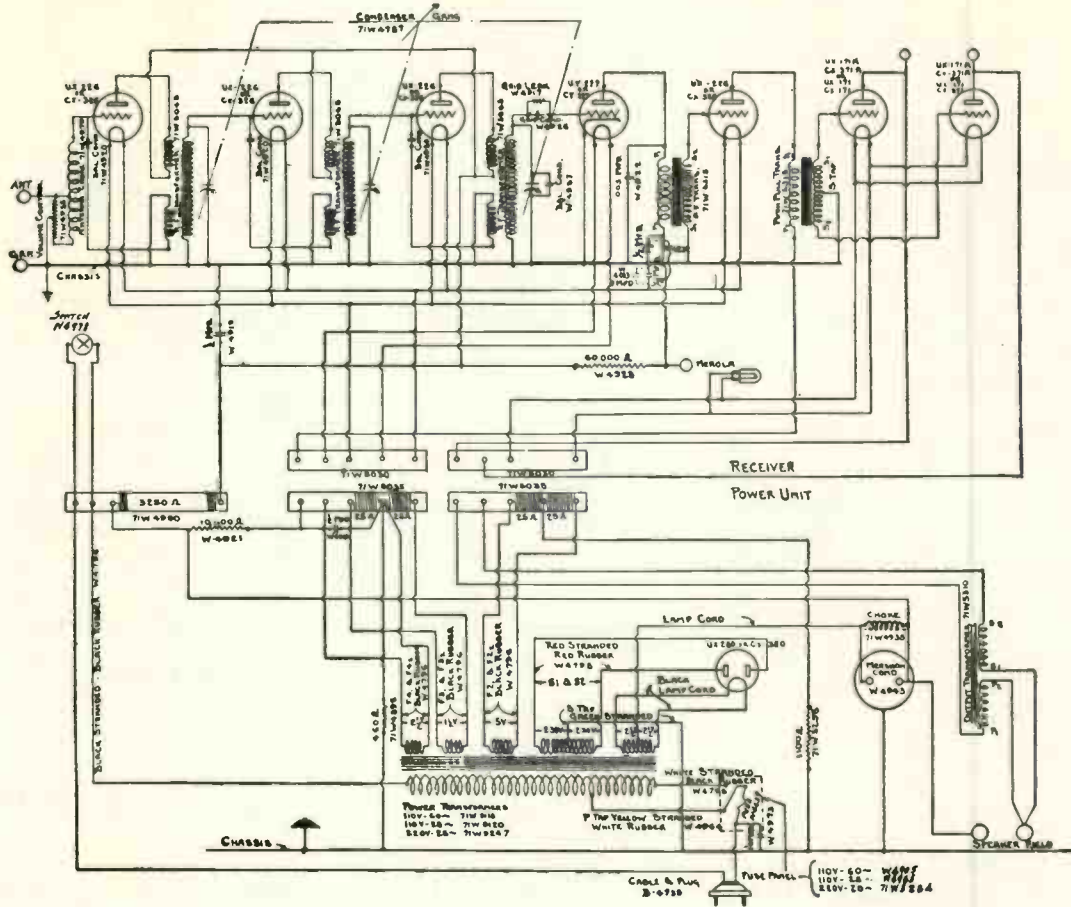


CIRCUIT, MODEL 704-B



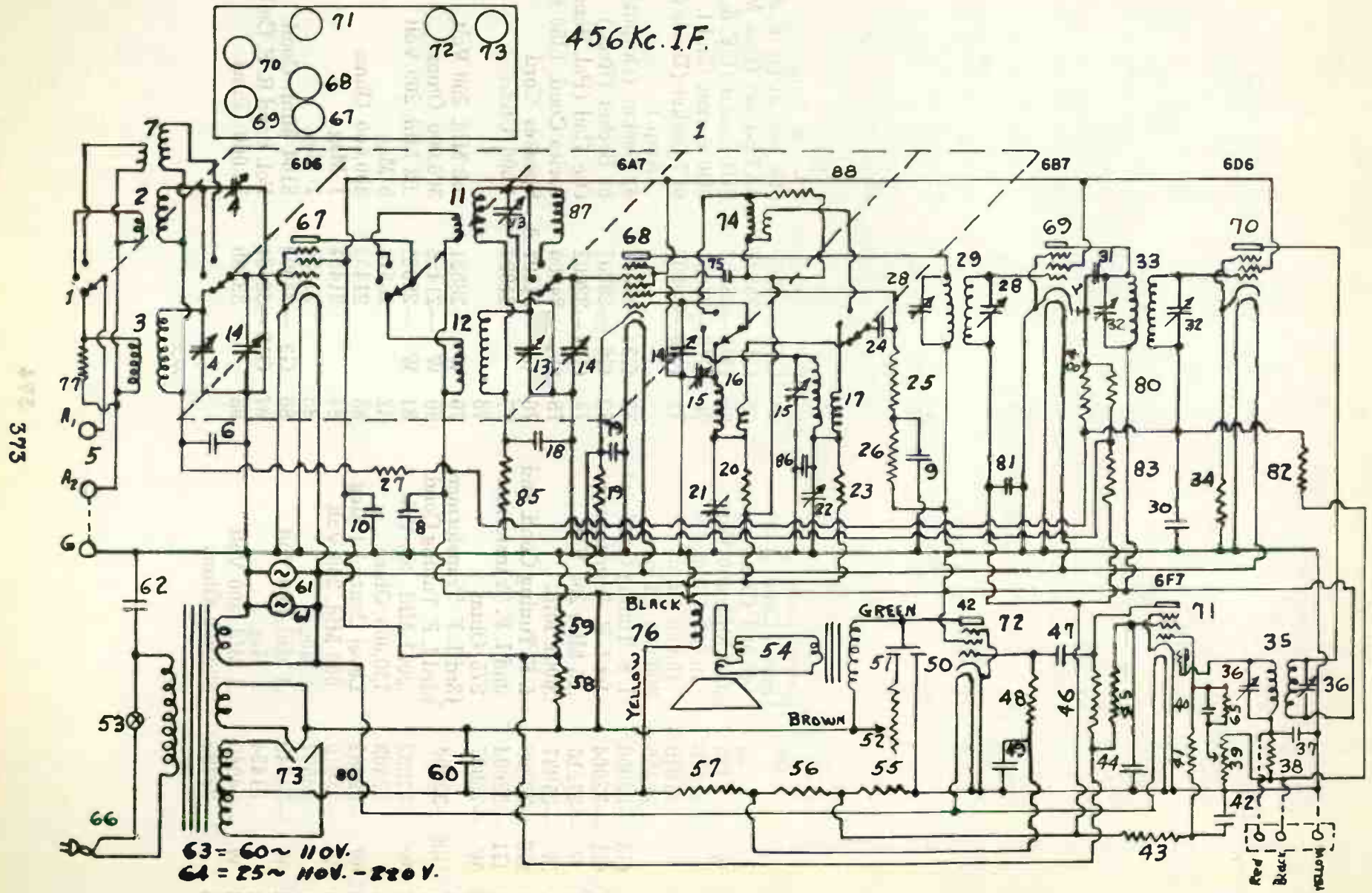
CIRCUIT, MODEL 705

# MODEL 706



The Crosley Corporation was one of the very earliest radio parts manufacturers. As early as 1920, parts were distributed on a nation-wide basis. We are still anxious to serve you with radio service parts through the Crosley distributor in your area.

Wiring Diagram For Model 714



# Parts List Model 714

Figures in first column correspond to figures in diagram

1	B —34443-A	Band Change Switch	46		21875	100,000 Ohms
		{ 6 Pole 3 Throw	47	W	—27216	.05 Mfd. 200 Volt
2	G28 —32000	H. F. Ant. Coil	48		23785	500,000 Ohms
3	G3 —32000	L. F. Ant. Coil	49	W	—30321	1.0 Mfd. 160 Volt
4	G1 —33008	Ant. Trimming Cond.	50	W	—31052	{ .004 Mfd. 400 Volt
5	G16 —26719	Ant.-Gnd. Term.	51			{ .05 Mfd. 400 Volt
6	W —32379	.02 Mfd. 200 Volt	52	W	—32063	{ Tone Control
7	G31 —32000	Pol. Ant. Coil	53			{ S. P. S. T. Switch
8		{ 8 Mfd. 450 Volt (Red)	54		411C	Speaker
9	W —29097-D	{ 8 Mfd. 450 Volt (Green)	55		33390	30,000 Ohms
10		{ 8 Mfd. 250 Volt (No Code)	56		23403	150,000 Ohms
11	G18 —32001	H. F.-R. F. Coil	57		21454	1 Meg.
12	G2 —32001	L. F.-R. F. Coil	58	W	—31361	{ 7,000 Ohms
13	G9 —33009	R. F. Trimmer Cond.	59			{ 11,000 Ohms
14	G18 —33002	Variable Condenser	60	W	—26194-B	12 Mfd. 475 Volt
15	G2 —33009	Osc. Trimming Cond.	61	W	—4099-A	6-8 V. Dial Light
16	G2 —32002	L. F. Osc. Coil	62	W	—30805	.01 Mfd. 400 Volt
17	G21 —32002	H. F. Osc. Coil	63	G1	—34432	Power Trans. 60 Cy.
18	W —32380	.05 Mfd. 200 Volt	64	G39	—25669	Power Trans. 25 Cy.
19	W —21452	1,100 Ohms				110 V.-220 V.
20	21237-A	60,000 Ohms	65		26578	5 Meg.
21	G12 —33006	{ Series Cond. L. F.	66	B	—33906-A	Cord & Plug
22		{ Series Cond. H. F.	67	G75	—28807	6D6 Socket (R. F. Amp.)
23	21453	40,000 Ohms	68	G47	—28807	6A7 Socket (Osc. Mod.)
24	W —25435	.003 Mfd. 400 Volt	69	G48	—28807	6B7 Socket (I. F. & Diode)
25	21876	10,000 Ohms	70	G75	—28807	6D6 Socket (2nd I. F.)
26	21876	10,000 Ohms	71	G49	—28807	6F7 Socket (Diode & A. F. Amp.)
27	21455	300,000 Ohms				
28	G6 —33006	I. F. Tuning Cond. 1st	72	G25	—28807	42 Socket (Output)
29	G1 —32004	1st I. F. Transformer	73	G6	—28807	80 Socket (Rect.)
30	W —27216	.05 Mfd. 200 Volt	74	G24	—32002	Osc. Coil (Pol. Band)
31	W —31937	.0001 Mfd.	75	G6	—34000	Series Cond. 1350 Mmf.
32	G6 —33006	I. F. Tuning Cond. 2nd	76	W	—31007-A	Speaker Cord
33	G1 —32004	2nd I. F. Transformer	77		31094	4,500 Ohms
34	W —25937	275 Ohms	78			
35	G26 —32004	{ 3rd I. F. Transformer	79	W	—28621	.02 Mfd. 200 Volt
36		{ 3rd I. F. Tuning Cond.	80	W	—21455	300,000 Ohms
37	W —27932	.0001 Mfd. 200 Volt	81	W	—28621	.02 Mfd. 200 Volt
38	23403	150,000 Ohms	82		26578	5 Meg.
39	W —32062	Level Control 1 Meg.	83		21455	300,000 Ohms
40	W —28619	.006 Mfd. 200 Volt	84		21454	1 Meg.
41	26577	3 Meg.	85		21454	1 Meg.
42	W —24049	.1 Mfd. 200 Volt	86	G2	—34000	3104 Mmf. Cond.
43	21454	1 Meg.	87	G19	—32001	Pol. Band R. F. Coil
44	W —24049	.1 Mfd. 200 Volt	88		33390	30,000 Ohms
45	23785	500,000 Ohms				

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.3	315	110	0	-3	0	—	—
6A7	Osc.-Mod.	6.3	315	110	—	-3	0	-5 to -15	185
6B7	I-F Amp. & AVC	6.3	315	110	0	-3	0	—	—
76	Detector	6.3	—	—	—	—	0	—	—
76	A-F Amplifier	6.3	35	—	—	-3	0	—	—
42	Output	6.3	300	245	0	-16	0	—	—
80	Rectifier	5.0	320	—	—	—	—	—	—

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st I-F transformer. (Fig. 2)

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. (Fig. 2)

(g) Adjust the top and bottom trimmers of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer or maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant"

terminal of the receiver. For the BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned (if provision is made for series alignment). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers (Fig. 2) in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Band care must

To align the "series" trimmer set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—

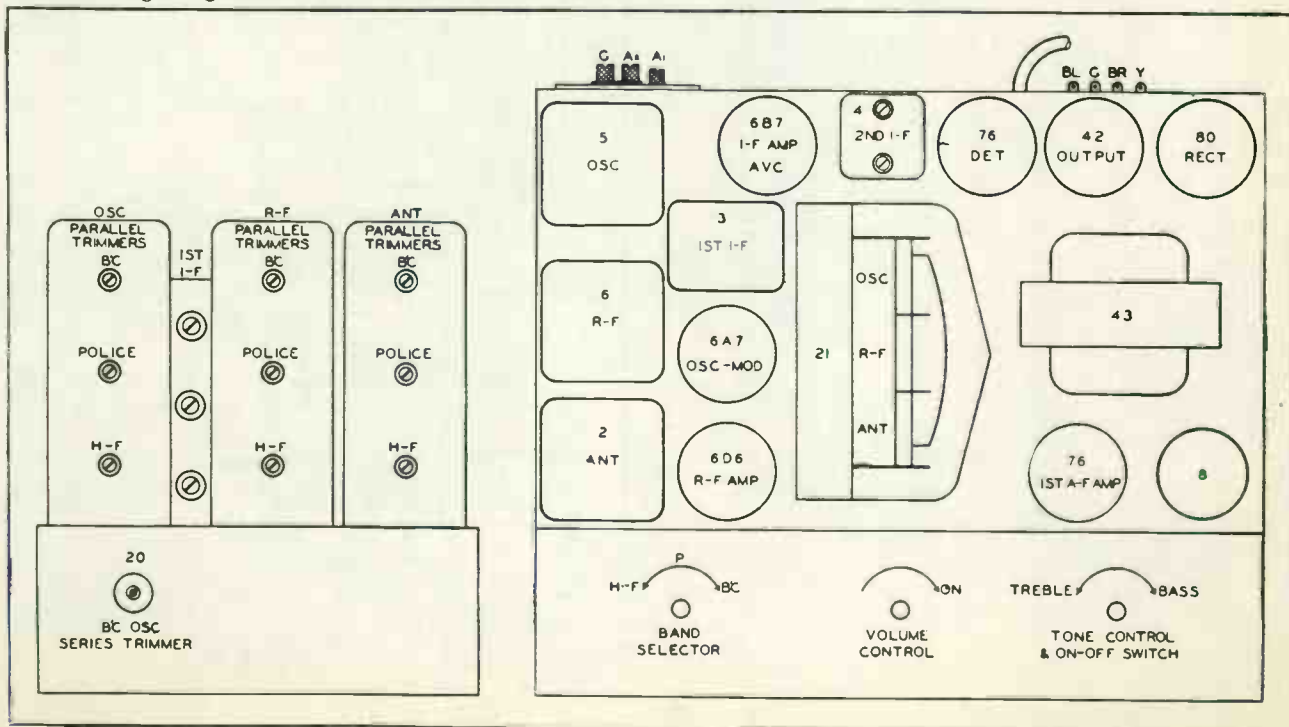
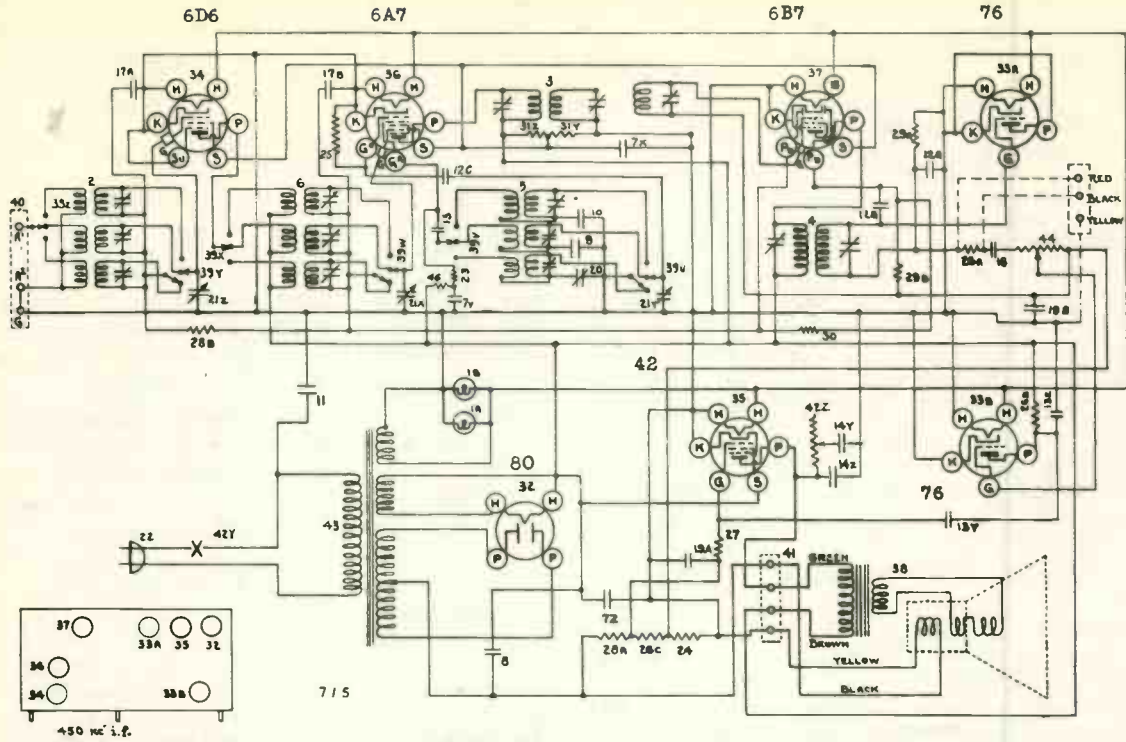


Fig. 2. Side And Top Views 715

MODEL 715



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 -27134	Dial Light Bracket Assembly.	23	-22831	Resistor, 15,000 Ohms.
1B	G4 -27134	Dial Light Bracket Assembly.	24	-22196	Resistor, 20,000 Ohms.
2	G50-32000	Ant. Coil Assembly complete.	25	-21875	Resistor, 100,000 Ohms.
	G44-32000	Ant. Coil Broadcast Band.	26A	-23403	Resistor, 150,000 Ohms.
	G45-32000	Ant. Coil Police Band.	26B	-23403	Resistor, 150,000 Ohms.
	G46-32000	Ant. Coil S. W. Band.	26C	-23403	Resistor, 150,000 Ohms.
	W -36032	Trimmer Condenser.	27	-21455	Resistor, 300,000 Ohms.
	G6 -36031	Support Base Assembly.	28A	-23785	Resistor, 500,000 Ohms.
	G4 -36031	Coil Shield Assembly.	28B	-23785	Resistor, 500,000 Ohms.
3	G47-32004	1st. I. F. Trans. Assembly.	28A	-21454	Resistor, 1 Megohm.
4	G46-32004	2nd. I. F. Trans. Assembly.	29B	-21454	Resistor, 1 Megohm.
5	G42-32002	Osc. Coil Assembly complete.	30	-26577	Resistor, 3 Megohm.
	G36-30202	Osc. Coil B. C. Band.	31Z	-35963	Resistor, 8,500 Ohm.
	G37-32002	Osc. Coil Police Band.	31Y	-35963	Resistor, 25,000 Ohm.
	G38-32002	Osc. Coil S. W. Band.	32	G6 -28807	Socket, 80.
	W -36032	Trimmer Condenser.	33A	G80-28807	Socket, 76.
	G7 -36031	Support Base Assembly.	33B	G80-28807	Socket, 76.
	G5 -36031	Coil Shield Assembly.	34	G75-28807	Socket, 6D6.
6	G29-32001	R. F. Coil Assembly complete.	W	-35774	Tube Shield Base.
	G23-32001	R. F. Coil B. C. Band.	W	-35772	Tube Shield Half.
	G24-32001	R. F. Coil Police Band.	W	-35773	Tube Shield Cap.
	G25-32001	R. F. Coil S. W. Band.	G25-28807	Socket, 42.	
	W -36032	Trimmer Condenser.	G47-28807	Socket, 6A7.	
	G6 -36031	Support Base Assembly.	W	-35774	Tube Shield Base.
	G4 -36031	Coil Shield Assembly.	W	-35772	Tube Shield Half.
7Z	W -36056	Condenser, 8 Mfd. 450 Volt.	37	W -35773	Tube Shield Cap.
7Y	W -36056	Condenser, 4 Mfd. 350 Volt.	G48-28807	Socket, 6B7.	
7X	W -36055	Condenser, 4 Mfd. 250 Volt.	W	-35774	Tube Shield Base.
8	G7 -34000	Condenser, 35 Mfd. 450 Volt.	W	-35772	Tube Shield Half.
9	G12-34000	Condenser, 0.00145 Mfd.	W	-35773	Tube Shield Cap.
10	W -36068	Condenser, 0.01 Mfd., 400 Volt.	W	-35773	Tube Shield Cap.
11	G2 -34002	Condenser, 100 Mmf.	W	-35773	Tube Shield Cap.
12A	G2 -34002	Condenser, 100 Mmf.	W	-35773	Tube Shield Cap.
12B	G2 -34002	Condenser, 100 Mmf.	W	-35773	Tube Shield Cap.
12C	G2 -34002	Condenser, 100 Mmf.	W	-35773	Tube Shield Cap.
13	W -25537A	Condenser, 0.001 Mfd., 400 Volt.	38	318-BL-18	Speaker.
13Y	W -25537A	Condenser, 0.001 Mfd., 400 Volt.	38	518-CL-22	Speaker.
14Z	W -31052	Condenser, 0.004 Mfd., 400 Volt.	39	-36058B	Band Change Switch
14Y	W -31052	Condenser, 0.004 Mfd., 400 Volt.	UtoZ	-36058B	Band Change Switch
15	W -32378	Condenser, 0.06 Mfd., 400 Volt.	40	G27-26719	Ant.-Grd. Terminal.
16	W -23191A	Condenser, 0.01 Mfd., 400 Volt.	41	G5 -31128	Speaker Terminal.
17A	W -32379	Condenser, 0.02 Mfd., 200 Volt.	W	-34627	Terminal Board Insulator.
17B	W -32379	Condenser, 0.02 Mfd., 200 Volt.	W	-34628	Terminal Board Insulator.
18	See 19B		42Z	-36062	Tone Control.
19A	W -30321	Condenser, 1.0 Mfd., 160 Volt.	43	G6 -30745	Power Transformer, 60 Cy., 110 V.
19B	W -30321	Condenser, 1.0 Mfd., 160 Volt.	G7	-30745	Power Transformer, 25 Cy., 110 V.
20	G10-33005	Trimmer Condenser, 5 plate.	G8	-30745	Power Transformer, 25 Cy., 220 V.
21Z	G33-33002	Var. Tuning Condenser, 3 Gang.	W	-36060	Volume Control.
21Y	G33-33002	Var. Tuning Condenser, 3 Gang.	44	-21876	Resistor, 10,000 Ohms.
21X	G33-33002	Var. Tuning Condenser, 3 Gang.	45	W -34878B	Knob, Band Change.
MG21-36045	Dial Drive Assembly.		46	W -31585B	Knob Controls.
W -37198	Dial Pointer only.		B	-33528C	Escutcheon.
W -32283	Dial Pointer Nut (2 used).		W	-33984	Escutcheon Gasket.
W -36098	Dial Indicator Plate.		W	-36312	Band Change Switch Plate.
C	W -36098	Dial Indicator Plate.	W	-36309	Band Change Indicator, Celluloid.
B	W -30375A	Cord and Plug.	W	-36313	Tone Control Plate.
22	W -30375A	Cord and Plug.	W	-35922	Grille Cloth, SN Cabinet.
			W	-35863	Grille Cloth, SD Cabinet.

## CHASSIS 716

### TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P2	S	G	K	Go
6C5	Oscillator	6.3	165	—	—	0	0	—
6A8	Modulator	6.3	270	—	120	0	2.85	-5 to -30
6K7	I. F. Amp.	6.3	270	—	120	0	2.85	—
6H6	Diode Detector	6.3	0	—	—	—	—	—
6F5	A. F. Amp.	6.3	170	—	—	0	1.75	—
6N6	Output	6.3	270	255	—	0	0	—
5Z4MG	Rectifier	5.0	—	—	—	—	330	—

Power Consumption Approximately 80 Watts at 117.5 Volts.  
 Power Output Approximately 6 Watts.  
 Voltage Drop Across Speaker Field Approximately 60 Volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

#### Aligning R-F Amplifier.

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "Ant" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

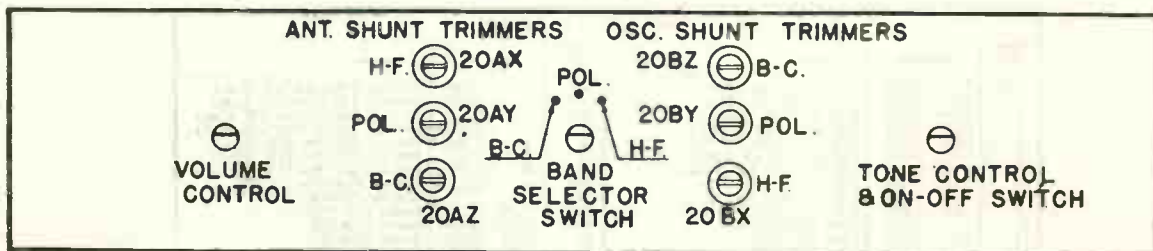
Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. Do NOT READJUST the "OSC" TRIMMER.

(b) To align the series trimmer (Item 10, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

Shunt Alignment	Series Alignment
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	.....
18000 Kilocycles	.....



Front View 716

*The Crosley Corporation was one of the very earliest radio parts manufacturers. As early as 1920, parts were distributed on a nation-wide basis. We are still anxious to serve you with radio service parts through the Crosley distributor in your area.*



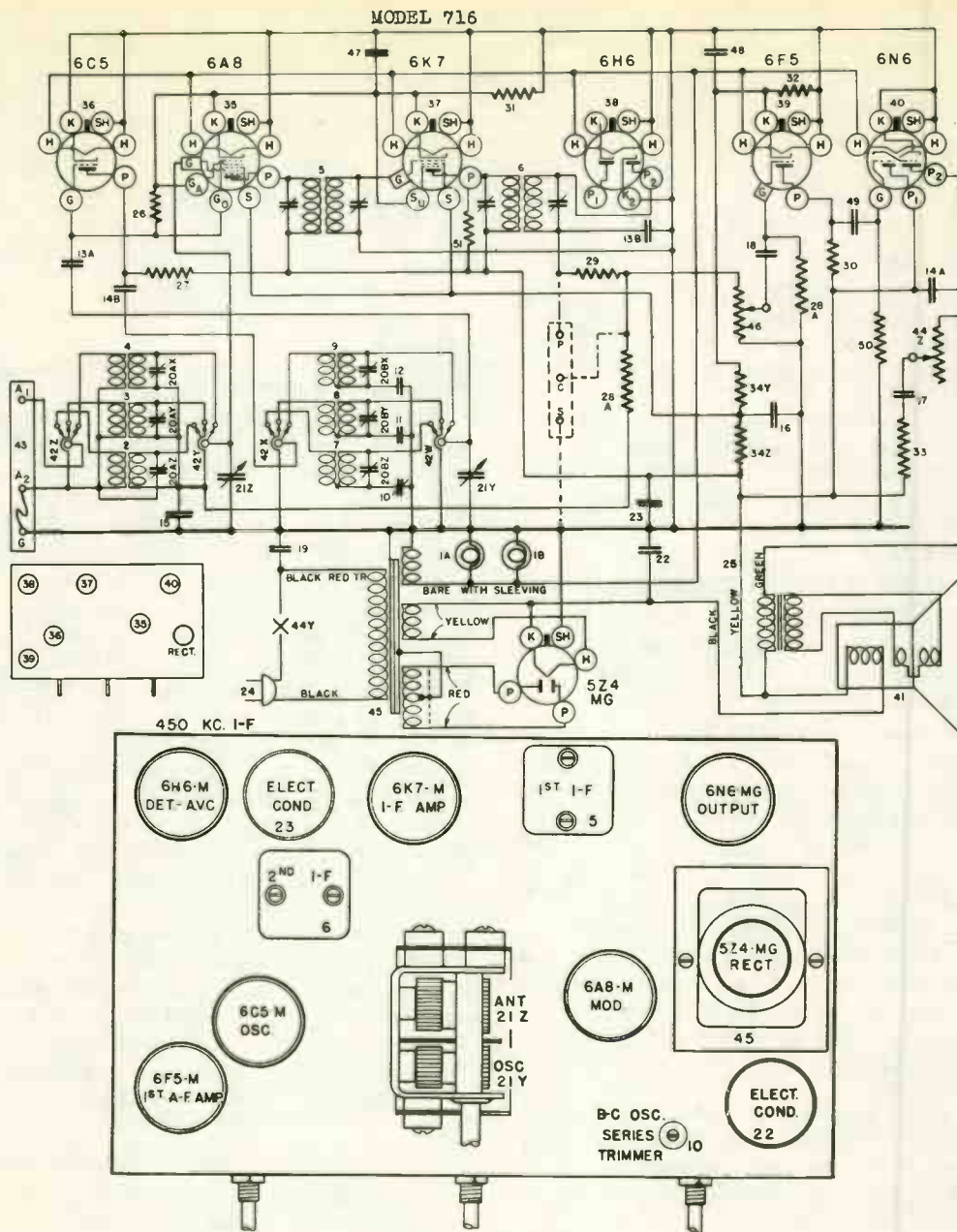


Fig. 2. Top View 716

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Item No.	Part No.	Name
1-AB	W -37922	Bulb 6-8V., Dial Light	28A	-36688	Resistor, 3 Megohm 1/4 W. (Car.)
	G3 -37965	Socket Assy., Dial Light	28B	-36688	Resistor, 3 Megohm 1/4 W. (Car.)
2	G120 -32000	Coil, Ant. (540-1800 Kc.)	29	-21455	Resistor, 300,000 Ohm 1/4 W. (Car.)
3	G119 -32000	Coil, Ant. (1800-6000 Kc.)	30	-35930	Resistor, 200,000 Ohm 1/4 W. (Car.)
4	G121 -32000	Coil, Ant. (5800-18000 Kc.)	31	-21964	Resistor, 165 Ohm 1/4 W. (Flex.)
5	G122 -32004	Coil Assy., 1st I-F (450Kc.)	32	-35457	Resistor, 210 Ohm 1/4 W. (Flex.)
6	G123 -32004	Coil Assy., 2nd I-F (450Kc.)	33	W -27503	Resistor, 1400 Ohm 1/4 W. (Flex.)
7	G112 -32002	Coil, Osc. (540-1800 Kc.)	34Z	W -32301	Resistor, 10,000 Ohm Candohm
8	G111 -32002	Coil, Osc. (1800-6000 Kc.)	34Y		Resistor, 15,000 Ohm
9	G123 -32002	Coil, Osc. (5800-18000 Kc.)	35	G156 -36400	Socket Type 6A8
10		Cond. 400-500 Mmf.	36	G152 -36400	Socket Type 6C5
11	G7 -34007	Cond. 1750 Mmf.	37	G151 -36400	Socket Type 6K7
12	G 8 -34007	Cond. 4350 Mmf.	38	G155 -36400	Socket Type 6H6
13A	G 2 -34002	Cond., .0001Mf. (Molded)	39	G158 -36400	Socket Type 6F5
13B	G 2 -34002	Cond., .0001 Mf. (Molded)	40	G165 -36400	Socket Type 6N6
14A	W -35139	Cond., .004 Mf. 400V. (Tub.)	41	332-BJ3	Speaker "M" Spec. 1-D-390
14B	W -35139	Cond., .004 Mf. 400V. (Tub.)		-41638	Cone Assy. for "M" 332BJ3
15	W -35936	Cond., .05Mf. 200V. (Tub.)		-40275	Field Coil for "M" 332BJ3
16	W -24049-B	Cond., .1Mf. 200V. (Tub.)	42	-41639	Output Trans. for "M" 332BJ3
17	W -30488	Cond., .1Mf. 400V. (Tub.)	G27	-40770-A	Switch, Band Selector
18	W -30488	Cond., .02Mf. 400 V. (Tub.)	43	-28719	Terminal Board, Antenna & Grd.
19	W -30805	Cond., .01 Mf. 400V. (Tub.)	44Z		Tone Control, 100,000 Ohm
20	W -35951	Cond.-3 Section Trimmer	44Y	-37908	Switch, Line
21	G21 -33001	Cond.-2 Section Tuning	45	-41978	Transformer, 110V. 60 Cy.
	B -42142-A	Dial-Calibrated Glass		-42149	Transformer, 110V. 25 Cy.
		Drive Unit		-42150	Transformer, 220V. 25 Cy.
	B -42338	Mask-Metal	46	W -37967	Volume Control 1Megohm
		Pointer-Dial	47	W -28810-A	Cond., .25Mf. 200V. (Tub.)
	W -40486	Screw, Pointer Mtg.	48	W -28621	Cond., .02Mf. 200V. (Tub.)
	MG27 -42151	Dial Drive Complete	49	W -35758	Cond., .008, 400V. (Tub.)
		Cable, Drive	50	W -23785	Resistor, 500,000 Ohm 1/4 W. (Car.)
22	W -36055	Cond., .35Mf. 400V. (Elect.)		W -42345	Escutcheon
23	W -36057	Cond., .40Mf. 300V. (Elect.)		D -28	Screw Escutcheon Mtg.
24	B -33906-A	Cord and Plug, Power		W -37339	Knob (3 Req.)
25	G4 -35686	Speaker Cable		W -40192-B	Knob (1 Req.)
26	-40757	Resistor, 50,000 Ohm 1/4 W. (Car.)		H	Cabinet, Model 744
27	W -37987	Resistor, 15,000 Ohm 1W (WireWound)		C	Cabinet, Model 745

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	K
6J8G	Oscillator-Modulator	6.3	172	88	-3	120	0
6U7G	I-F Amplifier	6.3	172	88	-3	0	0
6P5G	Detector A.V.C. Diode	6.3	0	0	0	0	-3
6F5G	1st A-F Amplifier	6.3	100	0	-2	0	-3
6V6G	Output	6.3	160	172	-10	0	0
5Y3G	Rectifier	3.9	A.C.				217
6U5	Tuning Indicator	6.3	170				

1. Tuning I-F Amplifier To 455 Kilocycles

- (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6J8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh and turn the volume control to the right (ON).
- (c) Turn the band selector switch to the left (American Broadcast Band).
- (d) Set the signal generator to 455 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output. (Fig. 2).
- (f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output of the modulated signal generator should be fed through a dummy antenna and connected to the "ANT" terminal of the receiver.

For the "Foreign" band use a 250 ohm carbon resistor for dummy and for the "American" band use a .0002 Mf. condenser.

Align the "Foreign" band first.

- (a) Set Band selector to "Foreign" band, right.
- (b) Set signal generator to 18.3 Megacycles.
- (c) Open gang all the way. Minimum capacity.
- (d) Tune-in with H-F Osc. shunt trimmer 18.3 signal. This signal will be heard at two settings of this trimmer always choose the setting furthest open.
- (e) Set signal generator to 18.0 Megacycles.
- (f) Tune-in 18.0 Mc. signal with station selector, then align the H-F ANT. trimmer condenser for maximum output. DO NOT ADJUST OSC. TRIMMER AT THIS FREQUENCY.
- (g) Repeat operations (d), (e) and (f) until no further improvement can be obtained.
- (h) Set the band selector to the American Broadcast band.
- (i) Set the signal generator to 1725 Kilocycles.
- (j) Open the gang all the way. Minimum capacity.
- (k) Adjust B-C OSC. trimmer for maximum output.
- (l) Set signal generator to 1400 Kc.
- (m) Tune receiver for maximum general signal (approx. 140 on the dial).
- (n) Adjust B-C ANT. trimmer for maximum output. DO NOT RE-ADJUST OSC. TRIMMER AT 1400 Kc.

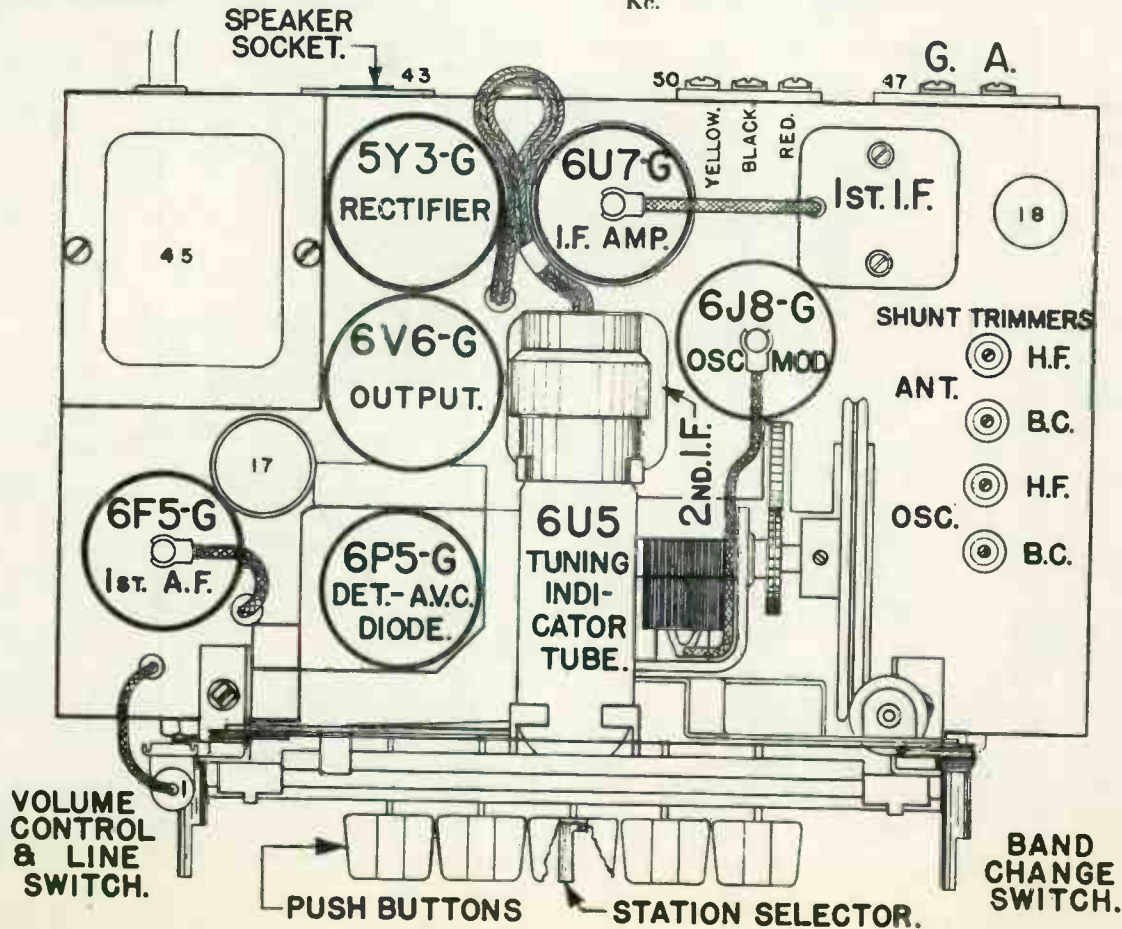
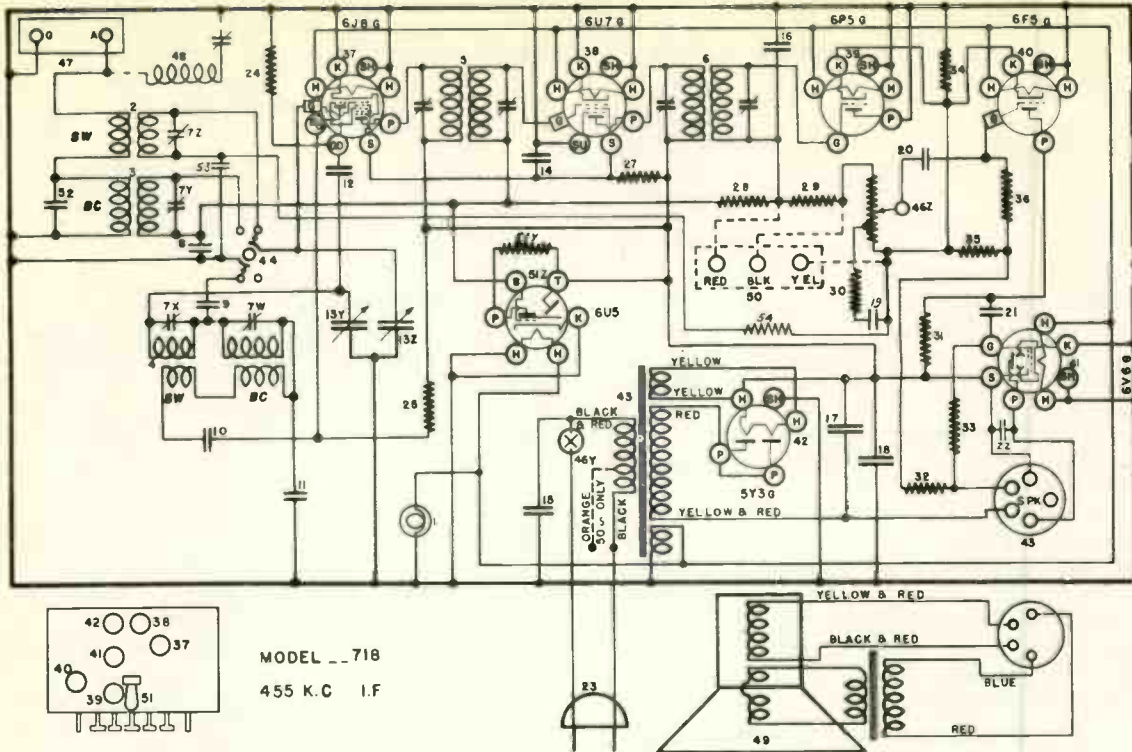


FIG. 2 Top View Model 718

MODEL 718



MODEL 718  
455 K.C. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -37922	Dial Light, 6-8 V.	46	-45973	Line Sw. and Vol. Cont. (1 Meg. Tap & Meg.)
2	G13 -4590R	D. L. Socket Assy.	47	G1 -26719	A-G. Terminal Strip
3	G164 -32000	Ant. Coil—5.7—18.3 Mc.	48	G193 -32001	455 Kc. Wave Trap (Special Item)
4	G143 -32000	Ant. Coil—540—1725 Kc.	49	280BP12 "11"	Speaker, Spec. No. 5B136
	G187 -32002	Osc. Coils—5.7—18.3 Mc. and 540—1725 Kc.		-46123	Output Transformer
5	G190 -32001	1st I-F. Assy., 455 Kc.		480BP15 "B"	Speaker, Spec. No. 801Q3
6	G189 -32001	2nd I-F. Assy., 455 Kc.		-46680	Output Transformer
7	W -43923	4 Section Shunt Trimmer Assy.		280BP12 "11"	Speaker, Spec. No. S-5330M4
8	W -36511	Condenser, .02 Mf. 160 V.		-46902	Output Transformer
9	G11 -34005	Condenser, .00270 Mf. Molded	50	G41 -26719	Phono Terminals (Special Item)
10	G3 -34002	Condenser, .0005 Mf. Molded	51	W -44121	Eye Socket and Resistor Assy.
11	G18 -34002	Condenser, .0004 Mf. Molded	52	W -45919	Bracket—Eye Mounting
12	G5 -34002	Condenser, .00005 Mf. Molded	53	G5 -34002	Condenser, .00005 Mf. Molded
13	G56 -33001	2 Section Gang Condenser	54	W -36541	Condenser, .02 Mf. 160 V.
	D -46358	Dial Glass (Export Only)	55	W -36688	Resistor, 3 Megohm 1/4W.
	C -45925R	Dial Support Bracket	56	W -30488	Condenser, .02 Mf. 400 V.
	W -45875A	Cushion—Dial Glass	57	-38977	Resistor, 220 Ohm 1/4W.
	W -46020	L. H. Mtg. Clips—Dial Glass		G5 -45683	Push Button Unit
	W -46021	R. H. Mtg. Clips—Dial Glass		G26 -45683	Key and Toggle Assy.
	W -45890A	Pointer		W -50542C	Lock Clamp
	W -46035	Pointer Guide		W -45717	Screw—Lock Clamp
	G25 -45883	Idler Pulley Brkt. Assy.		G22 -45683	Rocker Plate and Gear Sector Assy.
	G12 -43561	Pulley and Hub Assy. (Pointer Drive)		W -50561	Bearing Screws—Rocker Plate
	W -45877A	Drive Shaft (Manual)		W -50607C	Spring—Key Return
	W -45878	Drive Shaft Bracket		W -45645B	Clip—Key Adjustment (Hooked)
	G3 -41582	Drive Cord (40-Inch)		W -50588B	Clip—Key Adjustment (Heart Shaped)
	W -46087	Tension Spring (Drive Cord)		W -45769C	Felt—Light Screen
	W -46290	Cord Clamp		W -50841	Station Call List
14	W -28621	Condenser, .02 Mf. 200 V.		W -50841A	Call Letter Cover
15	W -30825	Condenser, .01 Mf. 400 V.		W -50551A	Push Button (8C-8M-8P Cab.)
16	G2 -34002	Condenser, .0001 Mf. Molded		-45971	Push Button (8H-8HF Cab.)
17	W -44012	Condenser, 16 Mf. 250 V.		-46417	Push Button (8M Cab.)
17	W -46822	Condenser, 30 Mf. 250 V. on 25 Cycle Only		-46837	Push Button (8MA Cab.)
18	W -45968	Condenser, 16 Mf. 250 V.		-45972	Knob (3 Req.) (8C-8M-8P Cab.)
19	W -35758	Condenser, .015 Mf. 400 V.		-46408	Knob (3 Req.) (8H-8HF-8M-8MA-8P Cab.)
20	W -34713	Condenser, .008 Mf. 160 V.		-45943B	Escutcheon (8C-8H-8M-8P Cab.)
21	W -28621	Condenser, .02 Mf. 200 V.		-46451B	Escutcheon (8H-8HF-8MA Cab.)
22	W -30251	Condenser, .008 Mf. 400 V.		D30	Screws—Escutcheon Mounting
23	B -45769A	Power Cord and Plug		8C	Cabinet—Table—Sloping Front
24	-36761	Resistor, 40,000 Ohm 1/4W.		8H	Cabinet—Table—Horizontal—Louvred End
25	-24814	Resistor, 7,000 Ohm 1/4W.		8HF	Cabinet—Table—Horizontal—Grille Cloth
26	NONE			8M	Cabinet—Console—Sloping Front
27	-22196	Resistor, 20,000 Ohm 1/4W.		8MA	Cabinet—Console—Low Boy Type—Sloping Panel
28	-36577	Resistor, 3 Megohm 1/4W.		8P	Cabinet—V Front—Sloping Panel recessed
29	-35620	Resistor, 100,000 Ohm 1/4W.		-21427	Cabinet Feet
30	-24990	Resistor, 25,000 Ohm 1/4W.		480BP15 "Z"	Speaker Used in 8P Cab. Only
31	-21455	Resistor, 300,000 Ohm 1/4W.		-46764	Output Transformer
32	-38915	Resistor, 100 Ohm 1/4W.		-46347	Speaker Expand. Ring, 8P Only
33	-23785	Resistor, 500,000 Ohm 1/4W.		B -46252	Back—8M Cabinet
34	-50643	Resistor, 60 Ohm 1/4W.		B -46351	Back—8P Cabinet
35	-45981	Resistor, 32 Ohm 1/4W.		W -46476	Back—8H Cabinet
36	-33490	Resistor, 10 Megohm 1/4W.		B -46825	Back—8MA Cabinet
37 to 42	G178 -36400	Socket, 8 Prong Octal.		W -46464	Thumb Screw—Back Mtg. 8M-8P-8MA
	W -40911	Tube Shield		-20881	Screws—8H Back Mtg.
43	G103 -28807	Socket, 5 Prong Spkr.		-45937	Instruction Booklet
44	-45881	Band Change Switch			
45	-45923	Power Trans., 60 Cycle 110 V.			
	-45959	Power Trans., 50 Cycle 110 V.			
	-45960	Power Trans., 50 Cycle 220 V.			
	-45961	Power Trans., 25 Cycle 110 V.			
	-45962	Power Trans., 25 Cycle 220 V.			
	-45963B	Power Trans., 40-100 Cycle 95-267 V.			

**SPECIFICATIONS**

This model Crosley is a seven tube superheterodyne receiver designed for operation on 110 volt—50 or 60 cycle power circuits. It may be adapted for 25 cycle operation by the addition of another filter condenser as indicated in wiring diagram.

**CIRCUIT DESCRIPTION**

There are three versions of this model in the field namely: one version with an improved mechanical push button tuning system; one version with mechanical push button tuning and loop antenna, and one version has the Magnetune electric push button tuning system.

The circuit is a conventional super with no regeneration. Item 23, a 60,000 ohm resistor in series with the volume control form the A.V.C. load. Item 22, a 3 megohm resistor acts as a filter for the A.V.C. voltage applied to the 6A8GT and the 6SK7. Bias for the 25L6GT is obtained from the voltage drop

across item 28, a 140 ohm resistor. The two 25Z6GT rectifiers are in parallel and connected for voltage doubling.

The B voltage is filtered with the 900 ohm resistor, item 24, the speaker field (450 ohms) item 15, a twin 30 mf. electrolytic, and item 14, a single 30 mf. electrolytic.

The filaments of the tubes are wired in series. A .05 mfd. condenser, item 11, is connected across the power supply leads to reduce electrical interference from that source.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt volt-meter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range voltmeter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of the values given.

**TUBE SOCKET VOLTAGE READING**

Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	130	70	-17	130	H	—
6SK7	I-F Amplifier	—	H	—	—	—	70	H	130
6P5	Det. AVC Diode	—	H	—	J.B.	—	J.B.	H	—
6SF5	1st Audio	—	—	—	—	68	—	H	H
25L6	Output	—	H	121	128	—	J.B.	H	6
2-25Z6	Rectifier	—	H	A.C.	232	—	—	H	130

Maximum power output 2.5 watts.

Drop across speaker field 40 volts.

Power consumption @ 117.5 volt line = 65 watts. Those with "Magnetune" coil 40 watts additional.

**ALIGNMENT PROCEDURE**

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25L6GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning The I-F Amplifier to 455 Kilocycles**

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna lead on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, item 6, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers, item 5, for

maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

**Aligning the R-F Amplifier**

(a) Set the signal generator to 1725 kilocycles.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

The special police band has no provisions for alignment.

**WAVE TRAP**

Some chassis of this model may be equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the top side of the chassis and consists of a coil and a condenser as illustrated by dotted lines in the Wiring Diagram, Fig. 1A.

MODEL 719

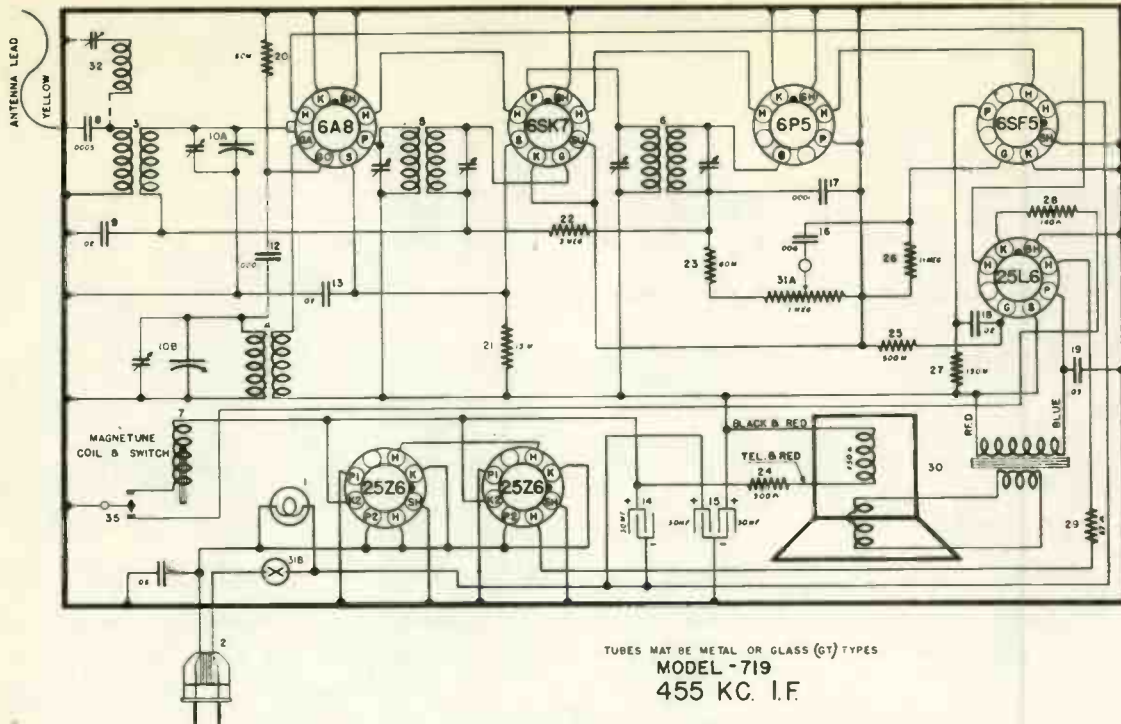


FIG. 1-A—WIRING DIAGRAM—MODEL 719

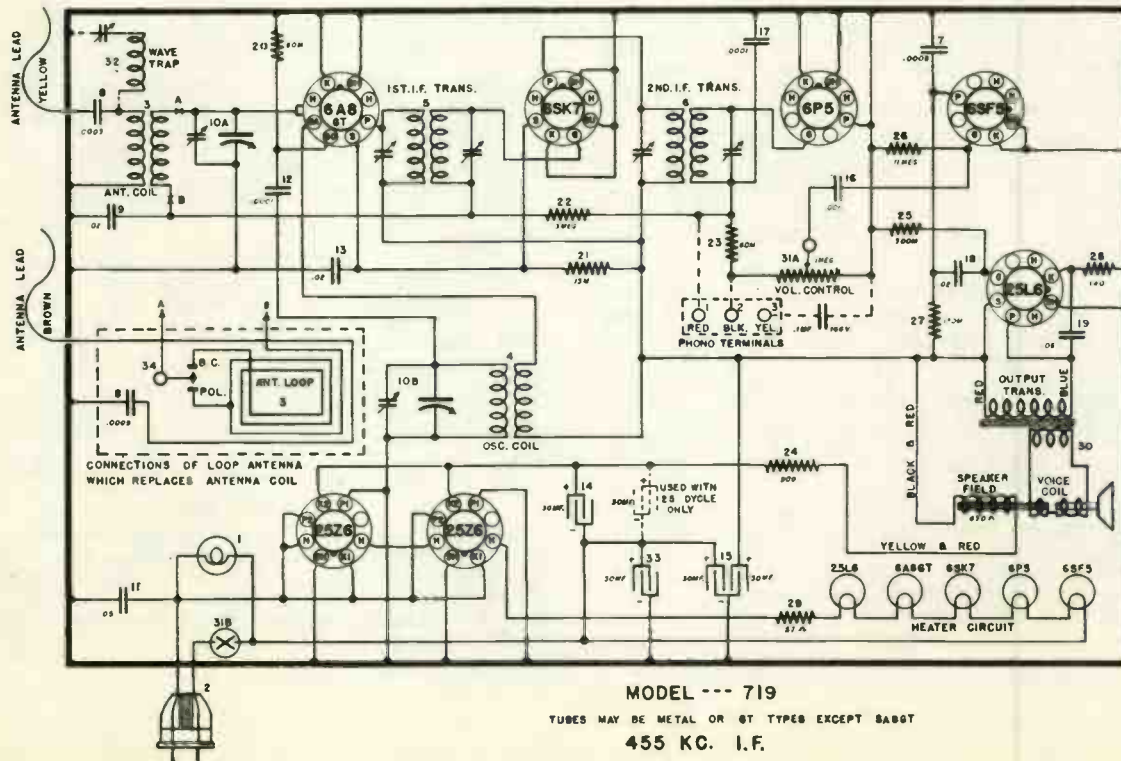


FIG. 1-B—WIRING DIAGRAM—MODEL 719  
382

# MODEL 719

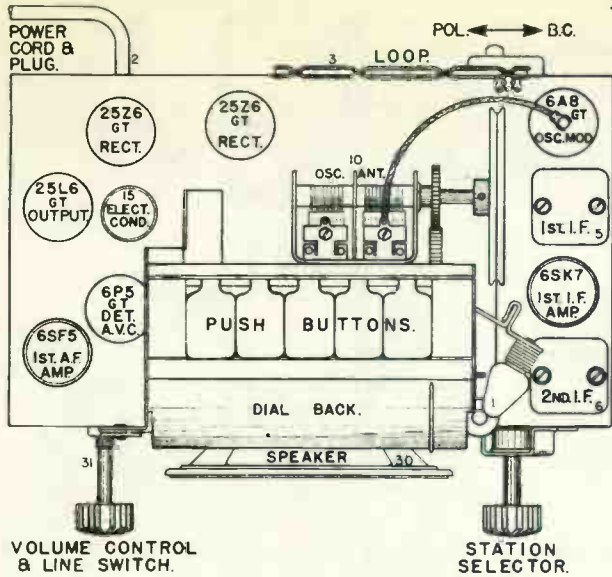


Fig. 2—Top View Model 719

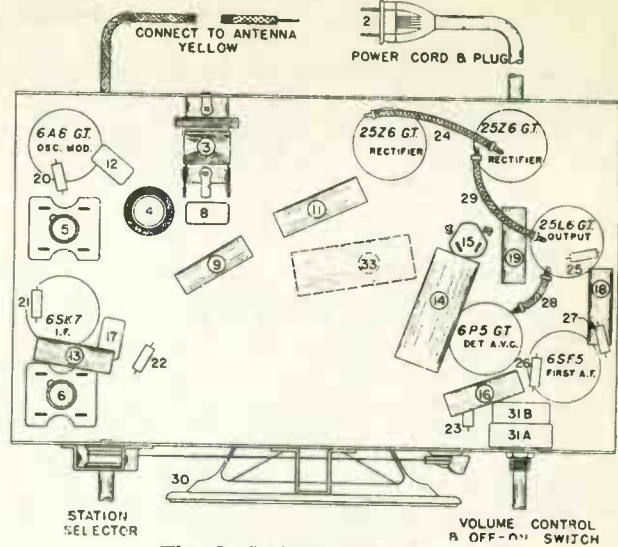


Fig. 3—Bottom View Model 719

## PARTS LIST—MODEL 719

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -47977	Dial Light Bulb, 110 Volt	G31	-47880	Rocker Plate Assembly
	W -47946	Dial Light Bracket Assembly	W	-45646B	Adjusting Clip (1 Req.)
2	B -45769A	Power Cable and Plug	W	-50588B	Adjusting Clip (4 Req.)
3	G189-32000	Antenna Coil	W	-47877A	Adjusting Screw (5 Req.)
3	G5 -47679	Loop Antenna	W	-50325A	Retaining Clip (5 Req.)
4	G186-32002	Oscillator Coil	W	-50547	Key Plate
5	G221-32004	1st I-F. Transformer Assembly	W	-31388	No. 8—32 x 1/8" W. H. Screw (Key Plate) (2 Req.)
6	G188-32004	2nd I-F. Transformer Assembly	W	-50561	No. 6—40 x 1/8" Fil. Hd. Screw (Rocker Plate Bearing)
7	G2 -47909	Solenoid Coil Assembly ("Magnetune Version)	W	-20800	No. 8 Ext. Shakeproof Washer (3 Req.)
8	G3 -34002	Condenser, .0005 Mf. Molded	W	-38056	No. 8—32 x 1/4" Set Screw (5 Req.)
9	W -45780B	Condenser, .02 Mf. 160 Volts Paper	W	-48322F	Spring Support Bracket
10A } 10B }	G79 -33001	2 Sect. Var. Condenser { Antenna Section Oscillator Section	W	-43226	Key Return Spring (5 Req.)
	MG18-47860	Riveted Mtg. Bracket, R. H.	W	-48827	Push Button Shaft (5 Req.)
	MG19-47860	Riveted Mtg. Bracket, L. H.	W	-45808	No. 8 x 1/4" P. K. Screw (8 Req.)
	MG26-47860	Idle Support Bracket	W	-48729B	Push Button (9GA and 9GC) (5 Req.) Mechanical
	G12 -43564	Pulley and Hub Assembly	W	-48772A	Push Button (9GB, 9GE, 9GF, 9GC) (5 Req.) Mechanical
	W -23877	No. 8—32 x 1/8" Set Screw (2 Req.) (Pulley and Hub Assy.)	W	-47767B	Push Button (9GA and 9GC) (5 Req.) Magnetune
	W -47875	Dial Back Face	W	-48143	Push Button (9GB, 9GE, 9GF, 9GC) (5 Req.) Magnetune
	W -47930A	Dial Pointer		-49166	Instruction Booklet
	W -47969	Drive Shaft		-48734	Call Letter Sheet
	W -43542B	Drive Shaft Bracket		-48747	Call Letter Cover
	W -45808	No. 8 x 1/4" P. K. Screw (Drive Shaft Bracket)	MG31-47861	Instruction Envelope Assy.	
	G20 -41582	Drive Cord, 42 3/4"		-9GA	Cabinet
	W -50590	Drive Cord Spring		-9GB	Cabinet, Ivory
	G30 -41582	Guide Cord, 9 1/2"		-9GE	Cabinet, Red
	W -46348	Guide Cord Spring		-9GF	Cabinet, Blue
	W -46290	Cord Clamp (3 Req.)		-9GC	Cabinet, Tan
	W -48764A	Cord Guide (4 Req.)		-9GC	Cabinet, Brown
	W -49163	Dial Glass (9GA, 9GB, 9GE, 9GF, 9GC)		-48110	Carton (9GA, 9GB, 9GE, 9GF, 9GC)
	W -49164	Dial Glass (9GC)		-48142	Carton (9GC)
11	W -45782B	Condenser, .05 Mf. 120 Volts A. C.		-46953	Knob (2 Req.) (9GA)
12	G2 -34002	Condenser, .0001 Mf. Molded		-44552	Knob (2 Req.) (9GB, 9GE, 9GF, 9GC)
13	W -45780B	Condenser, .02 Mf. 160 Volts Paper		-48165	Knob (2 Req.) (9GE)
14	W -47702	Condenser, .30 Mf. 125 Volts Elect.	MG32-47861	Escutcheon and Reflector Assy. (9GA, 9GC)	
15	W -47892	Condenser, .30-30 Mf. 135 Volts Elect.	MG33-47861	Escutcheon and Reflector Assy. (9GB, 9GE, 9GF, 9GC)	
16	W -45810B	Condenser, .006 Mf. 160 Volts Paper	MG36-47861	Push Button and Hinge Assy. (9GA, 9GC)	
17	G2 -34002	Condenser, .0001 Mf. Molded	MG39-47861	Push Button and Hinge Assy. (9GB, 9GE, 9GF, 9GC)	
18	W -45780B	Condenser, .02 Mf. 160 Volts Paper	W	-48017C	Push Button Hinge Spring
19	W -45817B	Condenser, .05 Mf. 160 Volts Paper	W	-47947C	Push Button Hinge
20	-21237A	Resistor, 60,000 Ohms 1/2 Watt Carb.		-46242	Rubber Bottom Mtg. Screw (Chassis Mtg.) (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GC)
21	-22831	Resistor, 15,000 Ohms 1/2 Watt Carb.		-48900	No. 8—32 x 1/4" H. H. Mach. Screw (Chassis Mtg.) (9GC) (4 Req.)
22	-26577	Resistor, 3 Megohms 1/2 Watt Carb.	U	-48744	Shakeproof Washer (Chassis Mtg.) (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GC)
23	-21237A	Resistor, 60,000 Ohms 1/2 Watt Carb.	W	-45020	Flat Washer (Chassis Mtg.) (9GC) (4 Req.)
24	W -47873	Resistor, 900 Ohms 7 Watt Flex.	S	-80	No. 4 x 3/4" Rd. Hd. Wood Screw (4 Req.) (9GC)
25	-23785	Resistor, 500,000 Ohms 1/2 Watt Carb.		-48135	No. 3—56 x 1/8" Rd. Hd. Mach. Screw (2 Req.) (9GA, 9GB, 9GE, 9GF, 9GC)
26	-46497	Resistor, 11 Megohms 1/2 Watt Carb.		-49095	Cabinet Back (9GA)
27	-23403	Resistor, 150,000 Ohms 1/2 Watt Carb.		-49096	Cabinet Back (9GB, 9GE, 9GF, 9GC)
28	W -47512	Resistor, 140 Ohms 3/4 Watt Flex.	W	-48979C	Cabinet Back (9GC)
29	W -47857	Resistor, 57 Ohms 7 Watt Flex.	W	-48758	Trimount Stud (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GC)
30	281-BL-7-"K"	Speaker, Spec. 5-1V-2	W	-48837	Light Deflector Felt (9GC)
	-47166	V. C. and Cone Assembly	W	-48313	Light Deflector Felt (9GB, 9GE, 9GF, 9GC)
	-47170	Field Coil, 450 Ohms, 60 M. A.	W	-48131A	Light Deflector Felt (9GA)
	-47171	Output Transformer	W	-20881	No. 6 x 3/4" Rd. Hd. Wood Screw (6 Req.) (9GC Cabinet Back)
	-47169	Cardboard Ring	W	-48018	Glass Reflector (Call Letter)
30	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
	-47290	V. C. and Cone Assembly			
	-46686	Field Coil, 450 Ohms, 60 M. A.			
	-46587	Output Transformer			
	-46685	Cardboard Ring			
31A } 31B }	-47858	Volume Control, 1 Megohm Power Switch			
		Pal Nut (Volume Control)			
32	G193-32004	Wave Trap			
33	W -47702A	Condenser, .30 Mf. 125 Volts Elect.			
34	W -46159	Band Change Switch			
35	G8 -47866	Magnetune Switch			
36	G3 -34002	Condenser, .0005 Mf. Molded			
	G2 -48762	Push Button Unit Assembly			
	G32 -47880	Riveted Key Assembly			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.3	315	110	0	-3	0	—	—
6A7	Osc.-Mod.	6.3	315	110	—	-3	0	-5 to -15	185
6B7	I-F Amp. & AVC	6.3	315	110	0	-3	0	—	—
76	Detector	6.3	—	—	—	—	0	—	—
76	A-F Amplifier	6.3	35	—	—	-3	0	—	—
42	Output	6.3	300	245	0	-16	0	—	—
80	Rectifier	5.0	320	—	—	—	—	—	—

Measured on 117.5 Volt Line—60 Cycles A. C.

Power Consumption Approximately 60 Watts.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather Band and Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is always approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as

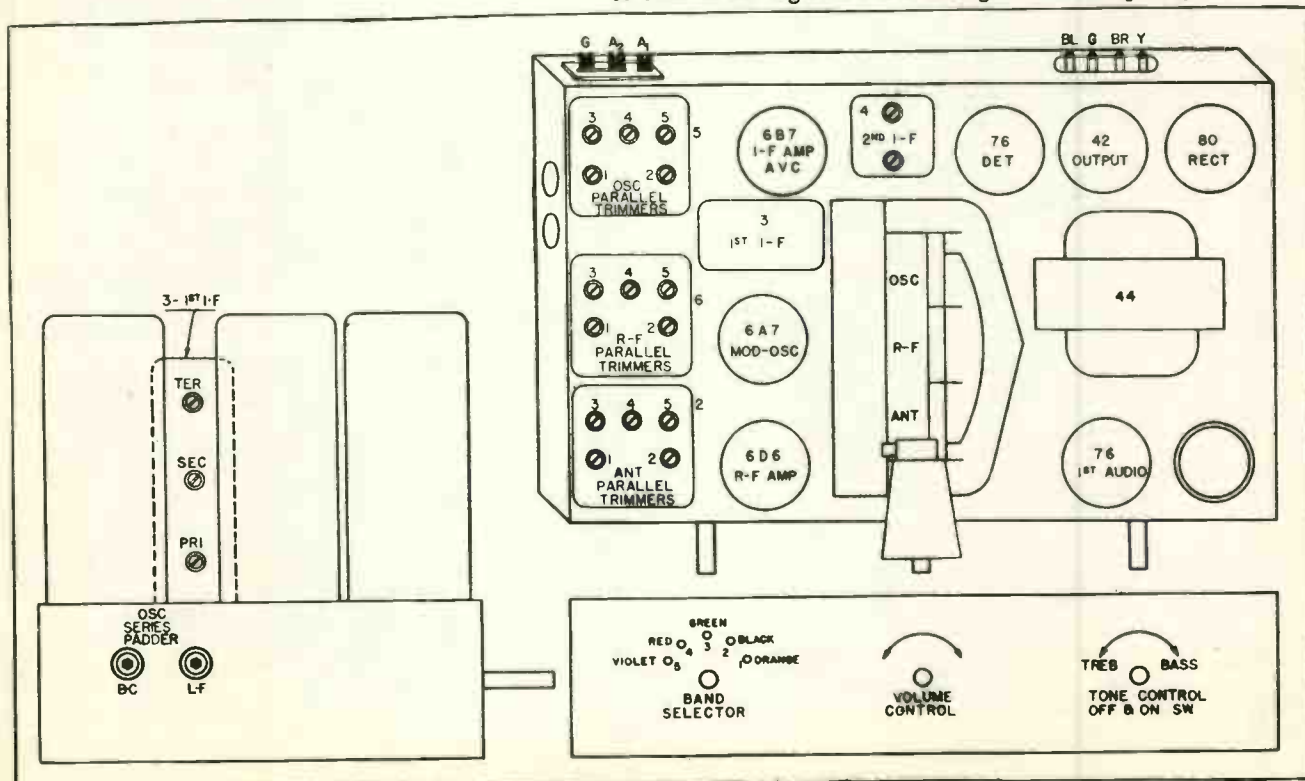


Fig 2. Top View 725

## MODEL 725

indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal

### (b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band.

### PARTS LIST—MODEL 725

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	—36504	Dial Light Socket Assm.	21X	G34—33002	Var. Tuning Cond. Gang
1B			21Y		
2	G57—32000	Ant. Coil Assm. Complete	21Z		
	G48—32000	Ant. Coil only 150-400 Kc.		—37433B	Dial Drive Assm.
	G47—32000	Ant. Coil only 540-1500 Kc.		C —37434A	Dial Face only
	G49—32000	Ant. Coil only 1500-4000 Kc.		—37551	Dial Hand
	G53—32000	Ant. Coil only 4-10 Mc.		—37554	Second Hand
	G52—32000	Ant. Coil only 10-22 Mc.		—37484	Hand Screw
	MG9—36168	Shield		—37543	Hand Washer
	W —36028	5 Section Trimmer Condenser	22	B —33905A	A. C. Cord & Plug
	MG19—36168	Coil Support Base	23A	—21876	Resistor, 10,000 Ohms
3	G47—32004	1st I. F. Assm.	23B	—21876	Resistor, 10,000 Ohms
4	G46—32004	2nd I. F. Assm.	24	—22196	Resistor, 20,000 Ohms
5	G46—32002	Osc. Coil Assm. Complete	25	—21875	Resistor, 100,000 Ohms
	G39—32002	Osc. Coil only 150-400 Kc.	26A	—23403	Resistor, 150,000 Ohms
	G40—32002	Osc. Coil only 540-1500 Kc.	26B	—23403	Resistor, 150,000 Ohms
	G41—32002	Osc. Coil only 1500-4000 Kc.	27	—21455	Resistor, 100,000 Ohms
	G45—32002	Osc. Coil only 4-10 Mc.	28A	—23785	Resistor, 500,000 Ohms
	G44—32002	Osc. Coil only 10-22 Mc.	28B	—23785	Resistor, 500,000 Ohms
	G4 —34007	Condenser, 1136 mmf. *	29A	—21454	Resistor, 1.0 Megohm
	G6 —34007	Condenser, 1707 mmf. *	29B	—21454	Resistor, 1.0 Megohm
	G5 —34007	Condenser, 2757 mmf. *	30	—26577	Resistor, 3.0 Megohm
	G6 —34002	Condenser, 25 mmf.	31Z	W —36442	Resistor, 17,500 Ohms
	MG20—36168	Coil Support Base	31Y		Resistor, 15,000 Ohms
	W —36028	5 Section Trimmer Condenser	32	G6 —28807	Socket, 80
	MG10—36168	Shield	33A	G80—28807	Socket, 76
6	G33—32001	R. F. Coil Assm. Complete	33B	G80—28807	Socket, 76
	G27—32001	R. F. Coil only 150-400 Kc.	34	G75—28807	Socket, 6D6
	G26—32001	R. F. Coil only 540-1500 Kc.	35	G25—28807	Socket, 42
	G28—32001	R. F. Coil only 1500-4000 Kc.	36	G47—33070	Socket, 6A7
	G31—32001	R. F. Coil only 4-10 Mc.	37	G48—28807	Socket, 6B7
	G30—32001	R. F. Coil only 10-22 Mc.		W —35772	Tube Shield Half
	G1 —34002	Condenser, 250 mmf.		W —35773	Tube Shield Cap
	MG9 —36168	Shield		W —35774	Tube Shield Base
	MG19—36168	Coil Support Base		W —33072	Socket Cushion
	W —36028	5 Section Trimmer Condenser	38	330CL—22	Speaker, (Table Model)
		Condenser, 8 mfd. 450 Volt		630CL—27	Speaker, (Console Model)
7Z	W —36056	Condenser, 4 mfd. 350 Volt	39U	—36271E	Band Change Switch
7Y		Condenser, 4 mfd. 250 Volt	To		
7X		Condenser, 35 mfd. 400 Volt	39Z		
8	W —36055	Condenser, 1136 mmf. *	40	G27—26719	Terminal Board Ant.-Grd.
9	G4 —34007	Condenser, 1707 mmf. *	41	G5 —31128	Terminal Board Speaker
10	G6 —34007	Condenser, 2757 mmf. *		W —34628	Terminal Board Cover (Speaker)
11	G5 —34007	Condenser, 0.01 mfd. 400 Volt		W —34627	Terminal Board Insulator
12	W —30805	Condenser, 100. mmf.	42Z	W —36539A	Tone Control (80,000 Ohms)
13A	G2 —34002	Condenser, 100. mmf.	42Y	W —36500	On & Off Switch
13B	G2 —34002	Condenser, 100. mmf.	43	G10—30745	Tuning Meter
13C	G2 —34002	Condenser, 100. mmf.	44	G11—30745	Power Trans. 60 Cy., 110 V.
14Z	W —25537A	Condenser, 0.001 mfd. 400 V.		G12—30745	Power Trans. 25 Cy., 110 V.
14Y		Condenser, 0.03 mfd. 400 V.		W —36066	Power Trans. 25 Cy., 220 V.
15Z	W —31052	Condenser, 0.004 mfd. 400 V.	45	W —36066	Volume Control 1.0 Megohm
15Y		Condenser, 0.05 mfd. 400 V.	46	—34019	Resistor, 75,000 Ohms
16A	W —32378	Condenser, 0.01 mfd. 400 V.		B —36515	Escutcheon
16B	W —32378	Condenser, 0.01 mfd. 400 V.		D —28	Escutcheon Screw (3)
17	W —23191A	Condenser, 0.01 mfd. 400 V.		W —36311	Band Charge Escutcheon
18A	W —32379	Condenser, 0.02 mfd. 200 V.		W —36310	Escutcheon Indicator (Celluloid)
18B	W —32379	Condenser, 0.02 mfd. 200 V.		W —28760B	Escutcheon Pin
19A	W —30321	Condenser, 1.0 mfd. 160 V.		W —36518	Knob, Bd. Chg. & Tone Control
19B	W —30321	Condenser, 1.0 mfd. 160 V.		W —36519	Knob, Dial
20Y	G15—33006	Condenser, B. C. Series Osc.		W —36520A	Knob, Vernier
20Z		Condenser, L. F. Series Osc.		W —36521	Knob, Volume Control

NOTE: \* First models had condensers mounted externally but eventually placed in G46—32002 Assm.



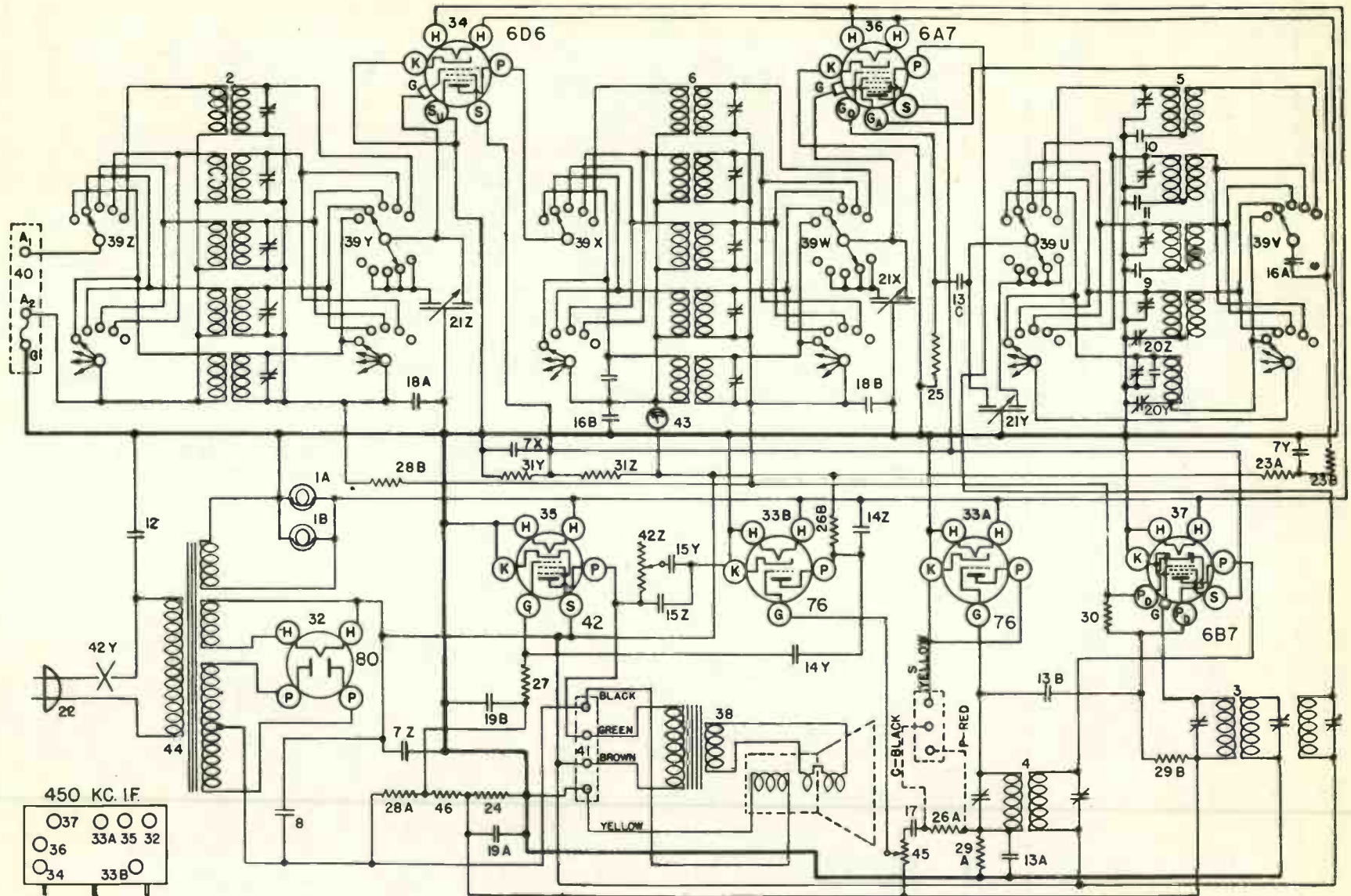


FIG. 1—WIRING DIAGRAM—MODEL 725

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	P <sub>2</sub>	S	G	Su	K	Ga
6K7	R. F. Amplifier	6.3	235	—	73	0	3.0	3.0	—
6A8	Osc.-Mod.	6.3	270	—	96	0	—	3.5	145
6K7	I. F. Amplifier	6.3	270	—	96	0	2.7	2.7	—
6H6	Det. & AVC	6.3	0	—	—	—	—	0	—
6F5	A. F. Amplifier	6.3	135	—	—	0	—	2.5	—
6N6	Output	6.3	270	260	—	0	—	2.2	—
5Z4MG	Rectifier	5.0	—	—	—	—	—	350	—

Power Output Approximately 6 Watts.  
 Power Consumption Approximately 83 Watts at 117.5 Volts.  
 Voltage Drop Across Speaker Field 77 Volts

**I. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the fidelity control knob to the left (NORMAL).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used

in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC.," "ANT" and "R-F" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" and "R-F" trimmers. **DO NOT READJUST the "OSC" TRIMMER.**

(u) To align the series trimmer (Item 33, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

<b>Shunt Alignment</b>	<b>Series Alignment</b>
1700 Kilocycles	600 Kilocycles
6000 Kilocycles	.....
18000 Kilocycles	.....

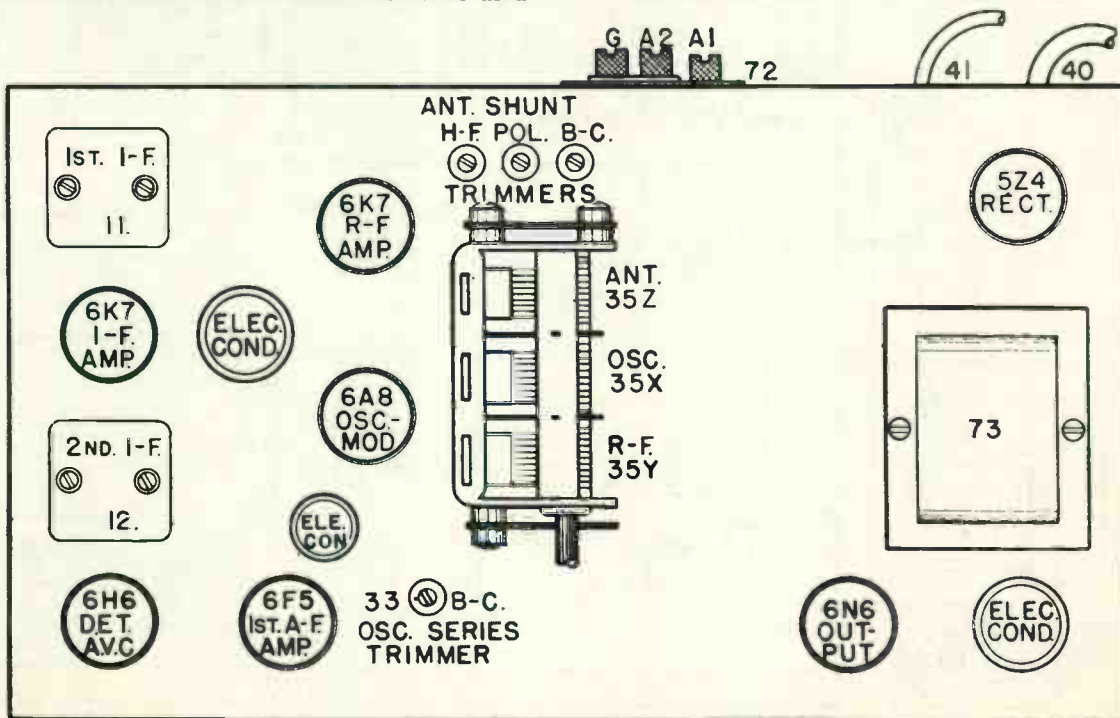


Fig. 2 Top View 726

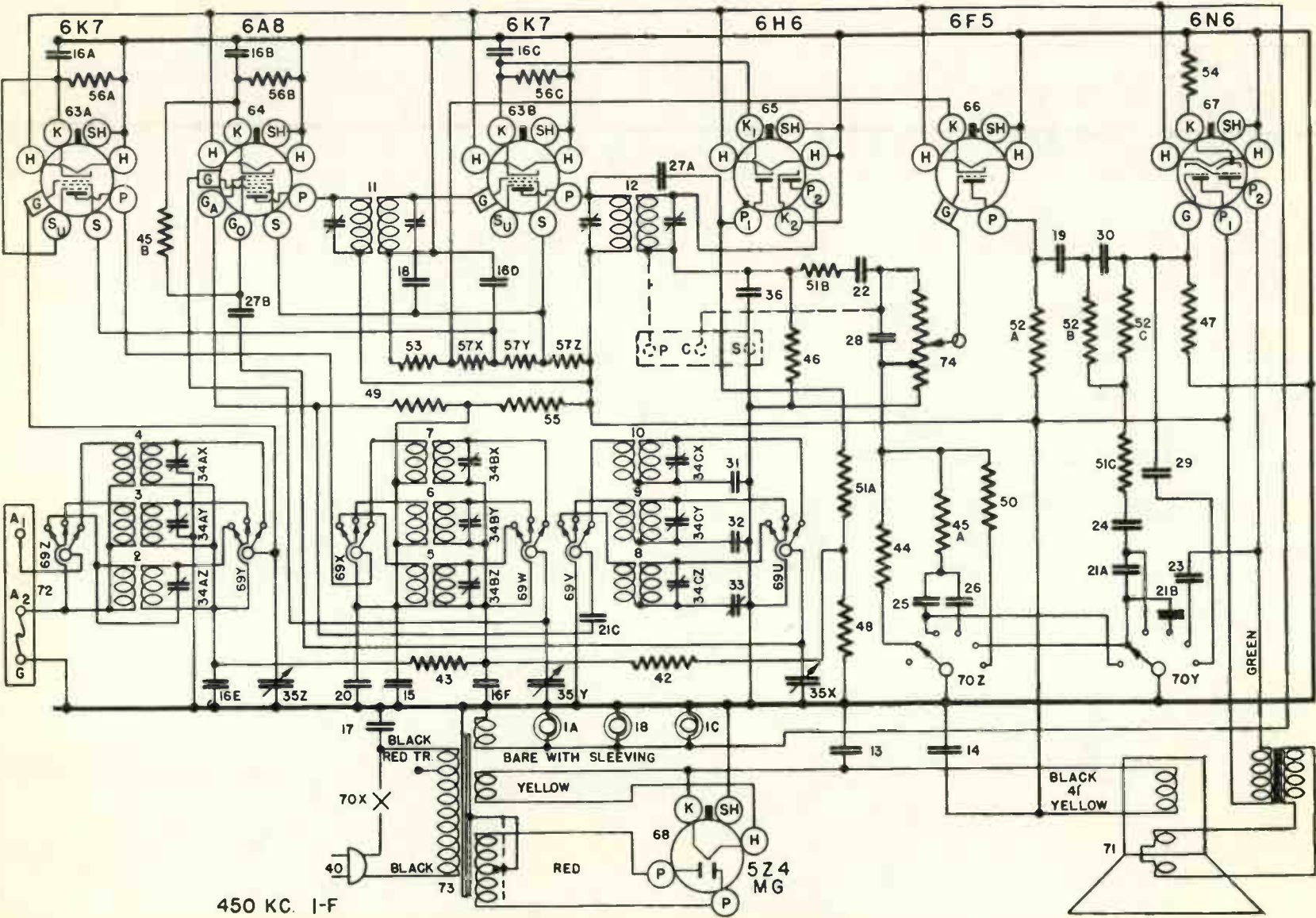


FIG. 1.—WIRING DIAGRAM—MODEL 726

MODEL 726

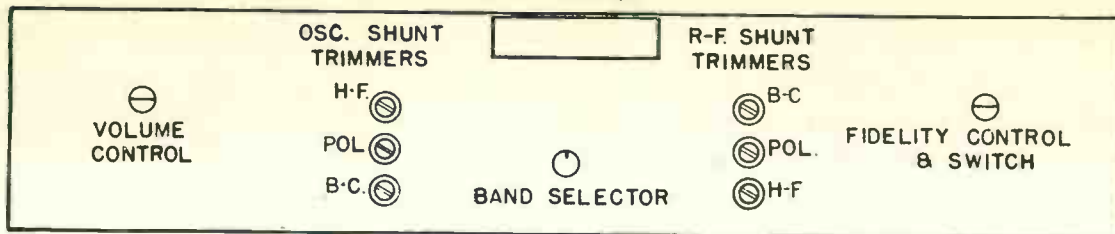


Fig. 4 Front View 726

PARTS LIST—MODEL 726

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Dial Light	44	—36319	Resistor, 75,000 Ohm. 1/4 W.
	G3 —37965	Socket Assy. Dial Light	45A	—35928	Resistor, 60,000 Ohm. 1/4 W.
2	G110—32000	Coil Ant. 540-1800 Kc.	45B	—35928	Resistor, 60,000 Ohm. 1/4 W.
3	G111—32000	Coil Ant. 1800-6000 Kc.	46	—36321	Resistor, 400,000 Ohm. 1/4 W.
4	G112—32000	Coil Ant. 6.-18 Mc.	47	—38623	Resistor, 750,000 Ohm. 1/4 W.
5	G76 —32001	Coil R. F. 540-1800 Kc.	48	—36322	Resistor, 500,000 Ohm. 1/4 W.
6	G89 —32001	Coil R. F. 1800-6000 Kc.	49	—37377	Resistor, 20,000 Ohm. 1 W.
7	G90 —32001	Coil R. F. 6.-18 Mc.	50	—35929	Resistor, 150,000 Ohm. 1/4 W.
8	G115—32002	Coil Osc. 590-1800 Kc.	51A	—35601	Resistor, 300,000 Ohm. 1/4 W.
9	G121—32002	Coil Osc. 1800-6000 Kc.	51B	—35601	Resistor, 300,000 Ohm. 1/4 W.
10	G122—32002	Coil Osc. 6.-18 Mc.	51C	—35601	Resistor, 300,000 Ohm. 1/4 W.
11	G121—32004	1st. IF. Assy.	52A	—35930	Resistor, 200,000 Ohm. 1/4 W.
12	G120—32004	2nd. IF. Assy.	52B	—35930	Resistor, 200,000 Ohm. 1/4 W.
13	W —36055	Condenser, 35Mf. 400V.	52C	—35930	Resistor, 200,000 Ohm. 1/4 W.
14	W —36057	Condenser, 40Mf. 300V.	53	W —30127	Resistor, 450 Ohm. 1/2 W. Flex.
15	W —41081	Condenser 16Mf. 250V.	54	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
16A	W —36541	Condenser, .02Mf. 160V.	55	—6705	Resistor, 3500 Ohm. 1 W.
TO	W —36541	Condenser, .02Mf. 160V.	56A	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
16F	W —30805	Condenser, .01Mf. 400V.	56B	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
17	W —35936	Condenser, .05Mf. 200V.	56C	W —28589	Resistor, 350 Ohm. 1/2 W. Flex.
18	W —32780B	Condenser, .05Mf. 400V.	57Z	—37781	Resistor, 16,500 Ohm. } Cand. Ohm.
19	W —32378	Condenser, .01Mf. 400V.	57Y	W —37781	Resistor, 4,000 Ohm. }
20	W —35139	Condenser, .004Mf. 400V.	57X	—37781	Resistor 18,500 Ohm. }
21A	W —35139	Condenser, .004Mf. 400V.	63A	G151—36400	Socket Type 6K7
21B	W —35139	Condenser, .004Mf. 400V.	63B	G151—36400	Socket Type 6K7
21C	W —35139	Condenser, .004Mf. 400V.	64	G156—36400	Socket Type 6A8
22	W —28621	Condenser, .02Mf. 200V.	65	G155—36400	Socket Type 6H6
23	W —23615	Condenser, .05Mf. 400V.	66	G158—36400	Socket Type 6F5
24	W —30323	Condenser, .01Mf. 200V.	67	G165—36400	Socket Type 6N6
25	W —28619	Condenser, .006Mf. 200V.	68	G154—36400	Socket Type 5Z4
26	W —25435	Condenser, .003Mf. 400V.	69	C —40910A	Band Selector Switch
27A	G2 —34002	Condenser, .0001Mf. (Mica)	70Z	—42387C	Fidelity Switch
27F	G2 —34002	Condenser, .0001Mf. (Mica)	70Y	—42387C	Fidelity Switch
28	G8 —34002	Condenser, .00001Mf. (Mica)	70X	—42387C	Line Switch
29	G3 —34002	Condenser, .0005Mf. (Mica)	71	—645CJ3	Speaker "M" Spec. 1D640
30	G6 —34002	Condenser, .000025Mf. (Mica)		—42883	Cone Assy. { For Above
31	G20 —34000	Condenser, 4910Mmf. (Mica)		—40406	Field Coil { Speaker
32	G7 —34000	Condenser, 1450Mmf. (Mica)		—42885	Output Trans. }
33	—40769	Condenser, B. C. Osc. Series Trim.	72	G27 —26719	Ant. & Gnd. Terminal Assy.
34	W —35951	Condenser, 3 Section Trimmer	73	—42260	Power Trans. 60 Cy. 110 V.
35	G52 —33002	Condenser, 3 Gang Var. Tuning		—42261	Power Trans. 25 Cy. 110 V.
	MG33—42255	Dial Drive Assy.	74	—42501	Volume Control 3 Meg.
	C —42491	Dial Glass (Calibrated)			Misc. Parts
	—42300	Drive Unit	C	—42045	Escutcheon
	—42597	Dial Mask (Cardboard)	B	—42043	Escutcheon Rubber
	W —42180	Dial Hand, Pointer	D	—30	Screws—Escutcheon Mtg.
	—41144	Dial Hand, Time Log	C	—42044	Lens—Escutcheon
	W —40486	Pointer Mtg. Screw	W	—40230B	Emblem
36	G1 —34002	Condenser, .00025 Mf. (Mica)	W	—32620	Nut—Emblem Mtg.
37	W —30270	Condenser, .001 Mf. 400V.	W	—36117	Rubber Mtg. Foot
40	B —33906A	Power Cord & Plug	W	—37339	Knob, (2 Req.)
41	G3 —35696	Cable, Speaker	W	—40192B	Knob, B. S. Sw. (1 Req.)
42	—37245	Resistor, Meg. Ohm. 1/4 W.	W	—42490	Knob, S. S. (1 Req.)
43	—35600	Resistor, 100,000 Ohm. 1/4 W.		6-NG	Cabinet

CHASSIS MODELS 726-01-11-21-31-41-51

SPECIFICATIONS

This Model Crosley radio is identical with Model 726 except that the dial is calibrated in Metres instead of Kilocycles, a long wave band has been substituted for

GREEN BAND 16- 52 METRES (18.1-5.8 Megacycles)  
 RED BAND 750-2000 METRES (400-150 Kilocycles)  
 YELLOW BAND 185- 555 METRES (1725-540 Kilocycles)

the Police and Amateur Band, the I-F transformers are tuned to 462 kilocycles rather than 450 kilocycles and a continuously variable tone control is used in place of the six-step Fidelity Control.

The tuning range of the receiver is as follows:

For tube socket voltage readings and alignment procedure, refer to pages 387-389, keeping in mind that the I.F. frequency is 462 kilocycles rather than 450 kilocycles.

PARTS LIST — MODEL 726-01-11-21-31-41-51

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Dial Light Bulb	36		None
	G3 —37965	Light Socket	37	B —33906A	Power Cord and Plug
2	G110—32000	Ant. Coil—185-555 Metres	38	G3 —35696	Cable for Speaker
3	G122—32000	Ant. Coil—750-2000 Metres	39		None
4	G112—32000	Ant. Coil— 16-52 Metres	40ABC	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
5	G76 —32001	R-F. Coil—185-555 Metres	41	W —30127	Resistor, 450 Ohm 1/2 W. Flex.
6	G86 —32001	R-F. Coil—750-2000 Metres	42	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
7	G84 —32001	R-F. Coil— 16-52 Metres	43Z		Resistor, 16,500 Ohm
8	G115—32002	Osc. Coil—185-555 Metres	43Y	W —37781	Resistor, 4,000 Ohm
9	G114—32002	Osc. Coil—750-2000 Metres	43X		Resistor, 18,500 Ohm
10	G107—32002	Osc. Coil— 16-52 Metres	44	—37377	Resistor, 20,000 Ohm 1W.
11	G121—32004	1st I-F. Assy. 462 Kc.	45	—36761	Resistor, 40,000 Ohm 1/4 W.
12	G120—32004	2nd I-F. Assy. 462 Kc.	46	— 6705	Resistor, 3,500 Ohm 1W.
13	W —41081	Condenser, 16 Mf. 250 V.	47	—35928	Resistor, 60,000 Ohm 1/4 W.
14	W —36055	Condenser, 35 Mf. 400 V.	48	—35600	Resistor, 100,000 Ohm 1/4 W.
15	W —36057	Condenser, 40 Mf. 300 V.	49		None
16	G8 —34002	Condenser, .00001 Mf. 200 V.	50ABC	—35930	Resistor, 200,000 Ohm 1/4 W.
17	G6 —34002	Condenser, .000025 Mf. 200 V.	51ABC	—35601	Resistor, 300,000 Ohm 1/4 W.
18	G5 —34002	Condenser, .00005 Mf. 200 V.	52	—36321	Resistor, 400,000 Ohm 1/4 W.
19AB	G2 —34002	Condenser, .0001 Mf. 200 V.	53	—36322	Resistor, 500,000 Ohm 1/4 W.
20	G11 —34002	Condenser, .000175 Mf. 200 V.	54	—38623C	Resistor, 750,000 Ohm 1/4 W.
21	G1 —34002	Condenser, .00025 Mf. 200 V.	55	—37245	Resistor, 1.5 Megohm 1/4 W.
22	G20 —34000	Condenser, 4190 Mmf.	58AB	G151—36400	Socket Type 6K7
23	—42426	Osc. Series Trimmer Cond.	59	G156—36400	Socket Type 6A8
24A to 24F	W —36541	Condenser, .02 Mf. 160 V.	60	G155—36400	Socket Type 6H6
25	W —32379	Condenser, .02 Mf. 200 V.	61	G158—36400	Socket Type 6F5
26	W —35139	Condenser, .004 Mf. 400 V.	62	G165—36400	Socket Type 6N6
27	W —35936	Condenser, .05 Mf. 200 V.	63	G151—36400	Socket Type 5Z4
28	W —32378	Condenser, .01 Mf. 400 V.	64		None
29	W —30805	Condenser, .01 Mf. 400 V.	65	C —40910A	Band Selector Switch
30	W —28619	Condenser, .006 Mf. 200 V.	66	432CJ4 "M"	Speaker Spec. 1-D-543
31	W —35139	Condenser, .004 Mf. 400 V.		—40277	Cone Assy. for 432CJ3 Spk. "M"
32	W —32708B	Condenser, .05 Mf. 400 V.	67	—40111	Field Coil for 432CJ3 Spk. "M"
33ABC	W —35951	3 Sect. Shunt Trimmer Cond.		—42877	Output Trans. for 432CJ3 Spk. "M"
34	G52 —33002	3 Gang Var. Tuning Condenser	68	G27 —26719	Ant. and Gnd. Terminal Board
	MG23 —42804	Dial Drive Complete	69Z	G36 —26719	Phono. Terminal Board
	—42819C	Drive Unit Only	69Y		Tone Control (80,000 Ohm)
	D —42313B	Dial—Calibrated Glass	70		Line Switch
	—42822	Dial-Mask—Paper Background	71		None
	W —40485A	Long Pointer	71 and 72		Power Trans. 50 Cy. 110 V.
	W —41145	Short Pointer			Power Trans. 50 Cy. 220 V.
	W —40486	Screw—Pointer Mtg.			Power Trans. 60 Cy. 110 V.
	C —37894	Escutcheon			Power Trans. 25 Cy. 110 V.
	B —37896A	Retaining Ring—Escutcheon	73		Power Trans. 25 Cy. 220 V.
	W —40365	Felt—Escutcheon	74		None
	B —37898	Glass Lens—Escutcheon		—42006	Volume Control 3 Meg. Tap 1 Meg.
35Z	W —30152	Condenser, .004 Mf. 400 V.		W —37339	Knob—3 Reg.
35Y		Condenser, .05 Mf. 400 V.		W —40192B	Knob—1 Req.
				W —36117	Rubber Mtg. Foot

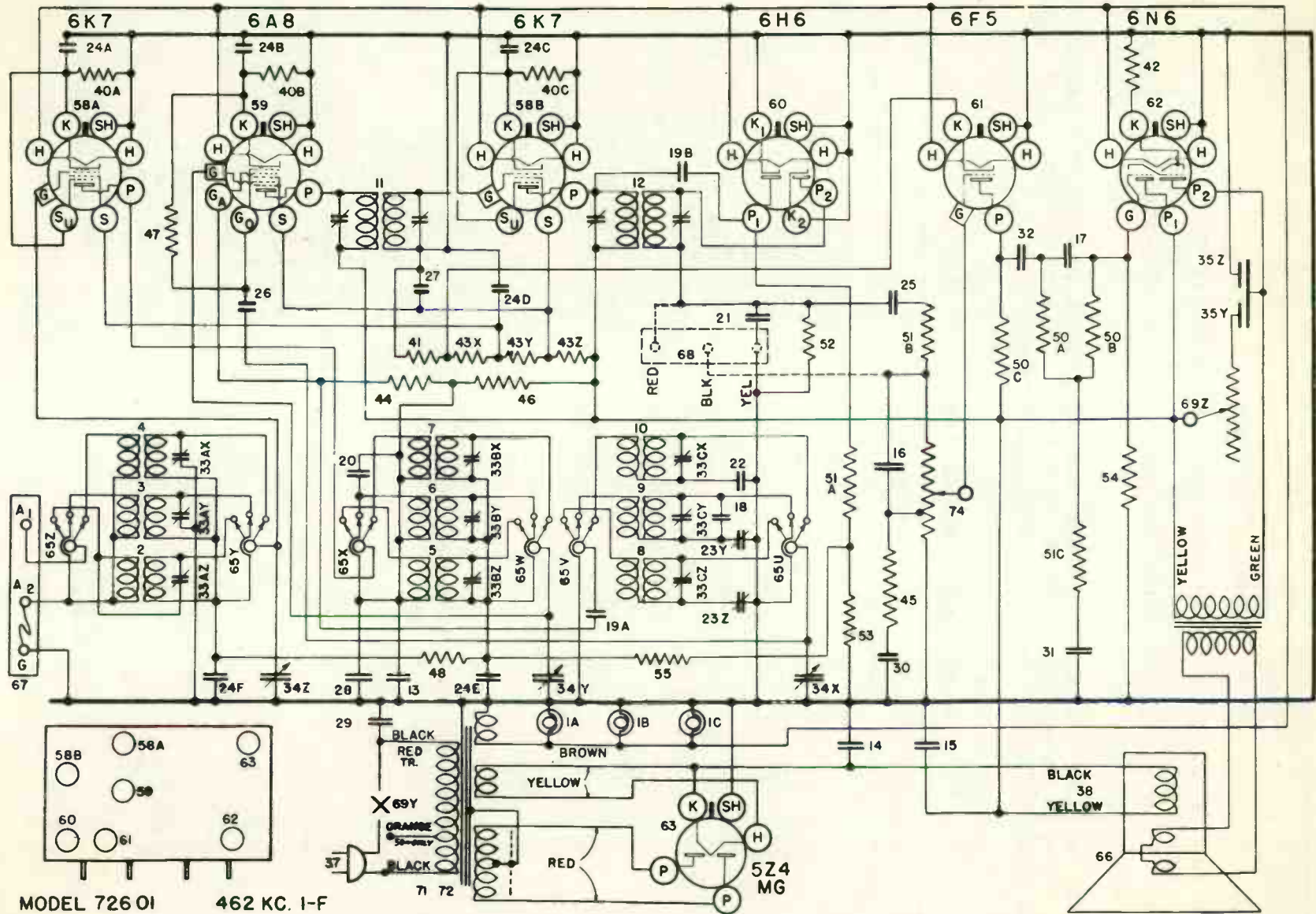


FIG. 1.—WIRING DIAGRAM—MODEL 726-01

Printed in U. S. A.

Specifications

This model Crosley radio is identical with Model 726 except that the Police and Amateur tuning band has been omitted and a continuously variable tone control is used in place of the six-step Fidelity Control.

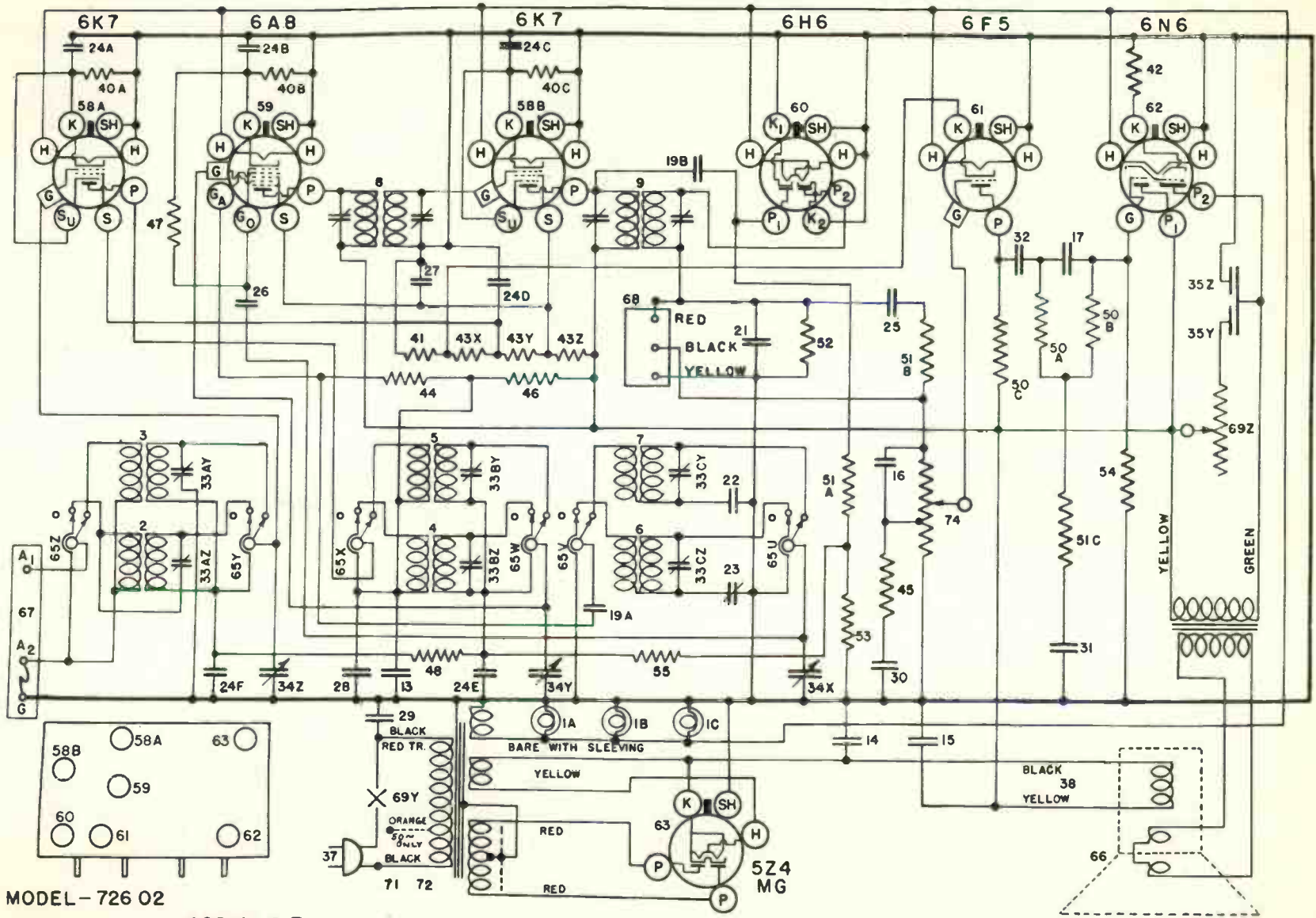
For tube socket voltage readings and alignment procedure, refer to pages 387-389, keeping in mind that the I.F. transformers are tuned to 462 kilocycles rather than 450 kilocycles.

PARTS LIST — MODEL 726-02-12-22-32-42-52

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W —37922	Bulb—Dial Light	37	B —33906A	Power Cord and Plug
	G3 —37965	Dial Light Socket	38	G3 —35696	Cable for Speaker
2	G110—32000	Ant. Coil—185-555 Metres	39		None
3	G116—32000	Ant. Coil—16-52 Metres	40ABC	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
4	G76 —32001	R-F. Coil—185-555 Metres	41	W —30127	Resistor, 450 Ohm 1/2 W. Flex.
5	G90 —32001	R-F. Coil—16-52 Metres	42	W —23012A	Resistor, 40 Ohm 3/4 W. Flex.
6	G115—32002	Osc. Coil—185-555 Metres	43Z	W —37781	Resistor, 16,500 Ohm
7	G122—32002	Osc. Coil—16-52 Metres	43Y		Resistor, 4,000 Ohm
8	G121—32004	1st I-F. Assy. 462 Kc.	43X		Resistor, 18,500 Ohm
9	G120—32004	2nd I-F. Assy. 462 Kc.	44	—37377	Resistor, 20,000 Ohm 1W.
10		None	45	—36761	Resistor, 40,000 Ohm 1/4 W.
11		None	46	—6705	Resistor, 3,500 Ohm 1W.
12		None	47	—35928	Resistor, 60,000 Ohm 1/4 W.
13	W —41081	Condenser, 16 Mf. 250 V.	48	—35600	Resistor, 100,000 Ohm 1/4 W.
14	W —36055	Condenser, 35 Mf. 400 V.	50ABC	—35930	Resistor, 200,000 Ohm 1/4 W.
15	W —36057	Condenser, 40 Mf. 300 V.	51ABC	—35601	Resistor, 300,000 Ohm 1/4 W.
16	G8 —34002	Condenser, .00001 Mf. 200 V.	52	—36321	Resistor, 400,000 Ohm 1/4 W.
17	G6 —34002	Condenser, .000025 Mf. 200 V.	53	—36322	Resistor, 500,000 Ohm 1/4 W.
18		None	54	—38623	Resistor, 750,000 Ohm 1/4 W.
19AB	G2 —34002	Condenser, .0001 Mf. 200 V.	55	—37245	Resistor, 1.5 Megohm 1/4 W.
20		None	56		None
21	G1 —34002	Condenser, .00025 Mf. 200 V.	57		None
22	G20 —34000	Condenser, 4190 Mmf.	58AB	G151—36400	Socket Type 6K7
23	—42830	Condenser, Osc. Series Trimmer	59	G156—36400	Socket Type 6A8
24A to 24F	W —36541	Condenser, .02 Mf. 160 V.	60	G155—36400	Socket Type 6H6
25	W —28621	Condenser, .02 Mf. 200 V.	61	G158—36400	Socket Type 6F5
26	W —35139	Condenser, .004 Mf. 400 V.	62	G165—36400	Socket Type 6N6
27	W —35936	Condenser, .05 Mf. 200 V.	63	G154—36400	Socket Type 5Z4
28	W —32378	Condenser, .01 Mf. 400 V.	64		None
29	W —30805	Condenser, .01 Mf. 400 V.	65	C —42844	Switch—Band Selector
30	W —28619	Condenser, .006 Mf. 200 V.	66	432CJ3 "M"	Speaker Spec. 1-D-543
31	W —35139	Condenser, .004 Mf. 400 V.		—40277	Cone Assy. for 432CJ3 Spk. "M"
32	W —32708B	Condenser, .05 Mf. 400 V.		—40411	Field Coil for 432CJ3 Spk. "M"
33ABC	W —42830	3 Sect. Shunt Trimmer Cond. Assy.		—42877	Output Trans. for 432CJ3 Spk. "M"
34	G52 —33002	3 Gang Var. Tuning Cond.	67	G27 —26719	Ant. and Gnd. Terminal Board
	MG23 —42828	Dial Drive Complete	68	G36 —26719	Phono. Terminal Board
	—42845B	Drive Unit Only	69Z	—37966	Tone Control (80,000 Ohm)
	D —42318A	Dial—Calibrated Glass	69Y		Line Switch
	—42843	Dial Mask—Paper Background	70		None
	W —40485A	Long Pointer	71	—42343A	Power Trans. 50 Cy. 110 V.
	W —41145	Short Pointer	72	—42344A	Power Trans. 50 Cy. 220 V.
	W —40486	Pointer Mtg. Screw	and	—42260	Power Trans. 60 Cy. 110 V.
	C —37894	Escutcheon	72	—42261	Power Trans. 25 Cy. 110 V.
	B —37896A	Retaining Ring for Escutcheon		—42262	Power Trans. 25 Cy. 220 V.
	B —37898	Glass Lens for Escutcheon	73		None
	W —40365	Escutcheon Felt	74	—42006	Volume Control, 3 Meg. Tap 1 Meg.
35Z	W —30152	Condenser, .004 Mf. 400 V.	W —37339		Knob—3 Req.
35Y		Condenser, .05 Mf. 400 V.	W —40192B		Knob—1 Req.
36		None	W —36117		Rubber Mtg. Foot

595



MODEL 726-02

MODEL - 726 02

462 KG I-F.

FIG. 1.—WIRING DIAGRAM—MODEL 726-02

Printed In U. S. A.



These models are the same as Model 718 with the following additions:

**Model 728** — Same as Model 718 with the addition of a long wave band, making a three band receiver covering 2000 to 790 — 555 to 174 — 51.3 to 16.4 meter bands.

**Model 738** — Same as Model 718 with the addition of Pickup and Motor for Phono Operation.

**Model 748** — Same as Model 728 with addition of Pickup and Motor for Phono Operation.

For voltage readings for Models 728, 738 and 748 use chart in Supplement No. 196 (718).

For I. F. alignment and for low and medium wave bands use procedure as outlined in supplement No. 196 (718).

To align the long wave band (2000 - 790 meters) on models 728 and 748 proceed as follows:

Connect output meter in usual way.

(a) Open condenser gang all the way.

(b) Using a .0002 mfd. condenser in series with signal generator lead, connect to antenna terminal of receiver.

(c) Set signal generator to 380 Kilocycles (790 meters).

(d) Adjust L.W. Oscillator shunt trimmer condenser so gang just tunes through a peak.

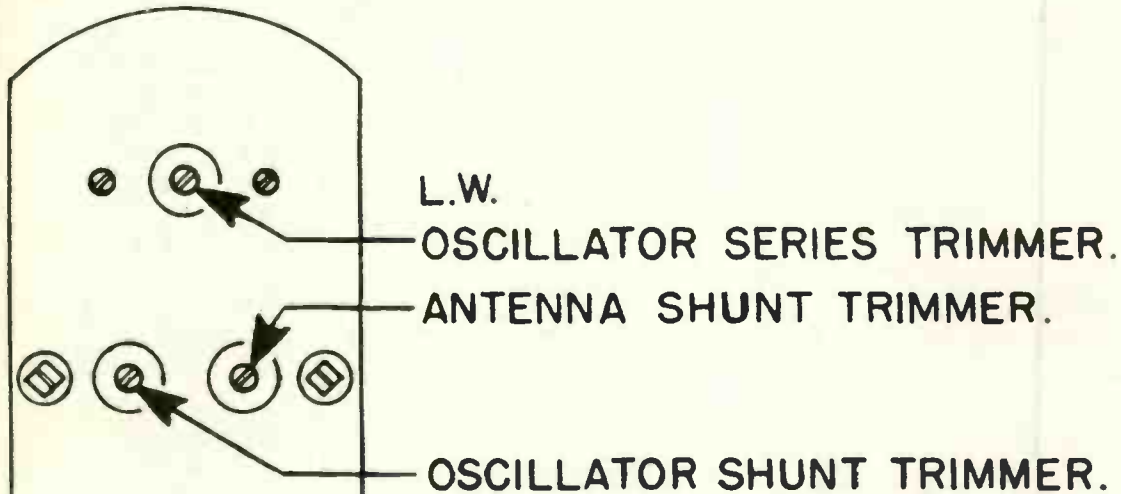
(e) Set signal generator to 350 Kilocycles (860 meters).

(f) Tune-in 350 Kc. signal with manual tuning knob. Adjust L. W. Antenna shunt trimmer condenser for maximum output. Repeat operations (c and d and e and f) for more accurate adjustment.

(g) Set signal generator to 150 Kilocycles (2000 meters).

(h) Tune-in 150 Kc. signal and while rocking the condenser gang back and forth adjust L. W. Oscillator series condenser for maximum output.

(i) Repeat (e) and (f).



G179—32000	H. F. Antenna Coil, 51.3-16.4 Meters
G143—32000	B. C. Antenna Coil, 555-174 Meters
G178—32000	L. F. Antenna Coil, 2000-790 Meters
G180—32002	H. F. Oscillator Coil, 51.3-16.4 Meters
G179—32002	B. C. Oscillator Coil, 555-174 Meters
	L. F. Oscillator Coil, 2000-794 Meters
W —46214	Trimmer Condenser { L. F. Antenna
D —46089	Dial Glass
G56 —34001	Gang Condenser, 2 Section { Antenna
B —46088A	Band Change Switch
—45923A	Power Trans., 110 V. 60 Cy. (728 only)
—45959A	Power Trans., 110 V. 50 Cy. (728)
—45960A	Power Trans., 220 V. 50 Cy. and
—45961A	Power Trans., 110 V. 25 Cy. (748)
—45962A	Power Trans., 220 V. 25 Cy. (728 only)
—45963B	Power Trans., Universal (728 only)

**MODEL 728**

W —46346	8CA Cabinet
D —46817	8MA Cabinet
D —47200	8HE Cabinet

—45972	Knob (8CA)
—46408	Knob (8MA and 8HE)
B —45943C	Escutcheon (8CA)
—46451A	Escutcheon (8MA and 8HE)
—46240	Call Letter Sheet (728 and
W —50551A	Call Letter Cover) 748

**MODEL 728**

480-BP-15-"Z"	Speaker, Spec. E8L327
—46763	Field Coil, 700 Ohms 50 M. A.
—46762	V. C. and Cone Assembly
—46764	Output Transformer
—46765	Cardboard Ring

**MODEL 728**

280-BP-12-"H"	Speaker, Spec. S5331J5
—46898	V. C. and Cone Assembly
—46899	Output Transformer
—46795	Cardboard Ring

**MODEL 728**

280-BP-12-"B"	Speaker, Spec. 55WA30
—46693	Field Coil, 700 Ohms 50 M. A.
—46682	V. C. and Cone Assembly
—46694	Output Transformer
—46685	Cardboard Ring

**MODEL 748**

480-BP-15-"B"	Speaker, Spec. 801Q3
—46679	Field Coil, 700 Ohms 50 M. A.
—46678	V. C. and Cone Assembly
—46680	Output Transformer
—46681	Cardboard Ring

## PARTS LIST — MODELS 728 and 748

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
	W —46964	No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back 8MA Cabinet)		W —33502	Needle Cup
	—20881	No. 6 x 3/8" R. H. Wood Screw (Cabinet Back 8HE Cabinet)		W —33503	Needle Cup Lid
		<b>MODEL 748</b>		—46148A	Phono-Radio Switch
	—8NA	Cabinet		W —33201	3/8" Palnut (Phono-Radio Switch)
	—46408	Knob (4 Req.)		B —47013	Turn Table
	—46451A	Escutcheon		W —46999	Rubber Friction Drive
	—46987	Grille Cloth		W —47006	Drive Plate
	D —30	No. 2 x 3/8" Oval Ctsk. Hd. Screw (4 Req.) (Escutcheon)		W —47002	Rubber Grommet, Motor Mtg.
	—46140	Carton for 8NA Cabinet		W —47003	Rubber Grommet, Motor Mtg.
	—46837	Push Button		—47004	Pickup and Tone Arm
	—46998	Instruction Booklet		—46161	1/2"—27 Hex. Nut (Pickup and Tone Arm)
	D —46180	Cabinet Back		D —165	No. 8 x 1" Oval Hd. Wood Screw (Motor Board)
	N —8	No. 8—32 Hex. Nut		W —20754A	Cup Washer (Motor Board)
	—2046	No. 8 Int. Shakeproof Washer } Speaker		—22085	No. 8—32 x 1 1/2" W. H. Screw (Motor Mtg.)
	O —8	Flat Washer		—46461	Headed Bushing (Motor Mtg.)
	W —46464	No. 6 x 1/2" Thumb Hd. Wood Screw (Cabinet Back) (4 Req.)		W —24715	No. 8 Elastic Stop Nut (Motor Mtg.)
		<b>MOTOR PARTS</b>		W —4702	Flat Washer (Motor Mtg.)
	D —47005A	Motor Board		W —32380	Condenser, .05 Mf. 200 V. Paper
	—47007	Motor, 60 Cycle 110 Volt		—35934	Resistor, 6,500 Ohms 1/4W.
	—47008	Motor, 50 Cycle 120 Volt		W —47015	Automatic Stop
	—47012	Motor, 50 Cycle 230 Volt		—20881	No. 6 x 3/8" Rd. Hd. Wood Screw (2 Req.) (Automatic Stop)
	—47025	Motor, 50 Cycle 110-220 Volt			

## PARTS LIST — MODEL 738

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
7	W —45720	4 Section Trimmer Condenser		B —47013	Turn Table
17	W —46128	Condenser, 16 Mf. 250 V. Elect.		W —46999	Rubber Friction Disc
22	W —35758	Condenser, .008 Mf. 400 V. Paper		W —47006	Drive Plate
53	W —35641	Condenser, .02 Mf. 160 V. Paper		—46148A	Phono-Radio Switch
	8NA	Cabinet		W —33502	Needle Cup
	—46451A	Escutcheon		W —33503	Needle Cup Lid
	D —30	Escutcheon Screws (4 Req.)		D —47005A	Motor Board
	—46408	Knob		D —165	No. 8 Wood Screw
	—46180	Cabinet Back		W —20754	Cup Washer
	—46837	Push Button		—46161	Hex. Nut (Pickup Arm)
	—47023	Call Letter Sheet		W —47003	Rubber Grommet (Motor Mounting)
	W —50551B	Call Letter Cover		W —47002	Rubber Grommet (Motor Mounting)
	—47014	Instructions		W —35201	3/8" Palnut
	W —46464	Screws—Back Mounting		W —47015	Automatic Stop
	W —43552	Speaker Plug Clamp		—22085	Motor Mounting Screw
	—45808	P. K. Screw for Clamp		—47240	Motor, 60 Cycle 220 Volt
	—46140	Carton		—47007	Motor, 60 Cycle 110 Volt
	N —8	Hex Nut (Speaker)		—47008	Motor, 50 Cycle 120 Volt
	—2046	Shakeproof Washer (Speaker)		—47012	Motor, 50 Cycle 230 Volt
	—44499	Screw (Chassis)			
	W —45579	Washer (Chassis)			
	—46987	Grille Cloth			
		<b>PHONO PARTS</b>			
	—47004	Pickup and Tone Arm			

SOCKET VOLTAGE READINGS AT 117.5 VOLT LINE

Tube	Purpose	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	125	74	Osc. Grid	130	H	—
6SK7	I-F Amplifier	—	H	—	Grid	—	74	H	125
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	—	65	—	H	H
25L6	Output	—	H	120	125	Grid	—	H	8
2-25Z6	Rectifier	—	H	117.5 A.C.	232	—	—	H	122

ALIGNMENT PROCEDURE

WILL GIVE A REASONABLE OUTPUT METER READING.

All circuits have been accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

NOTE: The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

CONNECTING OUTPUT METER

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D.C. by connecting a .25 mf. condenser in series with one of the leads.

(1) I-F Amplifier Alignment

- (a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place).
- (b) Connect the ground lead of the signal generator through a .01 mf. (or smaller .001 mf.) condenser to the chassis.
- (c) Adjust station selector so that the rotor plates of the gang are completely disengaged, turn band to B.C. position and turn the volume control to maximum.
- (d) Set the signal generator to 455 kc.
- (e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.
- (f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.
- (g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A.V.C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT

(2) Aligning R-F Amplifier

- (a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW) and the generator ground lead to the Black lead of the receiver. Turn band switch to B.C. band, open gang all the way and turn volume control on full.
- (b) Set signal generator to 1725 kilocycles.
- (c) Adjust B.C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).
- (d) Set signal generator to 1400 kilocycles.
- (e) Tune in generator signal on receiver by means of manual tuning knob.
- (f) Adjust B.C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.
- (g) Repeat above procedure for more accurate adjustments.
- (h) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S.W. position, open gang condenser all the way, and turn volume on full.
- (i) Set signal generator to 18.3 megacycles.
- (j) Adjust S.W. oscillator trimmer for maximum output.
- (k) Set signal generator to 18 megacycles.
- (l) Tune in 18 mc. signal with manual control, then adjust the S.W. antenna trimmer condenser for maximum output.

Check to see that receiver is aligned on the fundamental and not the image frequency. Increase signal generator output approximately 10 times and tune in image frequency (2 x 455 kc. + fundamental) which will be approximately 910 kilocycles less than 18 mc. as indicated by the dial calibrations (17.1 mc.). If correctly aligned, the image will come in as stated but will be much weaker than the fundamental.

The special police band in some models covering 2.3 to 2.5 mc. has no adjustments but can be checked by using a .0001 mf. condenser in series with the signal generator output lead, turning band switch to POL. position, set signal generator to 2.5 mc. and then tune in generator signal, which should come in with the dial pointer near the end of that band.

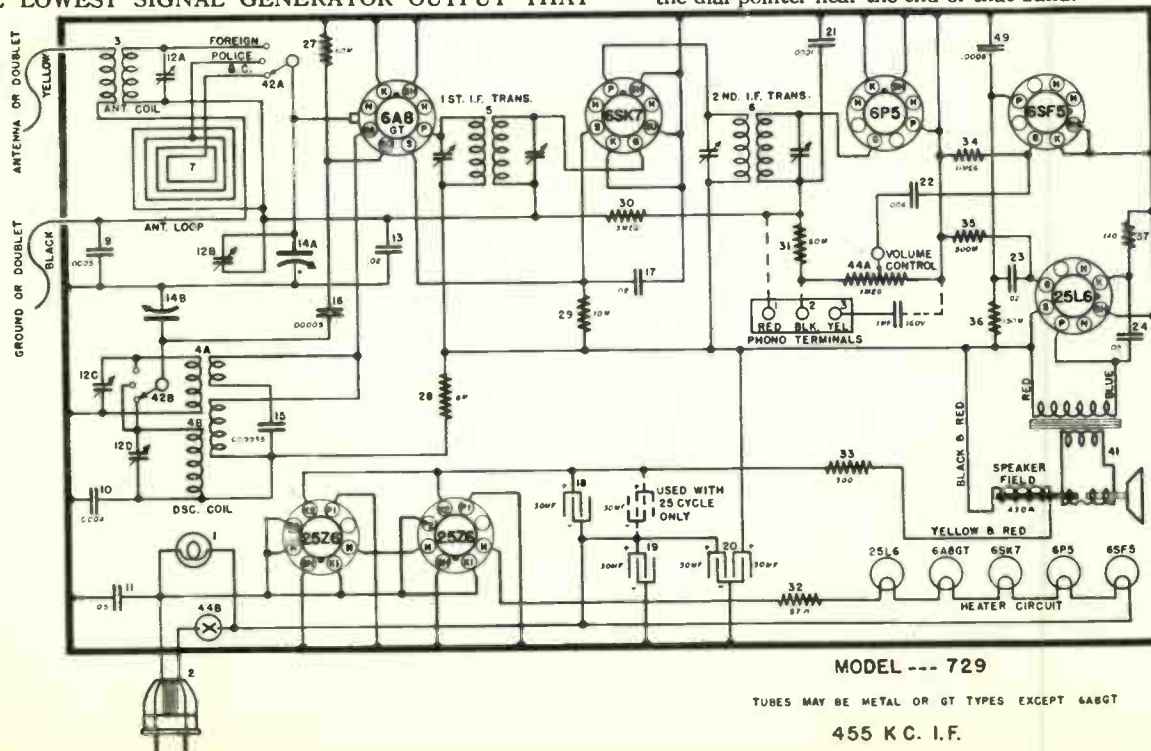
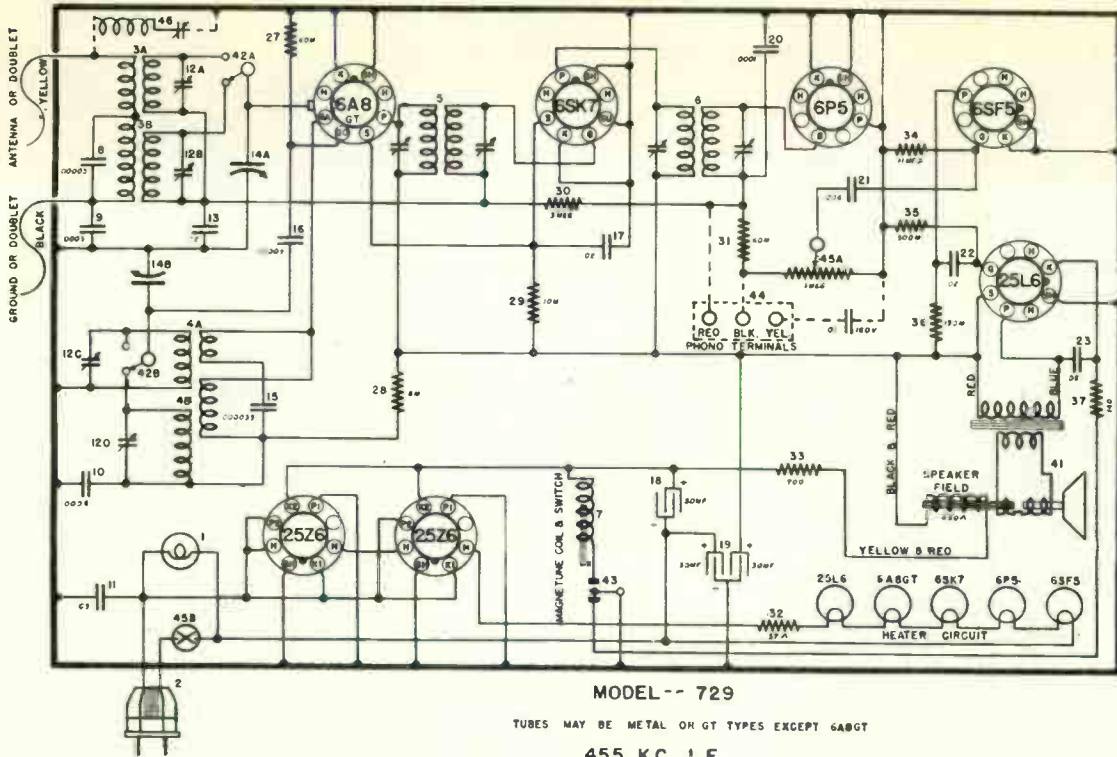


FIG. 1-C—WIRING DIAGRAM—MODEL 729 (MECH. P. B. LOOP)

# MODEL 729

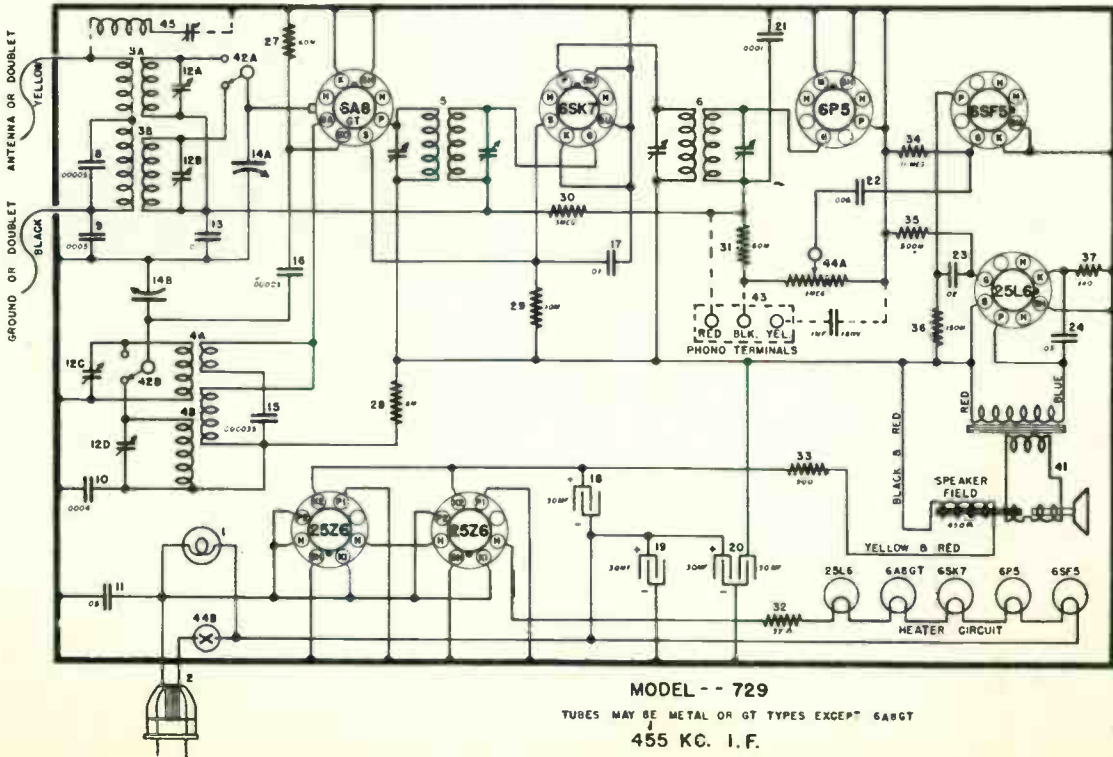


MODEL -- 729

TUBES MAY BE METAL OR GT TYPES EXCEPT 6ABGT

455 KC. I.F.

FIG. 1-A—WIRING DIAGRAM—MODEL 729 (MAGNETUNE)



MODEL -- 729

TUBES MAY BE METAL OR GT TYPES EXCEPT 6ABGT

455 KC. I.F.

FIG. 1-B—WIRING DIAGRAM—MODEL 729 (MECH. P. B.—TWO BAND)

PARTS LIST—MODEL 729

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —47977	Dial Light Bulb, 110 Volt		—46685	Cardboard Ring
	W —47946	Dial Light Bracket Assembly	41	281-BL-7-"K"	Speaker, Spec. 5-IV-2
	W —48169	Dial Light Cover		—47166	V. C. and Cone Assembly
2	B —45769A	Power Cord and Plug		—47170	Field Coil, 450 Ohms 60 M. A.
3	G214—32000	Antenna Coil, Foreign		—47171	Output Transformer
4A	G206—32002	Oscillator Coil { Foreign Broadcast	42	—47169	Cardboard Ring
4B			—49312A	Band Change Switch	
5	G221—32004	1st I-F. Transformer Assembly	43	G41 —26719	Phono Terminal Board (Mech. P. B., No Loop)
6	G188—32004	2nd I-F. Transformer Assembly	43	G8 —47866	Solenoid Switch (Magnetune only)
7	G6 —47673	Loop Antenna	44A	—47858	Volume Control, 1 Megohm
7	G2 —47909	Solenoid Coil Assembly	44B		
9	G3 —34002	Condenser, .0005 Mf. Molded	44	G41 —26719	Phono Terminal Board (Magnetune only)
10	G18 —34002	Condenser, .0004 Mf. Molded	45A	—47858	Volume Control, 1 Megohm { (Magnetune only)
11	W —45782B	Condenser, .05 Mf. 120 Volts Paper	45B		
12A	W —41247A	Trimmer Condenser { Antenna, Foreign Antenna, B. C. Oscillator, Foreign Oscillator, B. C.	45	G193—32004	Wave Trap (Mech. P. B., No Loop)
12B			G193—32004	Wave Trap (Magnetune only)	
12C			G3 —34002	Condenser, .0005 Mf. Molded	
12D			—47969	Drive Shaft	
13	W —47574	Spacers, (2 Req.) (4 Sect. Trimmer)	W	—435921B	Drive Shaft Bracket
	W —45780	Condenser, .02 Mf. 160 Volts Paper	G20	—41582	Drive Cord, 42 3/4"
14A	G80 —33001	2 Sect. Var. Cond. { Antenna Section Oscillator Section	W	—50590	Drive Cord Spring
14B	MG18—47860	Riveted Mtg. Bracket, R. H.	W	—46290	Cord Clamp (3 Req.)
	MG18—47860	Riveted Mtg. Bracket, L. H.	G30	—41582	Guide Cord, 9 1/2"
	MG20—47860	Idler Support Bracket	W	—46848	Guide Cord Spring
	W —47875	Dial Back Face		—9GA	Cabinet
	G8 —48762	Push Button Unit Assembly		—9GB	Cabinet, Ivory
	G12 —43564	Pulley and Hub Assembly		—9GE	Cabinet, Red
	W —23877	No. 8—32 x 3/16" Set Screw (2 Req.) (Pulley and Hub Assy.)		—9CF	Cabinet, Blue
	G31 —47880	Rocker Plate Assembly		—9CG	Cabinet, Tan
	G32 —47880	Riveted Key Assembly (5 Req.)		—9CC	Cabinet, Brown
	W —45646B	Adjusting Clip (1 Req.)		—48110	Carton (9GA, 9GB, 9GE, 9GF, 9GG)
	W —50583B	Adjusting Clip (4 Req.)		—48142	Carton (9GC)
	W —47877A	Station Setting Screw (5 Req.)		—46953	Knob (2 Req.) (9GA)
	W —50325A	Key Retaining Clip (5 Req.)		—44552	Knob (2 Req.) (9GB, 9GE, 9GF, 9GG)
	W —50547	Key Plate		—48165	Knob (2 Req.) (9GC)
	—31388	No. 8—32 x 3/16" W. Hd. Screw (2 Req.) (Key Plate)		—48729B	Push Buttons (9GA, 9GC)
	—38056	No. 8—32 x 1/4" Headless Set Screws (5 Req.)		—48772A	Push Buttons (9GB, 9GE, 9GF, 9GG)
	W —48104	Spring Washer (5 Req.)		—48734	Call Letter Sheet
	W —48322E	Spring Support Bracket		—48747	Call Letter Cover
	—2046	No. 8 Int. Shakeproof Washer (2 Req.)		—49315	Instruction Booklet
	W —48826	Key Return Spring (5 Req.)		—49284	Short Wave Instructions
	W —48827	Push Button Shaft (5 Req.)		—49321	Knob (Band Change) (9GA, 9GC)
	W —47995B	Dial Light Mounting Bracket		—49322	Knob (Band Change) (9GB, 9GE, 9GF, 9GG)
	W —47930A	Dial Pointer		—47765	Escutcheon (9GA, 9GC)
	—49307	Dial Glass (9GA, 9GB, 9GE, 9GF, 9GG)		—48144	Escutcheon (9GB, 9GE, 9GF, 9GG)
	—49308	Dial Glass (9GC)	W	—48167B	Escutcheon Mtg. Bracket (9GC)
15	G13 —34002	Condenser, .00003 Mf. Molded	W	—48018	Glass Reflector
16	G5 —34002	Condenser, .00005 Mf. Molded		—48135	No. 3—56 x 1/4" Rd. Hd. Mach. Screw (2 Req.) (Escutcheon 9GA, 9GB, 9GE, 9GF, 9GG)
17	W —45780	Condenser, .02 Mf. 160 Volts Paper	S	—80	No. 4 x 3/4" Rd. Hd. Wood Screw (4 Req.) (9GC Escutcheon Bracket)
18	W —47702A	Condenser, 30 Mf. 150 Volts Elect.		—49318	Cabinet Back (9GA)
19	W —47702A	Condenser, 30 Mf. 150 Volts Elect.		—49319	Cabinet Back (9GB, 9GE, 9GF, 9GG)
	W —47892	Condenser, 30-30 Ohms 135 Volts Elect. (Magnetune only)	W	—49320A	Cabinet Back (9GC)
20	W —47892	Condenser, 30-30 Ohms 135 Volts Elect.		—46242	No. 8 Rubber Bottom Mach. Screw (4 Req.) (9GA, 9GB, 9GE, 9GF, 9GG)
20	G2 —34002	Condenser, .0001 Mf. Molded (Magnetune only)		—20881	No. 6 x 3/4" Rd. Hd. Wood Screw (6 Req.) (9GC Cabinet Back)
21	G2 —34002	Condenser, .0001 Mf. Molded	W	—45020	Flat Washer (4 Req.) (9GC Chassis Mtg.)
21	W —45810B	Condenser, .006 Mf. 160 Volts Paper (Magnetune only)	U	—48744	Shakeproof Washer (4 Req.) (9GB, 9GE, 9GF, 9GG, 9GC Chassis Mtg.)
22	W —45810B	Condenser, .006 Mf. 160 Volts Paper	W	—48758	Trimount Stud (4 Req.)
22	W —45780B	Condenser, .02 Mf. 160 Volts Paper (Magnetune only)		—48900	No. 8—32 x 1/4" H. H. Mach. Screw (4 Req.) (9GC Chassis Mtg.)
23	W —45780B	Condenser, .02 Mf. 160 Volts Paper	W	—48837	Light Deflector Felt (9GC)
23	W —45817B	Condenser, .05 Mf. 160 Volts Paper (Magnetune only)	MG36—47861	Push Button and Hinge Assembly (9GA, 9GC)	
24	W —45817B	Condenser, .05 Mf. 160 Volts Paper	MG37—47861	Push Button and Hinge Assembly (9GB, 9GE, 9GF, 9GG)	
27	—21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	MG21—47860	Riveted Hinge Assembly	
28	—37905	Resistor, 8,000 Ohms 1/4 Watt Ins.	W	—48730B	Insert (5 Req.) (P. B. and Hinge Assembly)
29	—36317	Resistor, 10,000 Ohms 1/4 Watt Ins.	W	—47947A	Push Button Hinge
30	—26577	Resistor, 3 Megohms 1/4 Watt Carb.	W	—48017C	Push Button Hinge Spring
31	—21237A	Resistor, 60,000 Ohms 1/4 Watt Carb.	O	—6	Flat Washer (3 Req.)
32	W —47857	Resistor, 57 Ohms 7 Watt Flex.		—49271	Felt Strip (9GB, 9GE, 9GF, 9GG)
33	W —47873	Resistor, 900 Ohms 7 Watt Flex.		—47767B	Push Buttons (5 Req.) (Magnetune only)
34	—46497	Resistor, 11 Megohms 1/4 Watt Carb.	W	—48016B	Push Button Rod (Magnetune only)
35	—23785	Resistor, 500,000 Ohms 1/4 Watt Carb.	MG31—47892	Instruction Envelope Assy.	
36	—23403	Resistor, 150,000 Ohms 1/4 Watt Carb.			
37	W —47512	Resistor, 140 Ohms 3/4 Watt Flex.			
41	281-BL-7-"B"	Speaker, Spec. 55-WA-43			
	—47290	V. C. and Cone Assembly			
	—46686	Field Coil, 450 Ohms 60 M. A.			
	—46687	Output Transformer			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	K	S	Go	Ga
6A8	Osc.-Mod.	6.3	280	3.2	130	-5 to -30	160
6K7	1st. I. F. Amp.	6.3	280	3.2	110	—	—
6K7	2nd. I. F. Amp.	6.3	280	8.0	130	—	—
6H6	Det. & AVC	6.3	—	—	—	—	—
6C5	1st. A. F. Amp.	6.3	155	6.5	—	—	—
6N6	Output	6.3	220	—	P <sub>2</sub> 280	—	—
5Z4	Rectifier	5.0	—	330	—	—	—

Power Output Approximately 6 Watts.  
 Power Consumption Approximately 80 Watts at 117.5 Volts  
 Voltage Drop Across Speaker Field Approximately 50 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on the top of the

3rd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(g) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(h) Check operations (e), (f) and (g) for more accurate adjustments.

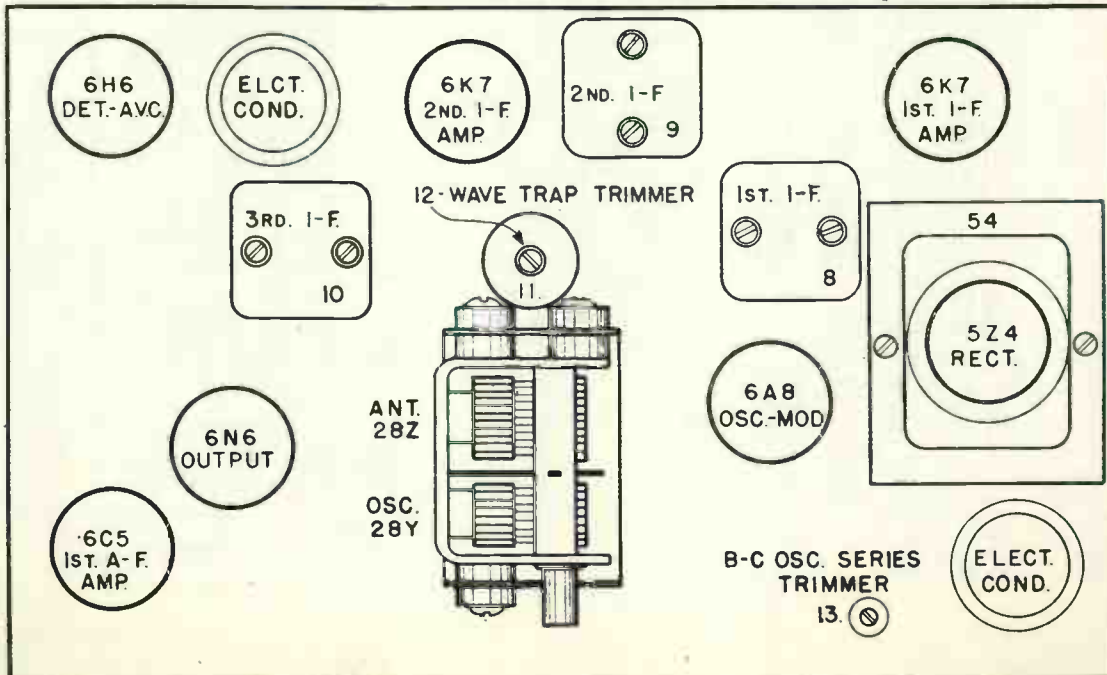
ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

Aligning R-F Amplifier.

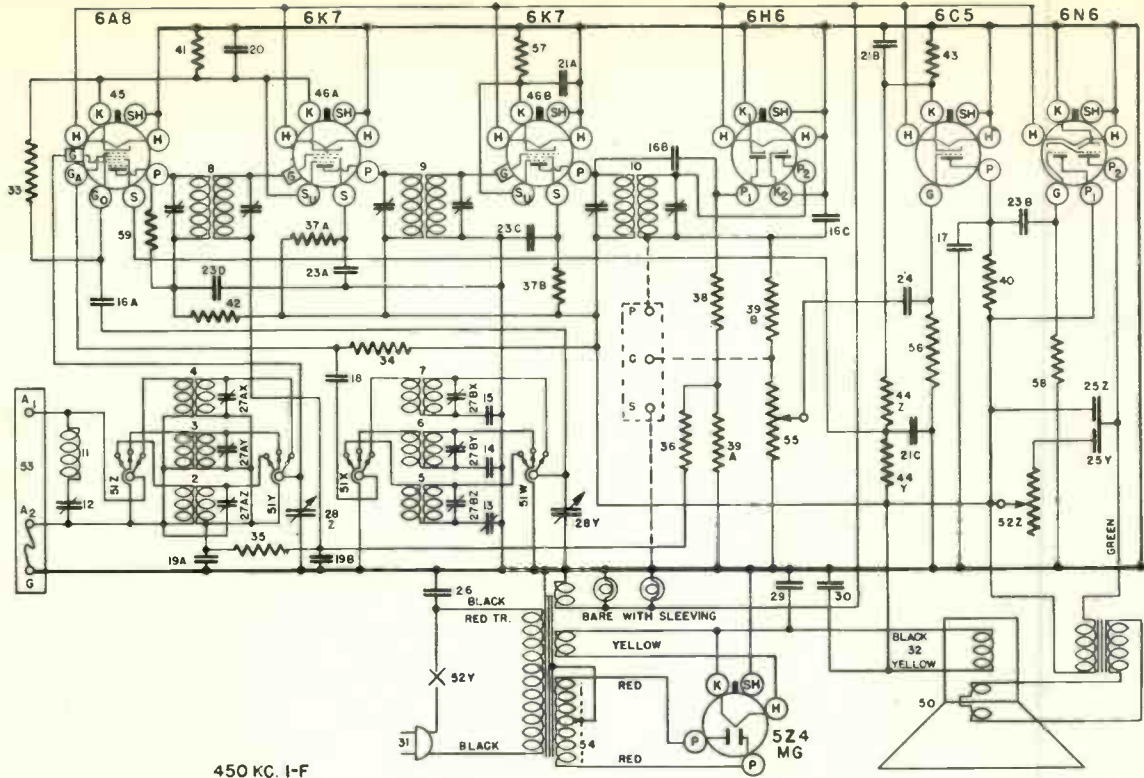
When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .0002 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the ad-



MODEL 736



450 KC. I-F

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name Value	Item No.	Part No.	Name Value
1AB	W -37992	Bulb, Dial Light 6-8V.	29	W -41582	Cable, Drive
2	G3 -37965	Socket Assy. Dial Light	W -36055	Condenser, 35 Mf. 400 V. Elect.	
3	G120 -32000	Coil, Ant. 540-1800 Kc.	W -36057	Condenser, 40 Mf. 300 V. Elect.	
4	G119 -32000	Coil, Ant. 1800-6000 Kc.	B -33906A	Cord & Plug, Power	
5	G121 -32000	Coil, Ant. 6000-18000 Kc.	G3 -35696	Cable, Speaker	
6	G112 -32002	Coil, Osc. 540-1800 Kc.	W -40757	Resistor, 50,000 Ohm. 1/4 W.	
7	G111 -32002	Coil, Osc. 1800-6000 Kc.	W -23616	Resistor, 15,000 Ohm. 1 W.	
8	G113 -32002	Coil, Osc. 6000-18000 Kc.	W -21454	Resistor, 1 Megohm 1/4 W.	
9	G125 -32004	Coil, Assy. 1st. I. F. 450 Kc.	W -37245	Resistor, 1.5 Megohm 1/4 W.	
10	G124 -32004	Coil, Assy. 2nd. I. F. 450 Kc.	W -21875	Resistor, 100,000 Ohm 1/4 W.	
11	G100 -32004	Coil, Assy. 3rd. I. F. 450 Kc.	W -21875	Resistor, 100,000 Ohm. 1/4 W.	
12	G1 -32006	Coil, Assy. Wave Trap	W -35930	Resistor, 20,000 Ohm. 1/4 W.	
13	LW -37235A	Coil, Only Wave Trap	W -21455	Resistor, 30,000 Ohm. 1/4 W.	
14	W -37232	Condenser, Wave Trap Trimmer	W -21455	Resistor, 30,000 Ohm. 1/4 W.	
15	G5 -31927	Shield Assy. Wave Trap	W -37768	Resistor, 600 Ohm. 1/4 W.	
16A	G2 -34002	Condenser, 400 to 500 Mmf., B. C. Osc. Series Trimmer	W -21964	Resistor, 165 Ohm. 1/4 W. Flex.	
16B	G2 -34002	Condenser, 1750 Mmf., Pol. Osc. Series, Fixed	W -23013	Resistor, 200 Ohm. 1 W. Flex.	
16C	G2 -34002	Condenser, 4350 Mmf., H. F. Osc. Series, Fixed	W -22514	Resistor, 750 Ohm. 1/4 W. Flex.	
17	G1 -34002	Condenser, .001 Mf. Molded	W -32301	Resistor, 10000 Ohm Candohm	
18	W -35139	Condenser, .001 Mf. Molded	G156 -36400	Socket Type, 6A8	
19A	W -35936	Condenser, .001 Mf. Molded	G151 -36400	Socket Type, 6K7	
19B	W -35936	Condenser, .001 Mf. Molded	G151 -36400	Socket Type, 6K7	
20	W -29910A	Condenser, .0025 Mf. Molded	G155 -36400	Socket Type, 6H6	
21A	W -28621	Condenser, .0025 Mf. Molded	G152 -36400	Socket Type, 6C5	
21B	W -28621	Condenser, .02 Mf. 200 V. Tub.	G165 -36400	Socket Type, 6N6	
21C	W -28621	Condenser, .02 Mf. 200 V. Tub.	W -632CJ3	Speaker, "M". Spec. 1-D-610	
23A	W -30488	Condenser, .02 Mf. 400 V. Tub.	W -42879	Cone Assy., For Above Spk.	
23B	W -30488	Condenser, .02 Mf. 400 V. Tub.	W -42880	Field Coil, For Above Spk.	
23C	W -30488	Condenser, .02 Mf. 400 V. Tub.	W -42881	Output Trans., For Above Spk.	
23D	W -30488	Condenser, .02 Mf. 400 V. Tub.	W -40770A	Switch, Band Selector	
24	W -35758	Condenser, .008 Mf. 400 V. Tub.	W -37908	Tone Control 100,000 Ohm.	
25Z	W -31052	Condenser, .004 Mf. 400 V. Tub.	W -26719	Terminal Board, Ant. & Gnd.	
25Y	W -30805	Condenser, .05 Mf. 400 V. Tub.	W -41978A	Transformer, Power 110 V. 60 Cy.	
27A	W -35951	Condenser, .35 Sect. Trimmer, Ant. Shunt	W -37967	Volume Control 1 Megohm.	
27B	W -35951	Condenser, .35 Sect. Trimmer, Osc. Shunt	W -36688	Resistor, 3 Megohm, 1/4 W.	
28	G21 -42390	Condenser, 2 Sect. Gang.	W -28106	Resistor, 500 Ohm. 1/4 W. Flex.	
	MG27 -42390	Dial Drive Assy.	W -36322	Resistor, 500,000 Ohm. 1/4 W.	
	C -42420	Dial Glass (Calibrated)	W -35928	Resistor, 60,000 Ohm. 1/4 W.	
	W -1844	Drive Unit	W -42408	Escutcheon Ring Assy.	
	W -42684	Dial Hand	W -41890	Dial Lens	
	W -40486	Screw, Hand Mtg.	W -41881	Lens Retaining Ring	
			W -7670	Screws, (2 Req.) Escutcheon Mtg.	
			W -37339	Knob, (3 Req.)	
			W -40192B	Knob, (1 Req.)	
			W -36117	Foot, (4 Req.) Rubber Mtg.	
			6-T	Cabinet	

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Go	Ga
6U7G	R-F Amplifier	6.3	244	103	0	Neg	—	—
6A8G	Modulator	6.3	282	103	0	Neg	Neg	103
6J7G	Oscillator	6.3	140	—	0	Neg	—	—
6U7G	I-F Amplifier	6.3	244	103	0	Neg	—	—
6Q7G	Detector, AVC & 1st A-F Amplifier	6.3	100	—	0	Neg	—	—
6N6G	Output	6.3	266	282	0	0	—	—
5Y3G	Rectifier	4.8	—	—	282	—	—	—

Power consumption approximately 76 watts at 117.5 volts.  
Power output approximately 5.3 watts.  
Voltage drop across speaker field 82 volts.

Tuning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch for the Medium Wave Band.

(d) Set the signal generator to 455 kilocycles.  
(e) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.  
(f) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Long Wave and Medium Wave Bands a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Bands a 400 ohm carbon resistor should be used in place of the condenser.

SIGNAL INPUT FREQUENCIES

Band	Min. Capacity	Shunt Alignment	Series Alignment		
			Ant.	R. F.	Osc.
L Wave	380 Kc.	350 Kc.			150 Kc.
M Wave	1650 Kc.	1400 Kc.			
S W-I	13 Mc.	12 Mc.	6 Mc.	6 Mc.	
S W-II	24 Mc.	22 Mc.	11 Mc.	11 Mc.	

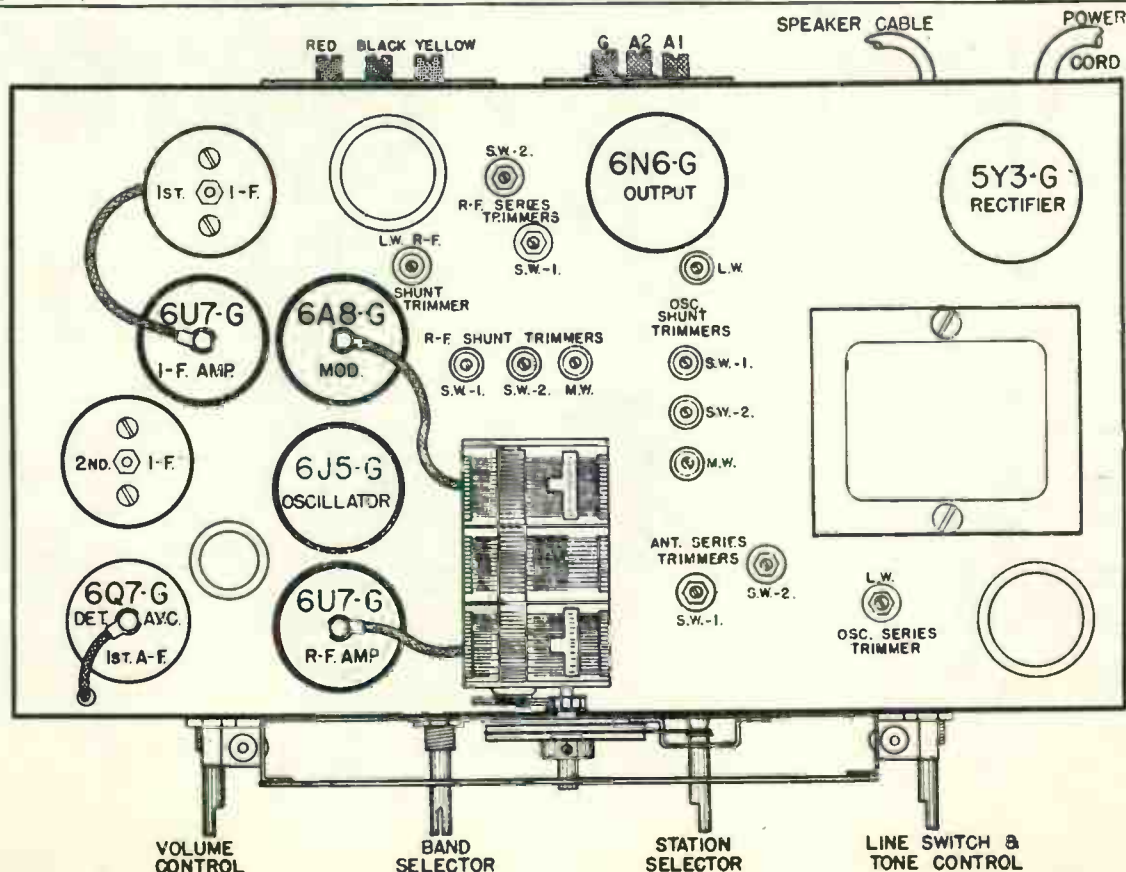
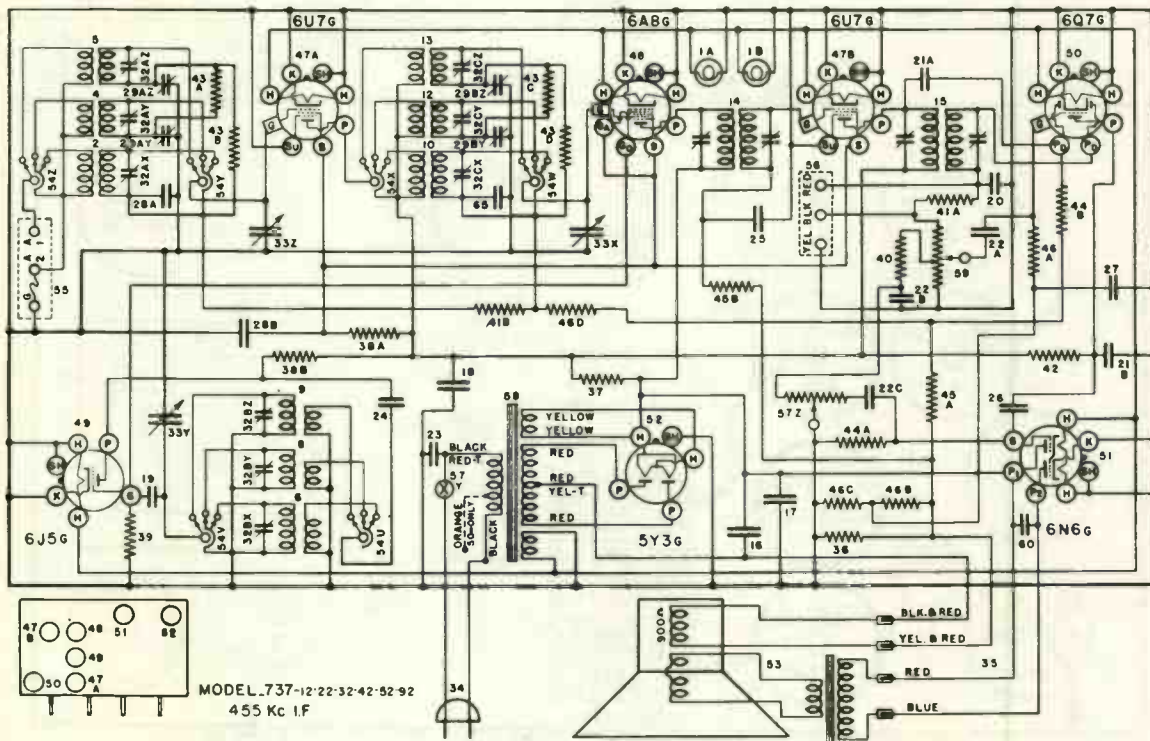
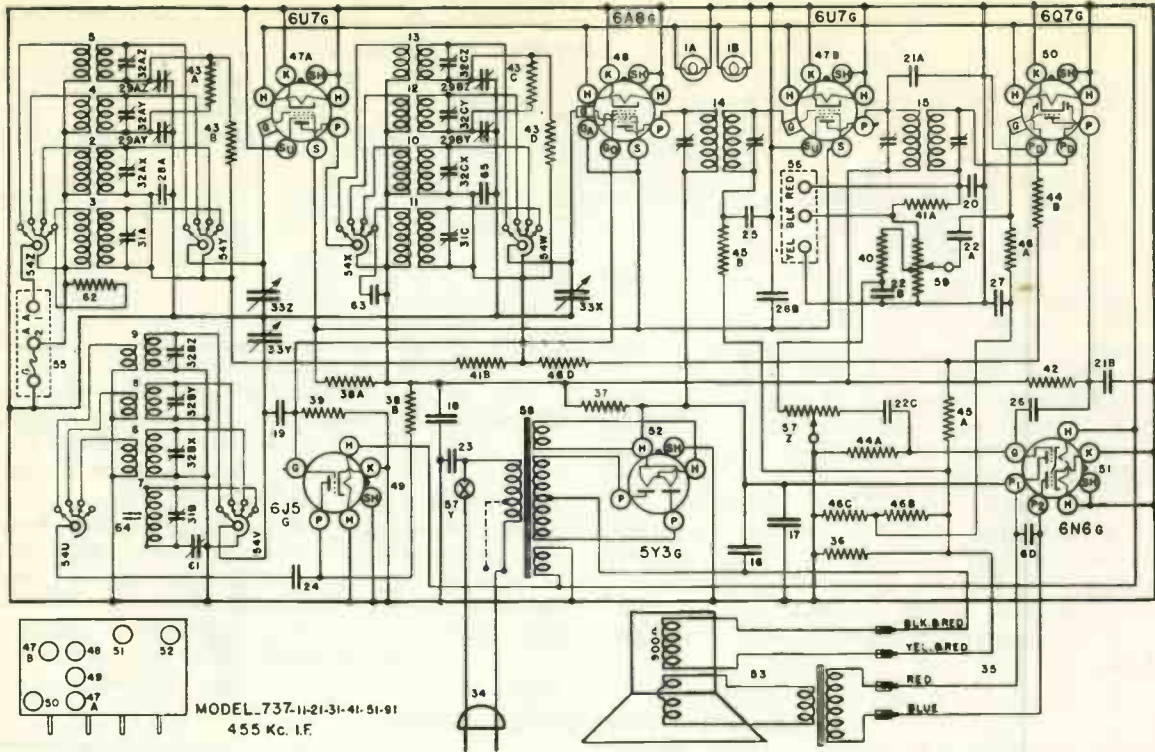


Fig. 2—Top View—Model 737  
401



MODEL 737



PARTS LIST—MODEL 737

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb, 6-8 V.	51	G165—36400	Socket, Type 6N6
	G11 —45398	D. L. Socket Assv.	52	G173—36400	Socket, Type 5Y3
2	G159—32000	Ant. Coil, 180-560 Metres		W —40911	Tube Shield
3	G162—32000	Ant. Coil, 790-2000 Metres (737-1 only)	53	462-BJ-4	Speaker, Spec. No. 1-D-1210 (8-Inch)
4	G161—32000	Ant. Coil, 23-55.6 Metres		—45545	V. C. and Cone Assy.
5	G160—32000	Ant. Coil, 12.5-30 Metres		—45516	Field Coil (900 Ohm—85 M. A.)
6	G132—32002	Osc. Coil, 180-560 Metres		—45547	Output Trans.
7	G165—32002	Osc. Coil, 790-2000 Metres (737-1 only)		—43675	Cardboard Cone Mtg. Ring
8	G163—32002	Osc. Coil, 23-55.6 Metres		662-CJ-4	Speaker Spec. No. 1-D-1242 (12-Inch)
9	G164—32002	Osc. Coil, 12.5-30 Metres		—15518	V. C. and Cone Assy.
10	G98 —32001	R-F. Coil, 180-560 Metres		—45549	Field Coil (900 Ohm—85 M. A.)
11	G101—32001	R-F. Coil, 790-2000 Metres (737-1 only)		—45550	Output Trans.
12	G99 —32001	R-F. Coil, 23-55.6 Metres		—43680	Cardboard Cone Mtg. Ring
13	G100—32001	R-F. Coil, 12.5-30 Metres	54	—15227	Band Change Switch (737-1)
14	G175—32004	1st I-F. Assy., 455 Kc.		—45213	Band Change Switch (737-2)
15	G176—32004	2nd I-F. Assy., 455 Kc.	55	G27 —26719	Ant. and Gnd. Terminal Assy.
16	W —36055B	Condenser, 35 Mf. 400 V. Electrolytic	56	G36 —26719	Phono Terminal Assy.
17	W —44438A	Condenser, 40 Mf. 300 V. Electrolytic	57Z		(Tone Control (1 Meg.))
18	W —44012	Condenser, 16 Mf. 250 V. Electrolytic	57Y		Line Switch
	W —44119	Fibre Washer (Used on Item 16)	58	—45111	Power Trans., 60 Cy.—110 V.
	W —44120	Fibre Washer Extruded (Used on Item 16)		—45114	Power Trans., 50 Cy.—110V.
				—45115	Power Trans., 50 Cy.—220 V.
19	G13 —34002	Condenser, .000035 Mf. Molded		—45112	Power Trans., 25 Cy.—110 V.
20	G2 —34002	Condenser, .0001 Mf. Molded		—45113	Power Trans., 25 Cy.—220 V.
21A	G1 —34002	Condenser, .00025 Mf. Molded	59	—45238	Power Trans., Universal
21B	G1 —34002	Condenser, .00025 Mf. Molded	60	—44773	Vol. Control (1 Meg. Tapped)
22A	W —28619	Condenser, .006 Mf. 200 V. Tubular	61	W —35139	Condenser, .004 Mf. 400 V. Tubular
22B	W —28619	Condenser, .006 Mf. 200 V. Tubular		—45203	L. W. Osc. Series Trimmer Cond. (737-1 only)
22C	W —28619	Condenser, .006 Mf. 200 V. Tubular	62	—24814	Resistor, 7,000 Ohm 1/2 W. Carb. (737-1 only)
23	W —30805	Condenser, .01 Mf. 400 V. Tubular			
24	W —32378	Condenser, .01 Mf. 400 V. Tubular	63	G11 —34002	Condenser, .000175 Mf. Molded (737-1 only)
25	W —28621	Condenser, .02 Mf. 200 V. Tubular			
26	W —23615	Condenser, .05 Mf. 400 V. Tubular	64	G6 —34002	Condenser, .000025 Mf. Molded (737-1 only)
27	W —27216	Condenser, .05 Mf. 200 V. Tubular	65	W —36541	Condenser, .02 Mf. 160 V.
28A	W —35936	Condenser, .05 Mf. 200 V. Tubular		7GH	Cabinet—Table Model (737-1)
28B	W —35936	Condenser, .05 Mf. 200 V. Tubular		7GG	Cabinet—Table Model (737-2)
29AZ		Ant. S. W.-1 Series Trimmer		7TH	Cabinet—Console Model (737-1)
29AY		Ant. S. W.-2 Series Trimmer		7TG	Cabinet—Console Model (737-2)
29BZ		R-F. S. W.-1 Series Trimmer		C —45122	Escutcheon and Lens
29BY		R-F. S. W.-2 Series Trimmer		W —36117	Rubber Mtg. Foot
31	W —44516	Single Shunt Trimmer Cond. (737-1 only)		G1 —42790	Phono Motor Board Assy., 50 Cy.—110 V.
32	W —35951A	3 Section Shunt Trimmer Assv.		G2 —42790	Phono Motor Board Assy., 25 Cy.—110 V.
33	G61 —33002	3 Section Var. Tuning Gang Cond.		G3 —42790	Phono Motor Board Assy., 50 Cy.—220 V.
	MG93—45126	Dial Face and Plate Assy. (737-1)		G4 —42790	Phono Motor Board Assy., 25 Cy.—220 V.
	MG94—45126	Dial Face and Plate Assy. (737-2)		G5 —42790	Phono Motor Board Assy., 60 Cy.—110 V.
	C —45244B	Face Mtg. Bracket		—43530	Phono Motor, 50 Cy.—110 V.
	G7 —43564	Pulley and Hub Assy.		—13531	Phono Motor, 25 Cy.—110 V.
	W —45334A	Pointer		—13532	Phono Motor, 50 Cy.—220 V.
	W —40486	Screw Pointer Mtg.		—13533	Phono Motor, 25 Cy.—220 V.
	W —43542B	Drive Shaft Bracket		—13534	Phono Motor, 60 Cy.—110 V.
	W —45360A	Drive Shaft	G6 —42790	Phono Motor Board Assy., 40 Cy.—110 V.	
	W —43549	Shaft Retaining Ring		—43659	Phono Motor, 40 Cy.—110 V.
	W —41582	Drive Cord (21 Inches)		—43658	Pickup Arm Assy.
	W —43561	Cord Tension Spring		W —33502	Needle Cup
34	B —33906A	Power Cord and Plug		W —33503	Needle Cup Lid
35	G2 —45378	4 Lead Speaker Cable		W —45392	Wall Tap
36	W —23012A	Resistor, 40 Ohms 3/4 W. Flex.		B —33906A	Power Cord and Plug (Phono)
37	W —45212A	Resistor, 1,400 Ohms 1 1/2 W. Flex.		W —27266A	Phono-Radio Switch
38A	—5370A	Resistor, 20,000 Ohms, 1W. Carb.		W —20757A	Switch Plate (Phono-Radio)
38B	—5370A	Resistor, 20,000 Ohms 1W. Carb.		W —45248	Knob (Band Switch) (7TH and 7TG Cab.)
39	—35928	Resistor, 60,000 Ohms 1/4 W. Ins.		W —45375	Knob (Tone Control) (7TH and 7TG Cab.)
40	—36319	Resistor, 75,000 Ohms 1/4 W. Ins.		W —45247	Knob (Vol. Cont. and Station Selector) (7TH and 7TG Cab.)
41A	—35600	Resistor, 100,000 Ohms 1/4 W. Ins.		W —44381B	Knob (Vol. Cont. and Station Selector) (7GH and 7GG Cab.)
41B	—35600	Resistor, 100,000 Ohms 1/4 W. Ins.		W —45389	Knob (Tone Control) (7GH and 7GG Cab.)
42	—34020	Resistor, 250,000 Ohms 1/3 W. Carb.		W —45376	Knob (Band Switch) (7GH and 7GC Cab.)
43A	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
43B	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
43C	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
43D	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
44A	—23785	Resistor, 500,000 Ohms 1/3 W. Carb.			
44B	—23785	Resistor, 500,000 Ohms 1/3 W. Carb.			
45A	—35602	Resistor, 1 Megohm 1/4 W. Ins.			
45B	—35602	Resistor, 1 Megohm 1/4 W. Ins.			
46A	—37245	Resistor, 1.5 Megohm 1/3 W. Carb.			
46B	—37245	Resistor, 1.5 Megohm 1/3 W. Carb.			
46C	—37245	Resistor, 1.5 Megohm 1/3 W. Carb.			
46D	—37245	Resistor, 1.5 Megohm 1/3 W. Carb.			
47	G171—36400	Socket, Type 6U7			
48	G156—36400	Socket, Type 6A8			
49	G186—36400	Socket, Type 6J5			
50	G160—36400	Socket, Type 6Q7			

## MODELS 739, 7739, J-739 AND J-7739

SOCKET VOLTAGE READINGS AT 117.5 VOLT LINE									
Tube	Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8GT	Oscillator-Modulator	—	H	123	80	-11	123	H	—
6SK7	I-F. Amplifier	—	H	—	Grid	—	80	H	123
6P5	Diode	—	H	—	—	Grid	—	H	—
6SF5	1st Audio	—	—	Grid	V.C.	68	—	H	H
25L6	Output	—	H	115	123	Grid	—	H	115
2-25Z6	Rectifier	—	H	117.5 A.C.	220	—	—	H	115

Drop across speaker field 35 volts, 739 -65 volts on 7739.

Drop across Item 33—72 volts.

Maximum power output 4.3 watts @ 125 volts line.

Power consumption @ 117.5 volts line -63 watts.

H=heater.

### CIRCUIT DESCRIPTION

Model 7739 uses a tapped volume control for variable level bass compensation. Models of either chassis in the later series are equipped with terminals for connecting a phonograph attachment.

Models J-739 and J-7739 are the same as models 739 and 7739 except for the following:

Model J-739 differs from Model 739 in that the negative or ground return is isolated from the chassis by a .2 mf.—160 volt condenser. For alignment procedure use same as outlined for Model 739. The voltage readings are the same as given for Model 739 except the MEASUREMENTS SHOULD BE TAKEN BETWEEN SOCKET CONTACTS AND THE LOW SIDE OF THE VOLUME CONTROL.

Model J-7739 is the same as Model 7739 except that Model J-7739 has a 1 to 1 isolating power transformer. For alignment procedure and socket voltages use same as given for the Model 739 etc.

### ALIGNMENT PROCEDURE

All circuits have been accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**NOTE:** The circuit of this receiver is such that if the signal generator has one side of the line connected to the case or ground side and the generator and receiver are plugged into the same line, serious damage may result to either or both instruments. ALWAYS ISOLATE SIGNAL GENERATOR GROUND LEAD BY INSERTING A .01 mf. OR SMALLER CONDENSER IN SERIES WITH THE LEAD BEFORE CONNECTING TO THE CHASSIS.

### CONNECTING OUTPUT METER

One terminal of the output meter should be connected to the plate (No. 3 pin) and the other terminal to the screen (No. 4 pin) of the 25L6GT output tube. Be sure the meter is protected from D. C. by connecting a .25 mf. condenser in series with one of the leads.

#### 1.—I-F Amplifier Alignment

(a) Connect the output lead of the signal generator through a .02 mf. condenser to the top (GRID) cap of the 6A8GT tube (leaving the tubes grid connector in place) or to the antenna lead.

(b) Connect the ground lead of the signal generator through a .01 mf. (or smaller, .001 mf.) condenser to the chassis.

(c) Adjust station selector so that the rotor plates

of the gang are completely disengaged, turn band to B. C. position and turn the volume control to maximum.

(d) Set the signal generator to 455 kc.

(e) Adjust the trimmer condensers on the 2nd I-F transformer for maximum output.

(f) Adjust the trimmer condensers on the 1st I-F transformer for maximum output.

(g) Repeat (e) and (f) for more accurate adjustments. IN ORDER TO PREVENT A. V. C. ACTION, ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2.—Aligning R-F Amplifier

(a) Connect the signal generator output lead through a .0001 mf. condenser to the antenna lead (YELLOW OR BLUE) and the generator ground lead to the Black lead of the receiver. Turn band switch to B. C. band, open gang all the way and turn volume control on full and tone control to treble position.

(b) Set signal generator to 1725 kilocycles. (Generator should be set to 1620 kilocycles for Model 7739).

(c) Adjust B. C. oscillator trimmer for maximum output (receiver does not have to tune through this signal).

(d) Set signal generator to 1400 kilocycles.

(e) Tune in generator signal on receiver by means of manual tuning knob.

(f) Adjust B. C. antenna trimmer for maximum output. DO NOT readjust oscillator trimmer.

(g) Repeat above procedure for more accurate adjustments.

(h) Set signal generator to 600 kilocycles.

(i) Tune in 600 kilocycle signal on receiver. While rocking the gang back and forth adjust the B. C. oscillator series condenser for maximum output.

(j) Repeat operations (d), (e) and (f) to correct any change caused by series alignment.

(k) Connect the signal generator output lead through a 250 ohm carbon resistor to the antenna lead of the receiver. Turn band switch to S. W. position, open gang condenser all the way, and turn volume on full, etc.

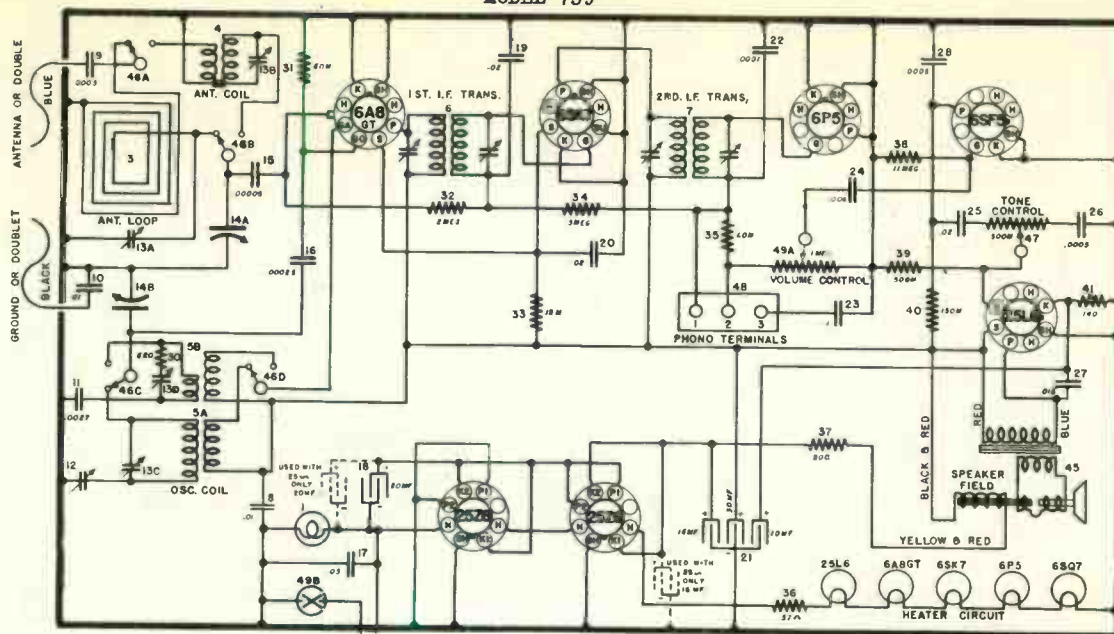
(l) Set signal generator to 18.3 megacycles.

(m) Adjust S. W. oscillator trimmer for maximum output.

(n) Set signal generator to 18 megacycles.

(o) Tune in 18 mc. signal with manual control, then adjust the S. W. antenna trimmer condenser for maximum output.

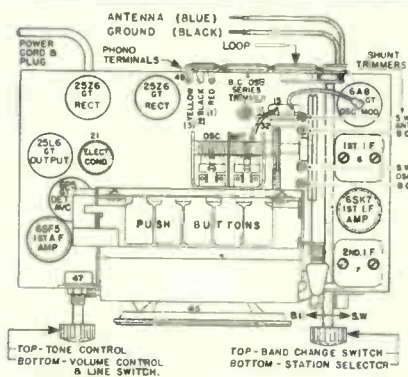
MODEL 739



MODEL --- 739

TUBES MAY BE METAL OR GT TYPES EXCEPT 6A8

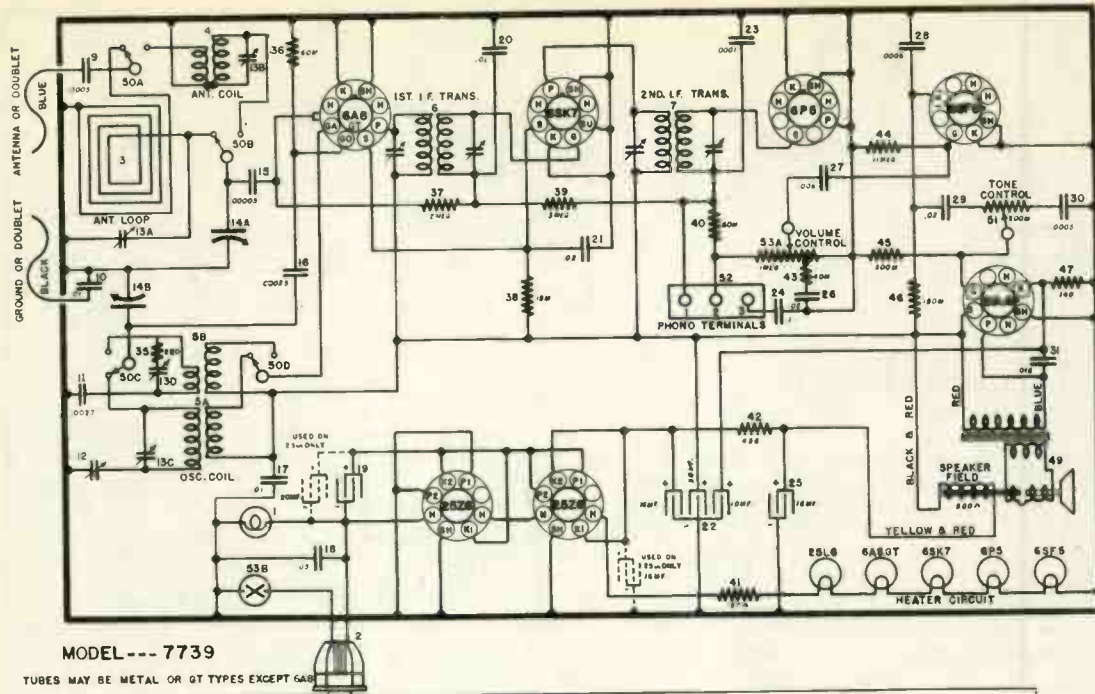
455 KC. I.F.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—47977	Dial Light—110 Volt	48	G51—26719	Phono Terminal Strip
	—47946	Dial Light Socket		—48170	Line Switch and Vol. Control—1 Meg. Push Button Unit (With Gang Cond.)
	—47995	Cover—D. L. Mounting	G4	—48762	P. B. R. Vented Key Assy
2	—48969	Power Cord and Plug	G32	—47880	Screw—Key Adjusting
3	G7—47673	Loop Antenna		—48827	Shaft—P. B. Screw Extension
4	G20—32000	Antenna Coil—S. W.		—38026	Headless Set Screw—Ext. Shaft Mtg.
5	G217—32002	Oscillator Coils A—B. C. Osc. Coil B—S. W. Osc. Coil		—50325	"C" Retaining Washer—Ext. Shaft
6	G221—32004	1st I.F. Transformer		—18101	Spring Washer—Ext. Shaft Friction
7	G188—32004	2nd I.F. Transformer		—18322	Bracket—Key Return Spring Support
8	—23191	Condenser, .01 Mf. 400 V		—48826	Spring—Key Return
9	G3—34002	Condenser, .0005 Mf. Mica	G31	—47880	Rocker Bar and Gear Assy.
10	—23191	Condenser, .01 Mf. 400 V		—30561	Screw—Rocker Bar Bearing
11	G11—34005	Condenser, .00270 Mf. Fixed S. W. Osc. Series		—49084	Glass Dial
12	—38998	B. C. Osc. Series Trimmer Condenser		—47875	Dial Face Background
13	—41247	4 Section Shunt Trimmer Condenser		—47930	Pointer (Dial Hand)
14	G87—33001	2 Section Var. Tuning Condenser	G12	—43564	Pulley and Hub Assy.
15	G5—34002	Condenser, .00005 Mf. Mica		—48100	Drive Shaft
16	G1—34002	Condenser, .00025 Mf. Mica		—43542	Bracket—Shaft Mtg.
17	—45782	Condenser, .05 Mf. 120 V.	G20	—41582	Drive Cord (42 1/2")
18	—49047	Condenser, 20 Mf. 135 V. Elect.		—50390	Spring—Cord Tension
19	—45780	Condenser, .02 Mf. 160 V.	G30	—41582	Clamp—Drive Cord
20	—43780	Condenser, .02 Mf. 160 V.		—46848	Guide Cord (9 1/4")
21	—49014	Condenser, 16-30-10 Mf. 250-135-10 V.	MG20	—47680	Spring—Guide Cord Tension
22	G2—34002	Condenser, .0001 Mf. Mica		—46848	Idle Pulley and Bracket Assy.
23	—50105	Condenser, .1 Mf. 160 V.		—46729	Socket—8 Prong Octal
24	—45810	Condenser, .006 Mf. 160 V.	G2	—44470	Toggle Arm (On Switch)
25	—45780	Condenser, .02 Mf. 160 V.	G6	—44470	Toggle Arm (On Ext. Shaft)
26	—34002	Condenser, .0005 Mf. Mica		—47998	Extension Shaft—Band Switch
27	—30251	Condenser, .015 Mf. 400 V.		9GD	Cabinet
28	G3—34002	Condenser, .0005 Mf. Mica		—48979	Back—Cabinet
29	None			—20881	Screws—Back Mounting
30	—38977	Resistor, 220 Ohms 1/2 W.	MG32	—48103	Escutcheon and Reflector Assy.
31	—35928	Resistor, 60,000 Ohms 1/4 W.		—48018	Reflector—Call Letter
32	—35927	Resistor, 2 Megohms 1/4 W.		—48167	Bracket—Escutcheon Mtg.
33	—36318	Resistor, 15,000 Ohms 1/4 W.	S	—80	Screw—Escutcheon Bracket Mtg.
34	—35777	Resistor, 2 Megohms 1/4 W.	MG36	—47861	Push Button and Hinge Assy.
35	—21237	Resistor, 60,000 Ohms 1/2 W.	MG21	—47860	Riv. P. B. Hinge Assy.
36	—47857	Resistor, 57 Ohms 7 W.		—48016	Rod—P. B. to Hinge Mtg.
37	—47873	Resistor, 900 Ohms 7 W.		—48729	Push Button
38	—46497	Resistor, 11 Megohms 1/2 W.		—48730	Insert—Push Button
39	—23785	Resistor, 500,000 Ohms 1/4 W.		—48837	Light Deflector Feit
40	—23403	Resistor, 150,000 Ohms 1/4 W.		—46953	Knob
41	—47512	Resistor, 140 Ohms 1/4 W.		—48900	Screw—Chassis to Cab. Mtg.
42	None			—45020	Washer—Chassis to Cab. Mtg.
43	None			—49089	Instruction Booklet
44	None			—49352	Phono Instruction
45	281-BL-7	Speaker		—49284	Short Wave Station Chart
	—48830	Bracket—Speaker Mounting		—48734	Station Call Letters
	—48829	Bracket—Speaker Mounting		—48747	Celluloid Covers—Call Letter
	—48828	Plate—Speaker Mounting	MG31	—47966	Instruction Envelope Assy.
46	—47993	Band Switch (Without Loop)			
	—49058	Band Switch (With Loop)			
47	—48181	Tone Control Switch			

MODEL 7739



MODEL --- 7739

TUBES MAY BE METAL OR OF TYPES EXCEPT GAS

455 K.C. I. F.

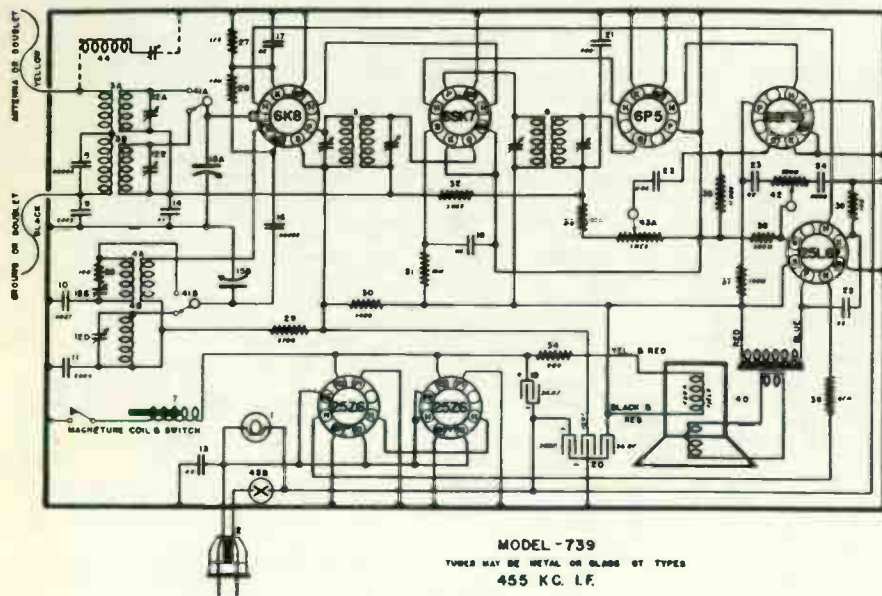
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	-47977	Dial Light—110 Volt	52	G51	Phono Terminal Board
	-17946	Socket—Dial Light		-49338	Line Switch and Vol. Control—1 Mex.
	-48105	Pracket—Dial Light Mtg.	53	G4	Push Button Tuning Unit (With Gang
	-48169	Cover—Dial Light		-18762	Condenser) Mechanical
2	-45769	Power Cord and Plug		G32	Push Button Tuning Unit only
3	G5	Loon Antenna (R. C.)		-47890	P. B. Riveted Key Assy.
4	G208	Antenna Coil (S. W.)		-17877	Screw—Key Adjusting
5	G216	Oscillator Coils		-18827	Shaft—P. B. Screw Extension
		A—B. C. Band		-38056	Headless Set Screw—Ext. Shaft
		B—S. W. Band		-50325	"C" Washer—Ext. Shaft Retaining
6	G221	1st I-F. Assy. (455 Kc.)		-48104	Spring Washer—Ext. Shaft Friction
7	G188	2nd I-F. Assy. (455 Kc.)		-48322	Pracket—Key Return Spring Support
8	None			-18826	Spring—Key Return
9	G3	Condenser, .0005 Mf. Mica		G31	Rocker Bar and Gear Assy.
10	-23191	Condenser, .01 Mf. 400 V.		-50561	Screw—Rocker Bar Bearing
11	G11	Condenser, .00270 Mf. S. W. (See Series		-48022	R. H. Pracket—P. B. Unit Mtg.
12	38898	Condenser, B. C. Osc. Series Trimmer		-18023	L. H. Pracket—P. B. Unit Mtg.
13	-11217	Condenser, 4 Section Var. Tuning Gang		-49059	Glass Dial
14	C87	Section Var. Tuning Gang	MG12	-47980	Pracket—Dial Glass Support
15	G5	Condenser, .00005 Mf. Mica		MG20	Idler Pracket Assy.
16	G1	Condenser, .00025 Mf. Mica		-16090	L. H. Clip—Dial Glass Mtg.
17	-23191	Condenser, .01 Mf. 400 V.		-48187	R. H. Clip—Dial Glass Mtg.
18	-45782	Condenser, .05 Mf. 120 V.		-48084	Cushion—Dial Glass
19	-45917	Condenser, 20 Mf. 135 V. Elect.	G12	-43564	Pulley and Hub Assy.
20	-45780	Condenser, .02 Mf. 160 V.		-18032	Pointer (Dial Hand)
21	-45780	Condenser, .02 Mf. 160 V.		-40056	Drive Shaft—Manual
22	-40011	Condenser, 16-30-10 Mf. Elect.		-43542	Pracket—Drive Shaft Mtg.
23	G2	Condenser, .001 Mf. Mica	G37	-41582	Drive Cord (42")
24	-30106	Condenser, 1 Mf. 160 V.	C31	-41582	Guide Cord (14") Pointer Bottom
25	-46128	Condenser, 16 Mf. 250 V.	G20	-41582	Guide Cord (9 1/2") Pointer Top
26	W	Condenser, .02 Mf. 160 V.		-50500	Spring—Drive Cord Tension
27	-15810	Condenser, .006 Mf. 160 V.		-16848	Spring—Guide Cord Tension (Bottom)
28	G3	Condenser, .0005 Mf. Mica		-16790	Clamp—Drive Cord
29	-45780	Condenser, .02 Mf. 160 V.	G6	-44170	Toggle Arm Assy. (Mts. on Ext. Shaft)
30	G3	Condenser, .0005 Mf. Mica	G2	-44170	Toggle Arm Assy. (Mts. on B.C. Switch)
31	-30251	Condenser, .015 Mf. 400 V.		-47989	Extension Shaft—B. C. Switch
32	None			-50325	"C" Washer—Shaft Retaining (Ext.)
33	None			-18558	Felt Strip (8 1/2" x 3/4")
34	None			-18837	Light Deflector Felt
35	-38977	Resistor, 250 Ohms 1/2 W.		GC11	Cabinet
36	-35528	Resistor, 60,000 Ohms 1/2 W.		-47932	Cabinet Pack
37	-35527	Resistor, 9 Megohms 1/2 W.		-16464	Thumb Screw—Back Mtg.
38	-26318	Resistor, 15,000 Ohms 1/2 W.		47831	Shipping Carton
39	-25577	Resistor, 3 Megohms 1/2 W.		-18043	Escutcheon
40	21227	Resistor, 60,000 Ohms 1/2 W.		-48539	Screw—Escutcheon Mtg.
41	17857	Resistor, 57 Ohms 7W.	MG36	-47861	P. B. and Hinge Assy.
42	-48031	Resistor, 450 Ohms 5W.	MG21	-47860	Hinge Assy. (P. B.)
43	-21453	Resistor, 40,000 Ohms 1/2 W.		-48729	Push Button
44	-16197	Resistor, 11 Megohms 1/2 W.		-48730	Insert—Push Button
45	23785	Resistor, 500,000 Ohms 1/2 W.		-48016	Rod—Push Button to Hinge Mtg.
46	-23103	Resistor, 150,000 Ohms 1/2 W.		-47960	Knob (4)
47	-17512	Resistor, 110 Ohms 1/2 W.		-48750	Call Letter Sheet
48	None			-48748	Celluloid Cover (Call Letter)
49	495-DP-10" R"	Speaker, Mfg. Spec. No. F-5729	MG25	-47981	Instruction Envelope Assy.
	-18616	V. C. and Cone Assy.		G1	Antenna Beard Assy.
	-13978	Cardboard Ring—Cone Mtg.		-48088	Instruction Booklet
	-18625	Output Transformer		-19352	Phono Instruction
	-48026	Field Coil		-49294	Short Wave Station Chart
	-49058	Band Change Switch		-161	Chassis Mtg. Screw
50	-48337	Tone Control Switch	R	-45579	Chassis Mtg. Washer

MISCELLANEOUS PARTS FOR MODELS WITH ELECTRICAL TUNING UNIT

Figures in first column refer to parts in Diagrams.

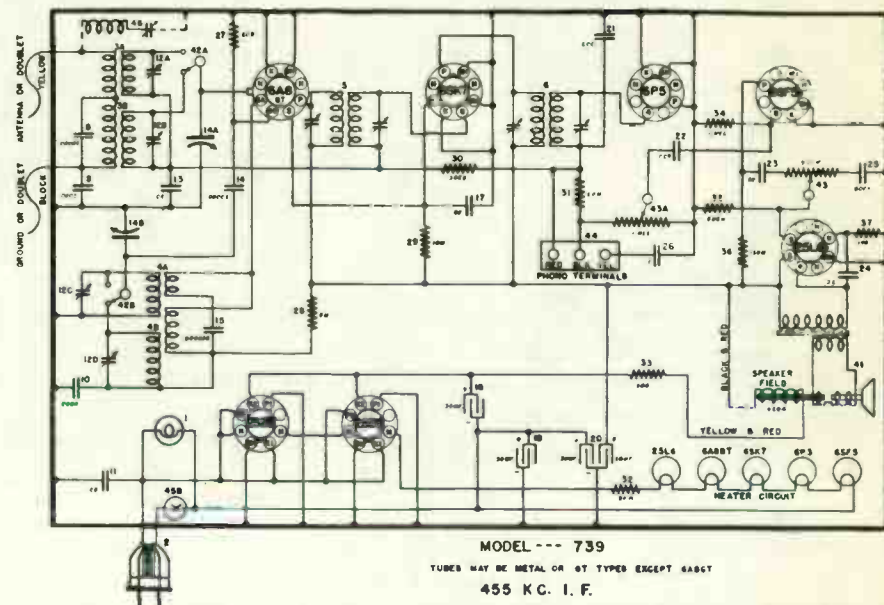
Item No.	Part No.	Description	Item No.	Part No.	Description
G1	-47880	Magnetone Push Button Tuning Unit		-48016	Rod—P. B. to Hinge Mtg.
G32	-47880	Riveted Key Assy.		-48131	Light Deflector Felt
	-47878	Push Button Shaft—(Adj. Screw Ext.)		-18113	Glass Dial—Model 739
	-50325	"C" Washer—P. B. Shaft Retaining		-17994	Glass Dial—Model 7739 (7 1/2" Wide)
	-48104	Spring Washer—P. B. Shaft Friction		-17991A	Glass Dial—Model 7739 (8" Wide)
	-38056	Set Screw—P. B. Shaft		-48202	Instructions—Model 7739
	-47877	Adjusting Screw (Station Setting)		-48194	Instructions—Model 739
	-47953	Spring—Key Return		-46165	Knobs—Model 739
	-48654	Solenoid Rocker Plate		-17060	Knobs—Model 7739
G31	-47880	Rocker Bar and Gear Assy.	G8	-47866	P. B. Contact Switch (Magnetone)
	-50561	Screw—Rocker Bearings	G2	-47866	Blade Contact (Magnetone)
MG27	-47880	Riveted Armature Assy.	G3	-47866	Bottom Contact (Magnetone)
G1	-47509	Solenoid Coil Assy.	G7	-47866	Top Contact (Magnetone)
MG21	-47860	Riveted P. B. Hinge Assy.		-44635	Switch Blade Spring
	-47767	Push Button			



“MAGNETUNE”—MODEL 739—WIRING DIAGRAM  
PARTS LIST

1	W	-47977	Bulb, Dial Light 110 V
2	B	-45769A	Cable and Plug
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G202-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G229-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7	G2	-47909	Coil, Solenoid
8	G5	-34002	Condenser, .00005 Mf. Mica
9	G3	-34002	Condenser, .0005 Mf. Mica
10	G11	-34005	Condenser, .0027 Mf. Mica
11	G18	-34002	Condenser, .0004 Mf. Mica
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45782B	Condenser, .05 Mf. 120 V. Paper
14	W	-45936	Condenser, .05 Mf. 200 V. Paper
15A	G80	-33001	Var. Condenser, Antenna Section
15B			Var. Condenser, Oscillator Section
16	G5	-34002	Condenser, .00005 Mf. Mica
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-45780B	Condenser, .02 Mf. 160 V. Paper
19	W	-47702	Condenser, 30 Mf. 125 V. Elect.
20	W	-47809	Cond., 30-30-10 Mf. 135 V. Elect.
21	G2	-34002	Condenser, .0001 Mf. Mica
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper

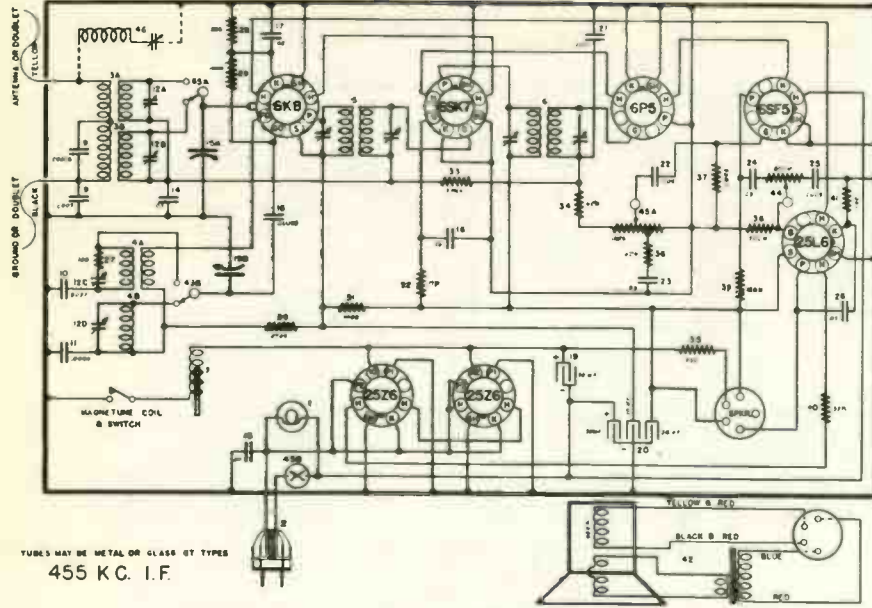
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	G3	-34002	Condenser, .0005 Mf. Mica
25	W	-45817B	Condenser, .05 Mf. 160 V. Paper
26		-48293	Resistor, 100 Ohms ½ W. Carb.
27		-38977	Resistor, 220 Ohms ½ W. W. W.
28		-21453	Resistor, 40,000 Ohms ½ W. Carb.
29		-31093	Resistor, 2,700 Ohms ½ W. Carb.
30	W	-27503	Resistor, 1,400 Ohms ¾ W. Flex.
31		-22831	Resistor, 15,000 Ohms ½ W. Carb.
32		-26577	Resistor, 3 Megohms ½ W. Carb.
33		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
34	W	-47873	Resistor, 900 Ohms 7W. Flex.
35		-46497	Resistor, 11 Megohms ½ W. Carb.
36		-23785	Resistor, 500,000 Ohms ½ W. Carb.
37		-23403	Resistor, 150,000 Ohms ½ W. Carb.
38	W	-47857	Resistor, 57 Ohms 7W. Flex.
39	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
40	B	-46774A	Speaker, 281 BL7
41A		-47993	Switch, Band Chg.
41B			Switch, Band Chg.
42		-48181B	Tone Control, 500M.
43A		-48170	Volume Control, 1 Meg.
43B			Switch, Power
44	G193-32004		Wave Trap



MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 739—WIRING DIAGRAM  
PARTS LIST

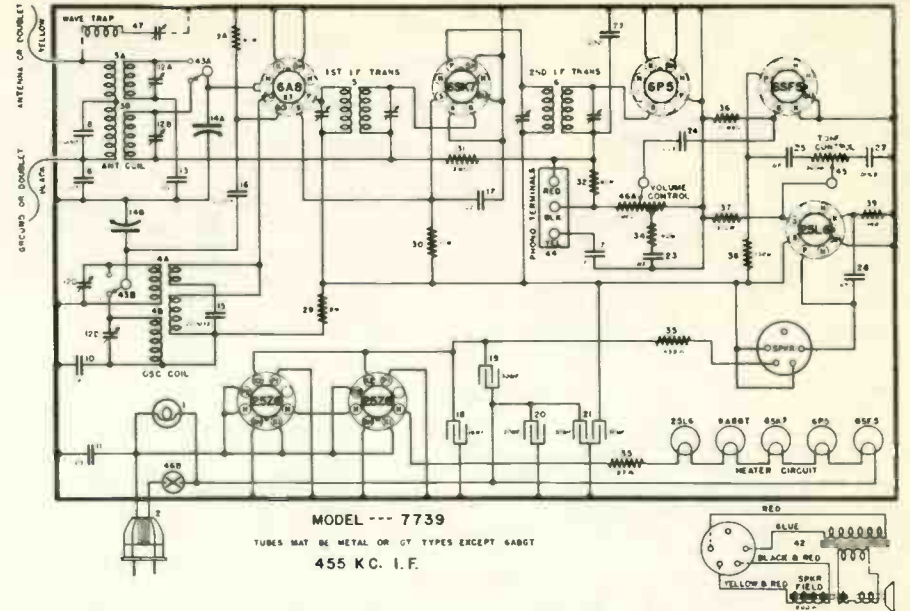
1	W	-47977	Bulb, Dial Light 110 V.
2	B	-45769A	Cord and Plug, Power
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G206-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G221-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7			
8	G5	-34002	Condenser, .00005 Mf. Mica
9	G3	-34002	Condenser, .0005 Mf. Mica
10	G18	-34002	Condenser, .0004 Mf. Mica
11	W	-45782B	Condenser, .05 Mf. 120 V. Paper
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45780B	Condenser, .02 Mf. 160 V. Paper
14A	G80	-33001	Var. Condenser, Antenna Section
14B			Var. Condenser, Oscillator Section
15	G13	-34002	Condenser, .00035 Mf. Mica
16	G5	-34002	Condenser, .00005 Mf. Mica
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-47702	Condenser, 30 Mf. 150 V. Elect.
19	W	-47702	Condenser, 30 Mf. 150 V. Elect.
20	W	-47892	Condenser, 30-30 Mf. 135 V. Elect.
21	G2	-34002	Condenser, .0001 Mf. Mica
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper

23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	W	-45817B	Condenser, .05 Mf. 160 V. Paper
25	G3	-34002	Condenser, .0005 Mf. Mica
26	W	-50105	Condenser, .1 Mf. 160 V. Paper
27		-21237	Resistor, 60,000 Ohms ½ W. Carb.
28		-37905	Resistor, 8,000 Ohms ½ W. Ins.
29		-36317	Resistor, 10,000 Ohms ½ W. Ins.
30		-26577	Resistor, 3 Megohms ½ W. Carb.
31		-21237	Resistor, 60,000 Ohms ½ W. Carb.
32	W	-47857	Resistor, 57 Ohms 7W. Flex.
33	W	-47873	Resistor, 900 Ohms 7W. Flex.
34		-46497	Resistor, 11 Megohms ½ W. Carb.
35		-23785	Resistor, 500,000 Ohms ½ W. Carb.
36		-23403	Resistor, 150,000 Ohms ½ W. Carb.
37	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
38			
39			
40			
41	B	-46774A	Speaker, 281-BL-7
42A		-47993	Switch, Band Chg.
42B			Switch, Band Chg.
43		-48181B	Switch, Tone Control, ½ Meg.
44	G41	-26719	Terminal Board Phono.
45A		-48170	Volume Control, 1 Meg.
45B			Switch, Power
46	G193-32004		Wave Trap



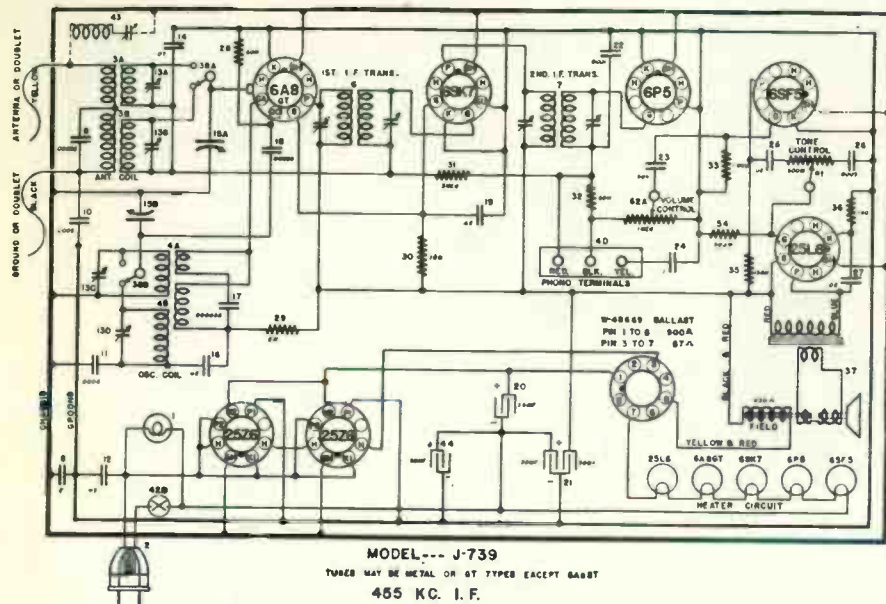
"MAGNETUNE"—MODEL 7739—WIRING DIAGRAM  
PARTS LIST

1	W	-47977	Bulb, Dial Light 110 V.
2	B	-45769A	Cable and Plug, Power
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G202-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G229-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7	G2-47909	Coil, Solenoid	
8	G5-34002	Condenser, .00005 Mf. Mica	
9	G3-34002	Condenser, .0005 Mf. Mica	
10	G11-34005	Condenser, .0027 Mf. Mica	
11	G18-34002	Condenser, .0004 Mf. Mica	
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45782B	Condenser, .05 Mf. 120 V. Paper
14	W	-35936	Condenser, .05 Mf. 200 V. Paper
15A	G80-33001	Var. Condenser, Antenna Section	
15B		Var. Condenser, Oscillator Section	
16	G5-34002	Condenser, .00005 Mf. Mica	
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-45780B	Condenser, .02 Mf. 160 V. Paper
19	W	-47702	Condenser, 30 Mf. 125 V. Elect.
20	W	-47809	Cond., 30-30-10 Mf. 135 V. Elect.
21	G2-34002	Condenser, .0001 Mf. Mica	
22	W	-45810B	Condenser, .006 Mf. 160 V. Paper
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	W	-45780B	Condenser, .02 Mf. 160 V. Paper
25	G3-34002	Condenser, .0005 Mf. Mica	
26	W	-45817B	Condenser, .05 Mf. 160 V. Paper
27		-48293	Resistor, 100 Ohms ½ W. Carb.
28		-38977	Resistor, 220 Ohms ½ W. W.
29		-21453	Resistor, 40,000 Ohms ½ W. Carb.
30		-31093	Resistor, 2,700 Ohms ½ W. Carb.
31	W	-27503	Resistor, 1,400 Ohms ¼ W. Flex.
32		-22831	Resistor, 15,000 Ohms ½ W. Carb.
33		-26577	Resistor, 3 Megohms ½ W. Carb.
34		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
35	W	-48031	Resistor, 450 Ohms 5 W. Flex.
36		-21453	Resistor, 40,000 Ohms ½ W. Carb.
37		-46497	Resistor, 11 Megohms ½ W. Carb.
38		-23785	Resistor, 500,000 Ohms ½ W. Carb.
39		-23403	Resistor, 150,000 Ohms ½ W. Carb.
40	W	-47857	Resistor, 57 Ohms 7 W. Flex.
41	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
42	C	-47920	Speaker, 495-BP-10
43A		-47993	Switch, Band Change
43B			Switch, Band Change
44		-48020B	Tone Control, 500M.
45A		-48019	Volume Control, 1 Meg.
45B			Switch, Power
46	G193-32004	Wave Trap	



MECHANICAL PUSH BUTTON (NO LOOP)—MODEL 7739—WIRING DIAGRAM  
PARTS LIST

1	W	-47977	Bulb, Dial Light 110 V.
2	B	-45769A	Cable and Plug, Power
3A	G201-32000	Coil, S. W. Antenna	
3B		Coil, B. C. Antenna	
4A	G206-32002	Coil, S. W. Oscillator	
4B		Coil, B. C. Oscillator	
5	G221-32004	1st I-F. Transformer	
6	G188-32004	2nd I-F. Transformer	
7	W	-50105	Condenser, .1 Mf. 160 V. Paper
8	G5-34002	Condenser, .00005 Mf. Mica	
9	G3-34002	Condenser, .0005 Mf. Mica	
10	G18-34002	Condenser, .0004 Mf. Mica	
11	W	-45782B	Condenser, .05 Mf. 120 V. Paper
12	W	-41247A	Condenser Shunt Trimmer Assy.
13	W	-45780B	Condenser, .02 Mf. 160 V. Paper
14A	G80-33001	Var. Condenser, Antenna Section	
14B		Var. Condenser, Oscillator Section	
15	G13-34002	Condenser, .000035 Mf. Mica	
16	G5-34002	Condenser, .00005 Mf. Mica	
17	W	-45780B	Condenser, .02 Mf. 160 V. Paper
18	W	-48122	Condenser, 16 Mf. 250 V. Elect.
19	W	-47702	Condenser, 30 Mf. 150 V. Elect.
20	W	-47702	Condenser, 30 Mf. 50 V. Elect.
21	W	-47892	Condenser, 30-30 Mf. 135 V. Elect.
22	G2-34002	Condenser, .0001 Mf. Mica	
23	W	-45780B	Condenser, .02 Mf. 160 V. Paper
24	W	-45810B	Condenser, .006 Mf. 160 V. Paper
25	W	-45780B	Condenser, .02 Mf. 160 V. Paper
26	W	-45817B	Condenser, .05 Mf. 160 V. Paper
27	G3-34002	Condenser, .0005 Mf. Mica	
28		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
29		-37905	Resistor, 8,000 Ohms ½ W. Ins.
30		-36317	Resistor, 10,000 Ohms ½ W. Ins.
31		-26577	Resistor, 3 Megohms ½ W. Carb.
32		-21237A	Resistor, 60,000 Ohms ½ W. Carb.
33	W	-47857	Resistor, 57 Ohms 7 W. Flex.
34		-21453	Resistor, 40,000 Ohms ½ W. Carb.
35	W	-47873	Resistor, 900 Ohms 7 W. Flex.
36		-46497	Resistor, 11 Megohms ½ W. Carb.
37		-23785	Resistor, 500,000 Ohms ½ W. Carb.
38		-23403	Resistor, 150,000 Ohms ½ W. Carb.
39	W	-47512	Resistor, 140 Ohms ¾ W. Flex.
40			
41			
42	C	-47920	Speaker, 495-BP-10
43A		-47993	Switch, Band Chg., Antenna
43B			Switch, Band Chg., Oscillator
44	G41-26719	Terminal Board, Phono.	
45		-48020	Tone Control, 500M.
46A		-48019	Volume Control, 1 Meg.
46B			Switch, Power
47	G193-32004	Wave Trap	

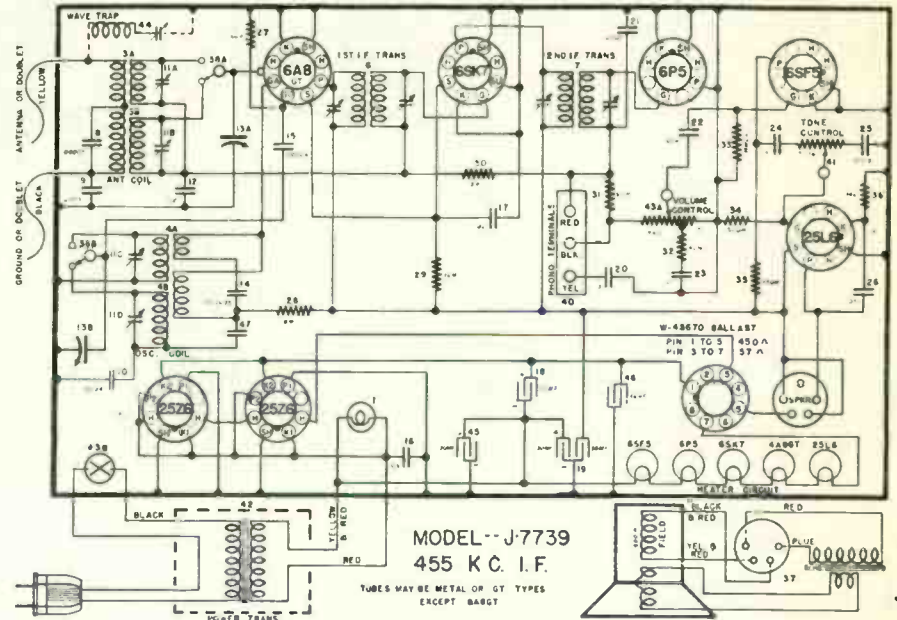


MODEL--- J-739  
TUBES MAY BE METAL OR GT TYPES EXCEPT 6A8BT  
455 K.C. I.F.

MODEL J-739—WIRING DIAGRAM  
PARTS LIST

1	-47977	Dial Lamp, 110 Volt	24	-50105	Condenser, .1 Mf. 160 V.
2	-45769	Power Cord and Plug	25	-45780	Condenser, .02 Mf. 160 V.
3	G201-32000	Antenna Coils Assy. A—Short Wave Antenna Coil B—Broadcast Antenna Coil	26	G3 -34002	Condenser, .0005 Mf. Mica
4	G208-32002	Oscillator Coils Assy. A—Short Wave Oscillator Coil B—Broadcast Oscillator Coil	27	-45817	Condenser, .05 Mf. 160 V.
5	None		28	-21237	Resistor, 60,000 Ohms 1/2 W.
6	G221-32004	1st I-F. Assy.	29	-37905	Resistor, 8,000 Ohms 1/4 W.
7	G188-32004	2nd I-F. Assy.	30	-36317	Resistor, 10,000 Ohms 1/4 W.
8	-48686	Condenser, .2 Mf. 160 V.	31	-26577	Resistor, 3 Megohms 1/2 W.
9	G5 -34002	Condenser, .00005 Mf. Mica	32	-21237	Resistor, 60,000 Ohms 1/2 W.
10	G3 -34002	Condenser, .0005 Mf. Mica	33	-46497	Resistor, 11 Megohms 1/2 W.
11	G18 -34002	Condenser, .0004 Mf. Mica	34	-23785	Resistor, 500,000 Ohms 1/2 W.
12	-45782	Condenser, .05 Mf. 120 V.	35	-23403	Resistor, 150,000 Ohms 1/2 W.
13	-41247	4 Sect. Shunt Trimmer Cond. Assy.	36	-48753	Resistor, 140 Ohms 1W.
14	-45780	Condenser, .02 Mf. 160 V.	37	281-UL-7	Speaker
15	G80 -33001	2 Section Var. Tuning Gang Cond.	38	-47993	Band Switch (No Loop)
16	-45780	Condenser, .02 Mf. 160 V.	38	-49058	Band Switch (With Loop)
17	G13 -34002	Condenser, .000035 Mf. Mica	39	None	
18	G5 -34002	Condenser, .00005 Mf. Mica	40	G41 -26719	Phono Terminal Board
19	-45780	Condenser, .02 Mf. 160 V.	41	-48181	Tone Control, 500,000 Ohms
20	-47702	Condenser, 30 Mf. 125 V.	42	-47858	Line Sw. and Vol. Control (1 Meg.)
21	-48596	Condenser, 30-30 Mf. 135 V.	43	G193-32004	Wave Trap (Not Used on Any Loop Models)
22	G2 -34002	Condenser, .0001 Mf. Mica	44	-47702	Condenser, 30 Mf. 125 V.
23	-45810	Condenser, .006 Mf. 160 V.		-48795	Instruction Booklet
				MG31-48576	Instruction Envelope Assy.
				-48669	Ballast Resistor

For miscellaneous parts not listed use Model 739 Parts List.



MODEL-- J-7739  
455 K.C. I.F.  
TUBES MAY BE METAL OR GT TYPES EXCEPT 6A8BT

MODEL J7739—WIRING DIAGRAM  
PARTS LIST

1	-47977	Dial Lamp, 110 Volt	24	-45780	Condenser, .02 Mf. 160 V.
2	-45769	Power Cord and Plug	25	G3 -34002	Condenser, .0005 Mf. Mica
3	G201-32000	Antenna Coils Assy. A—S. W. Antenna Coil B—B. C. Antenna Coil	26	-45817	Condenser, .05 Mf. 160 V.
4	G206-32002	Oscillator Coils Assy. A—S. W. Oscillator Coil B—B. C. Oscillator Coil	27	-21237	Resistor, 60,000 Ohms 1/2 W.
5	None		28	-37905	Resistor, 8,000 Ohms 1/4 W.
6	G221-32004	1st I-F. Assy.	29	-36317	Resistor, 10,000 Ohms 1/4 W.
7	G188-32004	2nd I-F. Assy.	30	-26577	Resistor, 3 Megohms 1/2 W.
8	G5 -34002	Condenser, .00005 Mf. Mica	31	-21237	Resistor, 60,000 Ohms 1/2 W.
9	G3 -34002	Condenser, .0005 Mf. Mica	32	21453	Resistor, 40,000 Ohms 1/2 W.
10	G18 -34002	Condenser, .0004 Mf. Mica	33	-46497	Resistor, 11 Megohms 1/2 W.
11	-41247	4 Sect. Shunt Trimmer Cond. Assy.	34	-36322	Resistor, 500,000 Ohms 1/2 W.
12	-45780	Condenser, .02 Mf. 160 V.	35	-23403	Resistor, 150,000 Ohms 1/2 W.
13	G80 -33001	2 Section Var. Tuning Condenser	36	-48753	Resistor, 140 Ohms 1W.
14	G13 -34002	Condenser, .000035 Mf. Mica	37	-495-BP-10	Speaker
15	G5 -34002	Condenser, .00005 Mf. Mica	38	-47993	Band Switch (No Loop)
16	-45782	Condenser, .05 Mf. 120 V.	38	-49058	Band Switch (With Loop)
17	-45780	Condenser, .02 Mf. 160 V.	39	None	
18	-47702	Condenser, 30 Mf. 125 V.	40	G41 -26719	Phono Terminals
19	-48596	Condenser, 30-30 Mf. 135 V.	41	-48020	Tone Control, 500,000 Ohms
20	-50105	Condenser, .1 Mf. 160 V.	42	-48650	Power Transformer
21	G2 -34002	Condenser, .0001 Mf. Mica	43	-48019	Line Sw. and Vol. Control (1 Meg.)
22	-45810	Condenser, .006 Mf. 160 V.	44	G193-32004	Wave Trap
23	-45780	Condenser, .02 Mf. 160 V.	45	-47702	Condenser, 30 Mf. 125 V.
			46	-48122	Condenser, 16 Mf. 250 V.
			47	-457E0	Condenser, .02 Mf. 160 V.
				-48670	Ballast Resistor

For miscellaneous parts not listed use Model 7739 Parts List.



**MODEL 746-61  
MODEL 746-62**

**VALVE HOLDER VOLTAGE READINGS**

Valve	Function	H	P	S	G	Su	K	Ga	Go
6K7	R. F. Amp.	6.3	95	52	—	1.3	1.3	—	—
6A8	Osc. Mod.	6.3	95	52	—	—	1.7	90	—
6K7	I. F. Amp.	6.3	95	52	—	1.5	1.5	—	—
6Q7	Det. A. F. Amp. A. V. C.	6.3	25	—	—	—	—	—	13
25A6	Output	25	90	96	—	—	—	—	1.2
25Z6	Rectifier	25	96	—	—	—	—	—	—
W-40655	Ballast	Variable							

Power output approximately 1 watt (2 watts on 220 V. supply mains).

Power consumption approx. 60 watts.

Voltage drop across speaker field approx. 105 V.

All readings taken on 117.5 Volt A. C. supply mains.

All voltages except filaments will be approx. 40% higher when measured on 220 Volt supply mains.

**1. Tuning the I.F. Amplifier to 462 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I. F. amplifier valve leaving the valve's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd. or larger condenser to the frame of the variable condenser gang.

(b) Set the station selector to read between 60 and 70 on the dial, turn the band selector to the Yellow Band, turn volume control to the right (on) and the tone control to the left (Treble).

(c) Set the signal generator to 462 Kilocycles.

(d) Adjust both trimmers on top of the 2nd I. F. transformer (Item 13) Fig. 2, for maximum output.

(e) Transfer the output lead of the signal generator from the 6K7 to the grid cap of the 6A8 Osc.-Mod. valve leaving the valve's grid clip in place.

(f) Close the middle trimmer on the 1st I. F. transformer (Item 12) Fig 2, so that it is moderately tight (DO NOT FORCE ADJUSTING SCREW).

(g) Adjust top and bottom trimmer for maximum output on the 1st I. F.

(h) Transfer the lead of the signal generator from the 6A8 valve to the Ant. terminal of the receiver and increase the output of the signal generator if necessary.

(i) Check the adjustment of the bottom trimmer of the 1st I. F. transformer. Then adjust the middle trimmer by opening until maximum output is obtained. **DO NOT READJUST TOP OR BOTTOM TRIMMER AFTER THE MIDDLE TRIMMER HAS BEEN ADJUSTED.**

**ALIGNING R-F AMPLIFIER**

When aligning the R. F. amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the YELLOW and RED bands a .0002 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (YELLOW and RED band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig 4) and "Ant" (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

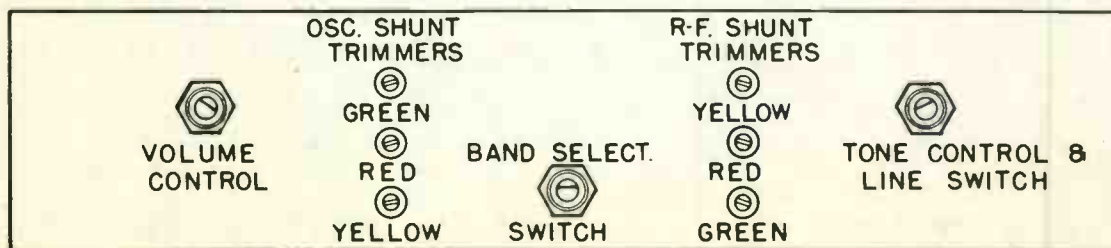
(b) To align the "OSC" series trimmers, Fig. 2, set the band selector switch to the band to be aligned and the signal generator as indicated in (C) for each adjustment; then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

**(C) SIGNAL INPUT FREQUENCIES**

	Shunt Aligned	Series Aligned
YELLOW	1700 Kc. (176.5M.)	600 Kc. (500 M.)
RED	370 Kc. (812 M.)	150 Kc. (2000 M.)
GREEN	18000 Kc. 16.65 M.)	

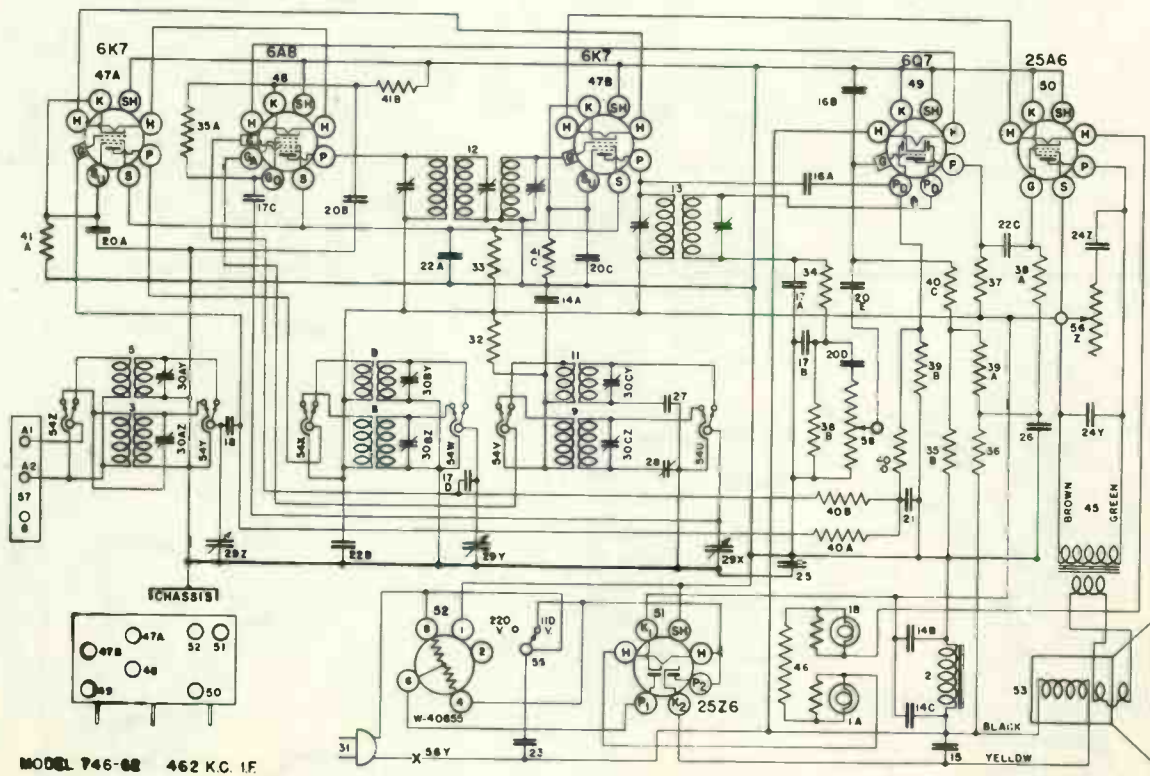
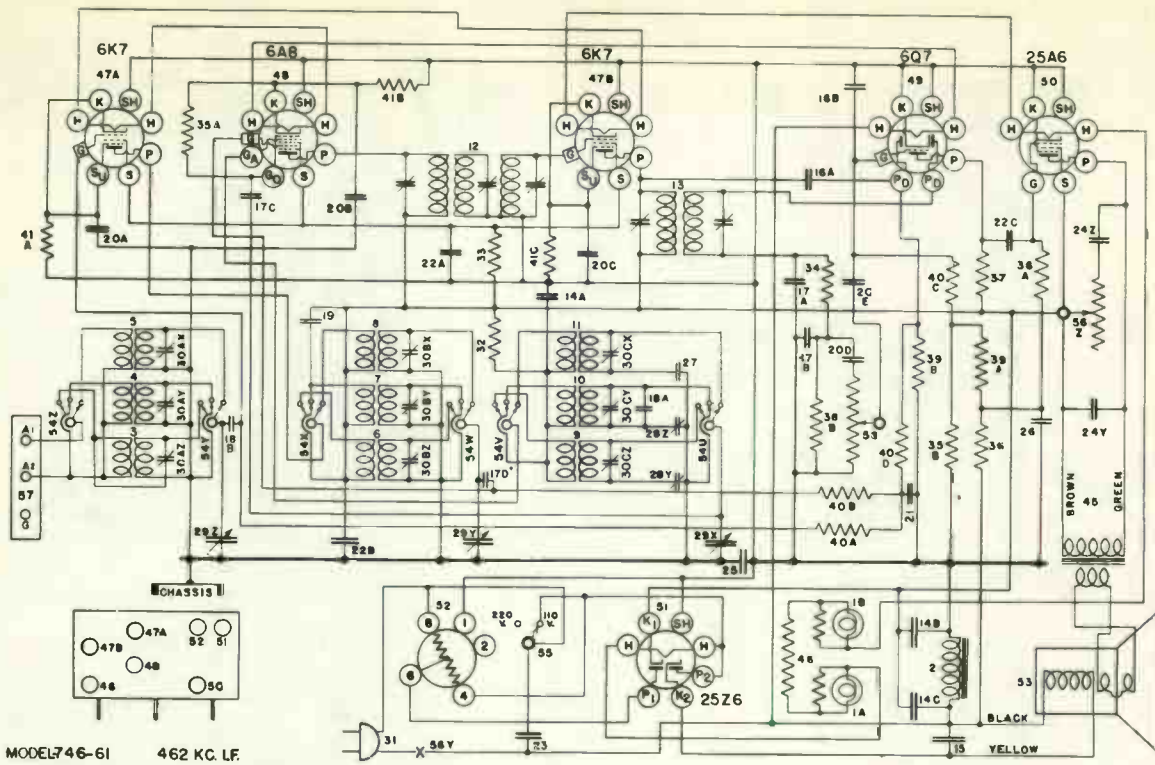
**NOTE:** Chassis number 746-62 (Balmoral) alignment procedure is the same as for chassis model 746-61 (Norma) except for the omitting of the 760-2050 Metre

(RED) band and complementary parts. Compare wiring diagrams and be governed accordingly.



**Fig. 4 Front View 746-61**

MODELS 746-61, 746-62



## MODEL 746-61 and 62—PARTS LIST

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W — 4099B	Dial Light Bulb	MG54	—42793	Drive Assy. Complete—746-62 Only
	G6 — 27134	Socket Assembly	W	—43475	Dial Glass (Calibrated) — 746-62 Only
2	G4 — 28859	Filter Choke	B	—43401	Escutcheon
3	G110 — 32000	Ant. Coil, 180-550 Metres	B	—43402	Lens—Escutcheon
4	G122 — 32000	Ant. Coil, 760-2050 Metres—746-61 Only		—43403	Rubber Gasket (Escutcheon)
5	G112 — 32000	Ant. Coil, 17-53 Metres		— 7670	Screw—Escutcheon Mtg.
6	G76 — 32001	R-F Coil, 180-550 Metres	30ABC	W — 35931A	3 Sect. Shunt Trimmer Cond.—746-61
7	G86 — 32001	R-F Coil, 760-2050 Metres—746-61 Only	30ABC	W — 35033	2 Sect. Shunt Trimmer Cond.—746-62
8	G92 — 32001	R-F Coil, 17-53 Metres	31	B — 33906A	Power Cord and Plug
9	G124 — 32002	Osc. Coil, 180-550 Metres	32	—31093	Resistor, 2,700 Ohm ¼W.
10	G125 — 32002	Osc. Coil, 760-2050 Metres—746-61 Only	33	—36317	Resistor, 10,000 Ohm ¼W.
11	G126 — 32002	Osc. Coil, 17-53 Metres	34	—36760	Resistor, 20,000 Ohm ¼W.
12	G133 — 32004	1st I-F Assembly—462 Kc.	35AB	—35928	Resistor, 60,000 Ohm ¼W.
13	G134 — 32004	2nd I-F Assembly—462 Kc.	36	—35600	Resistor, 100,000 Ohm ¼W.
14ABC	W — 36057	Condenser, 40 Mfd. 300 V.	37	—35601	Resistor, 300,000 Ohm ¼W.
15	W — 41081	Condenser, 16 Mfd. 250 V.	38AB	—36322	Resistor, 500,000 Ohm ¼W.
16AB	G1 — 34002	Condenser, .00025 Mfd. 200 V.	39AB	—38623	Resistor, 750,000 Ohm ¼W.
17ABCD	G2 — 34002	Condenser, .0001 Mfd. 200 V.	40AB	—35927	Resistor, 2. Megohm ¼W.
18AB	G5 — 34002	Condenser, .00005 Mfd. 200 V.	CD		
19	G11 — 34002	Condenser, .000175 Mfd. 200 V.	41ABC	W — 28589	Resistor, 350 Ohm ¼W. Flex.
20ABC			45	G2 — 35696	Cable for Speaker
DE	W — 36541	Condenser, .02 Mfd. 160 V.	46	W — 35979A	Resistor Filament Series
21	W — 32379	Condenser, .02 Mfd. 200 V.	47AB	G151 — 36400	Socket Type 6K7
22ABC	W — 35936	Condenser, .05 Mfd. 200 V.	48	G156 — 36400	Socket Type 6A8
23	W — 32780B	Condenser, .05 Mfd. 400 V.	49	G160 — 36400	Socket Type 6Q7
24Z	W — 31052	Condenser, .05 Mfd. 400 V.	50	G161 — 36400	Socket Type 25A6
24Y	W — 31935	Condenser, .25 Mfd. 300 V.	51	G162 — 36400	Socket Type 25Z6
25	W — 31935	Condenser, .25 Mfd. 300 V.	52	G163 — 36400	Socket for W—40655
26	W — 30321	Condenser, 1. Mfd. 160 V.	53	448CJ4 "M"	Speaker Spec. No. 1-D-698
27	G20 — 34000	Condenser, 4910 Mmfd.		—43171	Cone Assembly for above Speaker
28	W — 42426	2 Sect. Osc. Series Trimmer Cond.—746-61 Only		—43175	Field Coil for above Speaker
28	—42830	Osc. Series Trimmer—746-62 Only		—43179	Output Trans. for above Speaker
29	G50 — 33002	3 Sect. Var. Tuning Condenser	54	C — 40910	Band Selector Sw. for 746-61
	D — 42314B	Dial Glass (Calibrated) 746-61 Only	54	C — 42844	Band Selector Sw. for 746-62
	B — 41982A	Dial Mask (Metal)	55	W — 27554A	110V—220V Switch
	W — 42684A	Pointer	56Z		Tone Control
	W — 40486	Screw—Pointer Mtg.	56Y		Line Switch
	—42814	Drive Unit	G27	—26719	Ant. and Gnd. Terminal Assembly
	—41582	Cable—Drive		—42290	Volume Control, 3 Megohm
	—41584	Coupling—Flexible	W	—41605	Knob—Station Sel. (1)
MG29	—42793	Drive Assy. Complete — 746-61 Only	W	—37339	Knob, V. C. & T. C. (2)
			W	—42860	Knob, Band Sel. (1) 746-61
			W	—42490	Knob, Band Sel. (1) 746-62

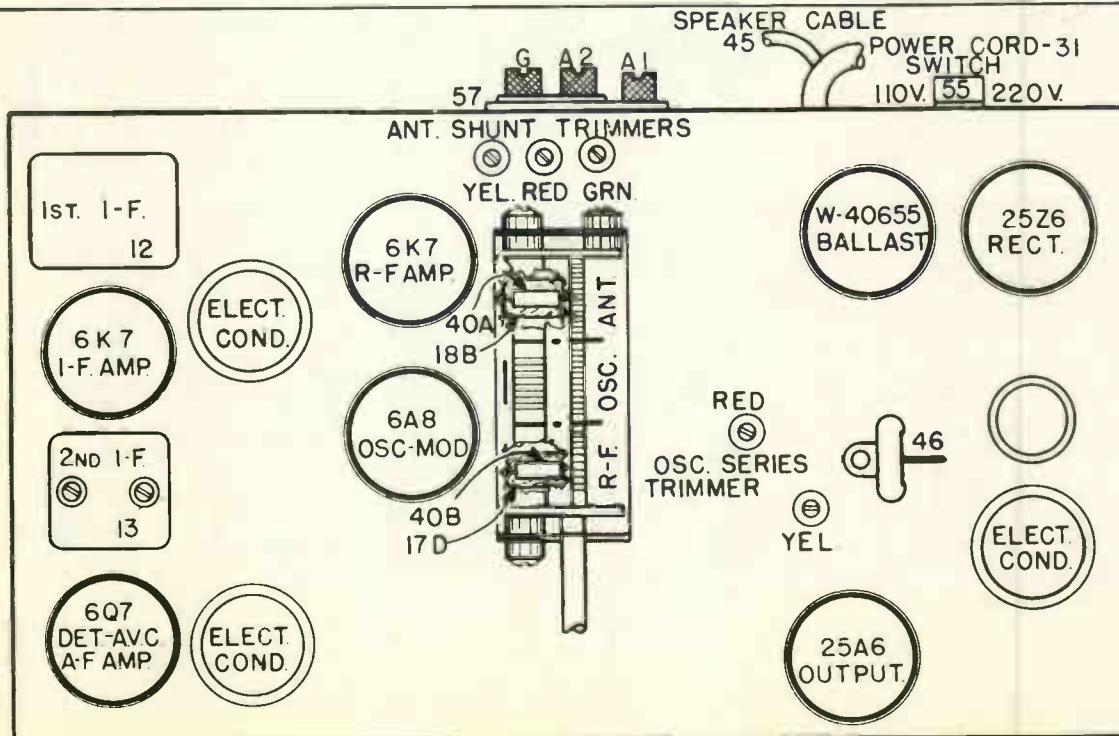


Fig. 2 Top View 746-61

**SPECIFICATIONS**

This model Crosley is a seven-valve (including the ballast resistor) superheterodyne receiver. It is de-

- BAND No. 1—(orange) 1712-540 Kilocycles or 175-556 Meters
- BAND No. 2—(green) 2.5-7.0 Megacycles or 120-428 Meters
- BAND No. 3—(blue) 7.2-22 Megacycles or 41.7-13.6 Meters

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .0002 mf. condenser to the antenna lead. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the volume control to the right (ON), and turn the band switch to the right (B. C.)

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers, Fig 2, for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead of the signal generator should be connected, through a dummy antenna, to the BLUE lead extending from the rear of the chassis. For the Medium Wave Band (ORANGE) use a .0002 mf. condenser and for the Short Wave Bands (GREEN & BLUE) a 250 ohm carbon resistor instead of the condenser.

(a) Set the signal generator to 1712 kilocycles.

(b) With the condenser gang turned to the minimum capacity position and band switch turned to the Medium Wave Band, adjust the "OSC" Band No. 1 trimmer condenser for maximum output. It is necessary that the receiver just tune through this signal.

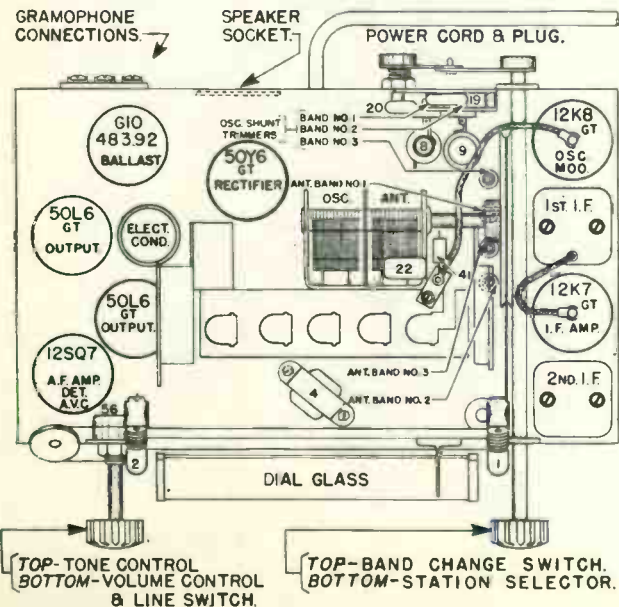


Fig. 2—Top View Model 749

signed for operation on 210 to 250 volt power mains either D.C. or 50-60 cycle A.C. The tuning range is divided into three bands as follows:

(c) Set the generator to 1400 kilocycles.

(d) Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser "ANT" Band No. 1 for maximum output.

NOTE: Do not readjust the "OSC" trimmer.

(f) Repeat operations (d) and (e) for more accurate adjustments.

(g) Set signal generator to 7.25 Megacycles, turn band switch to middle position (BLUE BAND). Connect 250 ohm carbon resistor in series with signal generator lead.

(h) Open gang condenser all the way then adjust OSC. Band No. 2 trimmer condenser for maximum output.

(i) Set signal generator to 7.0 Megacycles.

(j) Tune-in generator signal on receiver for maximum output.

(k) While rocking tuning condenser slowly back and forth adjust the ANT. Band No. 2 trimmer condenser for maximum output.

(l) Set signal generator to 23 megacycles, turn band switch all the way to the right and open gang all the way.

(m) Adjust "OSC" Band No. 3 trimmer condenser for maximum output.

(n) Set signal generator to 22 megacycles.

(o) Tune in 22 mc. signal on receiver, then adjust the "ANT" Band No. 3 trimmer condenser for maximum output while slowly rocking condenser back and forth.

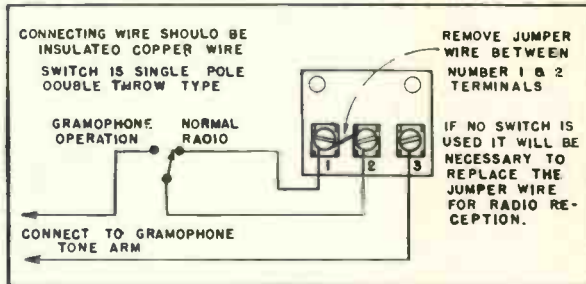


Fig. 4—Gramophone Connections

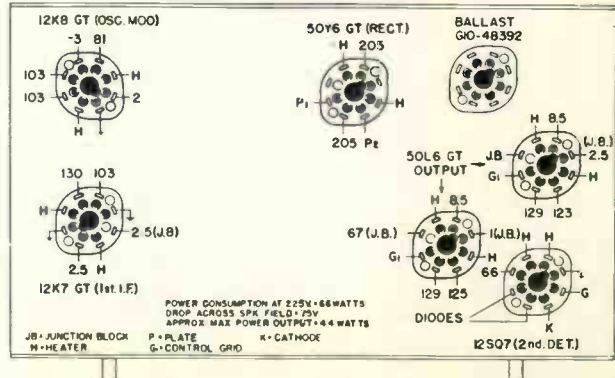
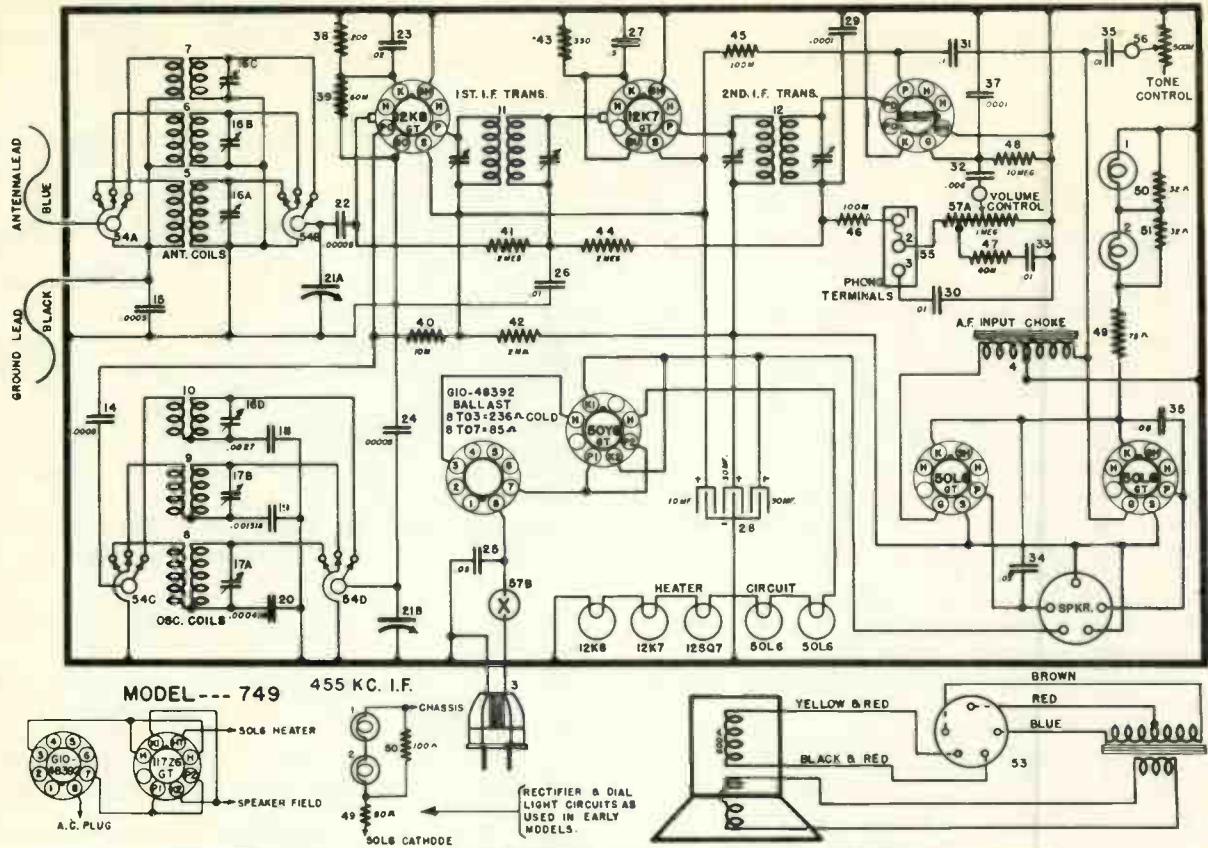


Fig. 5—Voltage Chart



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—37188	Dial Lamp	51	—37631	Resistor, 32 Ohms 1/4W.
2	—37188	Dial Lamp	52	None	
	G6	Socket Assy.—Dial Lamp	53	394-BP-11 "M"	Speaker—Mfg. Spec. No. 1-D-1642
3	—45769	Power Mains Cord and Plug		—49432	V. C. and Cone Assy.
4	G28	Choke—Audio Input		—49433	Field Coil (600 Ohms)
5	G210—32000	Antenna Coil—1,712-540 Kilocycles		—49434	Output Transformer
6	G211—32000	Antenna Coil—2.5-7.0 Megacycles		—43674	Cardboard Ring—Cone Mounting
7	G212—32000	Antenna Coil—7.2-22 Megacycles	54	—49172	Band Change Switch
8	G220—32002	Oscillator Coil—1,712-540 Kilocycles		G8	Toggle Arm (On Extension Shaft)
9	G219—32002	Oscillator Coil—2.5-7.0 Megacycles		G9	Toggle Arm (On Band Switch)
10	G218—32002	Oscillator Coil—7.2-22 Megacycles		(G50)	Gramophone Terminal Board
11	G236—32004	1st I-F. Assy.—455 Kc.	55	—48020	Tone Control (1/2 Meg.)
12	G235—32004	2nd I-F. Assy.—455 Kc.	56	—48019	Switch and Volume Control (1 Meg.)
13	None		57	G10	Plug-In Ballast Resistor
14	G3	Condenser, .0005 Mf. Mica		—46729	Socket—8 Prong—No Marking
15	G3	Condenser, .0005 Mf. Mica		G103—28807	Socket—Marked "Speaker"
16	—41247	Condenser—Shunt Trimmer Assy. A—M. W. Ant. (Orange Band) B—S. W. Ant. (Green Band) C—S. W. Ant. (Blue Band) D—S. W. Osc. (Blue Band)		—48992	Dial Glass Face
	—37986	Condenser—Shunt Trimmer Assy. A—M. W. Osc. (Orange Band) B—S. W. Osc. (Green Band)		—49180	Bracket—Dial Glass Mtg. (FS-71)
18	G11	Condenser, .002700 Mf. Mica		—49182	R. H. Clip—Dial Glass Mtg.
19	G15	Condenser, .001318 Mf. Mica		—49181	L. H. Clip—Dial Glass Mtg.
20	G19	Condenser, .000436 Mf. Mica		—49183	Pointer—Dial Hand (FS-77)
21	G8A	Condenser—Variable Tuning Gang		—46035	Pointer Guide—Metal Bar
22	G5	Condenser, .00005 Mf. Mica		G12	Pulley and Hub Assy. (On Gang)
23	—28621	Condenser, .02 Mf. 200 V.		MG13	Idle Pulley and Brkt. Assy. (R. H.)
24	G5	Condenser, .00005 Mf. Mica		MG14	Idle Pulley and Brkt. Assy. (L. H.)
25	—23615	Condenser, .05 Mf. 400 V.		—47969	Drive Shaft
26	—23191	Condenser, .01 Mf. 400 V.		—43542	Bracket—Drive Shaft Mtg.
27	—37732	Condenser, 3 Mf. 160 V.		—41582	Drive Cord (44" or 115 Cm.)
28	—49343	Condenser, 30-30-10 Mf. Electrolytic		—50590	Spring—Drive Cord Tension
29	G2	Condenser, .0001 Mf. Mica		—49184	B. Switch Extension Shaft
30	—23191	Condenser, .01 Mf. 400 V.		—50325	"C" Washer—Extens. Shaft Retainer
31	—24049	Condenser, 1 Mf. 200 V.		MG31	Riveted Bottom Cover
32	—49488	Condenser, .006 Mf. 400 V.		G23	Single Junction Block
33	—30805	Condenser, .01 Mf. 400 V.		—45580	Rubber Grommet—Gang Brkt. Mtg.
34	—45817	Condenser, .05 Mf. 160 V.		—46460	Headed Bushing—Gang Brkt. Mtg.
35	—49489	Condenser, .01 Mf. 400 V.		—6495	No. 8—32 x 1/4" Screw—Gang Brkt. Mtg.
36	—45817	Condenser, .05 Mf. 160 V.		9FD	Cabinet
37	G2	Condenser, .0001 Mf. Mica		—49200	Shipping Carton
38	—50699	Resistor, 200 Ohms 1/4W.		—49213	Cabinet Back
39	—35928	Resistor, 60,000 Ohms 1/4W.		—49219	Bracket (3 Req.) Speaker Mtg.
40	—36317	Resistor, 10,000 Ohms 1/4W.		—48736	Rubber Grommet—Speaker Mtg.
41	—35927	Resistor, 2 Megohms 1/4W.		—46460	Headed Bushing—Speaker Mtg.
42	—23013	Resistor, 2,000 Ohms 1/4W.		—45020	Flat Washer—Chassis Mtg.
43	—38616	Resistor, 350 Ohms 1/4W.		—48900	No. 8—3/4" Screw—Chassis Mtg.
44	—35927	Resistor, 2 Megohms 1/4W.		S	No. 4—3/4" Screw—Cabinet Back Mtg. (FS-18)
45	—35600	Resistor, 100,000 Ohms 1/4W.		—46953	Knob (4 Req.)
46	—35600	Resistor, 100,000 Ohms 1/4W.		—49612	Instruction Booklet
47	—36761	Resistor, 40,000 Ohms 1/4W.		MG31	Instruction Envelope Assy.
48	—33490	Resistor, 10 Megohms 1/4W.		—49284	Short Wave Station Chart
49	—47699	Resistor, 75 Ohms 1/4W.			
50	—37631	Resistor, 32 Ohms 1/4W.			

MODEL 758 & 118 FACIMILE PRINTER

TUBE	FUNCTION	H	P	K	S	GO	GA
6K8	Osc.-Mod.	6.3	100	-	100	Neg.	100
6SK7	1st I.F. Amp.	6.3	288	-	100		
1852	2nd I.F. Amp.	6.3	265	-	158		
6SQ7	Det, AVC, 1st AF Amp.	6.3	88	-			
6Q7G	AVC Amp.	6.3	288	17			
6N6	Output	6.3	272	P2	288		
5Y3G	Rectifier	5.0					

Power output approximately 6½ watts.

Power consumption approximately 82 watts at 117.5 volts.

Voltage drop across speaker field approximately 70 volts.

-74 volts chassis to #7 pin on cable socket.

ALIGNMENT PROCEDURE

1. TUNING I.F. AMPLIFIER TO 455 KILOCYCLES.

a. Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the black lead of the receiver.

KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

b. Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

c. Turn the band selector switch to the Broadcast Band.

d. Set the signal generator to 455 kilocycles.

e. Adjust the two REAR trimmers located on the top of the 3rd I.F. diode transformer for maximum output.

The following alignment procedure must be followed step by step to insure correct alignment of the 3000 kilocycles I.F. as this alignment is very important.

2. TUNING I.F. AMPLIFIER TO 3000 KILOCYCLES.

a. Connect the signal generator lead, through an .02 mfd. condenser to the grid of the 6SK7. Clip on the green lead with spade lug soldered to the band switch.

b. Set signal generator to 3000 kilocycles, condenser gang all the way open, and band switch in H.F. position.

c. Open the FRONT trimmer on the 2nd (H.F.) I.F.

d. Adjust the FRONT trimmer on the 3rd I.F. (Diode Transformer) and then the REAR trimmer on the 2nd (H.F.) I.F. transformer, for maximum output. Repeat the operation until no further improvement in output is to be had.

e. Align the FRONT trimmer on the 2nd (H.F.) I.F. transformer for MINIMUM output.

f. Touch up FRONT trimmer ONLY on the 3rd I.F. (Diode).

g. Transfer signal generator lead to top cap of 6K8 (leave grid cap in place).

h. Align both trimmers on top of (H.F.) 1st I.F. for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

ALIGNING R.F. AMPLIFIER.

When aligning the R.F. Amplifier the output lead of the signal generator is connected to the blue lead of the receiver. For the broadcast band a .0002 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 250 ohm carbon resistor should be used in place of the condenser.

B.C., R.F. ALIGNMENT

a. Connect the signal generator output through a .002 mfd. condenser to the blue lead and ground lead to the black lead.

b. Set band switch to broadcast band (left) and open gang condenser all the way.

c. Set signal generator to 1570 kilocycles.

d. Adjust B.C. oscillator trimmer for maximum output (second trimmer from end of rear chassis flange).

e. Set signal generator to 1400 kilocycles.

f. Adjust B.C. antenna trimmer for maximum output (first trimmer from end of rear chassis flange). Repeat for maximum output.

UHF, R.F. ALIGNMENT

a. Connect the signal generator output through a 250 ohm carbon resistor to the blue lead (antenna).

b. Close gang condenser and open UHF oscillator shunt trimmer ¾ turn, right trimmer on top of gang.

c. Set signal generator to 24 megacycles.

d. Peak 24 megacycles signal by adjusting the position of the insulated lead, fastened from oscillator trimmer to gang, with relation to end of coil.

e. Set signal generator to 47 megacycles and open gang condenser to minimum position.

f. Adjust UHF oscillator shunt trimmer for maximum output.

g. Set signal generator to 45 megacycles.

h. Tune-in 45 megacycles signal with gang and then adjust antenna shunt trimmer (left on top of gang) for maximum output.

i. Set signal generator to 25 megacycles and then tune-in with gang.

MODEL 758 & 118 FACIMILE PRINTER

j. Repeat antenna circuit by adjusting position on wire from antenna trimmer to gang, with relation to end of antenna coil.

NOTE: If this wire requires a great deal of movement, the antenna alignment at 45 megacycles should be checked.

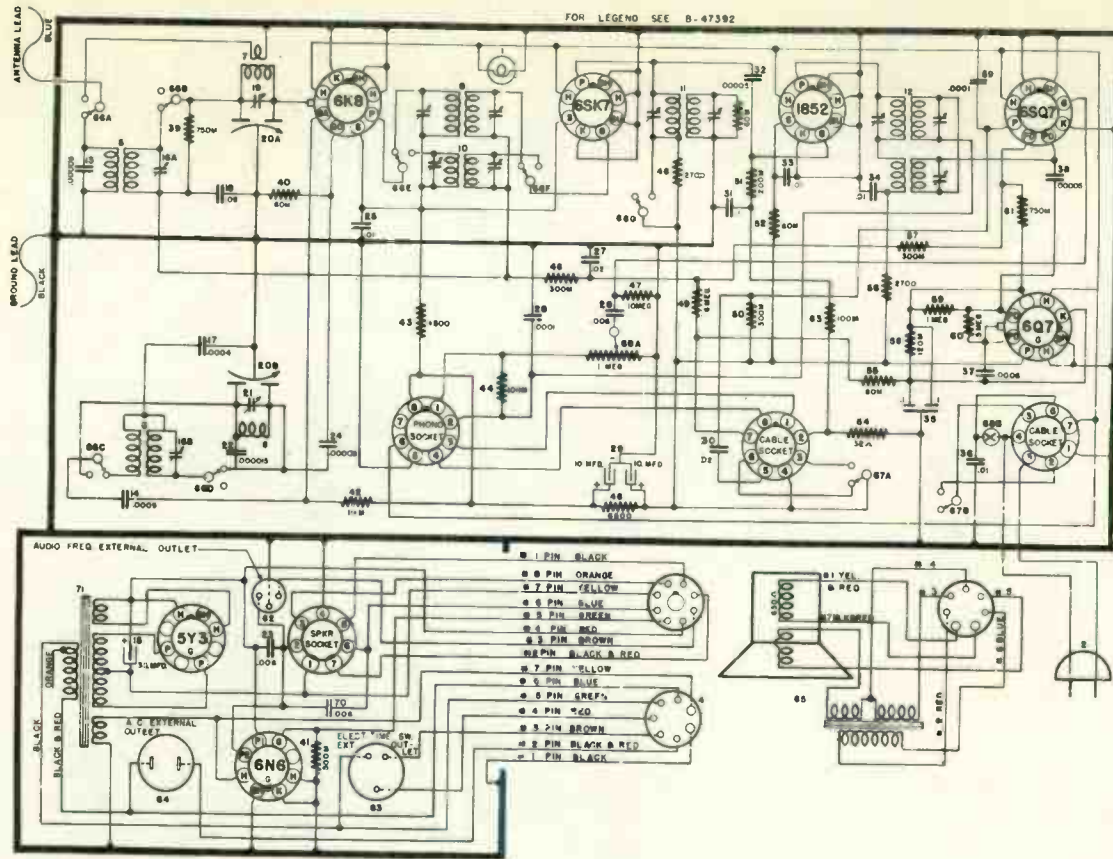
PARTS LIST -- MODEL 758

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37922	Dial Light, 6-8 v.	48	36316	2700 ohm $\frac{1}{2}$ w. Ins. Res.
3	B-45154	8 Lead Cable & Plug	49	47131	5 meg. $\frac{1}{2}$ w. Ins. Res.
4	B-45153	7 Lead Cable & Plug	50	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
5	G192-32000	BC Ant. Coil	51	35930	200,000 ohm $\frac{1}{2}$ w. Ins. Res.
6	G190-32002	BC Osc. Coil	52	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
7	G191-32000	UHF Osc. Coil	53	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.
8	G189-32002	UHF Osc. Coil	54	45981	32 ohm $\frac{1}{2}$ w. Ins. W.W. Res.
9	G214-32004	1st I.F. Trans. BC	55	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.
10	G213-32004	1st I.F. Trans. HF	56	36316	2700 ohm $\frac{1}{2}$ w. Ins. Res.
11	G215-32004	2nd I.F. Trans.	57	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.
12	G212-32004	Dual I.F. Trans.	58	36320	120,000 ohm $\frac{1}{2}$ w. Ins. Res.
13	G5-34002	.00005 mfd. Cond.	59	35602	1 meg $\frac{1}{2}$ w. Ins. Res.
14	G3-34002	.0005 mfd. Cond.	60	47131	5 meg $\frac{1}{2}$ w. Ins. Res.
15	W-36055-B	35 mfd. 400 v. Elec. Cond.	61	38623	750,000 ohm $\frac{1}{2}$ w. Ins. Res.
16A	W-47147	BC Ant. Sec. Trim. Cond.	62	W-47133	Socket A.F. Ext. Outlet
16B		BC Osc. Sec.	63	W-50243	Socket Elec. Time Sw.
17	G18-34002	.0004 mfd. Cond.	64	W-47163	Socket A.C. Ext. Outlet
18	W-35936	.05 mfd. 200 v. Cond.	65	388 BP-6"O"	Speaker Spec. 6-150
19	W-45979	UHF Ant. Trim. Cond.	66A	47509	Speaker Cone
20A		Ant. Sec.	66B	47536	Output Trans.
20B	G70-33001	Osc. Sec. Var. Cond.	66C		
	G12-43564	Pulley & Hub Assy.	66D	B-47157	Band Change Sw.
	D-47191	Dial Glass	66E		
	W-45890-A	Dial Hand	66F		
	G60-45683	Riveted Bracket Assy.	66G		
21	W-47126	UHF Osc. Trim. Cond.	67A		
22	G1-34009	.000015 mfd. Cond. (Temp. Comp.)	67B	47155-A	Function Change Sw.
23	W-35139	.004 mfd. 400 v. Cond.	67C		
24	G2-34009	.00005 mfd. Cond. (Temp. Comp.)	67D		
25	W-23191-A	.01 mfd. 400 v. Cond.	67E		
26	G2-34002	.0001 mfd. Cond.	67F		
27	W-28621	.02 mfd. 200 v. Cond.	67G		
28	W-34713	.006 mfd. 160 v. Cond.	67H		
29	W-47256	10-10 mfd. 300 v. Elec. Cond.	67I		
30	W-30488	.02 mfd. 400 v. Cond.	67J	47155-A	Function Change Sw.
31	W-24049-C	.1 mfd. 200 v. Cond.	68A		
32	G5-34002	.00005 mfd. Cond.	68B	47138-A	A.C. Power Sw.
33-34	W-23191-A	.01 mfd. 400 v. Cond.	68C	G2-34002	Vol. Cont. 1 meg.
35	W-28622	.1-.1 mfd. 200 v. Cond.	68D	W-35758	.0001 mfd. Cond.
36	W-30805	.0005 mfd. Cond.	68E	47177-A	.008 mfd. 400 v. Cond.
37	G3-34002	.0005 mfd. Cond.	68F		Power Trans., 60 cy. 110 v.
38	G5-34002	.00005 mfd. Cond.	68G	G35-45683	Push Button Unit Assy.
39	38623	750,000 ohm $\frac{1}{2}$ w. Res.	68H	G32-45683	Riveted Key Assy.
40	35928	60,000 ohm $\frac{1}{2}$ w. Ins. Res.	68I	G22-45683	Rocket Plate Assy.
41	36322	500,000 ohm $\frac{1}{2}$ w. Ins. Res.	68J	W-50547	Key Plate
42	36317	10,000 ohm $\frac{1}{2}$ w. Ins. Res.	68K	W-50542	Key Clip
43	31094	4500 ohm $\frac{1}{3}$ w. Carb. Res.	68L	W-50607-C	Key Return Spring (5 req.)
44	35600	100,000 ohm $\frac{1}{2}$ w. Ins. Res.	68M	W-47390	Shortening Plug
45	35601	300,000 ohm $\frac{1}{2}$ w. Ins. Res.	68N	8 GE	Cabinet
46	47101	6500 ohm $2\frac{1}{2}$ w. Ins. Res.	68O	46417	Push Buttons (5 req.)
47	50956	10 meg. $\frac{1}{2}$ w. Ins. Res.	68P	46408	Knob (1 req.)
			68Q	47295-A	Knob (3 req.)
			68R	46887	Call Letter Sheet

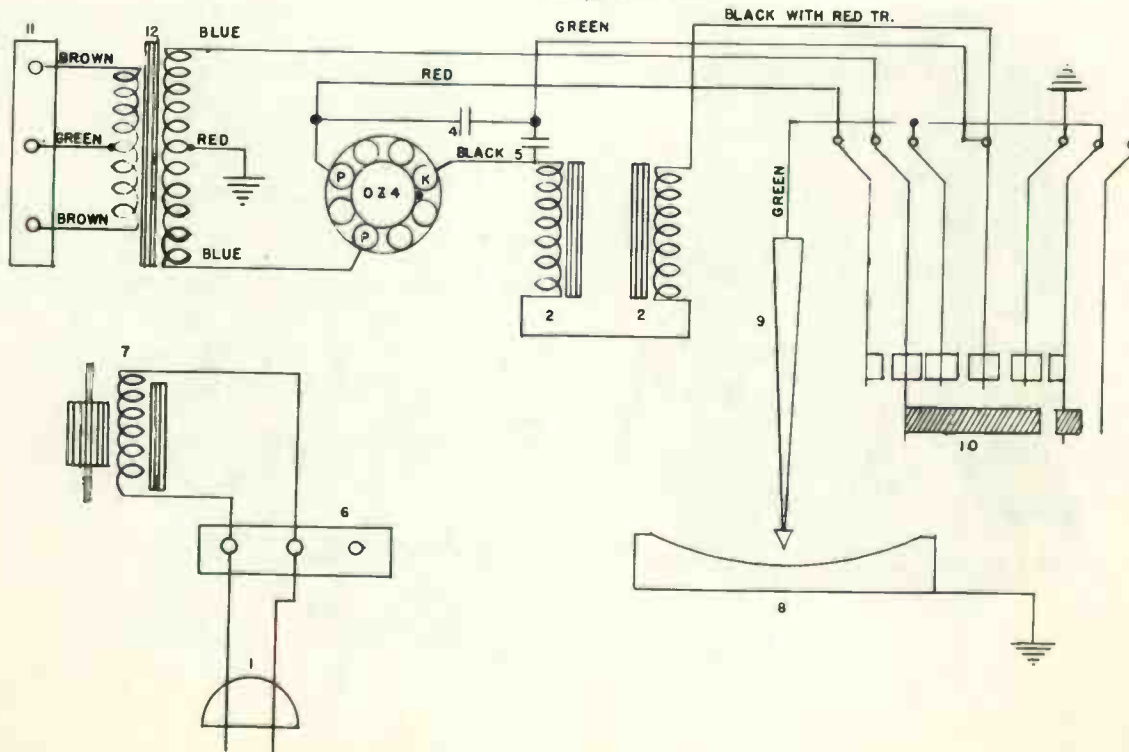
PARTS LIST -- MODEL 118 PRINTER

1	B-33906-A	Cable, Power Supply	8	C-46615	Platen, Paper
2	G4-50368	Coil, Synchronizing	9	W-46582	Stylus, Arm
4	W-41445	.036 mfd. 400 v. Cond.	10	W-46550	Sw. Jack
5	W-23615	.05 mfd. 400 v. Cond.	11	G43-26719	Term. Board
6	G60-35954	Junction Block	12	G1-46616	Input Trans.
7	B-46576	Motor			

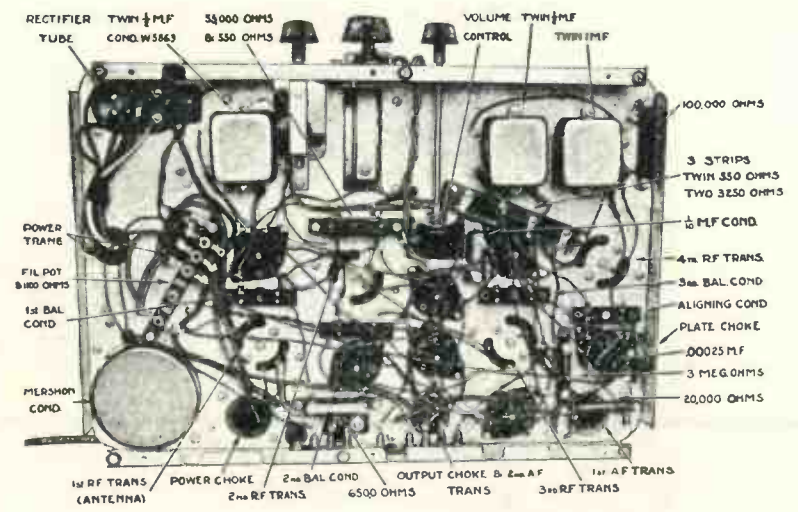
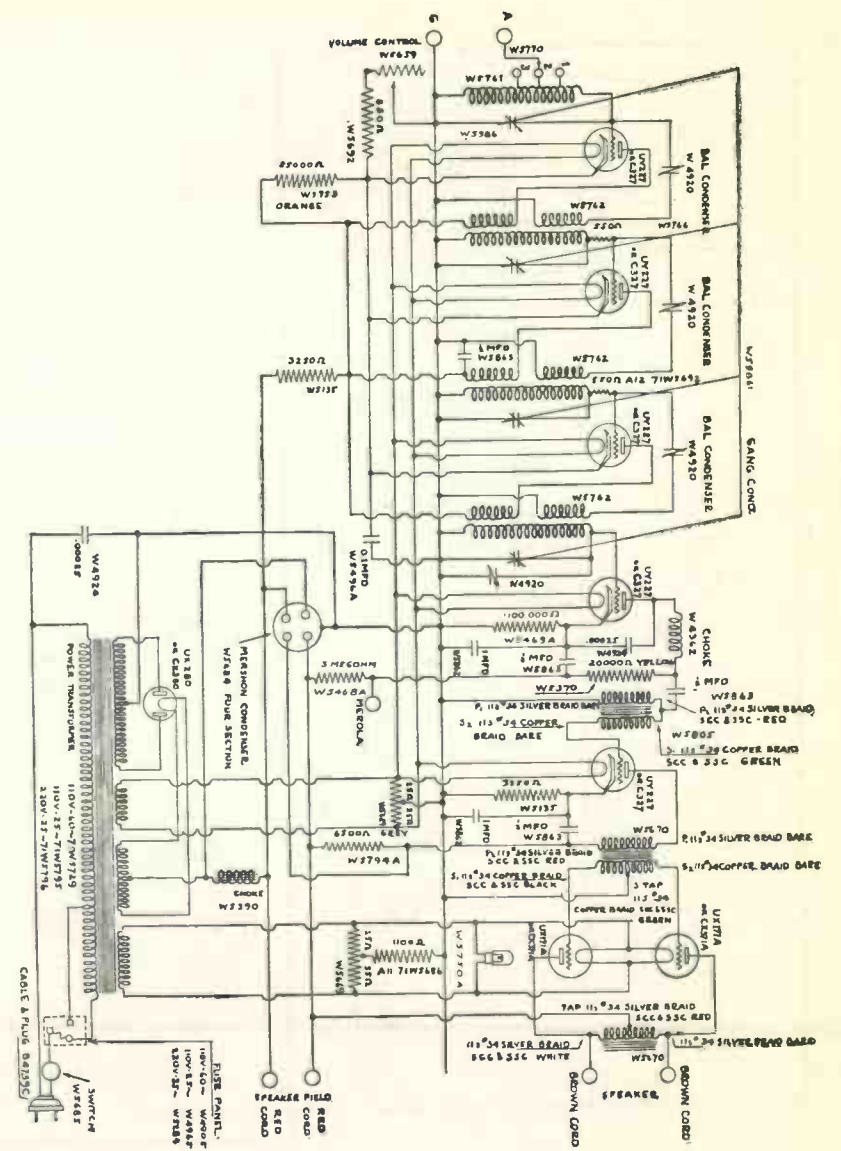
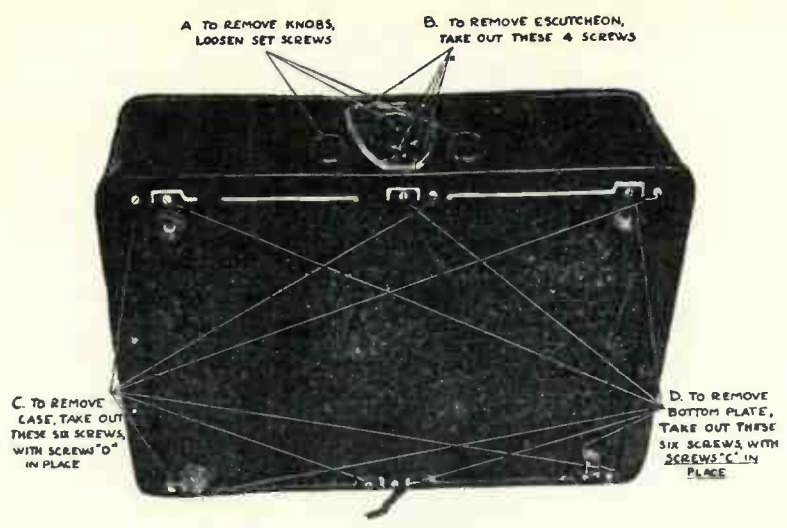
MODEL 758 & 118 FACIMILE PRINTER



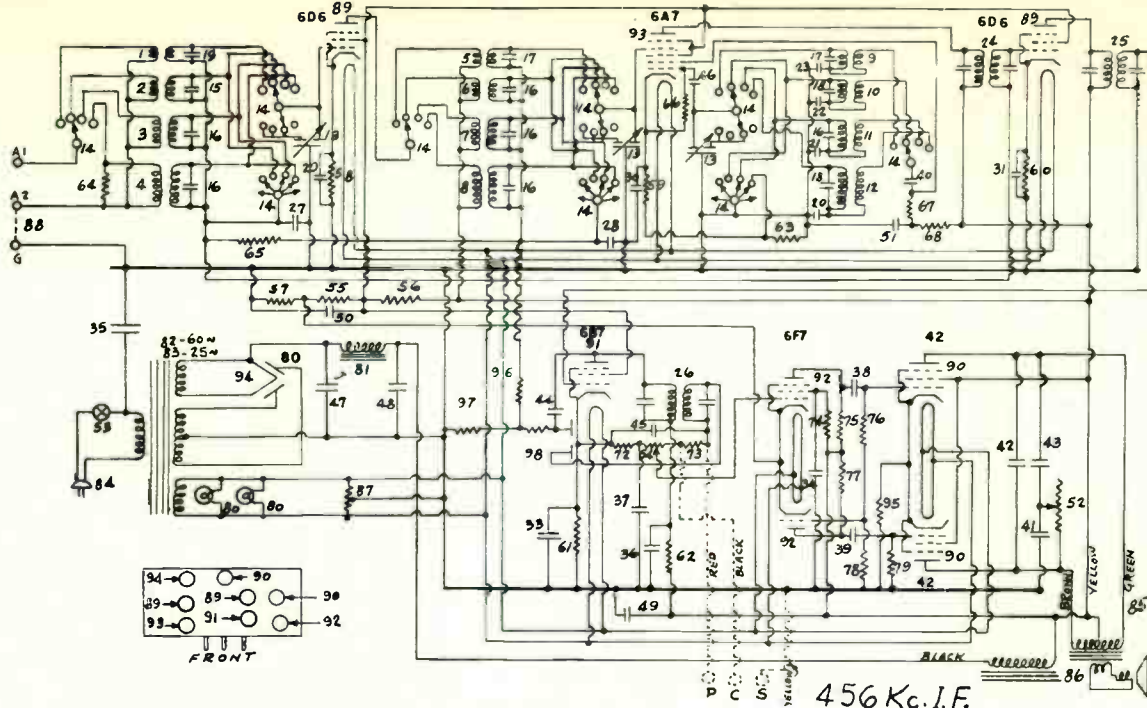
118 FACSIMILE PRINTER







MODEL 814



1	G30	-32000	Ant. Coil (10.0-22.0 Mc)	51	W	-32258	8 Mfd. 300 Volt
2	G29	-32000	Ant. Coil (4.0-10.0 Mc)	52			Tone Control Switch Level Control 15,000 Ohms 10,000 Ohms 450 Ohms Flex. 275 Ohms Flex. 1,400 Ohms Flex. 1,400 Ohms Flex. 450 Ohms Flex. 750 Ohms Flex. 600 Ohms Flex. 4,500 Ohms 300,000 Ohms 100,000 Ohms 7,000 Ohms 7,000 Ohms
3	G4	-32000	Ant. Coil (1.5-4.0 Mc)	53	W	-32063	
4	G3	-32000	Ant. Coil (Broadcast)	54	W	-33378	
5	G16	-32001	Inter. Coil (10.0-22.0 Mc)	55	W	-32301	
6	G15	-32001	Inter. Coil (4.0-10.0 Mc)	56	W	-30127	
7	G8	-32001	Inter. Coil (1.5-4.0 Mc)	57	W	-25937	
8	G2	-32001	Inter. Coil (Broadcast)	58	W	-27503	
9	G23	-32002	Osc. Coil (10.0-22.0 Mc)	59	W	-27503	
10	G22	-32002	Osc. Coil (4.0-10.0 Mc)	60	W	-30127	
11	G3	-32002	Osc. Coil (1.5-4.0 Mc)	61	W	-22514	
12	G17	-32002	Osc. Coil (Broadcast)	62	W	-29585	
13	G24	-33002	Variable Condenser	63	W	31094	
14	B	-34083-A	Band Change Switch	64		21455	
15	G17	-33009	Padding Condenser	65		21875	
16	G7	-33009	Padding Condenser	66		24814	
17	G6	-33009	Padding Condenser	67		24814	
18	G5	-33009	Padding Condenser	68		69	
19	G17	-33006	Padding Condenser	69		70	
20			Trimmer Condenser	70		71	
21	G16	-33006	Trimmer Condenser	71		21876	10,000 Ohms
22	G2	-34000	3104 Mmfd.	72		23785	500,000 Ohms
23	G1	-34000	1647 Mmfd.	73		23785	500,000 Ohms
24	G25	-32004	1st I. F. Transformer	74		21237-A	60,000 Ohms
25	G23	-32004	2nd I. F. Transformer	75		23785	500,000 Ohms
26	G24	-32004	3rd I. F. Transformer	76		23403	150,000 Ohms
27	W	-32379	0.02 Mfd. 200 Volt	77		21237-A	60,000 Ohms
28	W	-32379	0.02 Mfd. 200 Volt	78		23785	500,000 Ohms
29	W	-28621	0.02 Mfd. 200 Volt	79		4099-A	6.3 V. Dial Lamp
30	W	-28621	0.02 Mfd. 200 Volt	80	W	24628	Filter Choke
31	W	-28621	0.02 Mfd. 200 Volt	81	G1	-25669	60 Cy. Power Trans.
32				82	G37	-25669	25 Cy. Power Trans.
33	W	-28621	0.02 Mfd. 200 Volt	83	G38	-25669	
34	W	-23142	0.02 Mfd. 400 Volt	84	B	-33906-A	Cord & Plug
35	W	-30805	0.01 Mfd. 400 Volt	85	W	-31007-A	Speaker Cable
36	W	-23191-A	0.01 Mfd. 400 Volt	86		68C	Speaker
37	W	-30321	1.0 Mfd. 160 Volt	87	W	-32337	10 Ohms-10 Ohms
38	W	-23615	0.05 Mfd. 400 Volt	88	G14	-26719	Ant.-Gnd. Term.
39	W	-23615	0.05 Mfd. 400 Volt	89	G75	-27975	6D6 Socket
40	W	-23635	0.006 Mfd. 400 Volt	90	G25	-27975	42 Socket
41	W	-30270	0.001 Mfd. 400 Volt	91	G48	-27975	6B7 Socket
42	W	-31052	0.004 Mfd. 400 Volt	92	G49	-27975	6F7 Socket
43			0.05 Mfd. 400 Volt	93	G2	-33070	6A7 Socket
44	W	-32741-A	0.0005 Mfd.	94	G6	-27975	80 Socket
45	W	-31937	0.0001 Mfd.	95	W	-22873	220 Ohms
46	W	-30741	0.00025 Mfd.	96		26577	3 Megohm
47	W	-26194-B	12 Mfd. 475 Volt	97		23785	500,000 Ohms
48			8 Mfd. 450 Volt	98		23785	500,000 Ohms
49	W	-29097-D	8 Mfd. 450 Volt				
50			8 Mfd. 250 Volt				

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R. F. Amplifier	2.0	135	67.5	—	—	—
1C6	Osc.-Mod.	2.0	135	67.5	—	85	-5 to -10
34	1st I-F Amplifier	2.0	135	67.5	-3	—	—
34	2nd I-F Amplifier	2.0	135	67.5	-3	—	—
30	Diode Detector	2.0	—	—	—	—	—
30	A-F Amplifier	2.0	70	—	-3	—	—
30	A-F Driver	2.0	135	—	-9	—	—
19	Double Triode Output	2.0	135	—	-1.5	—	—

POWER OUTPUT APPROXIMATELY 2.5 WATTS.

"A" BATTERY DRAIN APPROXIMATELY .74 AMPERES AT 2 VOLTS.

"B" BATTERY DRAIN 20 TO 35 MILLIAMPERES—DEPENDING UPON VOLUME CONTROL ADJUSTMENT.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1C6 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 3rd I-F transformer for maximum output. (Screw and nut).

(f) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust both trimmers for the 1st I-F transformer (26Y and 26Z located on end of chassis) for maximum output.

(h) Repeat operations (e), (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm carbon resistor (Non-Inductive).

Each band should be shunt aligned, series aligned and then shunt aligned again in order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" (24), "R-F" (23) and "ANT" (22) shunt trimmers, Z—Broadcast and Y—High Frequency Bands, in the order given for maximum output. Retune the station selector to the generator signal for maximum output. Readjust the "R-F" and "Ant" trimmers for maximum output. Do not readjust the "OSC" shunt trimmer.

To adjust the "series" trimmers 25Z—Broadcast and 25Y—High Frequency Bands, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

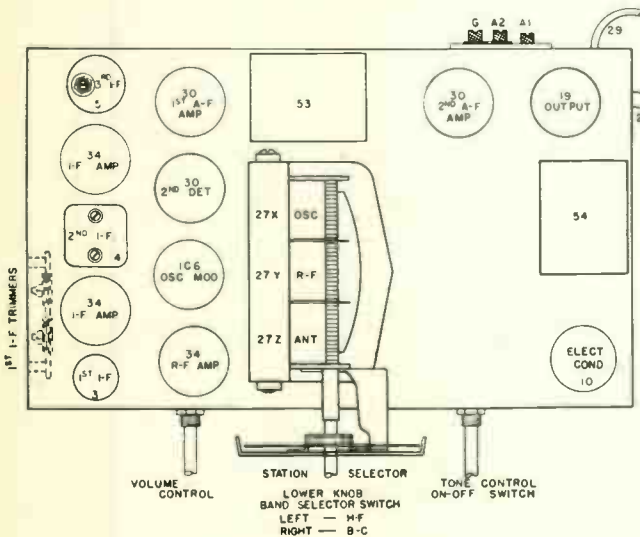


Fig. 2. Top View 815

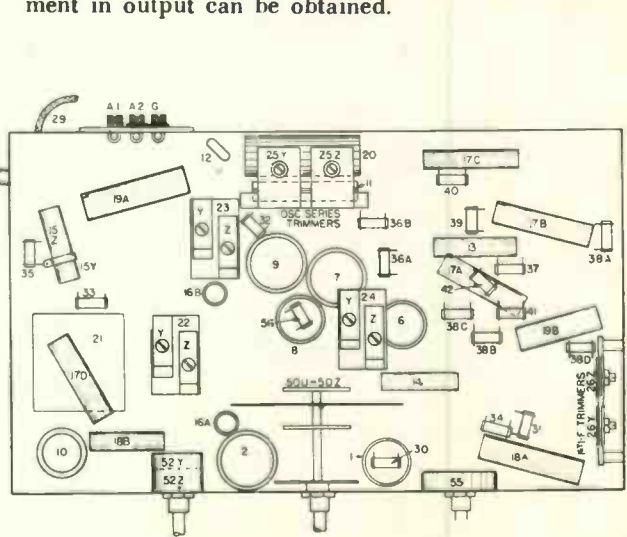
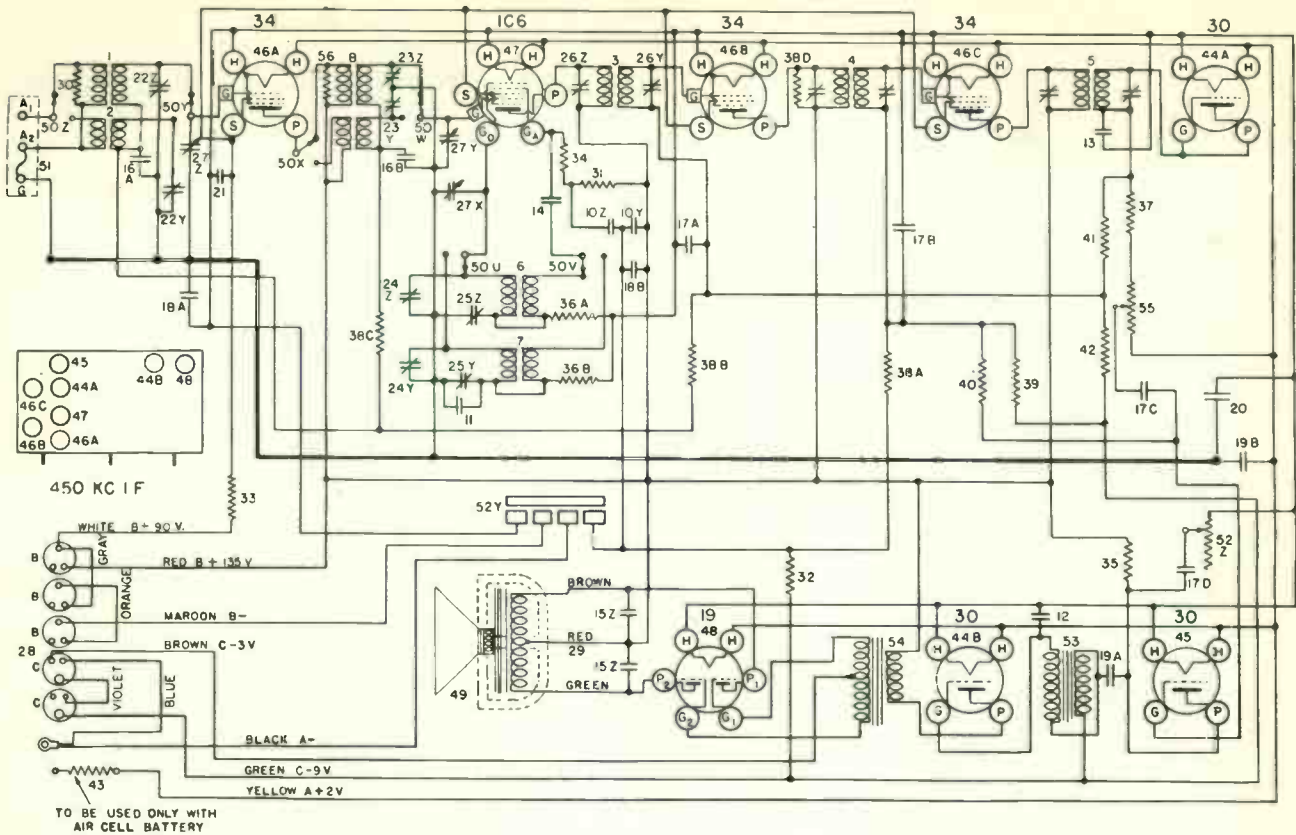


Fig. 3. Bottom View 815

(b) Signal Generator Frequencies.

	Shunt Alignment	Shunt Alignment
High Frequency Band	1400 Kc.	600 Kc.
Broadcast Band	15000 Kc.	6000 Kc.

MODEL 815



Item No.	Part No.	Description	Item No.	Part No.	Description
1	G3-32000	Ant. Coil 540-1720 Kc.	26Z		
	W-25925A	Coil Shield	26Y		
	W-26891	Insulating Washer	27Z		
	W-21541C	Retaining Ring	27Y		
	W-25200	Coil Socket	27X		
2	G28-32000	Ant. Coil 5.7-15.5 Mc.			
	W-30802A	Coil Shield			
	W-30025A	Retaining Ring			
	W-33438	Centering Washer			
3	G1-32004	1st I. F. Coil (only)			
	G1-24064	Shield			
	W-26891	Insulating Washer			
4	G22-32004	2nd I. F. Assm.			
5	G22-32004	3rd I. F. Assm.			
6	G2-32002	Osc. Coil 540-1720 Kc.			
	W-25925A	Coil Shield			
	W-26891	Insulating Washer			
	W-21541C	Retaining Ring			
	W-25200	Coil Socket			
7	G21-32002	Osc. Coil 5.7-15.5 Mc.			
	W-30802A	Coil Shield			
	W-30025A	Retaining Ring			
	W-33438	Centering Washer			
8	G2-32001	R. F. Coil 540-1720			
	W-25925A	Coil Shield			
	W-26891	Insulating Washer			
	W-21541C	Retaining Ring			
	W-25200	Coil Socket			
9	G18-32001	R. F. Coil 5.7-15.5 Mc.			
	W-30802A	Coil Shield			
	W-30025A	Retaining Ring			
	W-33438	Centering Washer			
10Z	W-33990	Condenser, 8. Mfd., 200 V.			
10Y	W-33990	Condenser, 8. Mfd., 200 V.			
11	G3-34000	Condenser, 2200 Mmfd., 300 V.			
12	G1-34002	Condenser, 0.00025 Mfd., 200 V.			
13	W-27232	Condenser, 0.0001 Mfd., 200 V.			
14	W-25435	Condenser, 0.003 Mfd., 400 V.			
15Z	W-31158	Condenser, 0.006 Mfd., 400 V.			
15Y	W-31158	Condenser, 0.006 Mfd., 400 V.			
16A	W-32379	Condenser, 0.02 Mfd., 200 V.			
16B	W-32379	Condenser, 0.02 Mfd., 200 V.			
17A	W-27216	Condenser, 0.05 Mfd., 200 V.			
17B	W-27216	Condenser, 0.05 Mfd., 200 V.			
17C	W-27216	Condenser, 0.05 Mfd., 200 V.			
17D	W-27216	Condenser, 0.05 Mfd., 200 V.			
18A	W-24049B	Condenser, 0.1 Mfd., 200 V.			
18B	W-24049B	Condenser, 0.1 Mfd., 200 V.			
19A	W-20910A	Condenser, 0.25 Mfd., 200 V.			
19B	W-20910A	Condenser, 0.25 Mfd., 200 V.			
20	W-38221A	Condenser, 1.0 Mfd., 160 V.			
21	W-28869	Condenser, 2.0 Mfd., 200 V.			
22Z	G1-33008	2 Section Ant. Trimmer			
22Y	G0-33009	2 Section R. F. Trimmer			
23Z	G18-33009	2 Section Osc. Trimmer			
23Y	G20-33006	2 Section Osc. Series Trimmer			
24Z					
24Y					
25Z					
25Y					
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			50Z		
			To		
			50Y		
			51		
			52Z		
			52Y		
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**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6K7	R-F Amplifier	6.3	245	—	100	4.0	0	4.0	—	—
6A8	Osc-Modulator	6.3	245	—	130	—	0	4.5	150	-5 to -30
6K7	I-F Amplifier	6.3	230	—	130	4.0	0	4.0	—	—
6R7	Diode Detector & A-F Amplifier	6.3	130	—	—	—	0	4.0	—	—
6N6	(2) Output	6.3	245	230	—	—	0	4.0	—	—
5Z4MG	Rectifier	5.0	345	—	—	—	—	—	—	—

W-41187 Phantom Conductor Tube—All Voltages Variable

Voltage drop across speaker field 100 volts.  
Power Output approximately 8 watts.  
Power Consumption approximately 115 watts.  
All readings taken on 117.5 volt power supply.

**PHONOGRAPH PICKUP**

Chassis equipped with a 25 cycle power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P C S and the pickup is connected through a double pole single throw switch to these terminals as shown in Fig. 7.

**ALIGNMENT PROCEDURE**

This is a High Fidelity receiver and in order to secure maximum performance the alignment of its circuits should be done with precision instruments.

**Tuning I-F Amplifier to 450 Kilocycles.**

The I-F amplifier employs two triple-tuned I-F transformers and under no condition should their trimmer condensers be readjusted just to determine if they are properly tuned. Fig. 5 shows the selectivity curve of a receiver whose I-F amplifier was slightly mis-tuned while Fig. 6 shows a curve made from actual measurements of a receiver which was properly aligned with the use of an oscilloscope. (See Note 3, next page).

**1. Conventional Method—**

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—Not Electrolytic to the plate terminal of the 6R7 tube. (Be sure, the oscilloscope is protected from D. C. by connecting a condenser, 0.1 to .05 mf., in series with the lead to the plate of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control to the right (ON), turn the tone control to the left (TREBLE) and turn the Phantom Conductor switch to the left (OFF).

(d) Set the signal generator to 450 kilocycles. See Instructions supplied with signal generator and oscilloscope.

(e) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum amplitude and symmetry of the selectivity curve on the resonance line (R).

NOTE: Keep the signal generator output as low as possible in order to prevent AVC action in the receiver.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer (TERT) of the 1st. tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 3) so that it is moderately tight. (DO NOT FORCE ADJUSTING SCREW).

(h) Adjust the top (Sec) and then the bottom (Pri) trimmers of the 1st. I-F transformer for maximum output.

(i) Transfer the lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom (Pri) trimmer of the 1st. I-F transformer. Then adjust the middle trimmer by opening until maximum output is obtained. DO NOT READJUST TOP OR BOTTOM TRIMMERS AFTER THE MIDDLE TRIMMER HAS BEEN ADJUSTED.

**2. Oscilloscope Method.**

(a) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The binding post marked "GND" should be connected to the receiver chassis and the other binding post should be connected

—to P2 of the other Output tube.

(b) Connect the output of the signal generator through a .02 mf. condenser, to the top cap of the 6K7 I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GND terminal of the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the Phantom Control Switch to the left (OFF).

(d) Set the signal generator to 450 Kilocycles.

(e) Adjust the trimmer condensers on the top of the 2nd. I-F transformer for maximum output. Fig. 2 (Item 12).

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc-Mod. I-F transformer so that it is moderately tight. (Do not force adjustment screw).

(h) Increase the output of the signal generator and adjust the top trimmer (Sec) of the 1st. I-F transformer for maximum symmetry and amplitude.

(i) Adjust the bottom trimmer (Pri) of the 1st. I-F transformer for maximum amplitude.

(j) Reduce the output of the signal generator and adjust the middle trimmer of the 1st. I-F transformer for maximum symmetry and amplitude.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 Ohm carbon resistor should be used in place of the condenser.

Each band should be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig. 4) and "Ant" (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental frequency. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(h) To align the B-C "OSC" series trimmer, Illus. -27, Fig. 4, set the signal generator to 600 Kilocycles and then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

**(C) SIGNAL INPUT FREQUENCIES**

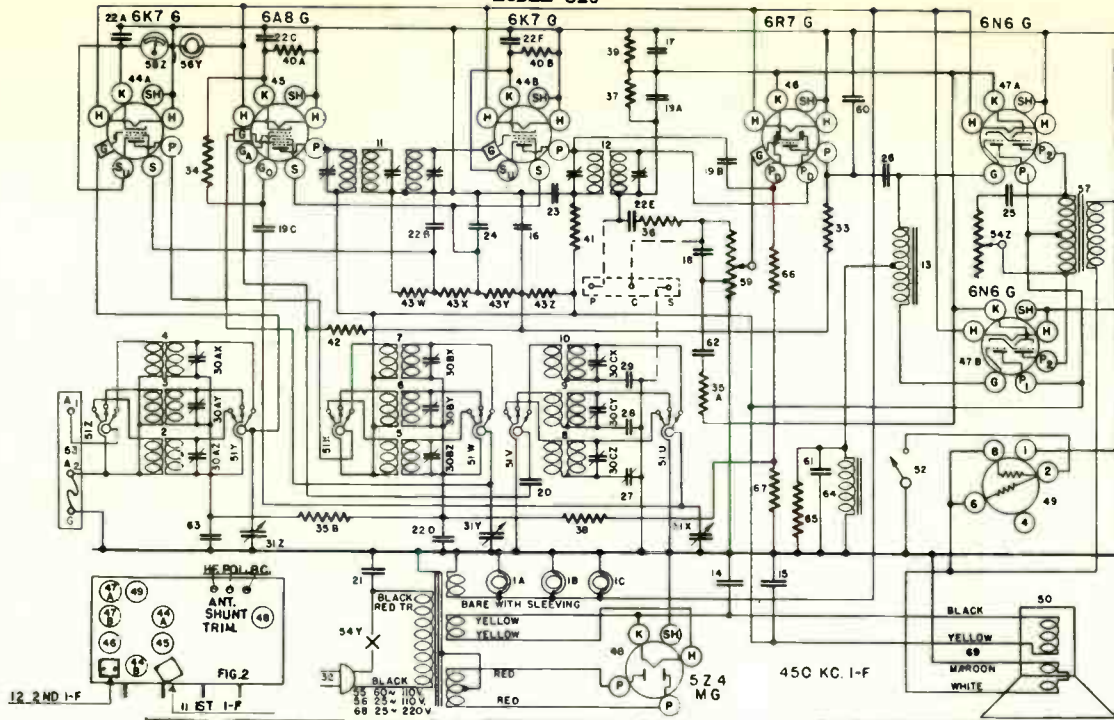
	Shunt Aligned	Series Aligned
American Broadcast (BLUE)	1700 Kc.	600 Kc.
Pol. & Amateur (RED)	6000 Kc.	
High-Frequency (GREEN)	18000 Kc.	

NOTE 3: The high frequency oscillator on this receiver is neutralized by the addition of some small capacity coupling between the oscillator grid and the R-F grid of the 6A8 tube. This is accomplished by loosely wrapping a piece of insulated hook-up wire around the

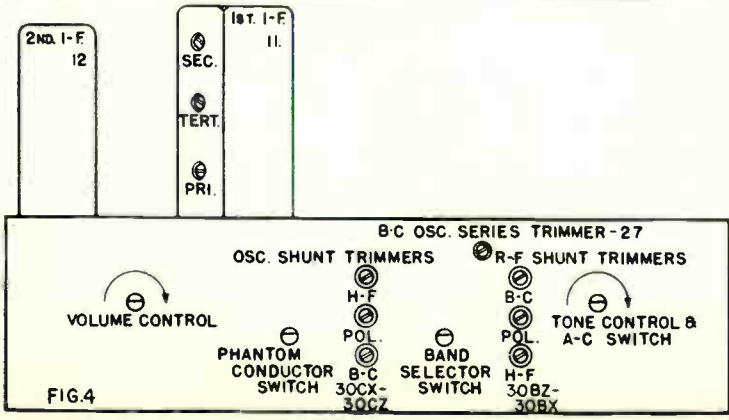
R-F grid lug and connecting it to the oscillator grid lug on the band selector switch.

It is necessary on some sets to adjust or even remove this coupling, in which case the wire should be unwrapped and threaded through the extra hole in the grid end of the R-F coil.

MODEL 816



Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light	37	-36321	Resistor, 400,000 Ohm 1/4 W. Insulated
	G3 -37965	Dial Light Socket Assembly	38	-37245	Resistor, 1.5 Megohm 1/4 W. Carbon
	W -40570	Dial Light Shield (2)	39	W -24537	Resistor, 60 Ohm 1/4 W. Flexible
2	G110 -32000	Ant. Coil—B-C-B.	40A	W -28589	Resistor, 350 Ohm 1/4 W. Flexible
3	G111 -32000	Ant. Coil—Pol.-B.	40B	W -28589	Resistor, 350 Ohm 1/4 W. Flexible
4	G112 -32000	Ant. Coil—H-F-B.	41	W -24013	Resistor, 2,000 Ohm 1/4 W. Flexible
5	G76 -32001	R-F. Coil—B-C-B.	42	W -37997	Resistor, 15,000 Ohm 1 W. Wire Wound
6	G83 -32001	R-F. Coil—Pol.-B.	43Z		1000 Ohm
7	G84 -32001	R-F. Coil—H-F-B.	43Y	W -41484	7000 Ohm Candohm
8	G98 -32002	Osc. Coil—B-C-B.	43X		3500 Ohm
9	G99 -32002	Osc. Coil—Pol.-B.	43W		15000 Ohm
10	G107 -32002	Osc. Coil—H-F-B.	44A	G151-36400	Socket Type 6K7
11	G112 -32001	1st I-F. Assembly	44B	G152-36400	Socket Type 6K7
12	G114 -32004	2nd I-F. Assembly	45	G156-36400	Socket Type 6A8
13	G12 -29535	A-F Driver Choke	46	G164-36400	Socket Type 6R7
14	W -36055	Condenser, 35 Mfd. 400 V. Electrolytic	47A	G165-36400	Socket Type 6N6
15	W -41080	Condenser, 12 Mfd. 200 V. Electrolytic	47B	G165-36400	Socket Type 6N6
16	W -41081	Condenser, 16 Mfd. 250 V. Electrolytic	48	G154-36400	Socket Type 5Z4
17	W -41598	Condenser, 50 Mfd. 25 V. Electrolytic	49	G167-36400	Socket Type 5 Prong (W41187 tube)
18	G6 -34002	Condenser, .00025 Mfd. Molded	W -27381A		Tube Shield Base
19A	G2 -34002	Condenser, .0001 Mfd. Molded	W -49911		Speaker 542 CJ 4
19B	G2 -34002	Condenser, .0001 Mfd. Molded	50	C -49910	Band Selector Switch
19C	G2 -34002	Condenser, .0001 Mfd. Molded	51	W -4486	Phantom Control Switch
20	W -35139	Condenser, .004 Mfd. 400 V.	52	G26 -26719	Ant. & Grid Terminal Assembly
21	W -30805	Condenser, .01 Mfd. 400 V.	53	54Z	Tone Control
22A	W -36541	Condenser, .02 Mfd. 200 V.	54Z	54Y	A-C Switch
to	W -36541	Condenser, .02 Mfd. 200 V.	54Y		
22F	W -36541	Condenser, .02 Mfd. 200 V.	55	-41506	Power Transformer 110 V. 60 Cy.
23	W -30488	Condenser, .02 Mfd. 400 V.		-41507	Power Transformer 110 V. 25 Cy.
24	W -35936	Condenser, .05 Mfd. 200 V.		-41508	Power Transformer 220 V. 25 Cy.
25	W -23615	Condenser, .05 Mfd. 400 V.	57	G53 -24528	Audio Output Transformer
26	W -29910A	Condenser, .25 Mfd. 200 V.	58Z		Tuning Meter
27	-40769	B-C Osc. Series Trimmer Condenser	W -41464		Tuning Meter Bulb
28	G7 -34000	Pol. Osc. Series Fixed Cond. (1450Mmfd.)	59	-41301	Volume Control 3 Megohm tap 1 Meg.
29	G20 -34000	H-F Osc. Series Fixed Cond. (4910Mmfd.)	60	G1 -34002	Condenser .0025 Mfd. Molded
30	W -35951	3 Section Shunt Trimmer Cond. Assy.	61	W -27216	Condenser .05 Mfd. 200 V.
31	G52 -33002	Dial Drive Assembly Complete	62	W -34713	Condenser .005 Mfd. 160 V.
	MG-22 -41475	Dial Drive Assembly Complete	63	-32379	Condenser .02 Mfd. 200 V.
	C -41501	Dial	G13	-29535	Compensator Choke
	-41136A	Dial Mask		-22196	Resistor 20,000 Ohm 1/4 W. Carbon
	-40485	Long Hand		-35930	Resistor 200,000 Ohm 1/4 W. Insulate
	-41145	Short Hand		-23785	Resistor 500,000 Ohm 1/4 W. Carbon
	W -40486	Hand Mtg. Screw	C	-37894	Escutcheon
32	-41157	Driver Belt	G	-37896A	Escutcheon Retaining Spring
	-33906	Power Cord & Plug	B	-37898	Glass Lens (Bezel)
33	-24990	Resistor, 25,000 Ohm 1/4 W. Carbon	B	-37897	Lens Retaining Spring
34	-21237A	Resistor, 60,000 Ohm 1/4 W. Carbon	W	-37339	Knob (3)
35A	-35600	Resistor, 100,000 Ohm 1/4 W. Insulated	W	-40492B	Knob (2)
35B	-35600	Resistor, 100,000 Ohm 1/4 W. Insulated	W	-36117	Rubber Mtg. Foot
36	-23403	Resistor, 150,000 Ohm 1/4 W. Carbon			



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	K	Go	Ga
6A8G	Modulator	6.3	240	85	Neg	0	Neg	85
6K6G	Oscillator	6.3	145	145	Neg	0	—	—
6U7G	1st I-F Amp	6.3	240	85	Neg	0	—	—
6U7G	2nd I-F Amp	6.3	210	85	Neg	0	—	—
6Q7G	Det., AVC & 1st A-F Amp	6.3	120	—	Neg	0	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
5Y3G	Rectifier	5.0	—	—	—	240	—	—

Power output approximately 5.5 watts.  
 Power consumption approximately 70 watts at 117.5 volts  
 Voltage drop across speaker field 80 volts

**CONNECTING OUTPUT METER**

Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F assm. for maximum output. (Item 9, Fig. 2)

(f) Adjust both trimmers located on top of the 1st I-F assm. for maximum output. (Item 8, Fig. 2)

(g) Check operations (e) and (f) for more accurate adjustment.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd. condenser should be connected in series

with the output lead of the signal generator and for the High Frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, paragraph (c) below.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

**NOTE:** When shunt aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, to try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(b) To align the B. C. OSC. series trimmer (Fig 2), set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band  
 Police & Amateur Band  
 Foreign Band

Shunt Alignment  
 1700 Kilocycles  
 6000  
 18 Megacycles

Series Align.  
 600 Kilocycles

**WAVE TRAP**

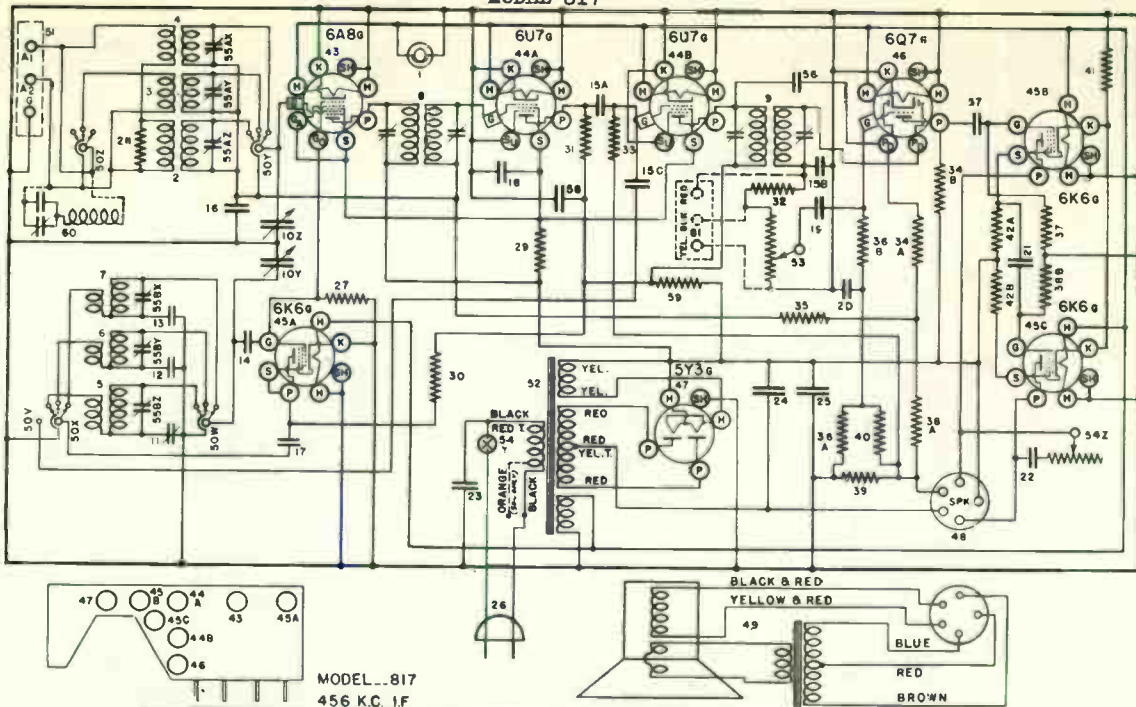
Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 60).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang con-

denser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

MODEL 817



MODEL 817  
456 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Function	Item No.	Part No.	Name	Function
1	W -43567	Bulb, Dial Light, 6-8 V.		34AB	-21455C	Resistor, 300,000 Ohm, 1/2 W.	
	W -44364	Pracket, for Dial Light		35	-21454	Resistor, 1 Megohm, 1/2 W.	
2	G139 -32000	Ant. Coil, 535-1850 Kc.		36AB	-26577	Resistor, 3 Megohm, 1/2 W.	
3	G138 -32000	Ant. Coil, 1900-6600 Kc.		37	-36322C	Resistor, 500,000 Ohm, 1/2 W.	
4	G140 -32000	Ant. Coil, 6.5-22 Mc.		38AB	-23785	Resistor, 500,000 Ohm, 1/2 W.	
5	G139 -32002	Osc. Coil, 535-1850 Kc.		39	W -23012A	Resistor, 40 Ohm, 1/2 W. Flex.	
6	G138 -32002	Osc. Coil, 1900-6600 Kc.		40	-34883	Resistor, 2 Megohm, 1/2 W.	
7	G140 -32002	Osc. Coil, 6.5-22 Mc.		41	W -21965	Resistor, 375 Ohm, 1 W. Flex.	
8	G153 -32004	1st I-F Assy.		42	W -40911	Resistor, 3,000 Ohm, 1/2 W.	
9	G154 -32004	2nd I-F Assy.		43	G156 -36400	Socket, Type 6A8	
10Z Y	G41 -33001	2 Section Gang Cond.		44AB	G171 -36400	Socket, Type 6U7	
	D -44080	Glass Dial Face		45ABC	G172 -36400	Socket, Type 6K6	
	W -44085B	Dial Mask (Paper)		46	G160 -36400	Socket, Type 6Q7	
	W -44084	Dial Support Ring		47	G173 -36400	Socket, Type 5Y3	
	C -44082	Support Brkt., Dial Glass		48	G103 -28807	Socket, Type Speaker	
	G1 -43564	Pulley and Hub Assy.			W -40911	Tube Shield	
	W -41582	Drive Cord (11 1/2 in. Req.)		49	465BP -12 "M"	Base, Tube Shield	
	W -44134	Drive Shaft			-42772	Speaker Spec., 1-D-1049 "M"	
	W -43549	Shaft Ret. Ring			-44273	V. C. and Cone Assy. for 465BP12 "M"	
	W -43542B	Brkt. for Drive Shaft		50	W -44273	Field Coil for 465BP12 "M" Spkr.	
	W -43561	Drive Spring			44274	Output Trans. for 465BP12 "M" Spkr.	
	W -44259	Dial Hand		51	W -43552	Spk. Plug Clmp.	
	W -40485	Pointer Mtg. Screw		52	W -44049	Band Selector Switch	
11	W -40769	B-C. Osc. Series Trimmer			G27 -26719	A1-A2-G. Terminal Assy.	
12	G23 -34000	Condenser, 1500 Mmf.			-44057	Power Trans., 110 V, 60 Cy.	
13	G20 -34000	Condenser, 4910 Mmf.			-44058	Power Trans., 110 V, 50 Cy.	
14	G13 -34002	Condenser, 35 Mmf.			-44059	Power Trans., 230 V, 50 Cy.	
15ABC	G2 -34002	Condenser, 100 Mmf.			44060	Power Trans., 110 V, 25 Cy.	
16	W -35436	Condenser, .05 Mf. 200 V.			-44061	Power Trans., 230 V, 25 Cy.	
17	W -35139	Condenser, .004 Mf. 400 V.		53	-44081	Volume Control, 1 Meg.	
18	W -22688	Condenser, 1 Mf. 400 V.		54Z	-44024	Tone Control, 100,000 Ohm.	
19	W -27652	Condenser, .003 Mf. 200 V.		54Y		Line Switch	
20	W -28621	Condenser, .02 Mf. 200 V.		55	W -35051	3 Sect. Shunt Trimmer Assy.	
21	W -30488	Condenser, .02 Mf. 400 V.		G3	-34002	Condenser, 500 Mmf.	
22	W -23615	Condenser, .05 Mf. 400 V.		56	W -34647	Condenser, .005 Mf. 400 V.	
23	W -30803	Condenser, .01 Mf. 400 V.		57	W -32378	Condenser, .01 Mf. 400 V.	
24	W -44054	Condenser, 30 Mf. 350 V.		58	W -23013	Resistor, 2,000 Ohm, 1/2 W. Flex.	
25	W -36057	Condenser, 40 Mf. 300 V.		59	W -44088	Knob	
26	B -33906A	Power Cord and Plug			W -40164A	Knob	
27	-21237A	Resistor, 60,000 Ohm, 1/2 W.			W -43553	Rubber Mtg. Foot	
28	-22196	Resistor, 20,000 Ohm, 1/2 W.			W -44225	Grille Bar (2)	
29	-44008	Resistor, 10,000 Ohm, 2 W.			-44092	Grille Cloth	
30	-23616	Resistor, 15,000 Ohm, 1 W.			-7C	Cabinet	
31	-31093	Resistor, 2,700 Ohm, 1/2 W.			B -44226B	Escutcheon	
32	-35600	Resistor, 100,000 Ohm, 1/2 W.			G165 -32004	Wave Trap	
33	-21875	Resistor, 100,000 Ohm, 1/2 W.		60			

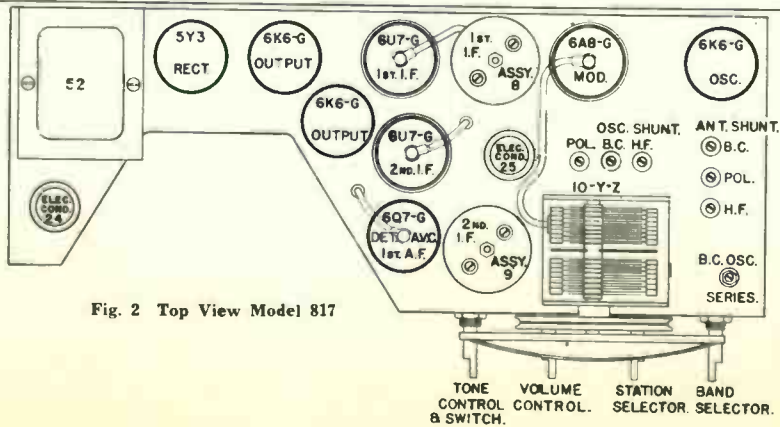


Fig. 2 Top View Model 817



# MODEL 818

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6A8G	Modulator	6.3	240	85	Neg	0	Neg	85
6K6G	Oscillator	6.3	145	145	Neg	0	—	—
6U7G	1st I-F Amp	6.3	240	85	Neg	0	—	—
6U7G	2nd I-F Amp	6.3	210	85	Neg	0	—	—
6Q7G	Det., AVC & 1st A-F Amp	6.3	120	—	Neg	0	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
6K6G	Output	6.3	235	230	0	18.5	—	—
5Y3G	Rectifier	5.0	—	—	—	240	—	—

Power output approximately 5.5 watts.  
 Power consumption approximately 70 watts at 117.5 volts.  
 Voltage drop across speaker field 80 volts.

### Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F assm. for maximum output. (Item 9, Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F assm. for maximum output. (Item 8, Fig. 2).

(g) Check operations (e) and (f) for more accurate adjustment.

### Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be **SHUNT ALIGNED** and then **SERIES ALIGNED** where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated for each adjustment, ¶ (C) below.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE "OSC" TRIMMER.**

### (C) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
 Police & Amateur Band  
 Foreign Band

Shunt Align.  
 1700 Kilocycles  
 6000 Kilocycles  
 18 Megacycles

Series Align.  
 600 Kilocycles

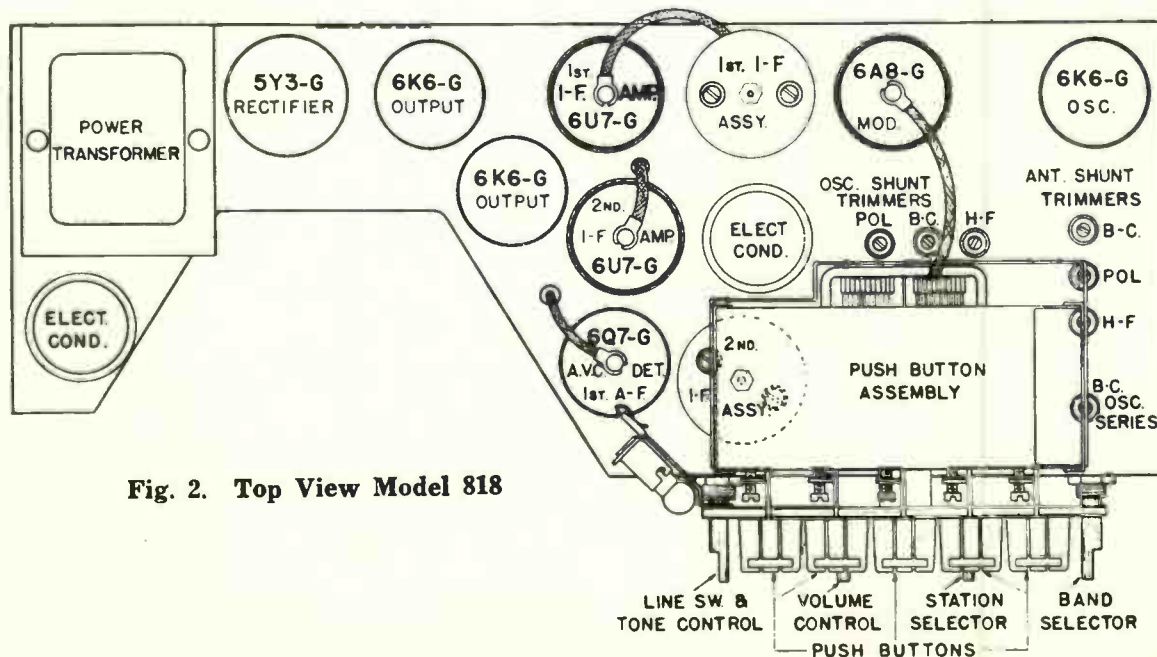


Fig. 2. Top View Model 818



## MODELS 819, J819, 1019

Model 1019 is the same as model 819 except for the cabinet, dial, escutcheon and knobs used. There are two versions of the model 819 in the field. The first few releases had an electrical (magnetune) push button tuning system and two 2526GT Rectifier tubes. The later releases had a mechanical push button tuning system, loop antenna, two 5Y3G Rectifier tubes and a power transformer. Models J-819 and 1019 falls in this group.

### Aligning The I-F Amplifier To 455 Kilocycles.

(a) Connect the output lead of the signal generator through a .0002 mf. condenser to the receiver antenna lead (Blue). Connect the signal generator ground lead through a .01 mf. or smaller condenser to the receiver ground lead (Black).

(b) Set the signal generator to 455 kilocycles. Turn the receiver band switch to the Broadcast band (left), the tone control switch to the speech position (left) open the gang condenser all the way then turn the volume control on full (all the way to the right).

(c) Adjust the two trimmer condensers on the second I-F assembly for maximum output (Fig. 2).

(d) Adjust the two trimmer condensers on the first I-F assembly for maximum output. (Fig. 2).

(e) Repeat (c) and (d) for more accurate adjustments.

### Aligning The R-F Amplifier.

(a) For aligning the broadcast band the setup remains the same. Using a .0002 mf. condenser for a dummy antenna and etc.

(b) For models without loop antenna set the signal generator to 1725 kilocycles. For models with a loop antenna set the signal generator to 1550 kilocycles. Open condenser gang all the way, turn band switch to left (B. C.), tone control to left (speech) and the volume control on full.

(c) For models without the loop antenna adjust B. C. oscillator shunt trimmer condenser (Fig. 2) for maximum output (gang does not have to tune through this signal). For models with a loop antenna there are two oscillator shunt trimmer condensers as will be noted in figure 2. Close the front oscillator shunt trimmer all the way, then open about 1/2 turn. Proceed to tune in with the other (rear) trimmer the 1550 kilocycle signal for maximum output.

(d) Set the signal generator to 1400 kilocycles.  
 (e) Tune the receiver to generator signal for maximum output (approximately 140 on the dial).  
 (f) On models without the loop adjust the B. C. antenna shunt trimmer for maximum output, see (Fig. 2). On models with a loop a B. C. antenna shunt trimmer is located on top the loop antenna; adjust for maximum output.

Models equipped with a loop antenna have provisions for series aligning the oscillator circuit:

(1) Set signal generator to 600 kilocycles.  
 (2) Tune in generator signal on receiver.  
 (3) While rocking tuning condenser back and forth adjust oscillator series trimmer (Fig. 2) for maximum output. Then repeat (d) and (f) for more accurate alignment.

(g) Change dummy antenna from a .0002 mf. condenser to a 250 carbon resistor.

(h) For models without loop antenna set the signal generator to 5.8 megacycles. Open gang condenser, turn band switch to center position, T. C. to left (speech) and volume on full. For models with a loop antenna set signal generator to 5.0 megacycles.

(i) Adjust "Pol." oscillator shunt trimmer condenser (Fig. 2) for maximum output.

(j) For models without loop antenna set signal generator to 5.5 megacycles. For models with a loop antenna set signal generator to 4.0 megacycles.

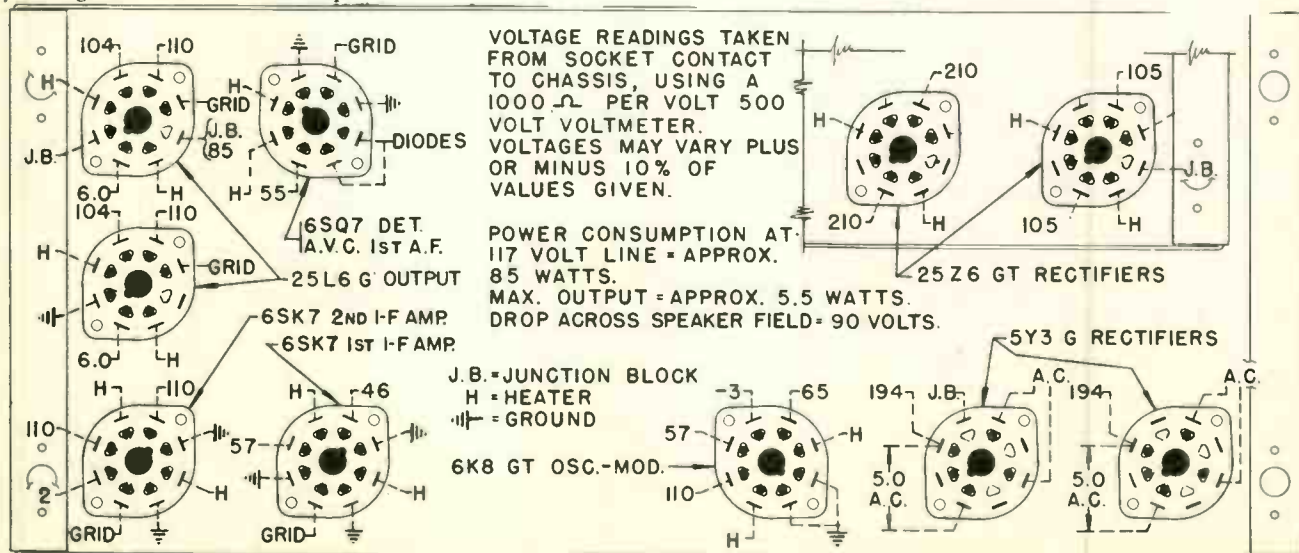
(k) Tune in generator signal with manual control for maximum output (approximate 5.5 or 4.0 megacycles on the dial). Adjust the "Pol." antenna shunt trimmer condenser for maximum output.

(l) Set signal generator to 18.3 megacycles.

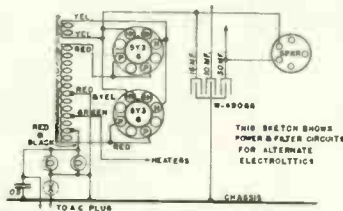
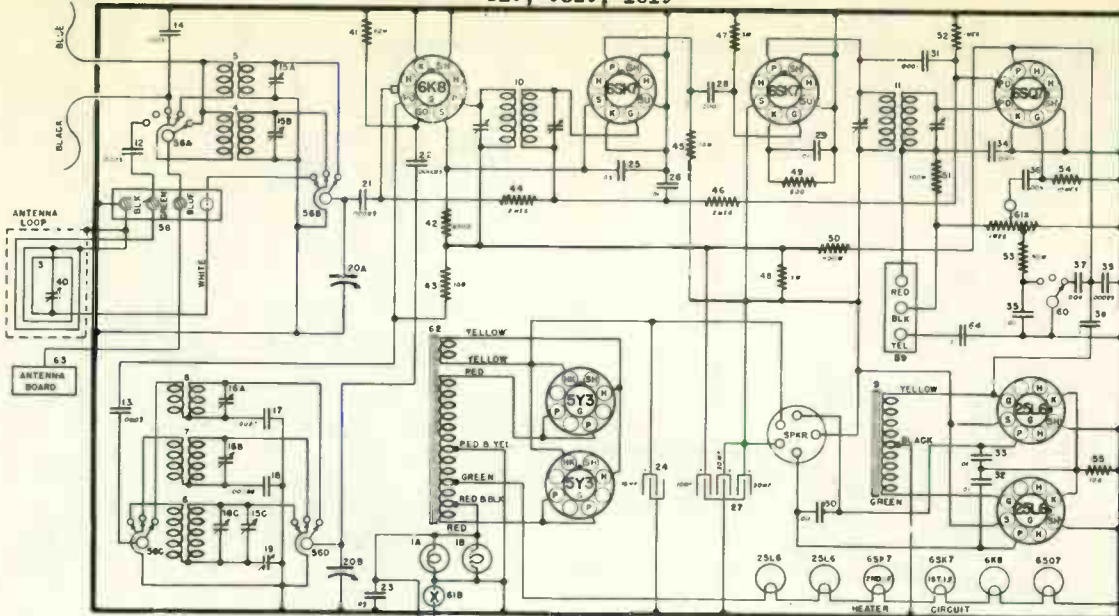
(m) With gang open and band switch turned to the right (H. F.), adjust the H. F. (high frequency) oscillator trimmer (Fig. 2) for maximum output. Care should be taken to align the oscillator on the fundamental and not the image frequency. When correctly aligned the image should be heard approximately 17.4 on the dial but will be comparatively weak compared to the fundamental signal.

(n) Set signal generator to 18.0 megacycles.

(o) Tune in the signal generator signal for maximum output; then adjust the H. F. antenna shunt trimmers for maximum output.



MODELS 819, J819, 1019



MODEL - B19 8 1019

455 KC. F.  
BLACK - GROUND  
BLUE - ANTENNA

PHONO TERMINALS  
TELEVISION - SOUND

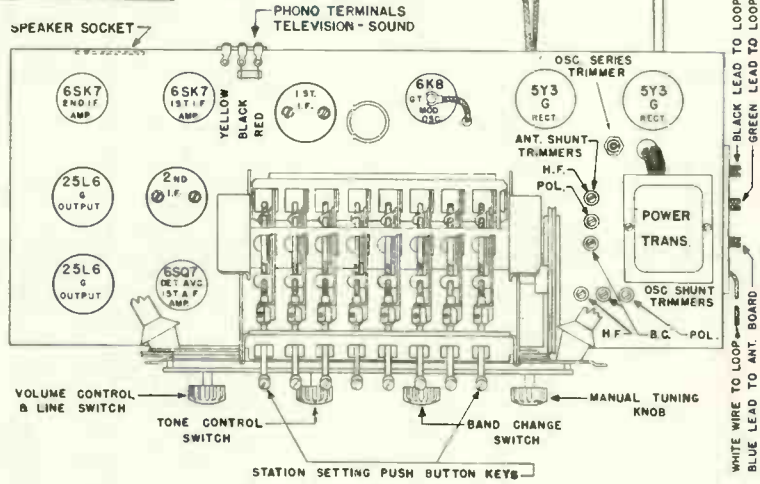


Fig. 2 -Top View Models 819 and 1019

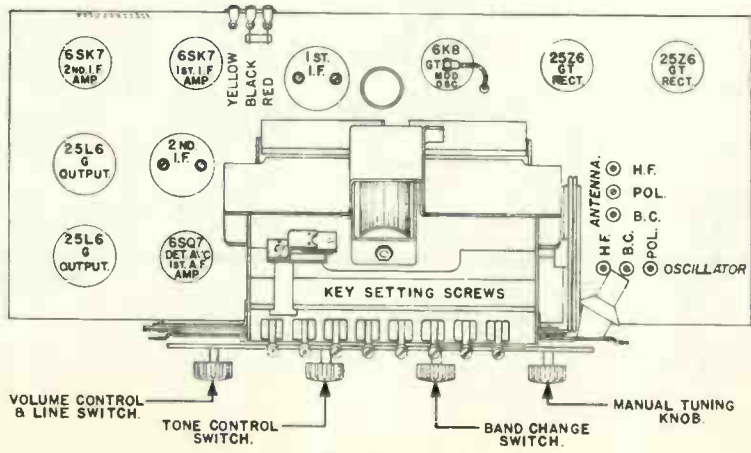
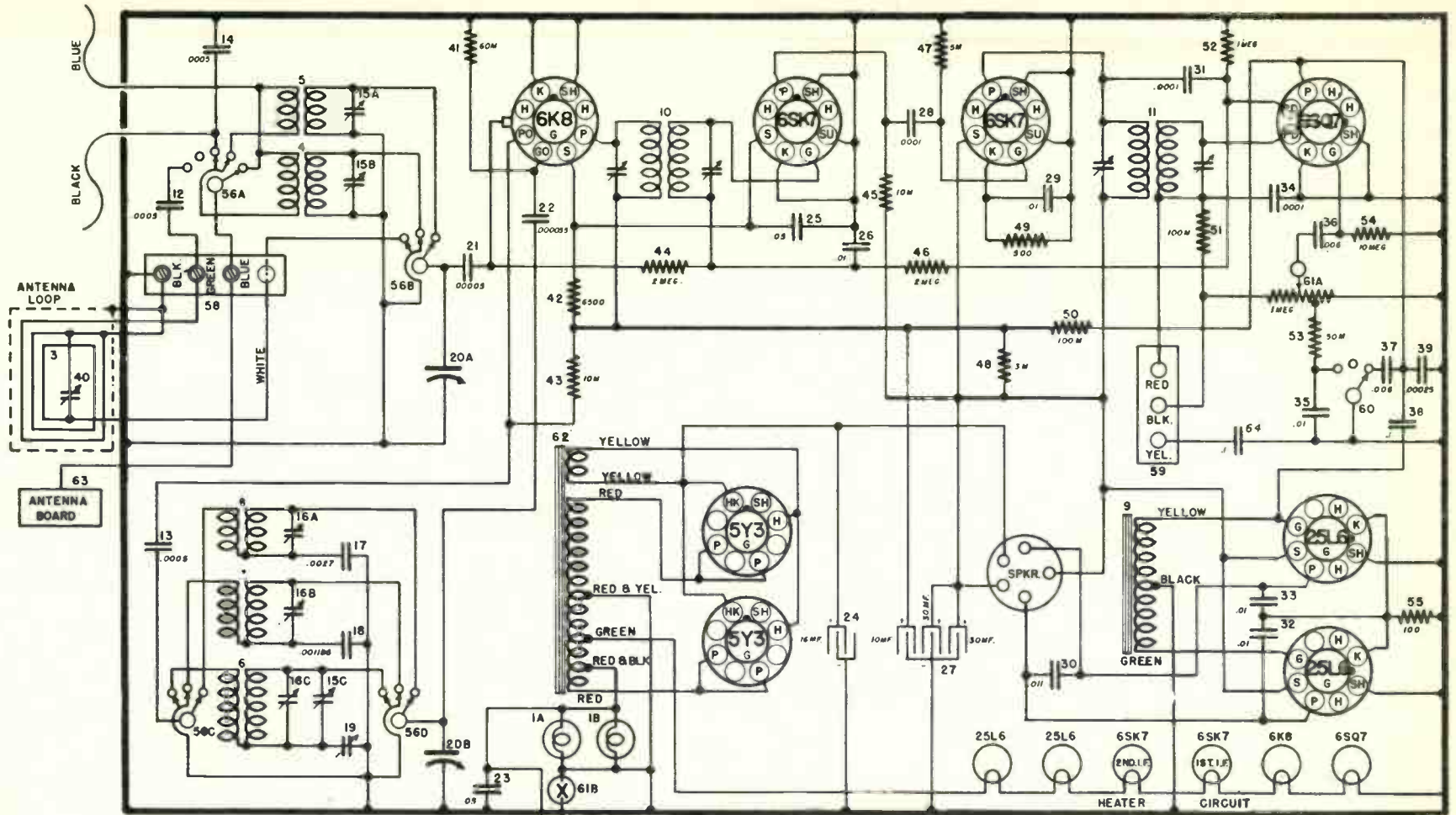
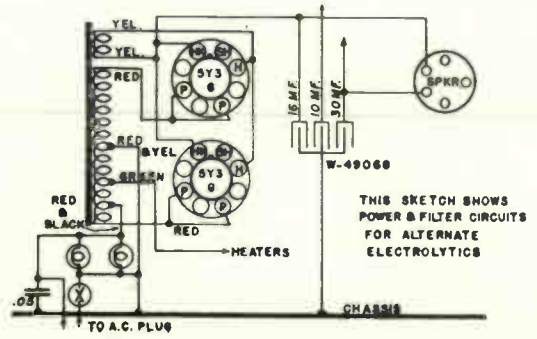


Fig. 3 -Top View Model 819 (No Loop)



MODELS 819, 1019



MODEL -- 819 & 1019  
455 KC. I.F.

FIG. 1—WIRING DIAGRAM—MODELS 819 and 1019

**PARTS LIST—MODEL 819**  
(Series Using 25Z6 Rectifiers)

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—48318	Dial Lamp—110 Volt		—48622	V. C. and Cone Assy.—“R”
	G1 —48303	Socket—Dial Lamp		—43979	Cardboard Ring—Cone Mounting
	—48302	Cover—For Dial Lamp		—48624	Field Coil (700 Ohms) “R”
2	—45784	Power Cord and Plug		—48623	Output Transformer
3	G198—32000	Antenna Coil, H. F.	56	—48241	Band Change Switch
4	G197—32000	Antenna Coil, Pol.	57	G41 —26719	Phono Terminal Board Assy.
5	G196—32000	Antenna Coil, B. C.	58	—48243	Tone Control Switch
6	G199—32002	Oscillator Coil, H. F.	59	—48242	Switch and Volume Control—1 Meg. taped
7	G198—32002	Oscillator Coil, Pol.			
8	G197—32002	Oscillator Coil, B. C.	60	G193—32004	455 Kc. Wave Trap
9	G4 —47909	Solenoid Tuning Coil	61	G8 —47866	Switch—Push Button
10	G12 —29535	Audio Input Choke		—44635	Spring—Switch Blade
11	G222—32004	1st I-F. Assy.—455 Kc.		G2 —47866	Contact and Blade Assy.
12	G228—32004	2nd I-F. Assy.—455 Kc.		G3 —47866	Bottom and Contact Assy. (Switch)
13	G3 —34002	Condenser, .0005 Mf. Mica		G2 —47880	Push Button Tuning Unit—Complete
14	G3 —34002	Condenser, .0005 Mf. Mica		G32 —47880	Riveted Key Assy.
15	—35951A	3 Section Ant. Shunt Trimmer		G29 —47880	Rocker Plate and Gear Assy.
16	—35936	Condenser, .05 Mf. 200 V.		MG23—47810	Riveted Switch Rocker Bar
17	—45713	3 Section Osc. Shunt Trimmer		G27 —47880	Armature and Pin Assy.
18	G11 —34005	Condenser, .0027 Mf. Mica		—48263	Magnet Mtg. Plate
19	G14 —34005	Condenser, .001185 Mf. Mica		—48368	Push Button Shaft
20	G14 —34002	Condenser, .0004 Mf. Mica		—48652	Magnet Rocker Plate
21	G77 —33001	2 Section Var. Tuning Condenser		—47849C	Glass Dial
22	G13 —34002	Condenser, .000035 Mf. Mica		MG27—47810	Bracket—Dial Support
23	—32380	Condenser, .05 Mf. 200 V.		—48187	R. H. Clip—Dial Mtg.
24	—23615	Condenser, .05 Mf. 400 V.		—46020	L. H. Clip—Dial Mtg.
25	—23191A	Condenser, .01 Mf. 400 V.		—48280	Clip—Dial Mtg.
26	—47702	Condenser, 30 Mf. 125 V.		—48301	Cushion—Dial Glass
27	G2 —34002	Condenser, .0001 Mf. Mica		—48285A	Pointer—Dial Hand
28	—47809	Condenser, 30-30-10 Mf. 135 V.		G21 —43564	Pulley and Hub Assy.
29	—23191A	Condenser, .01 Mf. 400 V.		—48292	Drive Shaft and Pulley
30	—23191A	Condenser, .01 Mf. 400 V.		—43878A	Bracket—Shaft Mtg.
31	—23191A	Condenser, .01 Mf. 400 V.		—51071	“C” Washer—Shaft Retaining
32	G2 —34002	Condenser, .0001 Mf. Mica		34—41582	Drive Cord (85½” Long)
33	—24049C	Condenser, .1 Mf. 200 V.		—46290	Cord Clamp—Drive Cord
34	—48667	Condenser, .01 Mf. 160 V.		—50590	Spring—Cord Tension
35	G2 —34002	Condenser, .0001 Mf. 200 V.		—48402	Felt Light Guard
36	—34713	Condenser, .006 Mf. 160 V.		—49285A	Guide—Cord on Pulley
37	—48560	Condenser, .008 Mf. 160 V.		9HM	Cabinet
38	—24049C	Condenser, .1 Mf. 200 V.		—47854	Shipping Carton
39	G1 —34002	Condenser, .00025 Mf. Mica		MG32—47811	Push Button Hinge Assy.
40	—35928	Resistor, 60,000 Ohms ¼W. Ins.		—47767	Push Button—Magnetune
41	—36317	Resistor, 10,000 Ohms ¼W. Ins.		—48277	Rod—Push Button Mtg.
42	—35934	Resistor, 6,500 Ohms ¼W. Ins.		—48284	Cabinet Back
43	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—48185	Escutcheon
44	—44009	Resistor, 3,000 Ohms ¼W. Ins.		—46464	Thumb Screw—Back Mtg.
45	—27121	Resistor, 5,000 Ohms ½W. Carb.		—48283	Speaker Baffle
46	—27121	Resistor, 5,000 Ohms ½W. Carb.		—47217	Grommet—Speaker Baffle
47	—35927	Resistor, 2 Megohms ¼W. Ins.		—47219	Headed Bushing—Speaker Baffle
48	—47815	Resistor, 500 Ohms ½W. W. W.		—48393	Dust Cloth—Speaker Baffle
49	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—49440	Escutcheon Mtg. Strip
50	—35600	Resistor, 100,000 Ohms ¼W. Ins.		—47843	Escutcheon Mtg. Screw, FS-18
51	—35602	Resistor, 1 Megohm ¼W. Ins.		MG31—47811	Instruction Envelope Assy.
52	—37472	Resistor, 50,000 Ohms ½W. Carb.		—48751	Call Letter Sheet
53	—50956	Resistor, 10 Megohms ¼W. Ins.		—48749	Celluloid Call Letter Cover
54	—47814	Resistor, 100 Ohms 1½W. W. W.		—48297	Knob—Band Switch
55	594-BP-15“M”	Speaker—Mfg. Spec. No. 1-D-1581		—48999	Knob—Tone Control
	—48891	V. C. and Cone Assy.—“M” only		—48298	Knob—V. C.—Tuning
	—48892	Field Coil (700 Ohms) “M”		—45056	Grommet—Chassis Mtg.
	—48893	Output Transformer—“M”		—44772	Chassis Hold Down Screw, FS-58
	—43678	Cardboard Ring—Cone Mounting		—45579	Chassis Hold Down Washer, FS-58
	—44682	5 Prong Speaker Plug			
	594-BP-15“R”	Speaker—Mfg. Spec. No. F-5735			

**PARTS LIST — MODELS 819, J-819, 1019**  
**(Model with 5Y3G Rectifiers)**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —48318	Dial Lamp—110 Volt	62	—48902	Power Trans., 110 V.—60 Cycle
	G1 —48303	Socket—Dial Lamp		—49018	Power Trans., 110 V.—50-60 Cycle
	—48302	Cover—For Dial Lamp		—49067	Power Trans., 110 V.—25-60 Cycle
2	B —45784	Power Cord and Plug		—49019	Power Trans., 220 V.—50-60 Cycle
	B —45769	Power Cord and Plug—220 Volt only and J819	62	—48996	Power Trans., 110 V.—60 Cycle—J819
3	G1 —48821	Loop Antenna—B. C.		—49706	Push Button Tuning Unit
4	G205—32000	Antenna Coil—Pol.	G32	—47880	Riveted Key Assv.
5	G206—32000	Antenna Coil—S. W.	G31	—48762	Rocker Plate and Gear Assy.
6	G210—32002	Oscillator Coil—B. C.		—50561	Screws—Rocker Plate Bearing
7	G211—32002	Oscillator Coil—Pol.		—47877	Adjusting Screw
8	G212—32002	Oscillator Coil—S. W.		—48769	Shafts (End of Adjusting Screw)
9	G12 —29535	Audio Coupling Choke		—38056	No. 8—32 x 1/8" Headless Set Screw
10	G222—32004	1st I-F. Assy.—455 Kc.	MG27	—48826	Spring—Push Button Return
11	G228—32004	2nd I-F. Assy.—455 Kc.		—47849	Bracket—Dial Support
12	G3 —34002	Condenser, .0005 Mf. Mica		—48857	Glass Dial
13	G3 —34002	Condenser, .0005 Mf. Mica		—48187	R. H. Clip—Dial Mtg. (1 Req.)
14	G3 —34002	Condenser, .0005 Mf. Mica		—46020	L. H. Clip—Dial Mtg. (1 Req.)
15	—35951	3 Section—Shunt Trimmer Cond.		—48280	Clip—Dial Mtg. (2 Req.)
16	—45713	3 Section—Shunt Trimmer Cond.		—48301	Cushion—Dial Mtg.
17	G11 —34005	Condenser, .00270 Mf. Mica	G21	—48285	Pointer—Dial Hand
18	G14 —34005	Condenser, .001185 Mf. Mica		—43564	Pulley and Hub Assy.
19	—38989	Condenser, B. C. Csc. Series Trimmer		—48292	Drive Shaft and Pulley
20	G85 —33001	2 Section Var. Tuning Condenser		—43878	Bracket—Drive Shaft Mtg.
21	G5 —34002	Condenser, .00005 Mf. Mica	G34	—51071	"C" Washer—Shaft Retaining
22	G13 —34002	Condenser, .000035 Mf. Mica		—41582	Drive Cord (85 1/2")
23	—23615	Condenser, .05 Mf. 400 V.		—46290	Cord Clamp
24	—30805	Condenser, .01 Mf. 400 V.—J819		—50590	Spring—Cord Tension
25	—46128	Condenser, 16 Mf. 250 V.		—48402	Felt Light Guard
26	—32380	Condenser, .05 Mf. 200 V.		—49285	Guide—Cord on Pulley
27	—23191	Condenser, .01 Mf. 400 V.		9HM	Cabinet
28	—47809	Condenser, 30-30-10 Mf. 135 V.		—47854	Shipping Carton
29	G2 —34002	Condenser, .0001 Mf. Mica		—48284	Cabinet Back
30	—23191	Condenser, .01 Mf. 400 V.		—46464	Thumb Screws—Back Mtg.
31	G2 —34002	Condenser, .0001 Mf. Mica	MG32	—47843	Screw—Escutcheon Mtg.—FS18
32	—23191	Condenser, .01 Mf. 400 V.		—48185	Escutcheon
33	—23191	Condenser, .01 Mf. 400 V.		—47811	Riveted Push Button Hinge
34	G2 —34002	Condenser, .0001 Mf. Mica		—48277	Rod—Button to Hinge Mtg.
35	—48667	Condenser, .01 Mf. 160 V.		—48729	Push Button—Mech. Unit
36	—34713	Condenser, .006 Mf. 160 V.		—48766	Light Deflector Felt—Escutcheon
37	—48560	Condenser, .008 Mf. 160 V.		—48751	Call Letter Tabs
38	—24049	Condenser, .1 Mf. 200 V.		—48749	Celluloid Cover—Call Tab
39	G1 —34002	Condenser, .00025 Mf. Mica		—49440	Escutcheon Mtg. Strip
40	—48822	Single Trimmer—Loop Antenna		—48297	Knob—Band Switch
41	—35928	Resistor, 60,000 Ohms 1/4 W.		—48999	Knob—Tone Control
42	—35934	Resistor, 6,500 Ohms 1/4 W.		—48298	Knob—V. C.—Tuning
43	—36317	Resistor, 10,000 Ohms 1/4 W.		—47843	Bristol Screw—Escut. Mtg.—FS18
44	—35927	Resistor, 2 Megohms 1/4 W.		—48283	Speaker Baffle
45	—36317	Resistor, 10,000 Ohms 1/4 W.		—48393	Dust Cloth—Speaker Baffle
46	—35927	Resistor, 2 Megohms 1/4 W.		—47217	Grommet—Baffle Mtg.
47	—27121	Resistor, 5,000 Ohms 1/4 W.		—47219	Headed Bushing—Baffle Mtg.
48	—44009	Resistor, 3,000 Ohms 1/4 W.	MG31	—47811	Instruction Envelope Assy.
49	—47815	Resistor, 500 Ohms 1/4 W.			
50	—35600	Resistor, 100,000 Ohms 1/4 W.			
51	—35600	Resistor, 100,000 Ohms 1/4 W.			
52	—35602	Resistor, 1 Megohm 1/4 W.			
53	—37472	Resistor, 50,000 Ohms 1/4 W.			
54	—50956	Resistor, 10 Megohms 1/4 W.			
55	—47814	Resistor, 100 Ohms 1 1/2 W.			
56	—48241	Band Change Switch			
57	594-BP-15"M"	Speaker—Mfg. Spec. No. 1-D-1581			
	—48891	V. C. and Cone Assy.—"M" only			
	—43678	Cardboard Ring—Cone Mtg.	MG32	—47811	Riveted Push Button Hinge
	—48892	Field Coil (700 Ohms) "M"		—48277	Rod—Button to Hinge Mtg.
	—48893	Output Transformer		—49125	Push Button
	594-BP-15"R"	Speaker—Mfg. Spec. No. F-5735		—48751	Call Letter Sheet
	—48622	V. C. and Cone Assy.—"R"		—48749	Celluloid Cover—Call Letter
	—43979	Cardboard Ring—Cone Mtg.		—49440	Escutcheon Mtg. Strip
	—48624	Field Coil (700 Ohms) "R"		—49123	Knob—Vol. Control—Tuning
	—48623	Output Transformer		—49130	Knob—Tone Control
	—44682	5 Prong Plug—Speaker		—49131	Knob—Band Switch
58	G48 —26719	Terminal Board—For Loop Connections	MG31	—49106	Instruction Envelope Assy.
59	G41 —26719	Phono Terminal Board		—44772	Screw—Chassis Mtg.—FS58
60	—48243	Tone Control Switch		—45579	Washer—Chassis Mtg.
61	—48242	Switch and Volume Control—1 Meg. Tapped			

**1019 MISCELLANEOUS**

- 9HP Cabinet
- 47854 Shipping Carton
- 48284 Cabinet Back
- 46461 Thumb Screws—Back Mtg.
- 47843 Screw—Escut. Mtg.—FS18 (Bristol)
- 48275 Screw—Escutcheon Mtg. (Mach.)
- 49143 Escutcheon
- MG32—47811 Riveted Push Button Hinge
- 48277 Rod—Button to Hinge Mtg.
- 49125 Push Button
- 48751 Call Letter Sheet
- 48749 Celluloid Cover—Call Letter
- 49440 Escutcheon Mtg. Strip
- 49123 Knob—Vol. Control—Tuning
- 49130 Knob—Tone Control
- 49131 Knob—Band Switch
- MG31—49106 Instruction Envelope Assy.
- 44772 Screw—Chassis Mtg.—FS58
- 45579 Washer—Chassis Mtg.

MODEL 828

Tube	Function	TUBE SOCKET VOLTAGE READINGS						
		H	P	S	G	K	Co	Po
6 J5G	Oscillator	6.3	145	—	—	0	—	—
6A8G	Modulator	6.3	265	82	-3	0	—	82
6U7G	I-F Amplifier	6.3	265	82	-3	0	—	—
6Q7G	Detector A.V.C. 1st A-F	6.3	200	—	-3	0	—	—
6 J5G	Phase Inverter	6.3	165	—	-4	78	—	—
6K6G(2)	Output	6.3	260	265	—	17	—	—
5Y3G	Rectifier	5.0						

Max. power output approx. 10 watts.  
Power consumption at 117.5 line 85 watts.  
Voltage across speaker field 62 volts.

A. C.

**Tuning I-F Amplifier to 455 Kilocycles.**

(a) Connected the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band. Right.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F asm. for maximum output. (Item 10, Fig. 2)

(f) Adjust both trimmers located on top of the 1st I-F asm. for maximum output. (Item 9, Fig. 2)

**Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast and Police Bands a .00025 mfd condenser should be connected in series with the output lead of the signal generator and for the High Frequency band a 250 ohm carbon resistor should be used in place of the condenser.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustment of the "ANT" trimmer **DO NOT READJUST THE "OSC" TRIMMER.**

(b) To align the B. C. OSC. series trimmer (Fig. 2), set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast Band  
Police and Amateur Band  
Foreign Band

Shunt Alignment  
1400 Kilocycles  
6000 "  
18 Megacycles

Series Align.  
600 Kilocycles

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light—6.8 Volt	48	—23785	Resistor, 500,000 Ohm 1/2 W.
2	W —37922	Dial Light—6.8 Volt	49	—27121	Resistor, 5,000 Ohm 1/2 W.
	G16 —45398	Socket and Brkt. Assy., Dial Light	50	—21875	Resistor, 100,000 Ohm 1/2 W.
3	G170—32000	Antenna Coil—H-F.	51	—21875	Resistor, 100,000 Ohm 1/2 W.
4	G168—32000	Antenna Coil—Pol.	52	—23785	Resistor, 500,000 Ohm 1/2 W.
5	G169—32000	Antenna Coil—B-C.	53	—23785	Resistor, 500,000 Ohm 1/2 W.
6	G170—32002	Oscillator Coil—H-F.	54	W —22873	Resistor, 220 Ohm 2 1/2 W.
7	G168—32002	Oscillator Coil—Pol.	55	G103—28807	Socket—(5 Prong Spkr.)
8	G169—32002	Oscillator Coil—B-C.		W —43552	Spkr. Plug Clamp
9	G175—32004	1st I-F. Assy., 455 Kc.	56	583-CP-18"K"	Speaker, Spec. No. V. C. and Cone Assy.
10	G176—32004	2nd I-F. Assy., 455 Kc.			Field Coil—(525 Ohm)
11	W —46713	3 Section Trimmer (Osc. Shunt)			Output Transformer
12	W —35951A	3 Section Trimmer (Ant. Shunt)			Cardboard Ring
13	W —35936	Condenser, .05 Mf. 200 V.			Speaker, Spec. No. S-4893N3
14	G20 —34000	Condenser, .004910 Mf. Mica		583-CP-18"H"	V. C. and Cone Assy.
15	G23 —34000	Condenser, .001560 Mf. Mica		—46786	Field Coil (525 Ohm)
16	—40769	B-C. Osc. Series Trimmer		—46788	Output Transformer
17	G13 —34002	Condenser, .000035 Mf. Molded		—46789	Cardboard Ring
18	G59 —33001	2 Section Gang Condenser		583-CP-18"Z"	Speaker, Spec. No. E10K326
	D —46317	Calibrated Dial Glass—Domestic		—46758	V. C. and Cone Assy.
	D —46749	Calibrated Dial Glass—International		—46759	Field Coil (525 Ohm)
	C —46275B	Dial Support—Flocked Mask		—46760	Output Transformer
	W —46941	Rubber Cushion—Dial Glass		—46761	Cardboard Ring
	W —46099	Dial Class Clip—(2 Req.) Mtg.		—46762	Band Selector Switch
	W —46096	Dial Class Clip—(R. H.) Mtg.	57	B —46276	8 Prong Socket
	W —46095	Dial Class Clip—(L. H.) Mtg.	58 to 65	G178—36400	Power Transformer, 60 Cy.—110 V.
	W —46203	Dial Pointer		—46318	Power Transformer, 50 Cy.—110 V.
	W —46097	Guide—Pointer		—46307	Power Transformer, 50 Cy.—220 V.
	G13 —43564	Pulley and Hub Assy. on Gang		—46308	Power Transformer, 25 Cy.—110 V.
	MG17—46287	Small Brass Idler Pulley and Brkt. Assy.		—46309	Power Transformer, 25 Cy.—110 V.
	MG20—46287	Idler Pulley Assy. (2 Pulleys)		—46310	Power Transformer, 40-100 Cy.—95-267 V.
	—45877B	Drive Shaft and Pulley (Manual)		—46311	Wave Trap—455 Kc.
	W —45878	Bracket—Drive Shaft Mounting	67	MG41—46287	Coil—Only—Wave Trap
	W —46087	Tension Spring—Drive Cord		G188—32000	Tone Control
	G9 —41582	Drive Cord (61 Inches)	68Y	—44024B	Line Switch
	W —46290	Clamp—Drive Cord	68Z		Volume Control
19	W —23615	Condenser, .05 Mf. 400 V.	69	—44773	Ant. and Gnd. Terminal Assy.
20	W —35139	Condenser, .004 Mf. 400 V.	70	G27 —26719	Phono Terminal Assy.
21	W —28621	Condenser, .02 Mf. 200 V.	71	G41 —26719	Push Button Unit Assy.
22	W —30805	Condenser, .01 Mf. 400 V.		G10 —45683	Key and Toggle Assy.
23	G2 —34002	Condenser, .0001 Mf. Molded		G29 —45683	Screw—Key Adjusting
24	G2 —34002	Condenser, .0001 Mf. Molded		—45717	Spring—Key Return
25	W —41461	Condenser, .0014 Mf. 200 V.		W —50607C	Clamp—Toggle Lock
26	W —28621	Condenser, .02 Mf. 200 V.		W —50542C	Adjusting Clip—(Heart Shaped)
27	W —36057B	Condenser, 40 Mf. 300 V.		W —50588B	Adjusting Clip—(Hooked)
28	W —44054	Condenser, 30 Mf. 350 V.		W —45646B	Guide Plate—Key
29	W —23615	Condenser, .05 Mf. 400 V.		W —46278	Rocker Plate and Gear Sector Assy.
30	W —23615	Condenser, .05 Mf. 400 V.		G18 —45683	Screw—Rocker Plate Bearing
31	W —35139	Condenser, .004 Mf. 400 V.		W —50561	Bronze Spring—Bearing Thrust
32	W —23615	Condenser, .05 Mf. 400 V.		W —45976	Rubber Band—Used on Keys
33	W —23615	Condenser, .05 Mf. 400 V.		W —50273	Cabinet
34	B —33906A	Power Cord and Plug		8R	Knob—4 Req.
35	—22196	Resistor, 20,000 Ohm 1/2 W.		—46360A	Cabinet (Lowboy Style)
36	—21237A	Resistor, 60,000 Ohm 1/2 W.		8T	Knob—Tuning—Volume
37	—35600	Resistor, 100,000 Ohm 1/2 W.		—46360A	Knob—Tone Control—Band Sw.
38	—4921C	Resistor, 10,000 Ohm 1 W.		—46784A	Escutcheon
39	—21454	Resistor, 1 Megohm 1/2 W.		C —46228C	Push Button
40	—36952	Resistor, 30,000 Ohm 1 W.		—46417	Station Call List
41	—34020	Resistor, 250,000 Ohm 1/2 W.		W —50551A	Celluloid Call Letter Cover
42	—37590	Resistor, 750,000 Ohm 1/2 W.		—46329	Instruction Booklet
43	—36320	Resistor, 120,000 Ohm 1/2 W.		—46306	Carton for 8R Cabinet
44	—36688	Resistor, 3 Megohm 1/2 W.		—46640	Carton for 8T Cabinet
45	—23785	Resistor, 500,000 Ohm 1/2 W.			
46	W —37631	Resistor, 32 Ohm 1/2 W.			
47	—21875	Resistor, 100,000 Ohm 1/2 W.			



MODEL 828

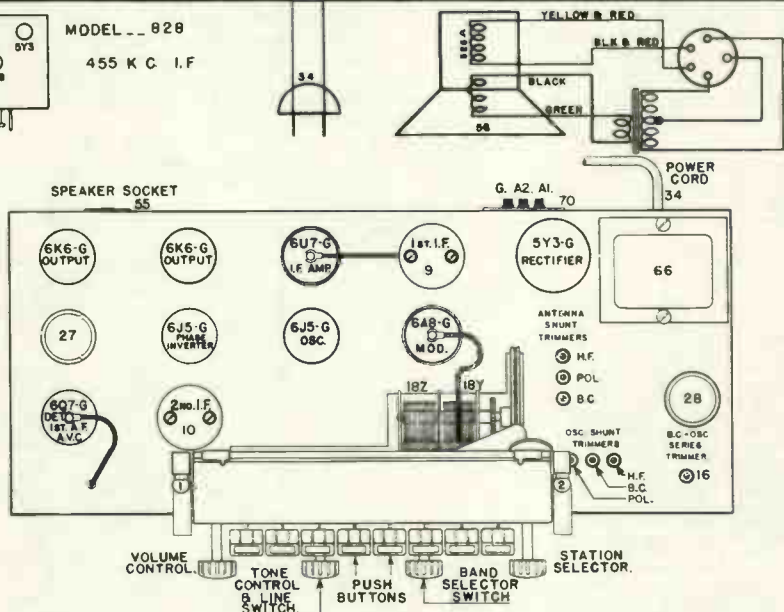
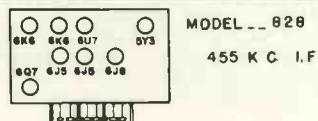
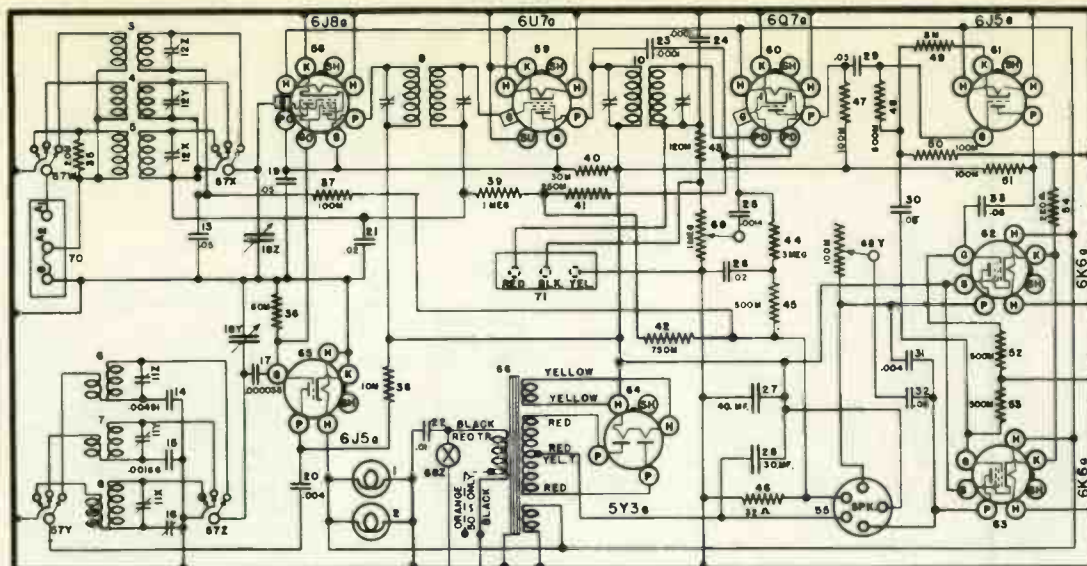


Fig. 2 Top View Model 828

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 60). The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mid. condenser into the antenna terminal of the receiver. With the

band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output. Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

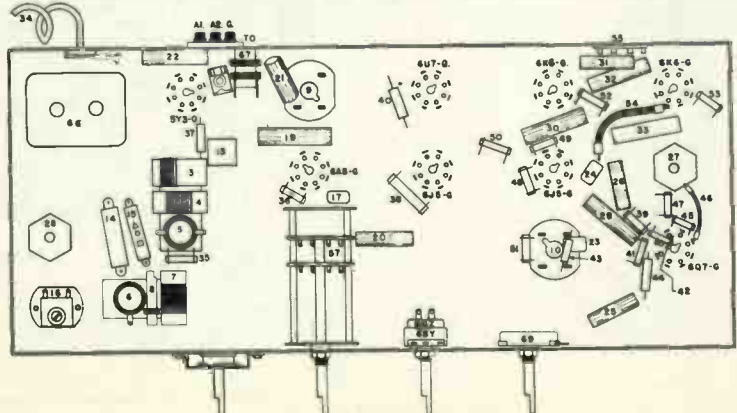


Fig. 3 Bottom View Model 828

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.3	245	110	0	-3	0	—	—
6A8	Osc.-Mod.	6.3	245	110	—	-3	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	-3	0	—	—
6H6	Detector	6.3	—	—	—	—	0	—	—
6H6	AVC	6.3	—	—	—	—	0	—	—
6C5	A-F Amplifier	6.3	35	—	—	-3	0	—	—
6F6	Output	6.3	235	245	—	-16	0	—	—
5Z4	Rectifier	5.0	250	—	—	—	—	—	—

Power Consumption Approximately 60 Watts.

Measured on 117.5 Volt Line—60 Cycles A. C.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Broadcast band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

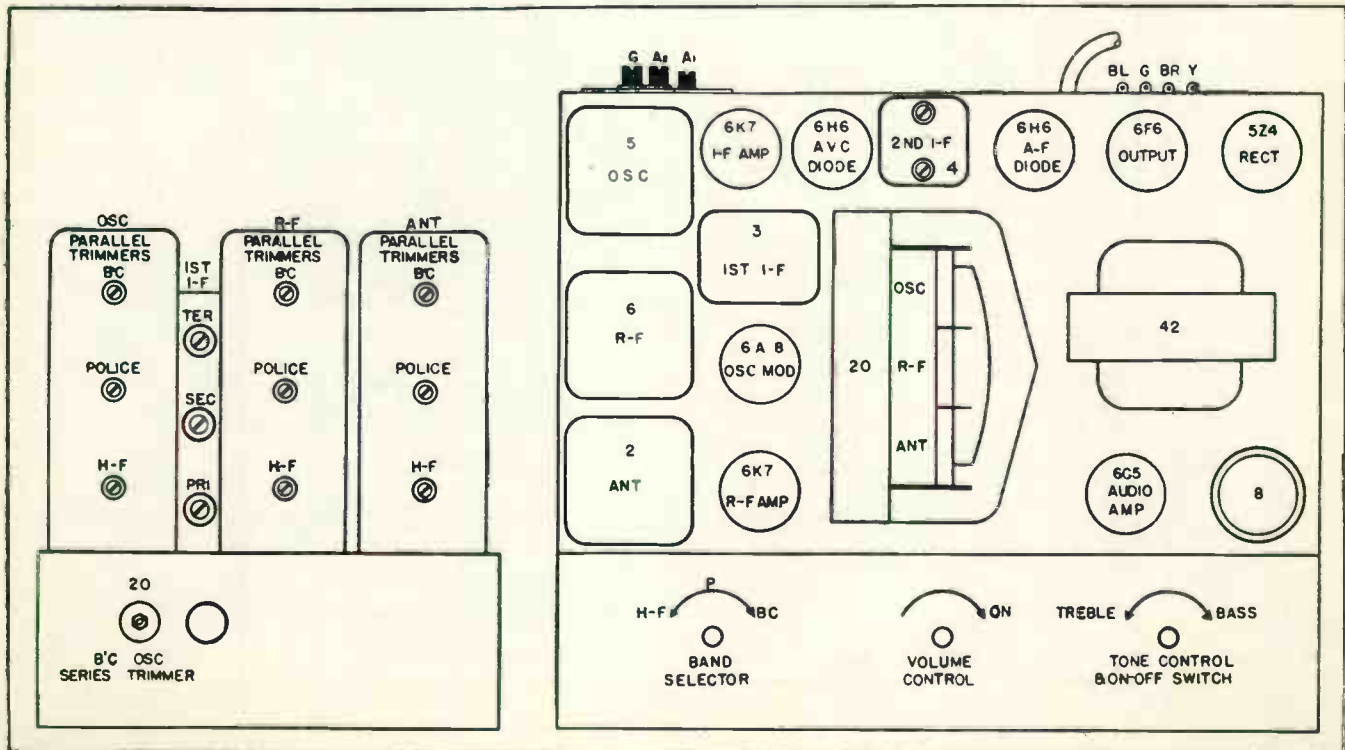
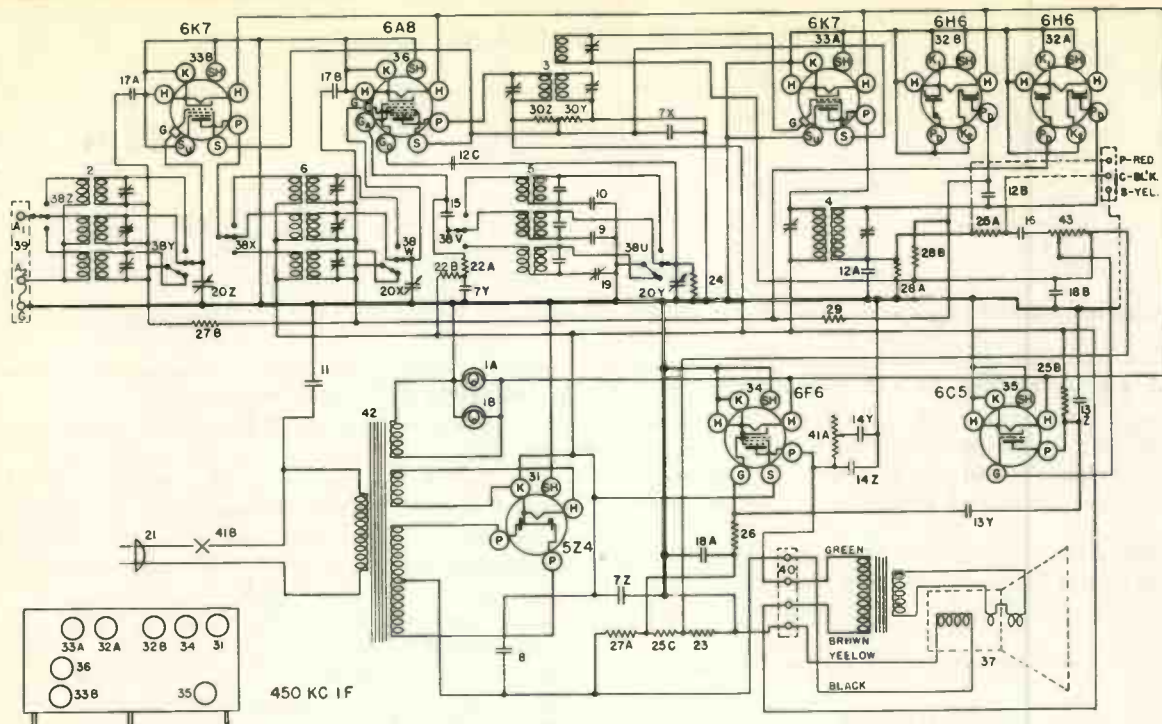


Fig. 2. Top View 855

MODEL 855



(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4 —27134	Dial Light Socket Assm.	21	B —33905A	Cord & Plug
1B	G4 —27134	Dial Light Socket Assm.	22A	—21876	Resistor, 10,000 Ohms
2	G74 —32000	Ant. Coil. Assm. Complete	22B	—21876	Resistor, 10,000 Ohms
	G46 —32000	Ant. Coil. S. W. Band	23	—22196	Resistor, 20,000 Ohms
	G73 —32000	Ant. Coil. Police Band	24	—21875	Resistor, 100,000 Ohms
	G44 —32000	Ant. Coil. Broadcast Band	25A	—23403	Resistor, 150,000 Ohms
	G6 —36031	Coil Support Base	25B	—23403	Resistor, 150,000 Ohms
	W —36032	Trimmer Condenser Assm.	25C	—23403	Resistor, 150,000 Ohms
	G4 —36031	Coil Shield	26	—21455	Resistor, 300,000 Ohms
3	G64 —32004	1st I. F. Trans.	27A	—23785	Resistor, 500,000 Ohms
	G65 —32004	2nd I. F. Trans.	27B	—23785	Resistor, 500,000 Ohms
4	G42 —32002	Osc. Coil Assm. Complete	28A	—21454	Resistor, 1 Megohm
	G38 —32002	Osc. Coil. S. W. Band	28B	—21454	Resistor, 1 Megohm
	G36 —32002	Osc. Coil. B. C. Band	29	—26577	Resistor, 3 Megohm
	G37 —32002	Osc. Coil. P. Band	30Z	W —35963	Resistor, 8,500 Ohms
	G7 —36031	Coil Support Base	30Y	W —35963	Resistor, 25,000 Ohms
	W —36032	Trimmer Condenser Assm.	31	G154—36400	Socket, 5Z4
	G5 —36031	Coil Shield	32A	G155—36800	Socket, 6H6
6	G51 —32001	R. F. Coil Assm. Complete	32B	G155—36400	Socket, 6H6
	G45 —32001	R. F. Coil. S. W. Band	33A	G151—36800	Socket, 6K7
	G46 —32001	R. F. Coil. P. Band	33B	G151—36400	Socket, 6K7
	G54 —32001	R. F. Coil. B. C. Band	34	G153—36400	Socket, 6F6
	G6 —36031	Coil Support Base	35	G152—36400	Socket, 6C5
	W —36032	Trimmer Condenser Assm.	36	MG45—36791	Socket, 6A8 (Cushion)
	G4 —36031	Coil Shield		G156—36800	Socket only
7Z	W —36056	8 mfd. 450 V.		W —33072	Socket Cushion only
7Y	W —36056	4 mfd. 250 V.		W —36828	Socket Plate only
7X	W —36055	Condenser, 35 mfd. 400 V.	37	318BL—18	Speaker, (Table Model)
8	G7 —34000	Condenser, .00145 mfd.		518CL—22M	Speaker, (Console Model)
9	G12 —34000	Condenser, .004725 mfd.	38Z	—36058B	Band Change Switch
10	W —30805	Condenser, .01 mfd. 400 V.	To		
11	G2 —34002	Condenser, 100 mmf.	38U		
12A	G2 —34002	Condenser, 100 mmf.	39	G27 —26719	Ant. Grd. Terminal
12B	G2 —34002	Condenser, 100 mmf.	40	G5 —31128	Speaker Terminal
12C	G2 —34002	Condenser, 100 mmf.		W —34627	Speaker Term. Cover Insulator
13Z	W —25537A	Condenser, 0.001 mfd. 400 V.		W —34628	Speaker Terminal Cover
13Y	W —31052	Condenser, 0.03 mfd. 400 V.		G28 —26719	Phono. Pickup Terminal Board (25 cy sets)
14Z	W —32378	Condenser, 0.05 mfd. 400 V.			
15	W —23191A	Condenser, 0.01 mfd. 400 V.	41A		Tone Control
16	W —32379	Condenser, 0.02 mfd. 200 V.	41B		On-Off Switch
17A	W —32379	Condenser, 0.02 mfd. 200 V.	42	G6 —30745	Power Trans. 110 V. 60 Cy.
17B	W —32379	Condenser, 0.02 mfd. 200 V.		G7 —30745	Power Trans. 110 V. 25 Cy.
18A	W —30321A	Condenser, 1.0 mfd. 160 V.		G8 —30745	Power Trans. 220 V. 25 Cy.
18B	W —30321A	Condenser, 1.0 mfd. 160 V.		—36060	Volume Control, 1 Megohm
19	G10 —33005	Condenser, Trim. (Osc. B. C. Bd)		W —37340	Knob (Pointer Notch)
20Z	G33 —33002	Var. Tuning Condenser Gang		W —37339	Knob
20Y				W —36518	Knob (Tail)
20X				W —36521	Knob (2)
	MG21—36045	Dial Drive Assm.		B —33528C	Escutcheon
	C —36088	Dial		W —33984	Escutcheon Gasket
	W —37188	Dial Hand		W —36309	Escutcheon Indicator
	W —32293	Dial Hand Nut		W —36312	Band Change Plate
				W —36313	Tone Control Plate

## MODEL 865

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.3	245	110	0	-3	0	—	—
6A8	Osc.-Mod.	6.3	245	110	—	-3	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	-3	0	—	—
6H6	Detector	6.3	—	—	—	—	0	—	—
6H6	AVC	6.3	—	—	—	—	0	—	—
6C5	A-F Amplifier	6.3	35	—	—	-3	0	—	—
6F6	Output	6.3	235	245	—	-16	0	—	—
5Z4	Rectifier	5.0	250	—	—	—	—	—	—

Measured on 117.5 Volt Line—60 Cycles A.C.  
Power Output Approximately 5 Watts.

Power Consumption Approximately 60 Watts.

#### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser (SEC) on the 1st I-F transformer. (Fig. 2).

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers (TERT and PRI) of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

#### 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Orange and Black Bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" parallel trimmers in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustments of the "R-F" and "Ant" trimmers in the order given. Do not readjust the "Osc" trimmer.

To align the "series" trimmer (17Y and 17Z, Fig. 2) set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

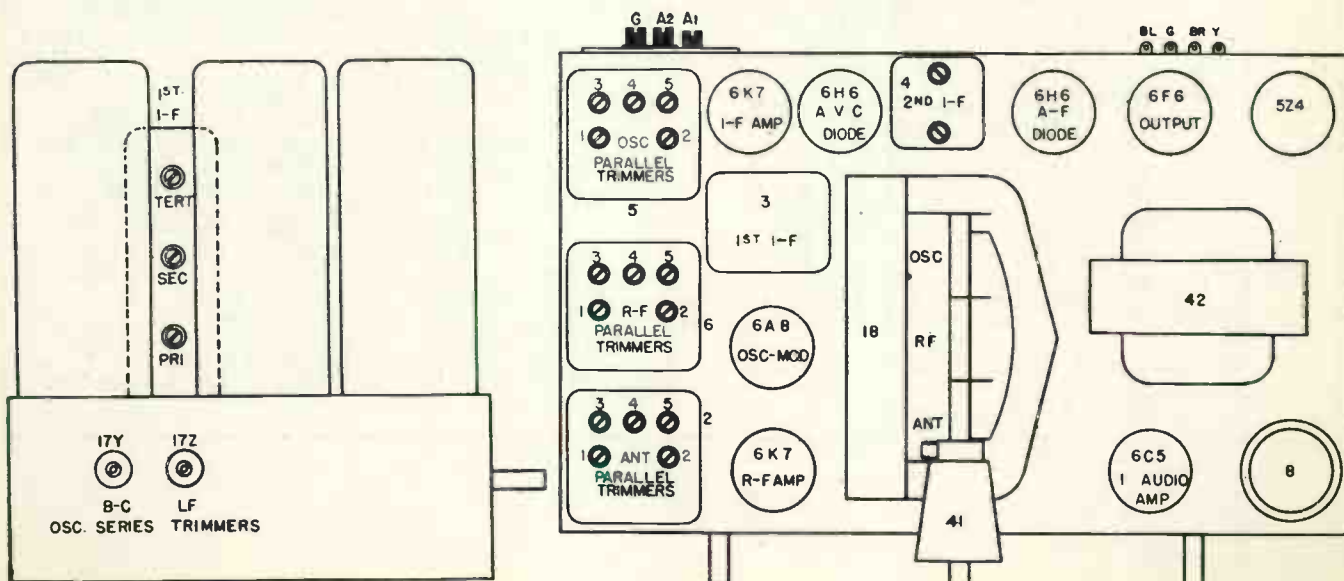


Fig. 2. Top & Side Views 865

**MODEL 865**  
**(b) Signal Input Frequencies**

	<b>Shunt Alignment</b>	<b>Series Alignment</b>
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description		
1A	—36504	Dial Light Socket Assm.		—36528	Dial Face only.		
1B				—37551	Dial Hand only		
2	G72 —32000	Ant. Coil Assm. Complete.		—37553	Second Hand only		
	G48 —32000	Ant. Coil only, 150-400 Kc.		—37484	Dial Hand Screw		
	G70 —32000	Ant. Coil only, 540-1500 Kc.		—37543	Dial Hand Washer		
	G49 —32000	Ant. Coil only, 1500-4000 Kc.	19	B —33905A	A. C. Cord & Plug		
	G71 —32000	Ant. Coil only, 4-10 Mc.	20A	—21876	Resistor, 10,000 Ohms		
	G52 —32000	Ant. Coil only, 10-22 Mc.	20B	—21876	Resistor, 10,000 Ohms		
	W —36028	5 Section Trimmer Condenser	21	—22196	Resistor, 20,000 Ohms		
	MG19 —36168	Coil Support Base	22	—34019	Resistor, 75,000 Ohms		
	MG9 —36168	Coil Shield	23	—21875	Resistor, 100,000 Ohms		
3	G64 —32004	1st I. F. Transformer Assm.	24A	—23403	Resistor, 150,000 Ohms		
4	G65 —32004	2nd I. F. Transformer Assm.	24B	—23403	Resistor, 150,000 Ohms		
5	G46 —32002	Osc. Coil Assm. Complete	25	—21455	Resistor, 300,000 Ohms		
	G39 —32002	Osc. Coil only, 150-400 Kc.	26A	—23785	Resistor, 500,000 Ohms		
	G40 —32002	Osc. Coil only, 540-1500 Kc.	26B	—23785	Resistor, 500,000 Ohms		
	G41 —32002	Osc. Coil only, 1500-4000 Kc.	27A	—21454	Resistor, 1.0 Megohm		
	G45 —32002	Osc. Coil only, 4-10 Mc.	27B	—21454	Resistor, 1.0 Megohm		
	G44 —32002	Osc. Coil only, 10-22 Mc.	28	—26577	Resistor, 3.0 Megohm		
	W —36028	5 Section Trimmer Condenser	29Z	W —36442	Resistor, 17,500 Ohms		
	MG20 —36168	Coil Support Base	29Y		Resistor, 15,000 Ohms		
	MG10 —36168	Shield	30	G154—36400	Socket, 5Z4		
	G4 —34007	Condenser, 1136 Mmf.	31	G152—36400	Socket, 6C5		
	G6 —34007	Condenser, 1707 Mmf.	32A	G151—36400	Socket, 6K7		
	G5 —34007	Condenser, 2757 Mmf.	32B	G151—36400	Socket, 6K7		
	G6 —34002	Condenser, 25 Mmf.	33	G153—36400	Socket, 6F6		
6	G49 —32001	R. F. Coil Assm. Complete	34A	G155—36400	Socket, 6H6		
	G27 —32001	R. F. Coil only, 150-400 Kc.	34B	G155—36400	Socket, 6H6		
	G47 —32001	R. F. Coil only, 540-1500 Kc.	35	G156—36400	Socket, 6A8		
	G28 —32001	R. F. Coil only, 1500-4000 Kc.	36	330—CL—22	Speaker, (Table Model)		
	G48 —32001	R. F. Coil only, 4-10 Mc.		630—CL—27	Speaker, (Console Model)		
	G30 —32001	R. F. Coil only, 10-22 Mc.	37U	—36271E	Band Change Switch		
	W —36028	5 Section Trimmer Condenser	To				
	MG19 —36168	Coil Support Base	37Z				
	MG9 —36168	Shield	38	G16 —26719	Ant. Terminal Board		
7Z	W —36056	Condenser, 8 Mfd., 450 Volts	39	G5 —31128	Speaker Terminal Board		
7Y		Condenser, 4 Mfd., 350 V.		W —34628	Speaker Terminal Cover		
7X	W —36055	Condenser, 4 Mfd., 250 V.		W —34627	Speaker Term. Cover Insulator		
8		Condenser, 35 Mfd., 400 V.			Tone Control		
9	W —30805	Condenser, 0.01 Mfd., 400 V.	40A	W —36539A	On & Off Switch		
10A	G2 —34002	Condenser, 100 Mmf.	40B		W —36500	Tuning Meter Complete	
10B		Condenser, 100 Mmf.	41	G10 —30745	Power Transformer, 60 Cy., 110 V.		
10C	W —25537A	Condenser, 100 Mmf.	42	G11 —30745	Power Transformer, 25 Cy., 110 V.		
11Z		Condenser, 0.001 Mfd., 400 V.		G12 —30745	Power Transformer, 25 Cy., 220 V.		
11Y	W —31052	Condenser, 0.03 Mfd., 400 V.	43	—36066	Volume Control		
12Y		Condenser, 0.004 Mfd.	44	W —36931	Condenser, 17 Mfd., 25 Volt		
12 Z	W —32378	Condenser, 0.05 Mfd.	45	W —29910A	Condenser, 0.25 Mfd., 200 Volt		
13A		Condenser, 0.01 Mfd., 400 V.	46	W —25291	Resistor, 500 Ohm (Flex)		
13B	W —23191A	Condenser, 0.01 Mfd., 400 V.		B —36515	Escutcheon & Lens Assm.		
14		Condenser, 0.01 Mfd., 400 V.		D —28	Escutcheon Screws (3)		
15A	W —32379	Condenser, 0.02 Mfd., 200 V.		W —36313	Tone Control Plate		
15B		Condenser, 0.02 Mfd., 200 V.		W —36311	Band Change Plate		
16	W —30321A	Condenser, 1.0 Mfd., 160 V.		W —36310	Band Chge. Ind., (Celluloid)		
17Z	G15 —33006	Condenser, B. C. Band Osc. Series		W —28760B	Escutcheon Pins		
17Y		Condenser, L. F. Band Osc. Series		W —36519	Knob, Tuning		
18Z	G34 —33002	3 Section Tuning Cond. Gang		W —36520	Knob, Vernier		
18Y			—36499	Dial Drive Assm.	W —36521	Knob, Vol. Control	
18X						W —36518	Knob, Band Chge. & Tone Con.

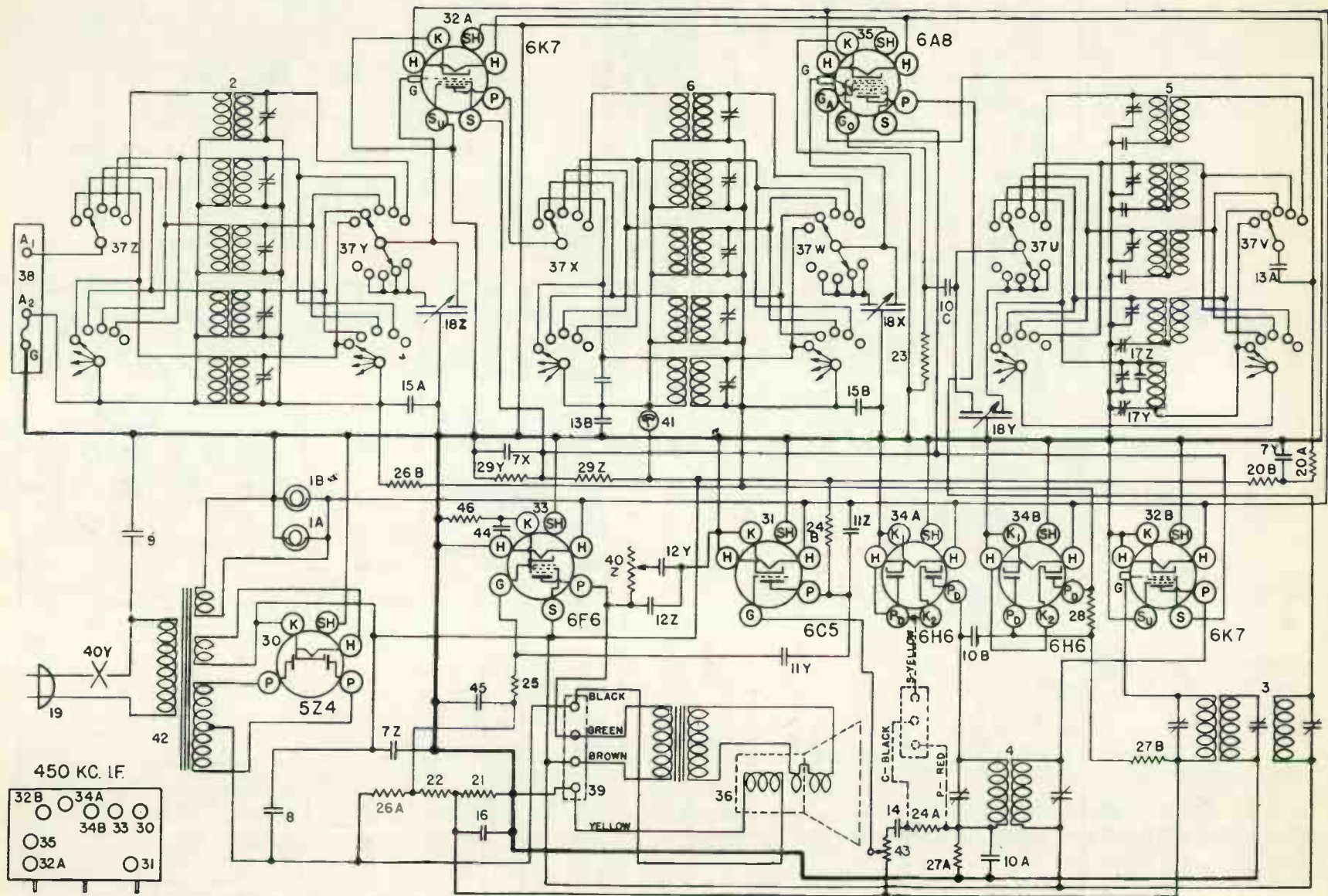


FIG. 1—WIRING DIAGRAM—MODEL 865

# MODEL 915

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.2	238	102	7	0	7	—	—
6A7	Modulator	6.2	238	102	—	0	6	-1 to -30	102
76	Oscillator	6.2	74	—	—	-24	0	—	—
6B7	I-F Amp. & Det.	6.2	238	102	—	0	3	—	—
76	1st. A-F Amp.	6.2	46	—	—	0	3	—	—
42	2nd. A-F Amp.	6.2	208	208	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
5Z3	Rectifier	4.9	345	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 122 Watts.

### 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the right.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

### 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather band and Broadcast band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no improvement in output can be obtained.

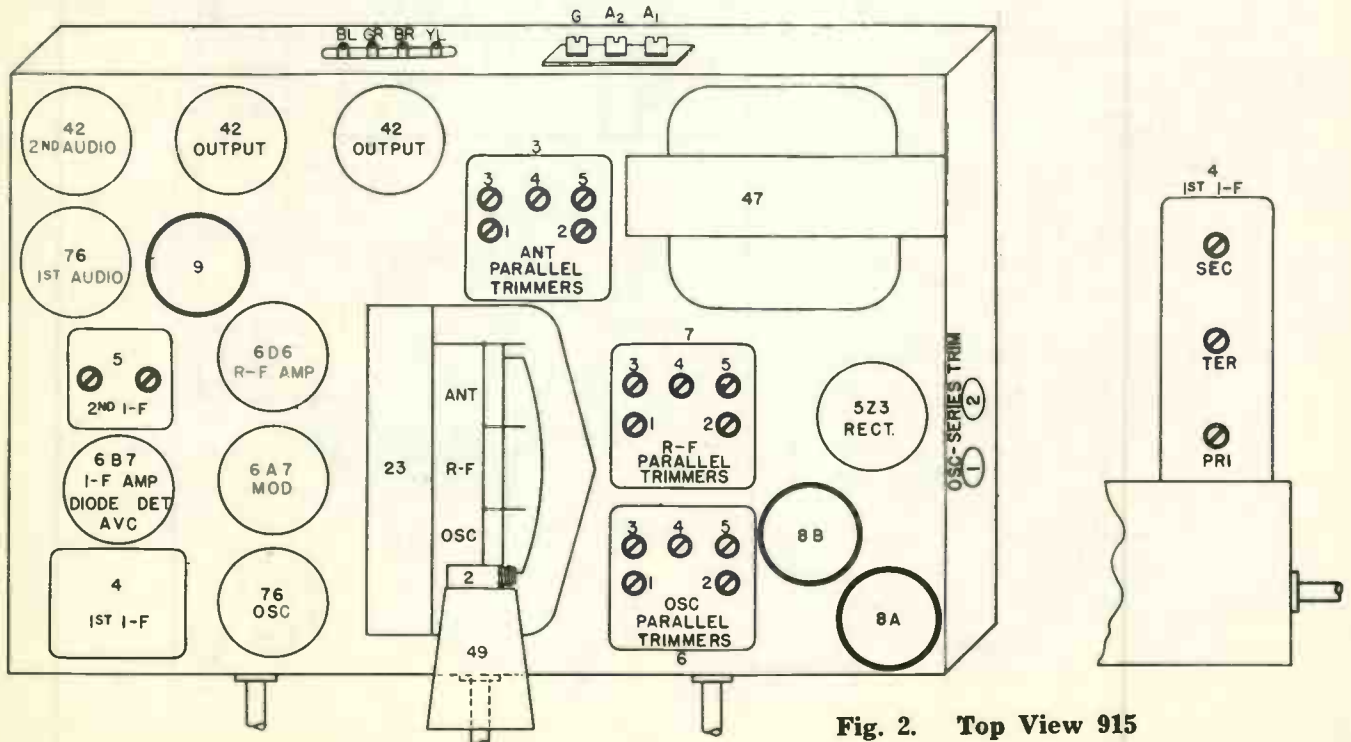


Fig. 2. Top View 915

# MODEL 915

## (b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police & Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	—36504	Dial Light Socket Assm.	23Z	G37—33002	Var. Tuning Condenser Gang
1B	—36504	Dial Light Socket Assm.	23X		
2	—36557	Tuning Meter Bulb	23Y		
3	G63—32000	Ant. Coil Assm. Complete		—37376B	Dial Drive Assm.
	G64—32000	Ant. Coil only, 150-400 Kc.		C —36658	Dial Face only
	G68—32000	Ant. Coil only, 540-1500 Kc.		—37551	Dial Hand
	G65—32000	Ant. Coil only, 1500-4000 Kc.		—37554	Second Hand
	G67—32000	Ant. Coil only, 4-10 Mc.		—37484	Dial Hand Screw
	G66—32000	Ant. Coil only, 10-22 Mc.		—37543	Dial Hand Washer
	MG26—36542	Coil Support Base	24	B —33906A	A.C. Cord & Plug
	W —36028	5 Section Trimmer Cond. Assm.	25	W —36545	Resistor, 30,000 Ohm, 1 Watt
	MG9 —36168	Shield	26	—22196	Resistor, 20,000 Ohm, ¼ Watt
4	G57—32004	1st I. F. Trans. Assm.	27	—23403	Resistor, 150,000 Ohm, ¼ Watt
5	G58—32004	2nd I. F. Trans. Assm.	28A	—21455	Resistor, 300,000 Ohm, ¼ Watt
6	G54—32002	Osc. Coil Assm. Complete	28B	—21455	Resistor, 300,000 Ohm, ¼ Watt
	G55—32002	Osc. Coil only, 150-400 Kc.	29	—23785	Resistor, 500,000 Ohm, ¼ Watt
	G56—32002	Osc. Coil only, 540-1500 Kc.	30	—35927	Resistor, 2 Megohm, ¼ Watt
	G57—32002	Osc. Coil only, 1500-4000 Kc.	31	W —36549	Resistor, 200 Ohm, 6 Watts
	G59—32002	Osc. Coil only, 4-10 Mc.	32 Z	W —32301	Resistor, 10,000 Ohms
	G58—32002	Osc. Coil only, 10-22 Mc.	32Y		
	MG26—36542	Coil Support Base	33	W —22873	Resistor, 220 Ohm (Flex) 2½ W
	W —36028	5 Section Trimmer Cond. Assm.	34	W —25937	Resistor, 275 Ohm (Flex) ½ W
	G7 —34007	Condenser, 1750 mmf.	35	W —22514	Resistor, 750 Ohm (Flex) ½ W
	G8 —34007	Condenser, 4350 mmf. (2)	36	G75—28807	Socket, 6D6, 6 Prong
	G6 —34002	Condenser, 25 mmf. (2)	37A	G80—28807	Socket, 76, 5 Prong
	MG9 —36168	Shield	37B		
7	G39—32001	R. F. Coil Assm. Complete	38	G48—28807	Socket, 6B7, 7 Prong
	G40—32001	R. F. Coil only, 150-400 Kc.	39A	G25—28807	Socket, 42, 6 Prong
	G44—32001	R. F. Coil only, 540-1500 Kc.	39B		
	G41—32001	R. F. Coil only, 1500-4000 Kc.	39C		
	G43—32001	R. F. Coil only, 4-10 Mc.	40		
	G42—32001	R. F. Coil only, 10-22 Mc.		G53—28807	Socket, 5Z3, 4 Prong
	MG27—36542	Coil Support Base		W —35772	Tube Shield Half
	W —36028	5 Section Trimmer Cond. Assm.		W —35773	Tube Shield Cap
	MG9 —36168	Shield		W —36280	Tube Shield Cap (Osc.)
	G6 —34002	Condenser 25 mmf.	41	W —35774	Tube Shield Base
	G1 —34002	Condenser, 250 mmf.		427CL—22	Speaker, (Table Model)
8A	W —36055	Condenser, 35 mfd. 400 Volts	42	627CL—27	Speaker, (Console Model)
8B	W —36055	Condenser, 35 mfd. 400 Volts	43	—36547	Band Change Switch
9	W —36057	Condenser, 40 mfd. 300 Volts	44	G27—26719	Ant. & Grnd. Terminal
10	W —36548	Condenser, 25 mfd. 25 Volts	45	G5 —31128	Speaker Terminal
11	G2 —34002	Condenser, 0.0001 mfd. 200 Volts	45Z	—32063	Tone Control
12	G1 —34002	Condenser, 0.00025 mfd. 200 Volts	45Y		
13A	W —35758	Condenser, 0.008 mfd. 400 Volts	46	G22—24628	A. F. Driver Transformer
13B	W —35758	Condenser, 0.008 mfd. 400 Volts	47	G42—25669	Power Trans. 110 V., 60 Cy.
14	W —34647	Condenser, 0.006 mfd. 400 Volts	48	B —37685	Universal Power Transformer
15	W —32378	Condenser, 0.01 mfd. 400 Volts	49	W —36500	Tuning Meter
16	W —30805	Condenser, 0.01 mfd. 400 Volts	50	W —36501	Tuning Meter Bracket
17A	W —36541	Condenser, 0.02 mfd. 160 Volts	51	—32062	Volume Control
17B	W —36541	Condenser, 0.02 mfd. 160 Volts	52	—36688	Resistor, 3 meg. ¼ Watt
18A	W —28621	Condenser, 0.02 mfd. 200 Volts	53	W —21964	Resistor, 165 Ohm (Flex) ½ W
18B	W —28621	Condenser, 0.02 mfd. 200 Volts	54	G47—28807	Socket, 6A7, 7 Prong
19	W —32708	Condenser, 0.05 mfd. 400 Volts		G6 —34002	Condenser, 25 mmf.
20	W —23615	Condenser, 0.05 mfd. 400 Volts		B —36515	Escutcheon
21A	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36311	Band Change Escutcheon
21B	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36564	Band Change Escutcheon Indica- tor (Celluloid)
21C	W —35936	Condenser, 0.05 mfd. 200 Volts		W —36519	Knob, Tuning
22Z	G27—33006	Series Trimmer Condenser		W —36520A	Knob, Vernier
22Y				W —36518	Knob, (Tail) Band Change
				W —36521	Knob (2)
				G25—35954	Terminal Junction for Uni. P. T.



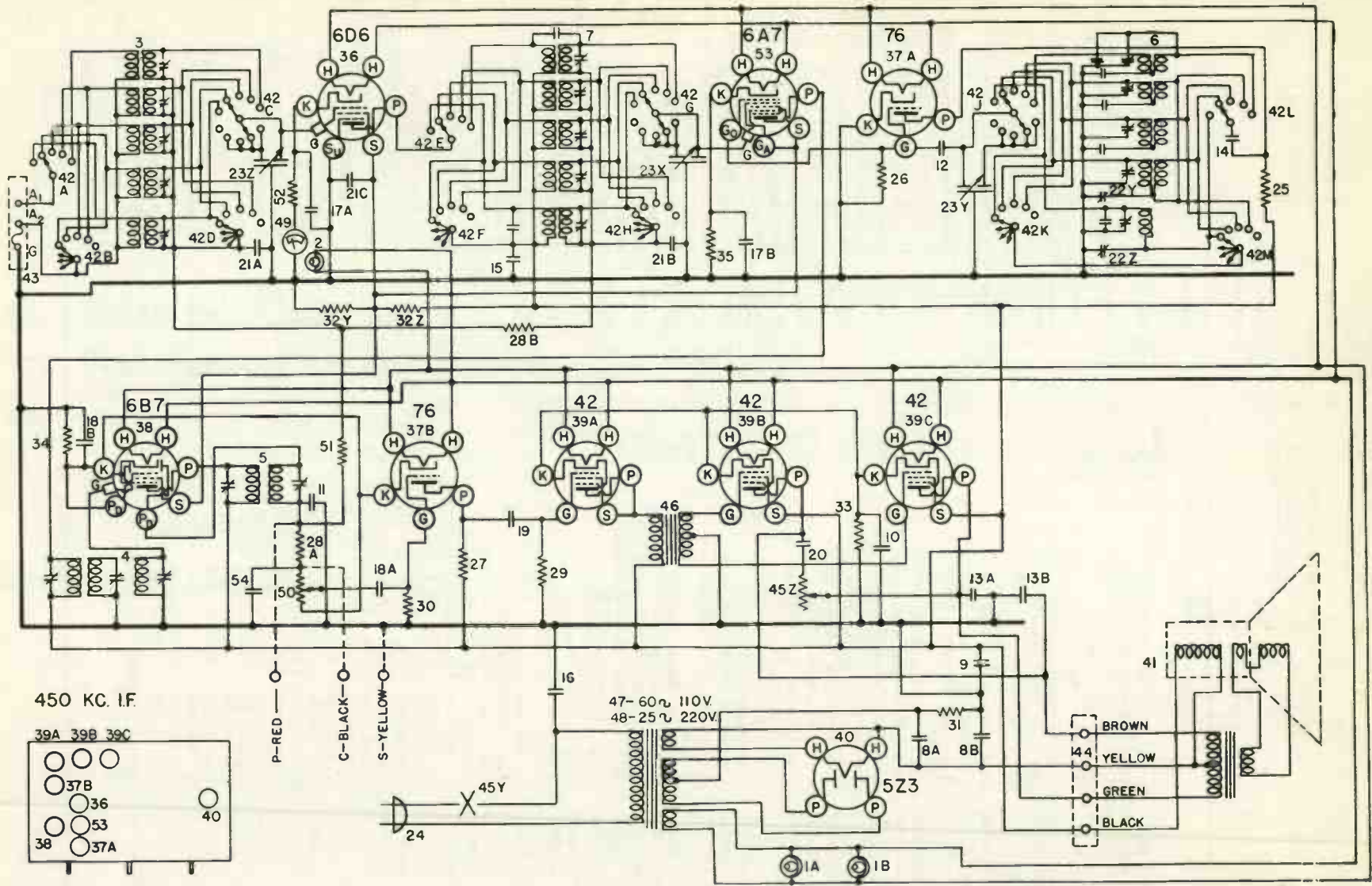


FIG. 1—WIRING DIAGRAM—MODEL 915

# MODEL 916

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga
6K7	R-F Amplifier	6.3	221	—	98	4	0	4	—
6A8	Osc-Mod	6.3	221	—	150	—	0	4.5	138
6K7	I-F Amplifier	6.3	260	—	138	5	0	5	—
6R7	Detector & 1st A-F Amplifier	6.3	130	—	—	—	0	6.5	—
6C5	2nd A-F Amplifier	6.3	150	—	—	—	0	6.5	—
6N6	(2) Output	6.3	285	278	—	—	0	3.2	—
5Z4	Rectifier	4.5	357	—	—	—	—	—	—
Phantom Conductor Tube (W41187)		Varies with power output.							

Voltage drop across speaker field 72 volts.  
 Power Output approximately 9 Watts.  
 Power Consumption approximately 117 Watts.  
 All readings taken on 117.5 volt power supply.

### I. Tuning I-F Amplifier to 450 Kilocycles.

- (a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.
- (b) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.
- (c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the Multivox control knob to the Auditorium Position (Third position in the clockwise direction).
- (d) Set the signal generator to 450 kilocycles.
- (e) Close the middle trimmer condenser on the 2nd. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force the adjustment screw).
- (f) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri) of the 2nd. I-F transformer for maximum output. **ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc.-Mod. tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).
- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.
- (j) Transfer the output lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.
- (k) Adjust the middle trimmer of the 2nd. I-F transformer by opening until maximum output is obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**
- (l) Adjust the middle trimmer of the 1st. I-F transformer by closing until maximum output is obtained. **DO NOT READJUST TOP AND BOTTOM TRIMMERS.**

### Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

**NOTE:** When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, 32Y and 32Z Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

### (c) Signal Input Frequencies:

Shunt Aligned	Series Aligned
1700 Kc.	600 Kc.
6000 Kc.	2000 Kc.
18000 Kc.	.....

American Broadcast Band (BLUE)  
 Police Band (RED)  
 High-Frequency Band (GREEN)

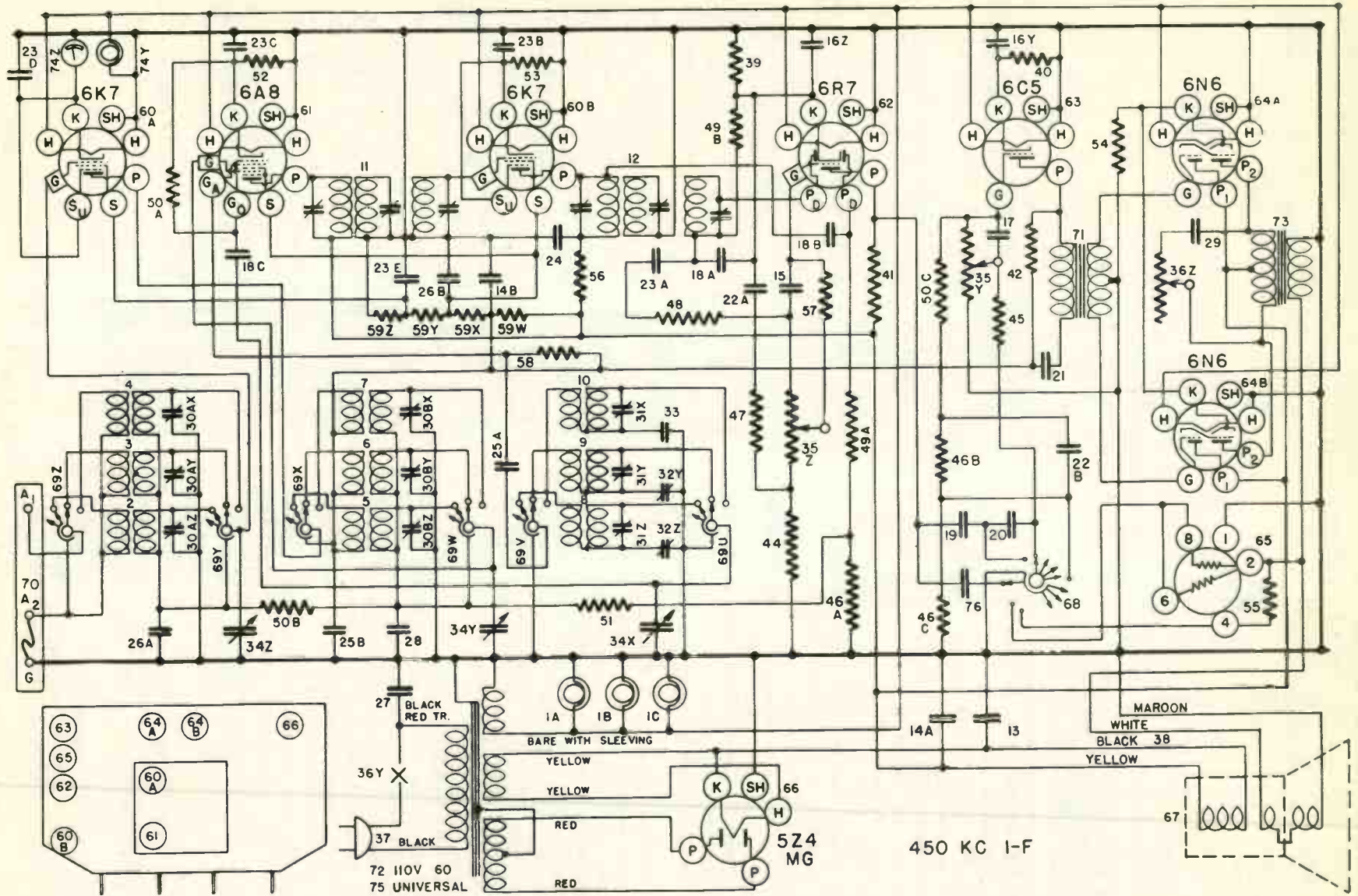


FIG. 1—WIRING DIAGRAM—MODEL 916

MODEL 916

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W 37922	Dial Light	36Z	—37966	Tone Control
2	G3 37965	Dial Light Socket	36Y	—37966	A. C. Switch
3	G84 32000	Ant. Coil, B. C. B.	37	B 33906A	Power Cord & Plug
4	G95 32000	Ant. Coil, H. F. B.	38	G3 37918	Speaker Cab.
5	G113 32000	Ant. Coil, H. F. B.	39	—31093	Resistor, 2,700 Ohm 1/4 W.
6	G68 32001	R. F. Coil, B. C. B.	40	W 21452	Resistor, 1,100 Ohm 1/4 W. Flex.
7	G80 32001	R. F. Coil, Pol. B.	41	—37768	Resistor, 65,000 Ohm 1/4 W.
8	G79 32001	R. F. Coil, H. F. B.	42	—5370A	Resistor, 20,000 Ohm 1 W.
9	G101 32002	Osc. Coil, B. C. B.	43	—21454	Resistor, 1 Megohm 1/2 W.
10	G102 32002	Osc. Coil, Pol. B.	44	—21455	Resistor, 300,000 Ohm 1/4 W.
11	G103 32002	Osc. Coil, H. F. B.	45	—23785	Resistor, 500,000 Ohm 1/4 W.
12	G90 32004	1st I. F. Assembly	46A	—23785	Resistor, 500,000 Ohm 1/4 W.
13	G91 32004	2nd I. F. Assembly	46B	—23785	Resistor, 500,000 Ohm 1/4 W.
14A	W 36055	Condenser, 35. Mfd. 400 V. Electrolytic	46C	—23785	Resistor, 500,000 Ohm 1/4 W.
14B	W 36057	Condenser, 40. Mfd. 300 V. Electrolytic	47	—21453	Resistor, 40,000 Ohm 1/4 W.
15	W 36057	Condenser, 40. Mfd. 300 V. Electrolytic	48	—23403	Resistor, 150,000 Ohm 1/4 W.
16Z	G8 34002	Condenser, .00001 Mfd. (Molded)	49A	—33344	Resistor, 400,000 Ohm 1/4 W.
16Y	W 37778	Condenser, 12 Mfd. 25 V. Electrolytic	49B	—33344	Resistor, 400,000 Ohm 1/4 W.
17	G6 34002	Condenser, .00025 Mfd. (Molded)	50A	—35600	Resistor, 100,000 Ohm 1/4 W.
18A	G2 34002	Condenser, .0001 Mfd. (Molded)	50B	—35600	Resistor, 100,000 Ohm 1/4 W.
18B	G2 34002	Condenser, .0001 Mfd. (Molded)	50C	—35600	Resistor, 100,000 Ohm 1/4 W.
18C	G2 34002	Condenser, .0001 Mfd. (Molded)	51	—37245	Resistor, 1.5 Megohm 1/4 W.
19	W 32780B	Condenser, .05 Mfd. 400 V.	52	W 28589	Resistor, 350 Ohm 1/2 W. Flex.
20	G3 34002	Condenser, .0005 Mfd. (Molded)	53	W 28106	Resistor, 500 Ohm 1/2 W. Flex.
21	W 37732	Condenser, .3 Mfd. 160 V.	54	W 23012A	Resistor, 40 Ohm 1/4 W. Flex.
22A	W 31219	Condenser, .023 Mfd. 200 V.	55	W 41193	Resistor, 1 Ohm 2 1/4 W. Flex.
22B	W 31219	Condenser, .023 Mfd. 200 V.	56	W 23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.
23A	W 36511	Condenser, .02 Mfd. 160 V.	57	—21273A	Resistor, 60,000 Ohm 1/4 W.
23E	W 36511	Condenser, .02 Mfd. 160 V.	58	W 37987	Resistor, 15,000 Ohm 1 W. Wire Wound
24	W 30489	Condenser, .02 Mfd. 400 V.	59	W 41225	4 Section Candohm
25A	W 32378	Condenser, .01 Mfd. 400 V.	60A	G151 36400	Socket Type 6K7
25B	W 32378	Condenser, .01 Mfd. 400 V.	60B	G151 36400	Socket Type 6K7
26A	W 35936	Condenser, .05 Mfd. 200 V.	61	G156 36400	Socket Type 6A8
26B	W 35936	Condenser, .05 Mfd. 200 V.	62	G164 36400	Socket Type 6R7
27	W 30805	Condenser, .01 Mfd. 400 V.	63	G152 36400	Socket Type 6C5
28	W 32380	Condenser, .05 Mfd. 200 V.	64A	G165 36400	Socket Type 6N6
29	W 23615	Condenser, .05 Mfd. 400 V.	64B	G165 36400	Socket Type 6N6
30	W 37891	3 Section Shunt Trimmer Assembly	65	G167 36400	Socket For W41187 (5 prong tube)
31	W 35951	3 Section Shunt Trimmer Assembly	66	G154 36400	Socket Type 5Z4
32Z	W 37874	B. C. Osc. Series Trimmer Cond.	67	W 40193	Speaker 63C14
32Y	W 37874	Pol. Osc. Series Trimmer Cond.	68	W 41446	Switch, Multivox Control 1
33	G18 34000	H. F. Fixed Series Condenser	69	C 37958E	Switch, Band Selector
34	G47 33002	3 Section Var. Tuning Condenser	70	G27 26719	Ant. & Grd. Terminal Board Assy.
	C 41153	Dial Drive Unit	71	G1 37995	Audio Input Transformer
	C 41148	Dial Glass	72	G43 25669	Power Supply Transformer (110V, 60Cy)
	W 41136	Mask for Dial	73	G48 24628	Audio Output Transformer
	W 40804	Dial Cushion	74Z	W 41259	Tuning Meter
	W 40184	Dial Hand Screw	74Y	W 41259	Bulb for Meter
	—40485	Long Dial Hand	75	—37685A	Universal Power Transformer
	—41145	Short Dial Hand	76	W 41445	Condenser .036 Mfd. 400 V.
	—40537	Coupling Unit		MG54 41214	Complete Dial Assembly
	—41157	Belt (Drive)		C 37884	Eucutcheon
	—40638	Indicator Cable		B 37895A	Eucutcheon Retaining Spring
35Z	—41417	Volume Control 1st A. F. 3 Megohm		B 37898	Dial Lens
35Y	—41417	Volume Control 2nd A. F. 1 Megohm		B 37897	Lens Retaining Spring
				W 40365	Eucutcheon Felt
				W 37339	Knob (3 required)
				W 40192B	Knob (2 required)

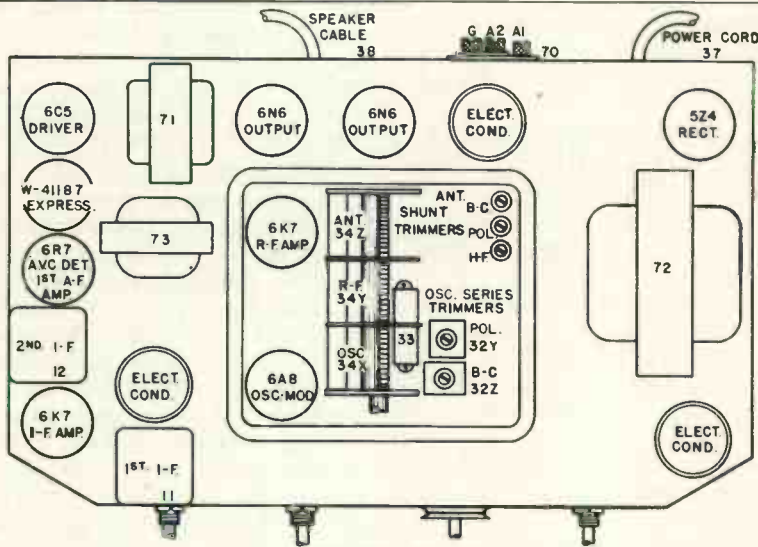
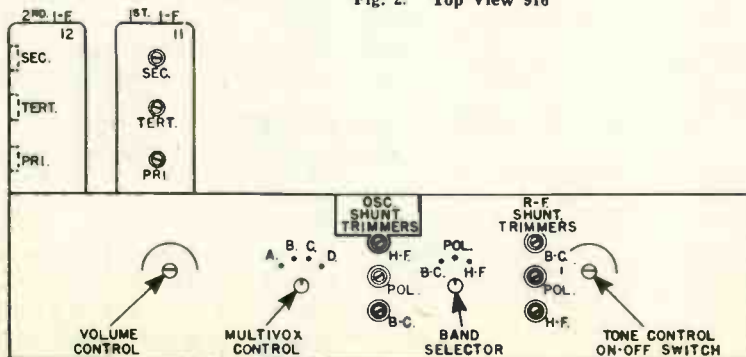


Fig. 2. Top View 916



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6K7	R-F Amplifier	6.3	225	—	90	4.0	—	4.0	—	—
6A8	Osc.-Modulator	6.3	250	—	120	—	—	5.0	Var.	150
6K7	I-F Amplifier	6.3	235	—	120	4.0	—	4.0	—	—
6H6	Det. & A. V. C.	6.3	—	—	—	—	—	4.0	—	—
6C5	1st A-F Amp.	6.3	120	—	—	—	—	12.0	—	—
6N6	(2) Output	6.3	250	245	—	—	—	4.0	—	—
5Z4	Rectifier	5.0	—	—	—	—	—	350	—	—

Voltage drop across speaker field 100 Volts.  
 Power output approximately 8 watts.  
 Power consumption approximately 115 watts.  
 All readings taken on 117.5 line voltage.

1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—Not Electrolytic—to P2 of the other Output Tube.

(b) Connect the output of the signal generator through a .02 mf. condenser, to the top cap of the 6K7 I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GND. terminal of the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the fidelity control knob to (NORMAL), and turn the Auto-Expressionator Control Switch to the left (NORMAL).

(d) Set the signal generator to 450 Kilocycles.

(e) Adjust the trimmer condensers on the top of the 2nd. I-F transformer for maximum output. Fig. 2 (Item 12).

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.**

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc.-Mod. tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 4) so that it is moderately tight. **(DO NOT FORCE ADJUSTING SCREW).**

(h) Adjust the top (Sec) and then the bottom (Pri) trimmers of the 1st I-F transformer for maximum output.

(i) Transfer the lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom (Pri) trimmer of the 1st. I-F transformer. Then adjust the middle trimmer by opening until maximum output is obtained. **DO NOT READJUST TOP OR BOTTOM TRIMMERS AFTER THE MIDDLE TRIMMER.**

(C) SIGNAL INPUT FREQUENCIES

American Broadcast (BLUE)  
 Pol. & Amateur (RED)  
 High-Frequency (GREEN)

Shunt Aligned  
 1700 Kc.  
 6000 Kc.  
 18000 Kc.

Series Aligned  
 600 Kc.

NOTE 3: The high frequency oscillator on this receiver is neutralized by the addition of some small capacity coupling between the oscillator grid and the R-F grid of the 6A8 tube. This is accomplished by loosely wrapping a piece of insulated hook-up wire around the

Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .0002 mf. condenser must be in series with the output lead of the signal generator and for the high-frequency band a 400 Ohm carbon resistor should be used in place of the condenser.

Each band should be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc.," "R-F" (Fig. 4) and "Ant." (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental frequency. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the B-C "OSC" series trimmer, Item 28, Fig. 4, set the signal generator to 600 Kilocycles and then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

R-F grid lug and connecting it to the oscillator grid lug on the band selector switch.

It is necessary on some sets to adjust or even remove this coupling, in which case the wire should be unwrapped and threaded through the extra hole in the grid end of the R-F coil.

PARTS LIST—MODEL 925

Figures in first column refer to parts in Diagrams.					
Item No.	Part No.	Description	Item No.	Part No.	Description
1 ABCD	W —37922	Dial Light (bulb)	40	W —37909A	Pulley—Indicator Cable
	G3 —37965	Light Socket Assembly	41	W —30488	Condenser, .02 Mfd. 400 V.
2	W —40670	Dial Light Shield	G1	—34002	Condenser, .00025 Mfd.
3	G110 —32000	Ant. Coil—B-C-B	B	—33906	Cord & Plug
4	G111 —32000	Ant. Coil—Pol-B	42	—21237A	Resistor, 60,000 Ohm 1/2 W.
5	G112 —32000	Ant. Coil—H-F-B	43A	—21237A	Resistor, 60,000 Ohm 1/2 W.
6	G76 —32001	R-F. Coil—B-C-B	43B	—21237A	Resistor, 60,000 Ohm 1/2 W.
7	G89 —32001	R-F. Coil—Pol-B	44A	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
8	G90 —32001	R-F. Coil—H-F-B	44B	W —28589	Resistor, 350 Ohm 1/2 W. Flex.
9	G121 —32002	Osc. Coil—B-C-B	45	—36321	Resistor, 400,000 Ohm 1/2 W.
10	G115 —32002	Osc. Coil—Pol-B	46	W —24537	Resistor, 60 Ohm 1/2 W. Flex.
11	G122 —32002	Osc. Coil—H-F-B	47A	—23403	Resistor, 150,000 Ohm 1/2 W.
12	G112 —32004	1st I-F Assembly	47B		See Item 79
13	G114 —32004	2nd I-F Assembly	48Z		Resistor, 1000 Ohms
14	G63 —24628	A-F Input Choke	48Y	W —41484	Resistor, 7000 Ohms
15	None	None	48X		Resistor, 3,500 Ohms
16	W —36055	Condenser 35 Mfd. 400 V.	48W		Resistor, 15,000 Ohms
17	W —41080	Condenser 12 Mfd. 300 V.	49	—35600	Resistor, 100,000 Ohm 1/2 W.
18	W —41081	Condenser 16 Mfd. 250 V.	50	—37987	Resistor, 15,000 Ohm 1 W.
19	W —41598	Condenser 50 Mfd. 25 V.	51	—37245	Resistor, 1.5 Megohm 1/2 W.
20A	W —36541	Condenser, .02 Mfd. 160 V.	52	—35930	Resistor, 200,000 Ohm 1/2 W.
To			53	—23785	Resistor, 500,000 Ohm 1/2 W.
20G	W —36541	Condenser, .02 Mfd. 160 V.	54	—36319	Resistor, 75,000 Ohm 1/2 W.
21		None	55	—36952	Resistor, 30,000 Ohm 1 W.
22A	G2 —34002	Condenser, .0001 Mfd.	56	W —23013	Resistor, 2,000 Ohm 1 1/2 W. Flex.
22B	G2 —34002	Condenser, .0001 Mfd.	57	—6705	Resistor, 3,500 Ohm 1 W.
22C	G2 —34002	Condenser, .0001 Mfd.	58AB	G151—36400	Socket Type 6K7
23	None	None	59	G156—36400	Socket Type 6A8
24	W —35936	Condenser, .05 Mfd. 200 V.	60	G155—36400	Socket Type 6H6
25	W —35139	Condenser, .004 Mfd. 400 V.	61	G152—36400	Socket Type 6C5
26		None	62AB	G165—36400	Socket Type 6N6
27	G20 —34000	Condenser, 4410 Mmfd.	63	G154—36400	Socket Type 5Z4
28	—40769	Condenser, B-C. Osc. Series Trimmer	64	G167—36400	Socket Type Plain
29	G7 —34000	Condenser, 1450 Mmfd.	65	636CJ4 "M"	Speaker "M" Spec. No. 1-D-641
30	G8 —34002	Condenser, .00001 Mfd.		—42882	Cone Assy. } Spk. 636CJ4 "M"
31A	W —35758	Condenser, .008 Mfd. 400 V.	66	—40406	Field Coil
31B	W —35758	Condenser, .008 Mfd. 400 V.	67	G4 —37918	Speaker Cable
32	W —37988	Condenser, .017 Mfd. 200 V.	68	C —40910	Band Selector Switch
33	W —28619	Condenser, .006 Mfd. 200 V.	69	W —42255A	Fidelity & Line Switch
34	W —23615	Condenser, .05 Mfd. 400 V.	70	W —41486	Expressionator Switch
35	W —32380	Condenser, .05 Mfd. 200 V.	G27	—26719	Ant. & Gnd. Terminal Assembly
36	W —29910A	Condenser, .25 Mfd. 200 V.	71		None
37	W —30805	Condenser, .01 Mfd. 400 V.	72	—41506	Power Transformer 110 V. 60 Cy.
38	W —35951	Condenser, 3 Section Shunt Trim. Assy.	75	—41507	Power Transformer 110 V. 25 Cy.
39	G52 —33002	Condenser, 3 Section Var. Tuning	G70	—24628	Output Transformer
	C —2311	Dial Glass—Calibrated	W	—41259	Tuning Meter Bulb
	—41914A	Dial Mask (Paper background)	W	—41464	Tuning Meter
MG-22	42320	Dial Drive Complete Assembly	78	—41301	Vol. Cont. 3 Megohm Tap at 1 Meg.
	42305	Dial Drive Unit	79	W —11209	Condenser, .048 Mfd. 200 V.
	W —42180	Dial Hand (short)	80	—36317	Resistor, 10,000 Ohm 1/2 W.
	W —41144	Dial Hand (long)	C	—42045	Escutcheon
	W —40486	Screw (Dial Hand Mtg.)	C	—42043	Escutcheon Rubber
	W —42306	Expressionator Flipper (R. H.)	C	—43044	Dial Lens (Escutcheon Glass)
	W —42307	Fidelity Flipper (L. H.)	D	—30	Mtg. Screws (Escutcheon)
	—43080	Flipper Control Cable Assy. (R. H.)	W	—40192B	Knob (Fidelity & Band Sel.) (2)
	—43081	Flipper Control Cable Assy. (L. H.)	W	—37339	Knob (V. C. & Station Sel.)
	—42308	Control Cable Pulley (R. H.) (L. H.)	W	—42490	Knob (Expressionator)
	—40638	Cable—Band Indicator Control	W	—40230B	Crosley Shield
			W	—32620	Nut—Shield Mtg.
			W	—6-SA	Cabinet

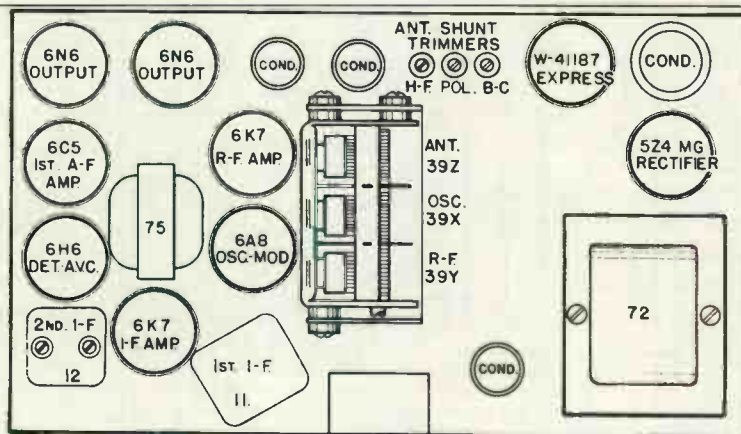


Fig. 2 Top View 925

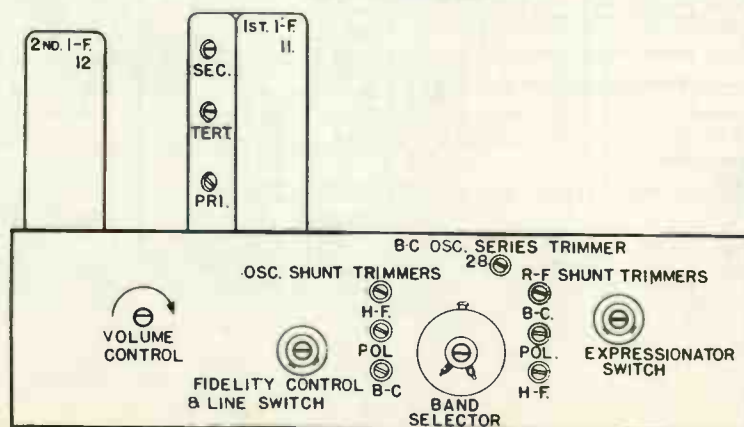


Fig. 4. Front View 925

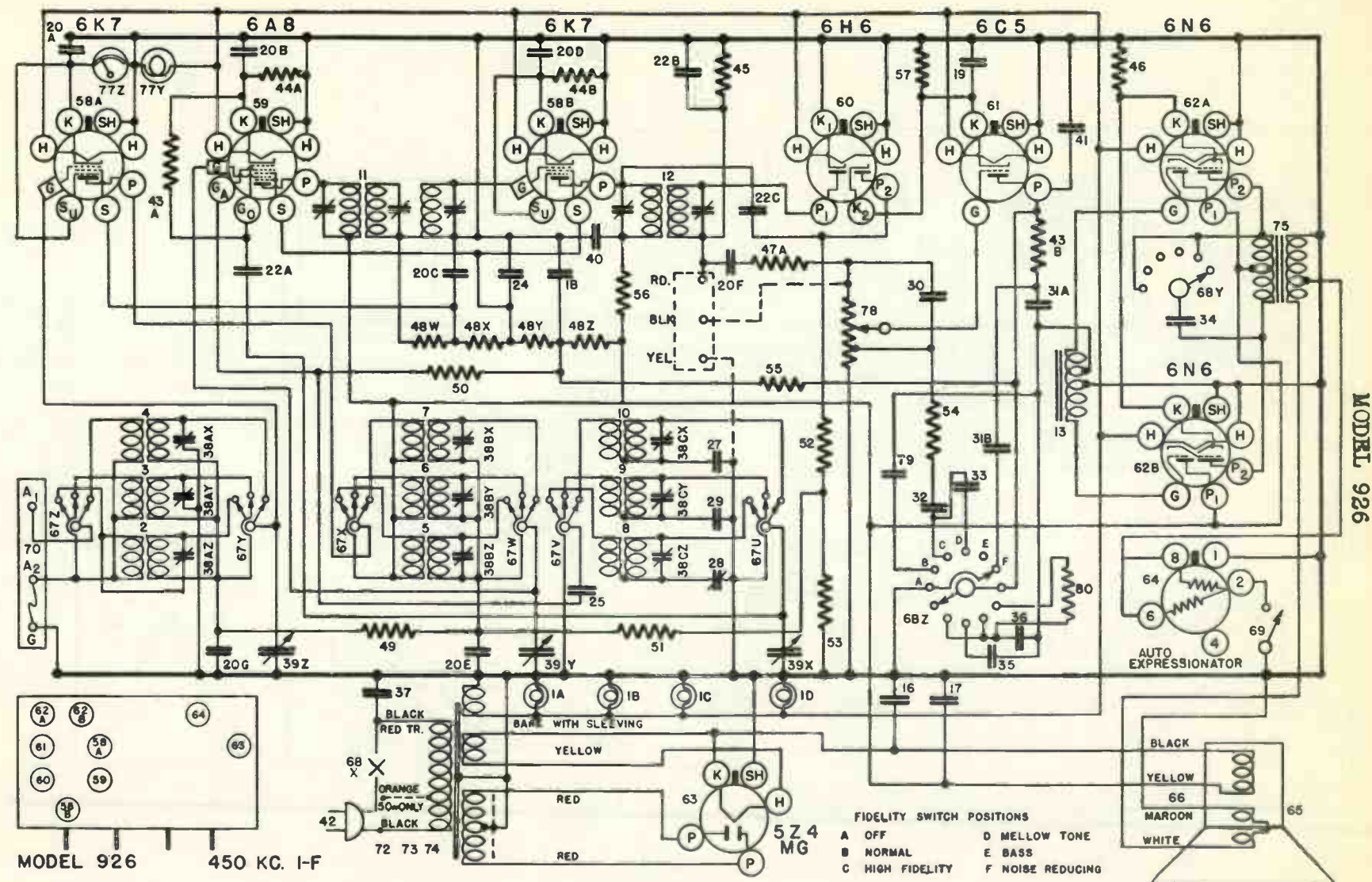
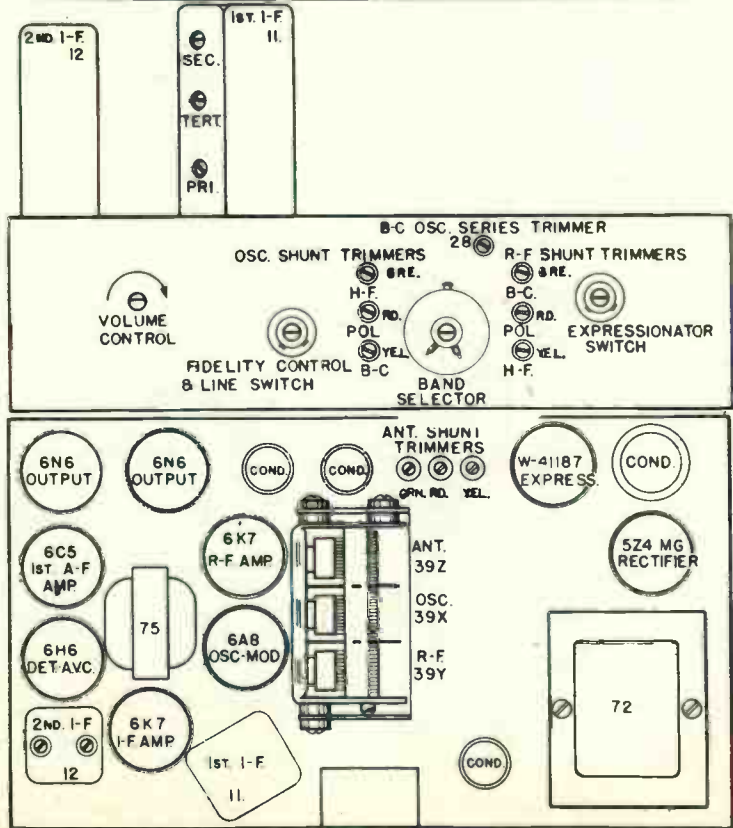


FIG. 1—WIRING DIAGRAM—MODEL 926

For schematic diagram and alignment procedure see pages

Note: On this Model, the I.F. frequency is 462 kilocycles rather than 450 kilocycles.

Item No.	Part No.	Description	Item No.	Part No.	Description
Figures in first column refer to parts in Diagrams					
1	W-37922	Dial Light (bulb)	43A	-21237A	Resistor, 60,000 Ohm 1/2 W.
1	G3-37965	Light Socket Assembly	43B	-21237A	Resistor, 60,000 Ohm 1/2 W.
1	W-10570	Dial Light Shield	44A	-28589	Resistor, 350 Ohm 1/2 W. Flex.
2	G110-32000	Ant. Coil-170-555 Metres	44B	-28589	Resistor, 350 Ohm 1/2 W. Flex.
3	G122-32000	Ant. Coil-760-2100 Metres	45	-36221	Resistor, 400,000 Ohm 1/2 W.
4	G112-32000	Ant. Coil-17-53 Metres	46	-24537	Resistor, 60 Ohm 1/2 W. Flex.
5	G76-32001	R-F. Coil-170-555 Metres	47A	-23-03	Resistor, 150,000 Ohm 1/2 W.
6	G86-32001	R-F. Coil-760-2100 Metres	47B		See Item 79
7	G84-32001	R-F. Coil-17-53 Metres	482		Resistor, 1000 Ohms
8	G115-32002	Osc. Coil-170-555 Metres	483		Resistor, 7000 Ohms
9	G114-32002	Osc. Coil-760-2100 Metres	48X	W-41484	Resistor, 3,500 Ohms Candohm
10	G107-32002	Osc. Coil-17-53 Metres	48W		Resistor, 15,000 Ohms
11	G112-32001	1st I-F Assembly-462 Kc.	49	-35600	Resistor, 100,000 Ohm 1/2 W.
12	G114-32004	2nd I-F Assembly-462 Kc.	50	37987	Resistor, 15,000 Ohm 1W.
13	G12-28535	A-F Input Choke	51	37245	Resistor, 1.5 Megohm 1/2 W.
14		None	52	35730	Resistor, 200,000 Ohm 1/2 W.
15		None	53	23785	Resistor, 500,000 Ohm 1/2 W.
16	W-36055	Condenser 35 Mfd. 400 V.	54	36319	Resistor, 75,000 Ohm 1/2 W.
17	W-41080	Condenser 12 Mfd. 300 V.	55	36952	Resistor, 30,000 Ohm 1W.
18	W-41081	Condenser 16 Mfd. 250 V.	56	W-23043	Resistor, 2,000 Ohm 1/2 W. Flex.
19	W-41568	Condenser 50 Mfd. 25 V.	57	W-6705	Resistor, 3,500 Ohm 1W.
20A	W-36541	Condenser, .02 Mfd. 160 V.	58AB	G151-36400	Socket Type 6K7
To			59	G155-36400	Socket Type 6A3
20B	W-36541	Condenser, .02 Mfd. 160 V.	60	G155-36400	Socket Type 6H6
20	W-32379	Condenser, .02 Mfd. 300 V.	61	G152-36400	Socket Type 6C5
22A	G2-34002	Condenser, .0001 Mfd.	62AB	G165-36400	Socket Type 6N6
22B	G2-34002	Condenser, .0001 Mfd.	63	G154-36400	Socket Type 5Z4
22C	G2-34002	Condenser, .0001 Mfd.	64	G167-36400	Socket Type Plain
23	G11-34002	Condenser, .000175 Mfd.	65	442CJ4 "M"	Speaker "M" Spec. No. 1-D-700
21	W-35436	Condenser, .05 Mfd. 300 V.		-43172	Cone Assy. Spk. 442CJ4 "M"
25	W-35139	Condenser, .004 Mfd. 400 V.		-43176	Field Coil
26	G5-34002	Condenser, .00005 Mfd.	66	G4-37918	Speaker Cable
27	G20-34000	Condenser, 4910 Mmfd.	67	C-40910	Band Selector Switch
28	-42830	Condenser, Osc. Series Trimmer	68	B-4225A	Fidelity & Line Switch
29	-40144	Condenser, L-W Osc. Series Trimmer	69	W-41486	Expressionator Switch
30	G8-34002	Condenser, .00001 Mfd.	70	G26-26719	Ant. & Gnd. Terminal Assembly
31A	W-35758	Condenser, .008 Mfd. 400 V.	71	G28-2671G	Photo Terminal Assembly
31B	W-35758	Condenser, .008 Mfd. 400 V.	72	-41506	Power Transformer 110 V. 60 Cy.
32	W-37988	Condenser, .017 Mfd. 300 V.		-41507	Power Transformer 110 V. 25 Cy.
33	W-28619	Condenser, .006 Mfd. 200 V.	75	G70-24659	Output Transformer
34	W-23615	Condenser, .05 Mfd. 400 V.	77Y	W-41259	Tuning Meter
35	W-32380	Condenser, .05 Mfd. 200 V.	77Z	W-41464	Tuning Meter Bulb
36	W-29910A	Condenser, .25 Mfd. 200 V.	78	W-41301	Vol. Cont. 3 Meg-ohm Tap at 1 Mex.
37	W-30805	Condenser, .01 Mfd. 400 V.	79	W-41209	Condenser .018 Mfd. 200 V.
38	W-35951	Condenser, 3 Section Shunt Trim Assy.	80	C-36317	Resistor, 10,000 Ohm 1/2 W.
39	G52-33002	Condenser, 3 Section Var. Tuning		37894	Escutcheon
	D-42292	Dial Glass-Calibrated		37896	Escutcheon Retaining Ring
	-42921	Dial Mask (Paper background)		B-37898	Dial Lens (Escutcheon Glass)
MG23	-42865	Dial Drive Complete Assembly		B-41658	Spring Lens Retaining
	-42924	Dial Drive Unit		D-30	Mtg. Screws (Escutcheon)
	W-41145	Dial Hand (short)		W-40192B	Knob (Fidelity & Band Sel.) (2)
	W-40485	Dial Hand (long)		W-37339	Knob (V. C. & Station Sel.)
	W-40186	Screw (Dial Hand Mtg.)		W-42199	Knob (Expressionator)
	W-41582	Cable-Band Indicator Control		W-40234B	Crowley Shield
	W-37909A	Pulley-Indicator Cable		W-32620	Nut Shield Mtg.
40	W-30488	Condenser, .02 Mfd. 400 V.		6-CC	Cabinet
41	G1-34002	Condenser, .00025 Mfd.			
42	B-33906	Power Cord and Plug			





TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Go	Ga
6U7G	R. F. Amplifier	6.3	225	125	0	Neg	—	—
6A8G	Modulator	6.3	265	125	0	Neg	Neg	125
6J5G	Oscillator	6.3	120	—	0	Neg	—	—
6U7G	I. F. Amplifier	6.3	225	125	0	Neg	—	—
6Q7G	Detector, AVC & A. F. Amplifier	6.3	115	—	0	Neg	—	—
6N6G (2)	Output	6.3	255	265	3.0	0	—	—
5Y3G	Rectifier	5.0	—	—	265	—	—	—
6T5	Tuning Indicator	—	—	—	—	—	—	—

Power consumption approximately 135 watts at 117.5 volts  
Power output approximately 12 watts.  
Voltage drop across speaker field 100 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch for the Medium Wave Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmer condensers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Long Wave and Medium Wave Bands a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Bands a 400 ohm carbon resistor

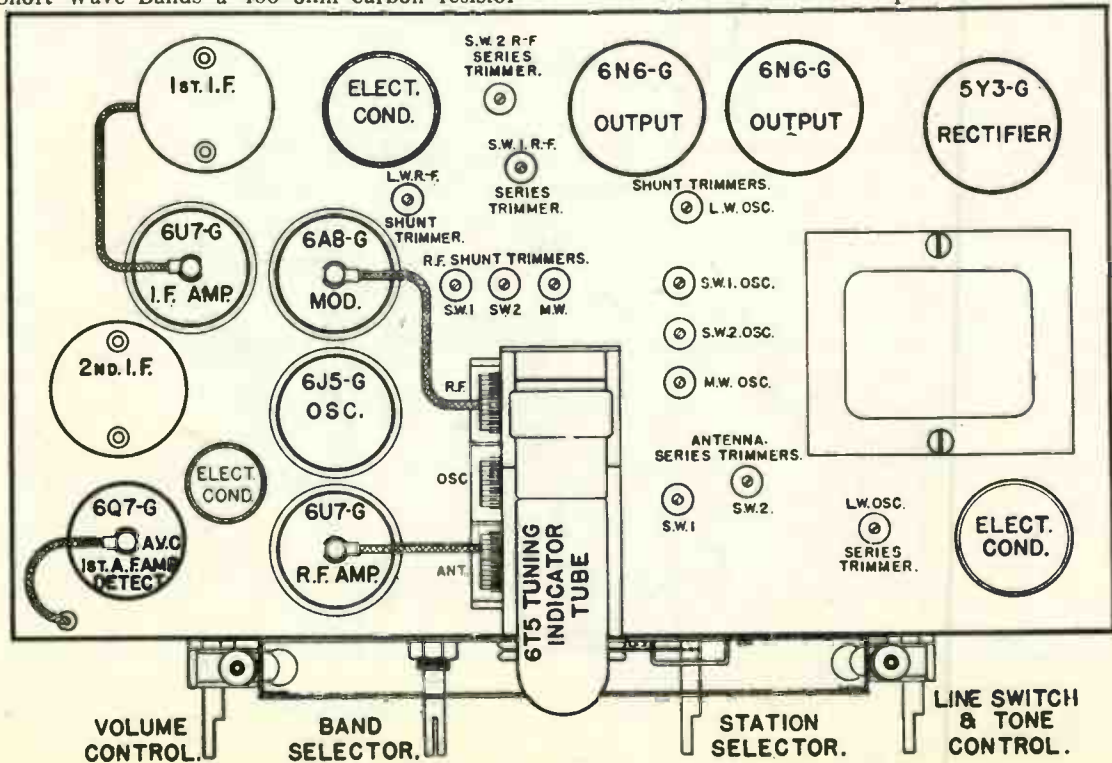
should be used in place of the condenser.

Each band should first be SHUNT aligned and then SERIES aligned where provision is made for series alignment. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY signal is heard (it is not necessary that the receiver tune through this signal).

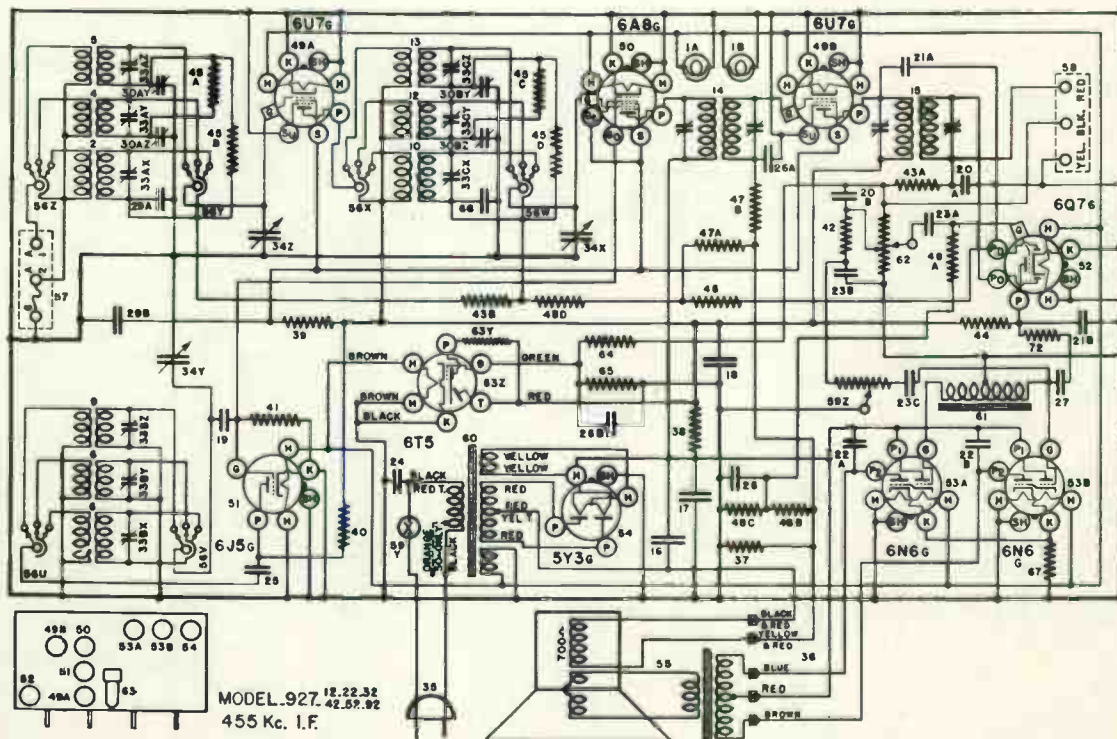
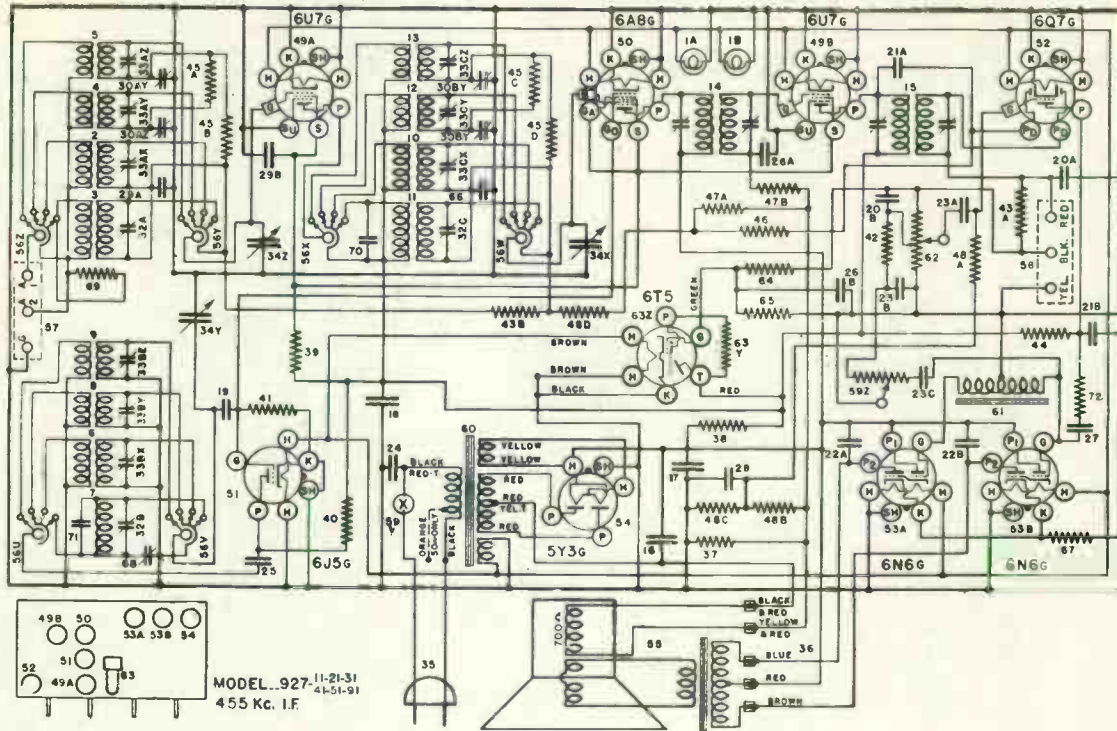
(b) Adjust the station selector so that the SHUNT ALIGNMENT signal (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(c) To align the series trimmers, set the signal generator to the frequencies indicated in ¶ (D) below and then tune-in the signal with the station selector for maximum output. To obtain the best adjustment of the series trimmers, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmers for maximum output.



(D) SIGNAL INPUT FREQUENCIES

Band	Min. Capacity	Shunt Alignment	Series Alignment		
			Ant.	R. F.	Osc.
L Wave	380 Kc.	350 Kc.			150 Kc.
M Wave	1650 Kc.	1400 Kc.			
S W-I	13 Mc.	12 Mc.	6 Mc.	6 Mc.	
S W-II	24 Mc.	22 Mc.	11 Mc.	11 Mc.	



**PARTS LIST—MODEL 927**

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1AB	W —43567	Dial Light Bulb, 6-8 V.	48C	—37245	Resistor, 1.5 Megohm $\frac{1}{3}$ W. Carbon
	G11 —45398	D. L. Socket Assy.	48D	—37245	Resistor, 1.5 Megohm $\frac{1}{3}$ W. Carbon
2	G159—32000	Ant. Coil, 182-570 Metres	49	G171—36400	Socket, Type 6U7
3	G162—32000	Ant. Coil, 789-2190 Metres (927-1 only)	50	G156—36400	Socket, Type 6A8
4	G161—32000	Ant. Coil, 23.1-56 Metres	51	G186—36400	Socket, Type 6J5
5	G160—32000	Ant. Coil, 12.5-30 Metres	52	G160—36400	Socket, Type 6Q7
6	G132—32002	Osc. Coil, 182-570 Metres	53	G165—36400	Socket, Type 6N6
7	G165—32002	Osc. Coil, 789-2190 Metres (927-1 only)	54	G173—36400	Socket, Type 5Y3
8	G163—32002	Osc. Coil, 23.1-56 Metres	W	—40911	Tube Shield
9	G164—32002	Osc. Coil, 12.5-30 Metres	55	477-BJ-5	Speaker, Spec. 1-D-1241
10	G98 —32001	R-F. Coil, 182-570 Metres		—45539	V. C. and Cone Assy.
11	G101—32001	R-F. Coil, 789-2190 Metres (927-1 only)		—45540	Field Coil (700 Ohms—120 M. A.)
12	G99 —32001	R-F. Coil, 23.1-56 Metres		—45541	Output Trans.
13	G100—32001	R-F. Coil, 12.5-30 Metres		677-BJ-5	Speaker, Spec. 1-D-1243
14	G175—32004	1st I-F., 455 Kc.		—45542	V. C. and Cone Assy.
15	G176—32004	2nd I-F., 455 Kc.		—45543	Field Coil (700 Ohms—120 M. A.)
	W —44119	Insulating Washer, Used on Item 16		—45544	Output Trans.
	W —44120	Insulating Washer Extruded, Used on Item 16	56	—45227	Band Switch (927-1 only)
16	W —36055B	Condenser, 35 Mf. 400 V. Electrolytic	56	—45213	Band Switch (927-2 only)
17	W —44438A	Condenser, 40 Mf. 300 V. Electrolytic	57	G27 —26719	Ant. and Gnd. Terminal Assy.
18	W —44012	Condenser, 16 Mf. 250 V. Electrolytic	58	G36 —26719	Phono Terminal Assy.
19	G13 —34002	Condenser, .000035 Mf. 200 V. Molded	59Z		Tone Control, 1 Meg.
20A	G2 —34002	Condenser, .0001 Mf. 200 V. Molded	59Y		Line Switch
20B	G2 —34002	Condenser, .0001 Mf. 200 V. Molded	60	—44704A	Power Trans., 110 V.—60 Cy. (11)
21A	G1 —34002	Condenser, .00025 Mf. 200 V. Molded		—45370	Power Trans., 110 V.—50 Cy. (21)
21B	G1 —34002	Condenser, .00025 Mf. 200 V. Molded		—45373	Power Trans., 220 V.—50 Cy. (31)
22A	W —35139	Condenser, .004 Mf. 400 V. Tubular		—45374	Power Trans., 110 V.—25 Cy. (41)
22B	W —35139	Condenser, .004 Mf. 400 V. Tubular		—45371	Power Trans., 220 V.—25 Cy. (51)
23A	W —28619	Condenser, .006 Mf. 200 V. Tubular		—45372	Power Trans., Universal (91)
23B	W —28619	Condenser, .006 Mf. 200 V. Tubular	61	G82 —24628	Audio Input Choke
23C	W —28619	Condenser, .006 Mf. 200 V. Tubular	62	—44773	Volume Control, 1 Meg.
24	W —30805	Condenser, .01 Mf. 400 V. Tubular	63Z		6T5 Socket Assy.
25	W —32378	Condenser, .01 Mf. 400 V. Tubular	63Y	W —44121	Resistor, 1 Meg. (In Base of 6T5 Socket)
26A	W —28621	Condenser, .02 Mf. 200 V. Tubular		W —45239	Bracket to Dial (6T5 Mtg.)
26B	W —28621	Condenser, .02 Mf. 200 V. Tubular	MG37	—45271	Bracket with Socket Clamp (6T5 Mtg.)
27	W —29910A	Condenser, .25 Mf. 200 V. Tubular	64	—26578	Resistor, 5 Megohm $\frac{1}{2}$ W. Carbon
28	W —27216	Condenser, .05 Mf. 200 V. Tubular	65	—26577	Resistor, 3 Megohm $\frac{1}{2}$ W. Carbon
29A	W —35936	Condenser, .05 Mf. 200 V. Tubular	66	W —36541	Condenser, .02 Mf. 160 V. Tubular
29B	W —35936	Condenser, .05 Mf. 200 V. Tubular	67	W —23012A	Resistor, 40 Ohm $\frac{3}{4}$ W. Flexible
30AZ		S. W.-2 Ant. Series Trimmer Cond.	68	—45203	L. W. Osc. Series Trimmer Cond. (927-1 only)
30AY	—45202	S. W.-1 Ant. Series Trimmer Cond.	69	—24814	Resistor, 7,000 Ohm $\frac{1}{3}$ W. Carbon (927-1 only)
30BZ		S. W.-2 R-F. Series Trimmer Cond.	70	G11 —34002	Condenser, .000175 Mf. 200 V. Molded (927-1 only)
30BY	—45202	S. W.-1 R-F. Series Trimmer Cond.	71	G6 —34002	Condenser, .000025 Mf. 200 V. Molded (927-1 only)
31			72	—33390	Resistor, 30,000 Ohm $\frac{1}{3}$ W. Carbon (927-2 only)
32A	W —44516	L. W. Ant. Shunt Trimmer Cond. (927-1 only)		7GK	Cabinet—Table Model (927-1)
32B	W —44516	L. W. Osc. Shunt Trimmer Cond. (927-1 only)		7GF	Cabinet—Table Model (927-2)
32C	W —44516	L. W. R-F. Shunt Trimmer Cond. (927-1 only)		7TK	Cabinet—Console Model (927-1)
33	W —35951A	3 Section Shunt Trimmer Assy.		7TF	Cabinet—Console Model (927-2)
34	G61 —33002	3 Section Gang Condenser (Variable)		C —45122	Escutcheon
	MG93—45126	Dial Face and Mtg. Plate (927-1 only)		—36884	Mtg. Screws—Tun. Indic. Escut.
	MG94—45126	Dial Face and Mtg. Plate (927-2 only)		W —45362	Tuning Indic. Escutcheon
	C —45244B	Dial Mtg. Bracket		W —45248	Knob—Band Switch (7TK and 7TF Cab.)
	G7 —43564	Pulley and Hub Assy.		W —45375	Knob—Tone Control (7TK and 7TF Cab.)
	—41582	Drive Cord (21 Inches)		W —45247	Knob—Vol. Cont. & Sta. Sel. (7TK & 7TF Cab.)
	W —43561	Cord Tension Spring		W —44381B	Knob—Vol. Cont. & Sta. Sel. (7GK & 7GF Cab.)
	W —45360A	Drive Shaft		W —45389	Knob—Tone Control (7GK and 7GF Cab.)
	W —43542B	Drive Shaft Mtg. Bracket		W —45376	Knob—Band Switch (7GK and 7GF Cab.)
	W —43549	Retaining Ring—Drive Shaft		W —36117	Rubber Mtg. Foot
	W —45334A	Pointer	G1	—42790	Phono Motor Bd. Assy., 50 Cy. 110 V. 78 R.P.M.
	W —40486	Pointer Mtg. Screw		—43530	Phono Motor only, 50 Cy. 110 V. 78 R.P.M.
35	B —33906A	Power Cord and Plug	G2	—42790	Phono Motor Bd. Assy., 25 Cy. 110 V. 78 R.P.M.
36	G1 —45378	5 Lead Speaker Cable Assy.		—43531	Phono Motor only, 25 Cy. 110 V. 78 R.P.M.
37	W —37631	Resistor, 32 Ohm $\frac{1}{2}$ W. Flexible	G3	—42790	Phono Motor Bd. Assy., 50 Cy. 220 V. 78 R.P.M.
38	W —26422	Resistor, 1,000 Ohm 4W. Flexible		—43532	Phono Motor only, 50 Cy. 220 V. 78 R.P.M.
39	—44008	Resistor, 10,000 Ohm 2W. Carbon	G4	—42790	Phono Motor Bd. Assy., 25 Cy. 220 V. 78 R.P.M.
40	—5370A	Resistor, 20,000 Ohm 1W. Carbon		—43533	Phono Motor only, 25 Cy. 220 V. 78 R.P.M.
41	—35928	Resistor, 60,000 Ohm $\frac{1}{2}$ W. Insulated	G5	—42790	Phono Motor Bd. Assy., 60 Cy. 110 V. 78 R.P.M.
42	—37472	Resistor, 50,000 Ohm $\frac{1}{4}$ W. Carbon		—43534	Phono Motor only, 60 Cy. 110 V. 78 R.P.M.
43A	—35600	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Insulated	G6	—42790	Phono Motor Bd. Assy., 40 Cy. 110 V. 78 R.P.M.
43B	—35600	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Insulated		—43639	Phono Motor only, 40 Cy. 110 V. 78 R.P.M.
44	—23403	Resistor, 150,000 Ohm $\frac{1}{2}$ W. Carbon		—43658	Pickup Arm
45A	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated		W —45392	Wall Tap—Receptical
45B	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated		W —33503	Needle Cup Lid
45C	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated		W —33502	Needle Cup
45D	—35601	Resistor, 300,000 Ohm $\frac{1}{4}$ W. Insulated		B —33906A	Cord and Plug (Phono-Power)
46	—23785	Resistor, 500,000 Ohm $\frac{1}{4}$ W. Carbon		W —20757A	Phono-Radio Switch Plate
47A	—35602	Resistor, 1 Megohm $\frac{1}{4}$ W. Insulated		W —27266A	Phono-Radio Switch
47B	—35602	Resistor, 1 Megohm $\frac{1}{4}$ W. Insulated			
48A	—37245	Resistor, 1.5 Megohm $\frac{1}{3}$ W. Carbon			
48B	—37245	Resistor, 1.5 Megohm $\frac{1}{3}$ W. Carbon			

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band (GREEN).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on the top of the 3rd I-F Transformer for maximum output.

(f) Open the middle trimmer of the 2nd I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut.)

(g) Adjust the top trimmer of the 2nd I-F transformer for maximum reading on the output meter.

(h) Adjust the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. (Do not readjust the trimmers on the 3rd I-F transformer).

(i) Adjust both trimmers located on top of the 1st I-F transformer for maximum reading on the output meter.

(j) Adjust the middle trimmer of the 2nd I-F transformer for maximum output.

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the ORANGE band a .0002 mfd. con-

denser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

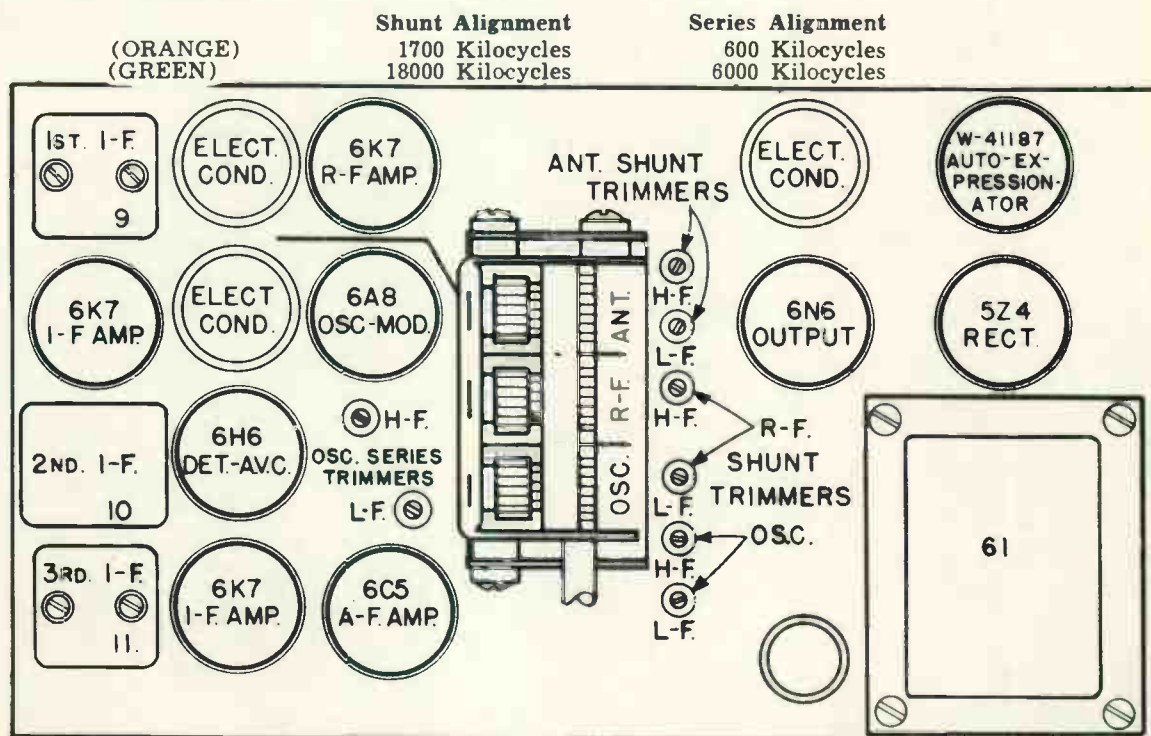
Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC," "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers. **DO NOT READJUST the "OSC" TRIMMER.**

NOTE: When shunt aligning the GREEN band care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

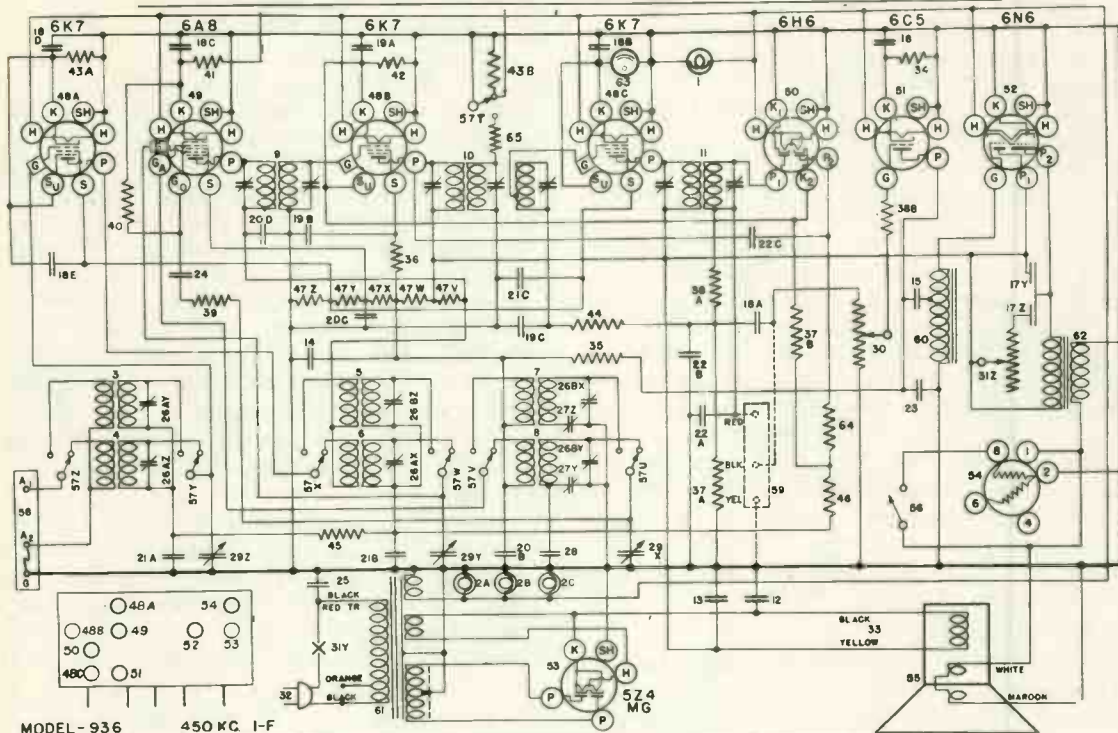


MODEL 936

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>1</sub>	S	Su	K	K <sub>1</sub>	Ga	Go
6K7	R-F Amplifier	6.3	220	—	97	4.7	4.7	—	—	—
6A8	Oscillator-Mod.	6.3	220	—	128	—	5.0	—	152	Var.
6K7	1st I-F Amplifier	6.3	245	—	119	3.5	3.5	—	—	—
6K7	2nd I-F Amplifier	6.3	245	—	95	2.0	2.0	—	—	—
6H6	Detector & AFC	6.3	0	0	—	—	—	3.5	—	—
6C5	A-F Amplifier	6.3	74	—	—	—	—	—	—	—
6N6	Output	6.3	255	240	—	—	—	—	—	—
5Z4	Rectifier	5.0	—	—	—	—	350	—	—	—
W-41187	Auto-Expressionator.	Varies with power output.								

Voltage drop across speaker field 100 volts.  
 Power Output approximately 6 watts.  
 Power consumption approximately 120 watts.  
 All readings taken on 117.5 volt A-C line.



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-41464	Bulb for Tuning Meter	35	-35928	Resistor, 60,000 Ohm 1/4 W. Car.
2ABC	W-37922	Bulb Dial Light	36	-36317	Resistor, 10,000 Ohm 1/4 W. Car.
3	G110-32000	Ant. Coil—540-1725 Kc.	37AB	-96322	Resistor, 300,000 Ohm 1/4 W. Car.
4	G125-32000	Ant. Coil—6,000-18,000 Kc.	38AB	-35930	Resistor, 200,000 Ohm 1/4 W. Car.
5	G87-32001	R-F. Coil—540-1725 Kc.	39	-42401	Resistor, 100 Ohm 1/2 W. Car.
6	G88-32001	R-F. Coil—6,000-18,000 Kc.	40	-40757	Resistor, 50,000 Ohm 1/4 W. Car.
7	G119-32002	Osc. Coil—540-1725 Kc.	41	W-28589	Resistor, 350 Ohm 1/2 W. Flex.
8	G120-32002	Osc. Coil—6,000-18,000 Kc.	42	W-28106	Resistor, 300 Ohm 1/2 W. Flex.
9	G130-32004	1st I-F. Assy. 450 Kc.	43AB	W-25437	Resistor, 275 Ohm 1/2 W. Flex.
10	G127-32004	2nd I-F. Assy. 450 Kc.	44	-36688	Resistor, 3 Megohm 1/2 W. Car.
11	G131-32004	3rd I-F. Assy. 450 Kc.	45	-35600	Resistor, 100,000 Ohm 1/2 W. Car.
12	W-36055	Condenser, 35 Mf. 400 V.	46	-37245	Resistor, 1.5 Megohm 1/2 W. Car.
13	W-36057	Condenser, 40 Mf. 300 V.	47Z		Resistor, 25,000 Ohm
14	W-40325	Condenser, 50 Mf. 150 V.	47Y		Resistor, 5,300 Ohm
15	W-42495	Condenser, 15 Mf. 200 V.	47X	W-42199B	Resistor, 2,300 Ohm
16	W-41598	Condenser, 50 Mf. 25 V.	47W		Resistor, 3,000 Ohm
17Z	W-31052	Condenser, 15 Mf. 400 V.	47V		Resistor, 2,000 Ohm
18ABC	W-36541	Condenser, .02 Mf. 160 V.	48ABC	G151-36400	Socket Type 6K7
CDE	W-28621	Condenser, .02 Mf. 200 V.	49	G156-36400	Socket Type 6A8
19ABC	W-32378	Condenser, .01 Mf. 400 V.	50	G155-36400	Socket Type 6116
20BCD	W-35936	Condenser, .05 Mf. 200 V.	51	G152-36400	Socket Type 6C5
21ABC	W-32004	Condenser, .0001 Mf. 200 V.	52	G165-36400	Socket Type 6N6
22ABC	C2-34002	Condenser, .0005 Mf. 200 V.	53	G154-36400	Socket Type 5Z4
23	C3-34002	Condenser, .0005 Mf. 200 V.	54	G187-36400	Socket Auto Expressionator
24	G5-34002	Condenser, .00005 Mf. 200 V.	55	442CJ4 "M"	Speaker Spec. 1-D-700
25	W-30805	Condenser, .01 Mf. 400 V.		-43172	Cone Assy. for Above Speaker
26AB	W-42498	3 Section Shunt Trimmer		-43176	Field Coil
27	W-37874	2 Sect. Osc. Series Trimmer	55	-42377	Speaker 1-D-641
28	G2-34002	Condenser, 3104 Mmf.		-42882	Cone Assy. for Above Speaker
29	G2-33002	3 Sect. Var. Tuning Condenser		-40406	Field Coil
	MG35-42457	Dial Drive Assy. Complete	56	-42402	Auto Expressionator Switch
	W-41905C	Drive Unit Only	57	C-42566A	Band Select. Switch
	W-42609	Dial Mask (paper background)	G27	-26719	Ant. and Gnd. Terminal Assy.
	W-42555	Dial Glass (calibrated)	G37	-26719	Phono. Terminal Assy.
	W-41145	Pointer—Short	60	G14-28535	Audio Coupling Choke
	W-40485A	Pointer—Long	61	-42614B	Power Trans. 50 Cy. 110 V.
	W-40186	Screw—Pointer Mtg.		-42615B	Power Trans. 30 Cy. 220 V.
	W-40537	Coupling Unit		-43159A	Power Trans. 60 Cy. 110 V.
	W-41582	Indicator Control Cable		-43160A	Power Trans. 25 Cy. 110 V.
	W-41157	Drive Belt		-43161A	Power Trans. 25 Cy. 220 V.
	C-37894	Escutcheon	62	GE9-24628	Output Transformer
	B-37896	Ring—Escutcheon Mtg.	63	W-42619	Tuning Meter (500 Ohm)
	B-37898	Ring—Escutcheon	64	-35601	Resistor, 300,000 Ohm 1/4 W. Car.
	B-37897	Ring—Lens Retaining	65	-21876	Resistor, 10,000 Ohm 1/4 W. Car.
30	W-42290	Volume Control, 3 Megohm	W-37339		Knob (3 Req.)
31Z	W-37908	Tone Control, 100,000 Ohm	W-42480		Knob (2 Req.)
31Y	W-37908	Line Switch		-6CC	Cabinet Table Model
32	B-33906A	Line Cord and Plug		-6PA	Cabinet
33	G6-37918	Cable for Speaker		-6SC	Cabinet
34	W-31093	Resistor, 2,700 Ohm 1/4 W. Car.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go
6K7	R-F Amplifier	6.4	185	85	3.0	0	3.0	—
6L7	Modulator	6.4	180	85	—	0	3.0	-5 to -30
6C5	Oscillator	6.4	110	—	—	-5 to -30	0	—
6K7	I-F Amplifier	6.4	195	85	3.0	0	3	—
6Q7	Diode and A-F Amplifier	6.4	130	—	—	0	2.0	—
6C5	Output Driver	6.4	195	265	—	0	16.0	—
6F6	(2) Output	6.4	260	—	—	—	—	—
5Z4	Rectifier	4.9	350	—	—	0	6.5	—

Tuning I-F Amplifier to 450 Kilocycles.

- (a) Connecting Output Meter: Connect one terminal of the output meter to the plate of one of the 6F6 Output tubes and the other terminal through a .1 mfd., or larger, condenser—not electrolytic—to the plate of the other 6F6 Output tube.
- (b) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver chassis.
- (c) Set the band selector switch to the broadcast band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the expressionator switch OFF.
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output. (7 Fig. 2).
- (f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube, leaving the tube's grid clip in place.
- (g) Close the middle trimmer condenser on the 1st. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force adjusting screw).
- (h) Adjust the top and then the bottom trimmer of the 1st I-F transformer for maximum output.
- (i) Transfer the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.
- (j) Adjust the middle trimmer of the 1st I-F trans-

former by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

Aligning R-F Amplifier.

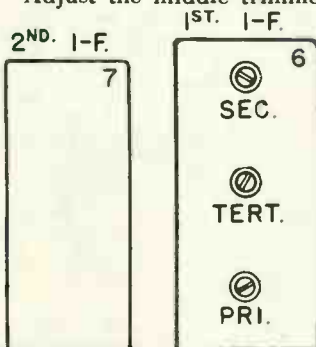
When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, 30Y and 30Z Fig. 2, set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. At the same time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

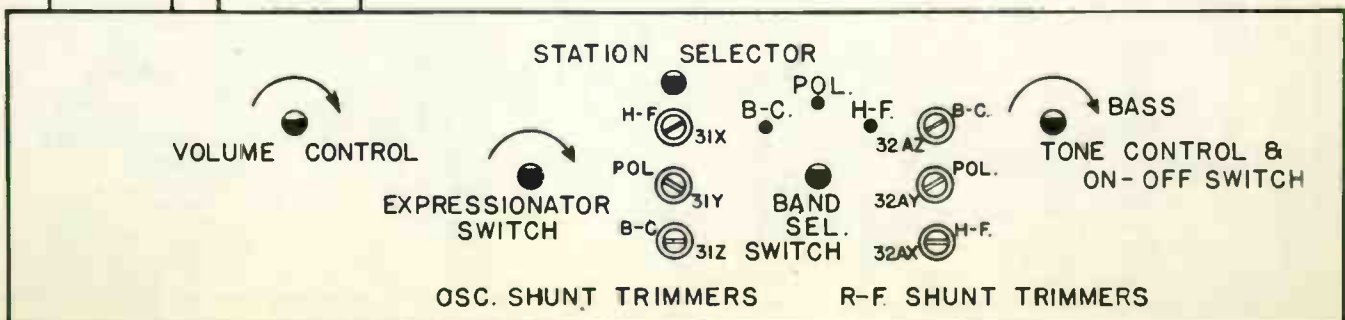
(c) Signal Input Frequencies:



American Broadcast Band (BLUE)  
Police Band (RED)  
High-Frequency Band (GREEN)

Shunt Aligned  
1790 Kc.  
6000 Kc.  
18000 Kc.

Series Aligned  
600 Kc.  
2500 Kc.  
.....



# MODEL 955

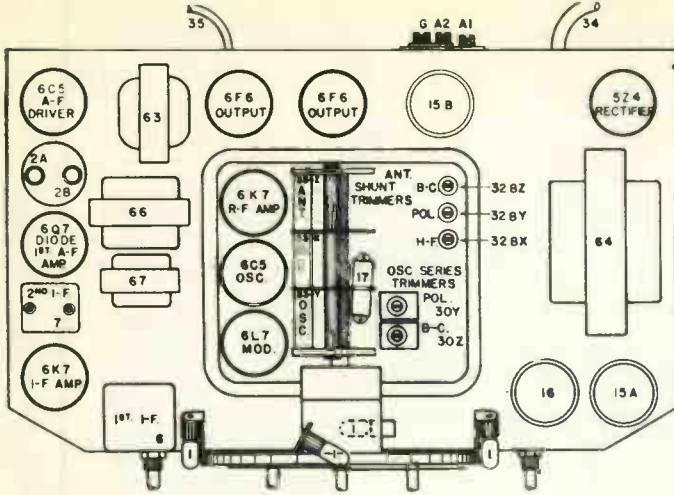


Fig. 2. Top View 955

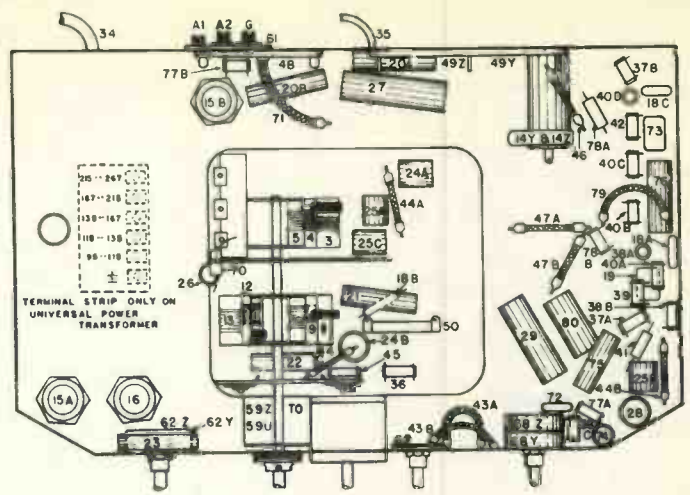


Fig. 3. Bottom View 955

Figures in first column refer to parts in Diagrams.

Item	Part No.	Name	Description	Item	Part No.	Name	Description
1A	W -37922	Bulb	Dial Light	43B	-40445	Resistor	3.5 ohm, wire wound
1B	W -37922	Bulb	Dial Light	44A	W -28589	Resistor	350 ohm, 1/2 W. Flex.
1C	W -37922	Bulb	Dial Light	44B	W -28589	Resistor	350 ohm, 1/2 W. Flex.
1D	W -37922	Bulb	Indicator light	44C	W -28589	Resistor	350 ohm, 1/2 W. Flex.
2A	W -37921	Bulb	Auto Expressionator Ballast	45	W -21876	Resistor	10,000 ohm, 1/4 W. carbon
2B	W -37921	Bulb	Auto Expressionator Ballast	46	W -21452	Resistor	1,100 ohm, 1/4 W. Flex.
3	G94 -32000	Coil	Ant. 540-1900 Kc.	47A	W -23013	Resistor	2,000 ohm, 1/4 W. Flex.
4	G65 -32000	Coil	Ant. 1900-6000 Kc.	47B	W -23013	Resistor	2,000 ohm, 1/4 W. Flex.
5	G83 -32000	Coil	Ant. 6-18 Mc.	48	W -37901	Resistor	1,000 ohm, 1/4 W. wire wnd.
6	G90 -32004	Coil	1st I. F. Trans. Assm.	49Z	W -37965	Resistor	4,000 ohm
7	G92 -32004	Coil	2nd I. F. Trans. Assm.	49Y	W -37965	Resistor	4,000 ohm
8	G80 -32002	Coil	Osc. 540-1900 Kc.	50	W -37087	Resistor	15,000 ohm
9	G81 -32002	Coil	Osc. 1900-6000 Kc.	51	G154 -36400	Socket	Type 574
10	G78 -32002	Coil	Osc. 6-18 Mc.	52A	G152 -36400	Socket	Type 9C5
11	G68 -32001	Coil	R. F. 540-1900 Kc.	52B	G192 -36400	Socket	Type 6C5
12	G80 -32001	Coil	R. F. 1900-6000 Kc.	53A	G151 -36400	Socket	Type 6K7
13	G66 -32001	Coil	R. F. 6-18 Mc.	53B	G151 -36400	Socket	Type 6K7
14Z	W -37778	Condenser	12 mfd. 25 Volt.	54	G100 -36400	Socket	Type 6Q7
14Y	W -38055	Condenser	12 mfd. 25 Volt.	55	G159 -36400	Socket	Type 6L7
15A	W -38055	Condenser	35 mfd. 400 Volt	56A	G153 -36400	Socket	Type 6F6
15B	W -38055	Condenser	35 mfd. 400 Volt	56B	G153 -36400	Socket	Type 6F6
16	W -38057	Condenser	40 mfd. 300 Volt	57	G1 -37965	Socket	Auto Express. Assm.
17	G18 -34000	Condenser	.0056 mfd.—mica	58	633-CJ-4	Speaker	
18A	G2 -34002	Condenser	.0001 mfd.—mica	59Z	C -37968	Switch	Band Selector
18B	G2 -34002	Condenser	.0001 mfd.—mica	to			
18C	G2 -34002	Condenser	.0001 mfd.—mica	30U	W -37956	Switch	Auto Expressionator
19	G1 -34002	Condenser	.00025 mfd.—mica	60	G27 -26719	Terminal	Ant. & Ground. Assm.
20A	W -35139	Condenser	.004 mfd. 400 Volt	61	62Z	Tone Control &	
20B	W -35139	Condenser	.004 mfd. 400 Volt	62Y	-37964	A. C. Switch	
21	W -34047	Condenser	.006 mfd. 400 Volt	63	G1 -37995	Transformer	Audio
22	W -32378	Condenser	.01 mfd. 400 Volt	64	G43 -25060	Transformer	Power 110 V. 60 cycle
23	W -30905	Condenser	.01 mfd. 400 Volt	65	-37965	Transformer	Universal
24A	W -30541	Condenser	.02 mfd. 160 Volt	66	G37 -24628	Transformer	Output
24B	W -30541	Condenser	.02 mfd. 160 Volt	67	G36 -24028	Transformer	Auto Expressionator
25A	W -35890	Condenser	.05 mfd. 200 Volt	68Z	-37907	Volume	3 meg. 1st A. F. Grid
25B	W -35890	Condenser	.05 mfd. 200 Volt	68Y	-37907	Control	1 meg. 2nd A. F. Grid
25C	W -35890	Condenser	.05 mfd. 200 Volt	69	-None	Resistor	300,000 ohms, Ins.
26	W -32390	Condenser	.05 mfd. 200 Volt	70	-35001	Resistor	220 ohms, 2 1/2 W. Flex.
27	W -23015	Condenser	.05 mfd. 400 Volt	71	W -22873	Condenser	.00025 mfd.—mica
28	W -24049B	Condenser	.1 mfd. 200 Volt	72	G6 -34002	Condenser	.0005 mfd.—mica
29	W -37732	Condenser	.3 mfd. 100 Volt	73	G3 -34002	Condenser	.017 mfd. 200 Volt
30Z	-37874	Condenser	Series Trimmer	74	W -37988	Condenser	.02 mfd. 200 Volt
30Y	-37874	Condenser	Series Trimmer	75	W -38021	Condenser	.02 mfd. 400 Volt
31Z	-37874	Condenser	Osc. Trimmer 540-1900 Kc.	76	W -30488	Condenser	.02 mfd. 400 Volt
31Y	W -35951	Condenser	Osc. Trimmer 1900-600 Kc.	77A	-22831	Resistor	15,000 ohm, 1/4 W.
31X	-35951	Condenser	Osc. Trimmer 6-18 Mc.	77B	-22831	Resistor	15,000 ohm, 1/4 W.
32AZ	-37891	Condenser	R. F. Trimmer 540-1900 Kc.	78A	-35600	Resistor	100,000 ohm, 1/4 W. Ins.
32AY	W -37891	Condenser	R. F. Trimmer 1900-6000 Kc.	78B	-35600	Resistor	100,000 ohm, 1/4 W. Ins.
32AX	-37891	Condenser	R. F. Trimmers 6-18 Mc.	79	W -30000	Resistor	200 ohm 1 1/2 W. Flex.
32BZ	-37891	Condenser	Ant. Trimmer 540-1900 Kc.	80	W -32780B	Condenser	.05 mfd. 400 Volt
32BY	W -37891	Condenser	Ant. Trimmer 1900-6000 Kc.		-37946	Dial Assy.	Complete
32BX	-37891	Condenser	Ant. Trimmer 6-18 Mc.		-40631	Belt	Drive
32Z	-37891	Condenser	Ant. Trimmer 6-18 Mc.		-40637	Coupling	Flex. Drive
33Z	G47 -33002	Condenser	3 Section Var. Tuning		-40196	Face	Celluloid Dial
34	B -33906A	Cable	Power Supply		-37948	Dial Face	Glass Dial
35	G1 -37918	Cable	Speaker		-40485	Pointer	Long
36	-21453	Resistor	40,000 ohm, 1/4 W.		-40484	Pointer	Short
37A	-23403	Resistor	150,000 ohm, 1/4 W.		-40486	Screw	Pointer Retaining
37B	-23403	Resistor	150,000 ohm, 1/4 W.		-37898	Lens	Dial
38A	-21455	Resistor	300,000 ohm 1/4 W.		W -37897	Spring	Dial Lens Retaining
38B	-21455	Resistor	300,000 ohm 1/4 W.		C -37804	Escutcheon	
38C	-21455	Resistor	300,000 ohm 1/4 W.		B -37804	Spring	Escutcheon Retaining
39	-33344	Resistor	400,000 ohm, 1/4 W.		W -40345	Felt	Escutcheon
40A	-23785	Resistor	500,000 ohm, 1/4 W.		W -37117	Foot	Rubber Mgt.
40B	-23785	Resistor	500,000 ohm, 1/4 W.		-40487	Cable	Indicator Control
40C	-23785	Resistor	500,000 ohm, 1/4 W.		W -37339	Knob	3 Required
40D	-23785	Resistor	500,000 ohm, 1/4 W.		W -40192	Knob	2 Required
41	-36602	Resistor	1. megohm, 1/4 W. Insul.		W -37909	Pulley	Band Selector Switch
42	-26577	Resistor	3. megohm, 1/4 W.		G2 -37965	Socket	Dial Light
43A	-40445	Resistor	3.5 ohm, wire wound		G3 -37965	Socket	Indicator Light

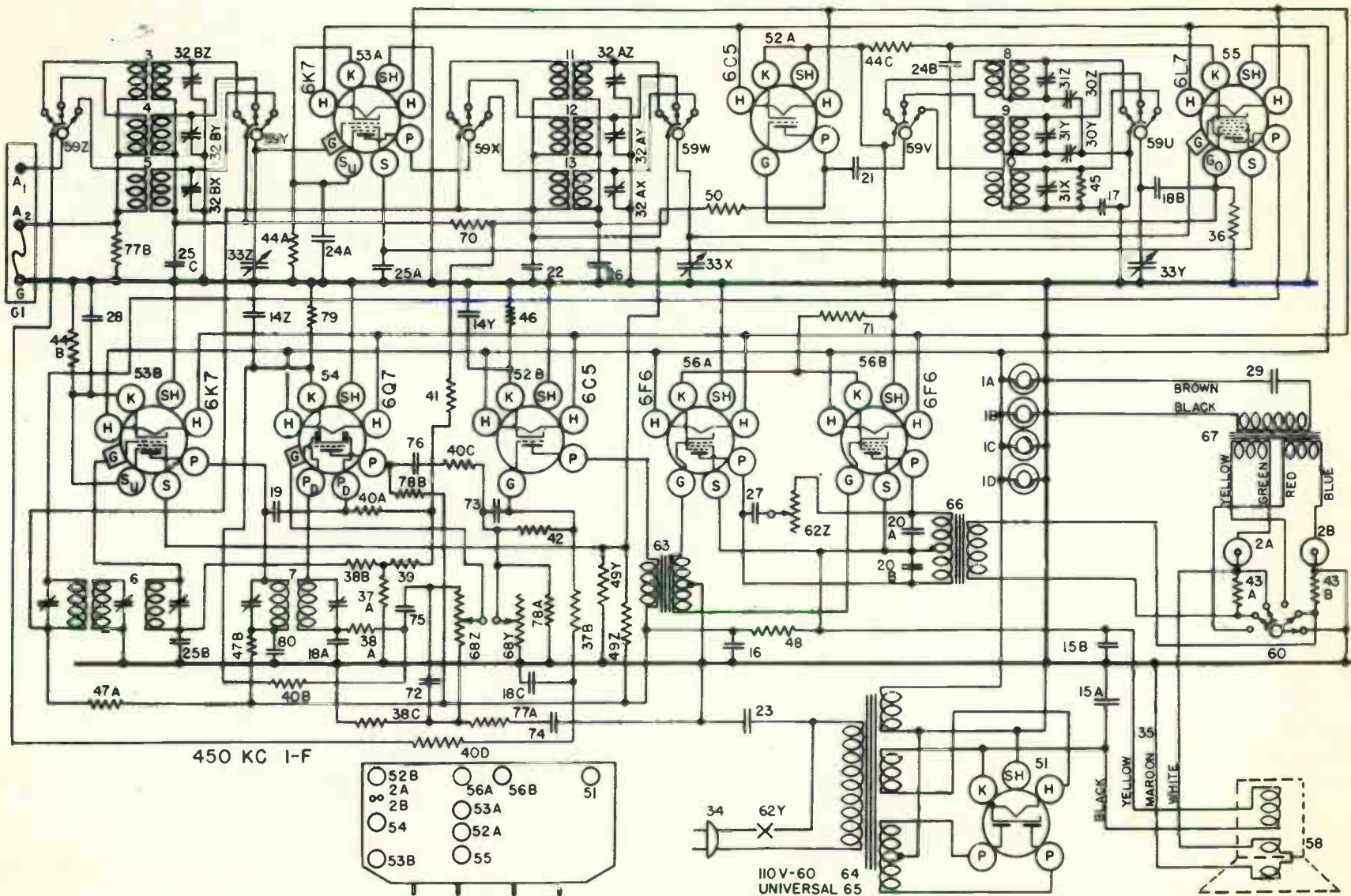


FIG. 1—WIRING DIAGRAM—MODEL 955



TUBE VOLTAGES—MODEL 1014 "CENTURION"

Type	Where Used	Ef	Ek	Eg	Esg	Esup.	Ep	Es1	Ep1
			Bands 1-2	Bands 2-4-8					
6D6	R. F. Amp.	6.3	0	0	x	100	0	250	—
6A7	Osc. Mod.	6.3	11.0	0	x	100	0	250	—
6D6	1st I. F.	6.3	0	0	x	100	0	250	—
6F7	2nd I. F. & Det.	6.3	0	0	x	75	—	240	0
76	A. V. C.	6.3	0	0	x	—	—	x	—
6D6	1st A. F. Amp.	6.3	4	4	0	40	40	—	—
76	Phase Inv.	6.3	4	4	0	—	—	50	—
(2) 42	Output	6.3	16	16	0	250	—	245	—
80	Rect.	5.0	—	—	—	—	—	—	—

VOLTAGE DROP ACROSS FILTER CHOKE 20 VOLTS  
VOLTAGE DROP ACROSS FIELD COIL 65 VOLTS  
ALL Measurements Made With A 1000 Ohms Per Volt Voltmeter From Chassis

1 IN ABOVE TABLE INDICATES HIGH RESISTANCE IN  
CIRCUIT WHICH PREVENTS ACCURATE MEASUREMENT.

PEAKING I. F. STAGES AT 456 Kc.

- I. Connect the ground lead of the test oscillator to the chassis frame. Connect a .1 mfd., or larger, condenser in series with the other lead and connect this lead to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. The .1 mfd. condenser is necessary to prevent a short circuit which would remove the bias voltage.
- II. Set the test oscillator at 456 kilocycles.
- III. Turn the volume control of the receiver on full. Turn the station selector until the tuning condenser plates are completely meshed and set the band switch to band No. 5.
- IV. (a) Peak both tuning condensers located on top of the first I.F. transformer shown on Fig. 4. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.

(b) Peak both tuning condensers located on top of the 2nd I. F. transformer shown on Fig. 4.

(c) Peak both tuning condensers located on top of the 3rd I.F. transformer shown on Fig. 4.

PEAKING R. F. CIRCUITS

- I. Connecting test oscillator to receiver: It is necessary to connect a dummy antenna in series with the test oscillator and the antenna terminal of the receiver. On bands 1 and 2 this consists of a .0002 mfd. mica condenser. On bands 3, 4 and 5 it consists of a carbon resistor of approximately 400 ohms. With the tuning condenser plates completely meshed make certain that the dial pointer is exactly horizontal. If not, loosen nut and set pointer horizontal and tighten nut again. The setting of the band spread pointer is not important.
- II. To Peak Band No. 1. NOTE: Be sure to use the lowest oscillator output that will give a reasonable scale deflection on the output meter. 30 to 90 volts output is satisfactory.
  - (a) Set test oscillator at 350 Kc. Tune station selector to 350 Kc. (35 on dial). Then adjust oscillator parallel trimmer condenser, Fig. 3, for maximum output.
  - (b) With same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 1.
    - (c) (1) Set test oscillator at 150 Kc.
    - (2) Tune station selector in the region of 15—Band No. 1—on dial for maximum reading on the output meter.
    - (3) Close the oscillator series trimmer condenser for Band No. 1, Fig. 3, 1/8 turn and re-tune station selector to 150 Kc. signal for maximum output, noting reading on output meter.
    - (4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser 1/8 turn and re-tune station selector to 150 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.
    - (d) Repeat operations (a) and (b) for more accurate adjustments.
- III. To Peak Band No. 2.
  - (a) Set test oscillator at 1400 Kc. Tune station selector to 1400 Kc. (140 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 2 for maximum output.
  - (b) With same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 2.
    - (c) (1) Set test oscillator at 600 Kc.
    - (2) Tune station selector in the region of 60—Band No. 2—on dial for maximum reading on the output meter.

(3) Close the oscillator series trimmer condenser for Band No. 2, Fig. 3, 1/8 turn and re-tune station selector to 600 Kc. signal for maximum output, noting reading on output meter.

(4) If meter reads higher after operation (3) repeat the operation again and again until no further improvement in the reading of the output meter can be obtained. If meter reads lower after operation (3) open the oscillator series trimmer condenser 1/8 turn and re-tune station selector to 600 Kc. signal, noting reading on output meter as above and repeat as many times as necessary to obtain the highest meter reading. Do not reset the parallel trimmer condensers at this frequency.

(d) Repeat operations (a) and (b) for more accurate adjustments.

IV. To Peak Band No. 3.

(a) Be sure to change dummy antenna as described in I under Peaking R.F. Circuits.

(b) Set test oscillator at 4 megacycles. Tune the station selector to 4 megacycles (4.0—Band No. 3 on dial). Then adjust oscillator parallel trimmer condenser for Band No. 3 for maximum output.

(c) With the same dial settings peak the interstage and antenna parallel trimmer condensers for Band No. 3.

V. To Peak Band No. 4.

(a) Set test oscillator at 10 megacycles.

(b) Tune station selector to 10 megacycles (10—Band No. 4 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 4 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 4 and open 1/8 turn.

(e) Close the antenna parallel trimmer condenser for Band No. 4 and then open 1/2 turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 9 on the dial and try to tune in the 10 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 10 megacycles and peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another 1/8 turn and re-tune the station selector to the 10 megacycle signal.

(i) Repeat operation (h) as many times as necessary to obtain the highest reading on the output meter on first peak obtained when opening trimmer condenser from closed position.

(j) Repeat operation (g) above.

VI. To Peak Band No. 5.

(a) Set test oscillator at 21 megacycles.

(b) Tune station selector to 21 megacycles (21—Band No. 5 on dial).

(c) Open oscillator parallel trimmer condenser for Band No. 5 about 3 turns from closed.

(d) Close the interstage parallel trimmer condenser for Band No. 5 and open 1/8 turn.

(e) Close the antenna parallel trimmer condenser for Band No. 5 and then open 1/2 turn.

(f) Peak the oscillator parallel trimmer condenser on the first signal heard when closing the condenser. As a check on the adjustment set the station selector to approximately 20 on the dial and try to tune in the 21 megacycle signal from the test oscillator. If a signal is heard the oscillator has been aligned on the correct frequency.

(g) Re-tune to 21 megacycles and Peak the antenna parallel trimmer condenser for maximum output.

(h) Open the interstage parallel trimmer condenser another 1/8 turn and re-tune the station selector to the 21 megacycle signal.

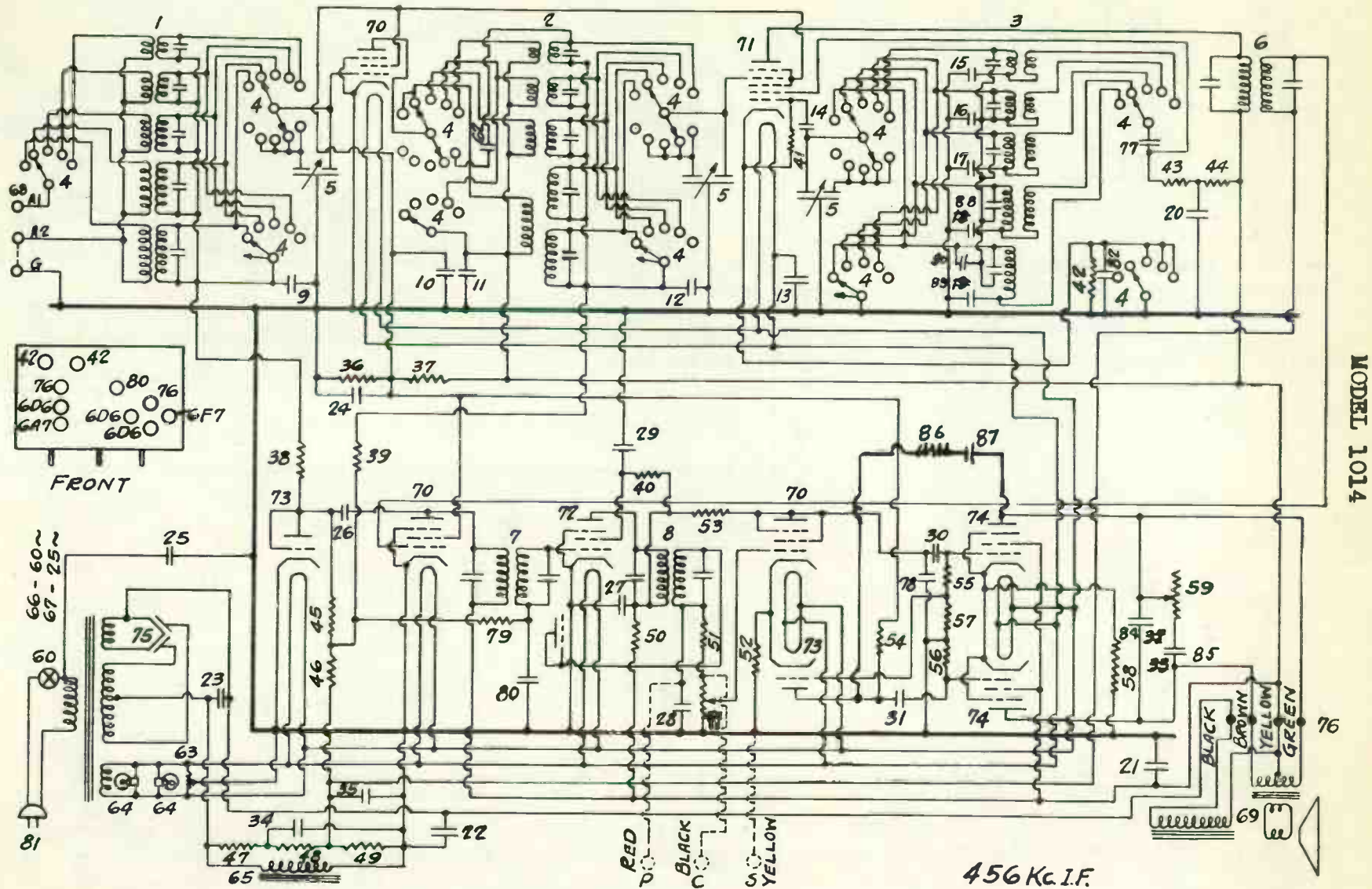


Fig. 1—Wiring Diagram of Model 1014 "Centurion"

# MODEL 1014

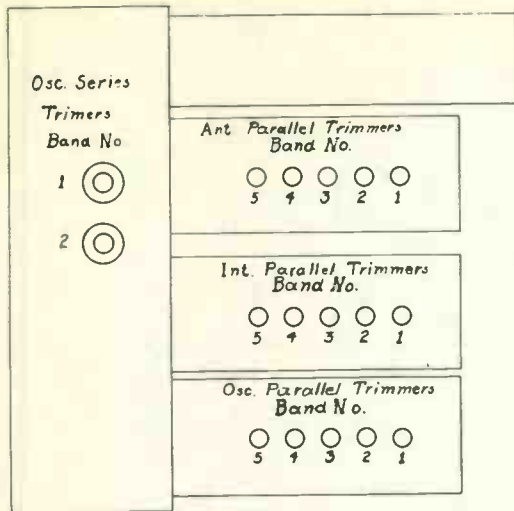


Fig 3 End View

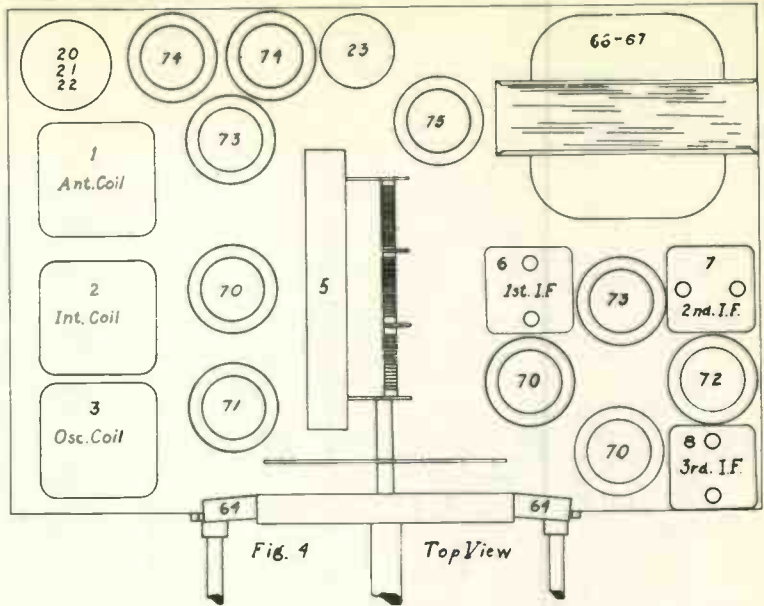


Fig. 4 Top View

## PARTS LIST—MODEL 1014 "CENTURION"

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G32-32000	Ant. Trans. Assembly	49	-21237A	60,000 Ohms Resistor
	G6-34503	Ant. Coil Assembly Only	50	W-30127	450 Ohms Flex. Resistor
	G4-34503	Ant. Coil Shield Assembly Only	51	-21455	300,000 Ohms Resistor
	W-34083	Aligning Condenser Assembly Only	52	-31003	2,700 Ohms Resistor
2	G20-32001	Inter. Trans. Assembly	53	-23403	150,000 Ohms Resistor
	G7-34503	Inter. Coil Assembly Only	54	-23403	150,000 Ohms Resistor
	G5-34503	Inter. Coil Shield Assembly Only	55	-23785	500,000 Ohms Resistor
	W-34083	Aligning Condenser Assembly Only	56	-23785	500,000 Ohms Resistor
3	G25-32002	Osc. Trans. Assembly	57	-21237A	60,000 Ohms Resistor
	G8-34503	Osc. Coil Assembly Only	58	W-22873	220 Ohms Flex. Resistor
	G5-34503	Osc. Coil Shield Assembly Only	59	W-25504B	Tone Control
	W-34083	Aligning Condenser Assembly Only	60	W-25504B	On-Off Switch
	G6-34002	0.00025 Mfd. Condenser	61	See Item 83	
4	B-34044	Band Change Switch	62	G1-34005	0.00025 Mfd. Condenser
5	G28-33002	Variable Condenser Assembly	63	W-32337	10-10 Ohms Resistor
	G20-32006	Dial Drive Assembly	64	See Item 5	Dial Light
	W-34657A	Dial Hand	65	G1-24828	Filter Choke
	W-34655B	Band Spread Pointer	66	G40-25000	Power Trans. 60 Cy 110 Volt
	G4-27134	Dial Light Bracket Assembly	67	B-35007	25 Cy. Power Trans.
	W-32128	Light Diffuser	68	G16-26719	Ant. Gnd. Terminal
	W-32244	Diffuser Retainer	69	-48CL	Speaker (Console)
6	G27-32004	1st I. F. Trans. Assembly	70	-48CL	Speaker (Table)
7	G28-32004	2nd I. F. Trans. Assembly	71	G75-28807	Socket 6D6
8	G29-32004	3rd I. F. Trans. Assembly		B-26009D	Tube Shield
9	W-32379	0.02 Mfd. 200 V. Condenser		W-27061A	Tube Shield Base
10	W-32378	0.01 Mfd. 400 V. Condenser		G2-33007	Socket 6A7
11	G8-34000	1500 Mmfd. Condenser		W-33072	Socket Cushion
12	W-32380	0.05 Mfd. 200 V. Condenser		W-26023A	Tube Shield
13	G1-34002	0.00025 Mfd. Condenser		G1-34072	Tube Shield Base
14	G1-34002	0.00025 Mfd. Condenser	72	G40-28807	Socket 6F7
15	G1-34000	1047 Mmfd. Condenser		W-29023A	Tube Shield
16	G2-34000	3104 Mmfd. Condenser		W-27061A	Tube Shield Base
17	G10-34000	1050 Mmfd. Condenser	73	G80-28807	Socket 76
18	See Item 88			W-26231B	Tube Shield
19	See Item 80			W-27061A	Tube Shield Base
20		6. Mfd. 300 Volt	74	G25-28807	Socket 42
21	W-34390	8. Mfd. 475 Volt Condenser	75	G6-28807	Socket 80
22		8. Mfd. 475 Volt	76	G5-31128	Speaker Terminal Board
23	W-26104B	12. Mfd. 475 Volt Condenser		W-34028	Terminal Board Cover
24	W-23015	0.05 Mfd. 400 Volt Condenser		W-34627	Terminal Board Insulator
25	W-30806	0.01 Mfd. 400 Volt Condenser	77	W-34847	0.0004 Mfd. 400 Volt Condenser
26	G1-34005	0.00025 Mfd. Condenser	78	G1-34005	0.00025 Mfd. Condenser
27	W-23191A	0.01 Mfd. 400 Volt Condenser	79	-20377	3 Megohm Resistor
28	G2-32004	0.0001 Mfd. Condenser	80	W-26021	0.02 Mfd. 200 Volt Condenser
29	W-23191A	0.01 Mfd. 400 Volt Condenser	81	B-33904A	Cord and Plug
30	W-23015	0.05 Mfd. 400 Volt Condenser	82	W-32370	.02 Mfd. 200 Volt Condenser
31	W-23015	0.05 Mfd. 400 Volt Condenser	83	W-28552	Level Control (1 Megohm)
32	See Item 84		84	W-35130	0.004 Mfd. 400 Volt Condenser
33	See Item 85		85	W-23015	0.05 Mfd. 400 Volt Condenser
34	W-29010A	0.25 Mfd. 400 Volt Condenser	86	-35140	350,000 Ohm Resistor
35	W-29010A	0.25 Mfd. 400 Volt Condenser	87	G6-34005	0.0002 Mfd. 300 Volt Condenser
36	W-32301	15,000 Ohms	88	G26-33006	Osc. Trimmer Condenser
37		10,000 Ohms Resistor	89		Osc. Trimmer Condenser
38	-26577	3 Megohm Resistor	90	G6-34002	0.00025 Mfd. Condenser
39	-26577	3 Megohm Resistor		W-34078B	Switch Knob
40	-23403	150,000 Ohms Resistor		W-31585B	Volume Control Knob
41	-21875	100,000 Ohms Resistor		W-31585B	Tone Control Knob
42	W-27503	1,400 Ohms Flex. Resistor		W-33994A	Station Selector Knob
43	-24814	7,000 Ohms Resistor		W-33995A	Vernier Knob
44	-24814	7,000 Ohms Resistor		B-33708B	Escutcheon
45	-21455	300,000 Ohms Resistor		W-34307	Escutcheon Lens
46	-21455	300,000 Ohms Resistor		W-33985	Escutcheon Gasket
47	-21455	300,000 Ohms Resistor		W-34680	Band Change Plate
48	-23403	150,000 Ohms Resistor		W-34681	Volume Control Plate

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	Ga
6K7	R-F Amplifier	6.3	221	—	98	4	0	4	—
6A8	Modulator	6.3	221	—	138	—	0	4.5	4.5
6C5	Oscillator	6.3	140	—	—	—	—	0	—
6K7	I-F Amplifier	6.3	260	—	138	5	0	5	—
6R7	Detector & 1st A-F Amplifier	6.3	130	—	—	—	0	6.5	—
6C5	2nd A-F Amplifier	6.3	150	—	—	—	0	6.5	—
6N6	(2) Output	6.3	278	285	—	—	0	3.2	—
5Z4	Rectifier	4.5	357	—	—	—	—	—	—

\*Phantom Conductor Tube (W41187)

Varies with power output.

**I. Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.
- (b) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.
- (c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the Multivox control knob to the Auditorium Position (Third position in the clockwise direction).
- (d) Set the signal generator to 450 kilocycles.
- (e) Close the middle trimmer condenser on the 2nd. I-F transformer (Tert. Fig. 4) so that it is moderately tight. (Do not force the adjustment screw).
- (f) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri) of the 2nd. I-F transformer for maximum output.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.

(j) Transfer the output lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(k) Adjust the middle trimmer of the 2nd. I-F transformer by opening until maximum output is obtained. **DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.**

(l) Adjust the middle trimmer of the 1st. I-F transformer by closing until maximum output is obtained. **DO NOT READJUST TOP AND BOTTOM TRIMMERS.**

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

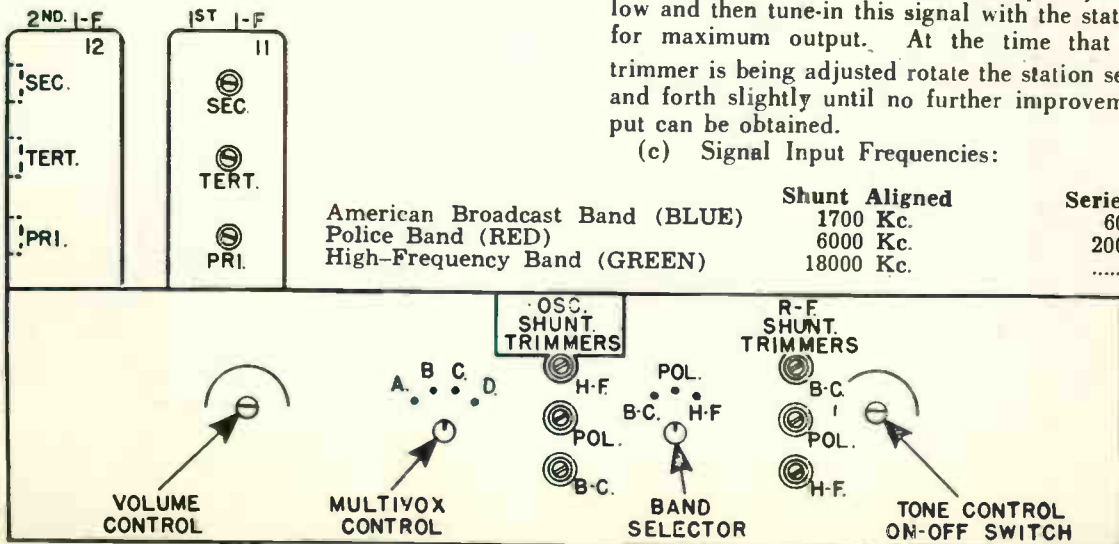
When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

(b) To align the series trimmers, 32Y and 32Z Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

(c) Signal Input Frequencies:

	Shunt Aligned	Series Aligned
American Broadcast Band (BLUE)	1700 Kc.	600 Kc.
Police Band (RED)	6000 Kc.	2000 Kc.
High-Frequency Band (GREEN)	18000 Kc.	.....



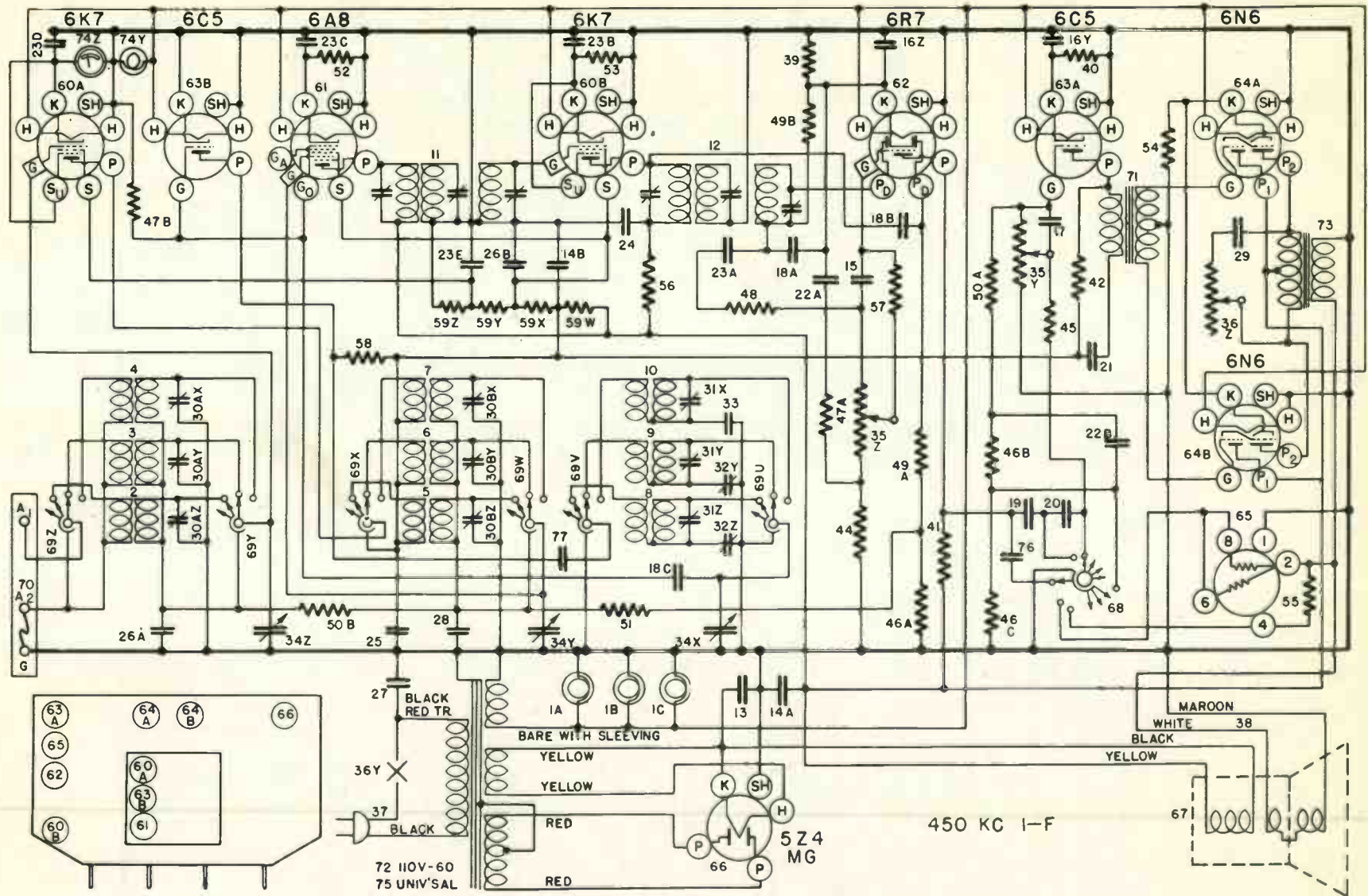


FIG. 1—WIRING DIAGRAM—MODEL 1016

MODEL 1016

Item No.	Part No.	Description	Item No.	Part No.	Description
1A1C	W-37922	Dial Light	37	R-33906A	Power Cord & Plug
2	G3-37925	Dial Light Socket	38	G3-37918	Speaker Cable
3	G94-32000	Ant. Coil, B. C. B.	39	-31093	Resistor, 2,700 Ohm 1/4 W.
4	G95-32000	Ant. Coil, Pol. B.	40	-21452	Resistor, 1,100 Ohm 1/2 W. Flex.
5	G113-32000	Ant. Coil, H. F. B.	41	-37788	Resistor, 65,000 Ohm 1/2 W.
6	G98-32001	R. F. Coil, B. C. B.	42	-5370A	Resistor, 20,000 Ohm 1 W.
7	G90-32001	R. F. Coil, Pol. B.	43	None	
8	G79-32001	R. F. Coil, H. F. B.	44	-21451	Resistor, 1 Megohm 1/2 W.
9	G101-32002	Osc. Coil, B. C. B.	45	-21455	Resistor, 300,000 Ohm 1/2 W.
10	G102-32002	Osc. Coil, Pol. B.	46A	-23785	Resistor, 500,000 Ohm 1/2 W.
11	G103-32002	Osc. Coil, H. F. B.	46B	-23785	Resistor, 500,000 Ohm 1/2 W.
12	G90-32001	1st I. F. Assembly	46C	-23785	Resistor, 500,000 Ohm 1/2 W.
13	W-36055	2nd I. F. Assembly	47A	-21453	Resistor, 40,000 Ohm 1/2 W.
14A	W-36057	Condenser 35 Mfd. 400 V. Electrolytic	47B	-21453	Resistor, 40,000 Ohm 1/2 W.
14B	W-36057	Condenser 40 Mfd. 300 V. Electrolytic	48	23403	Resistor, 150,000 Ohm 1/2 W.
15	GF-34002	Condenser 40 Mfd. 300 V. Electrolytic	49A	33344	Resistor, 400,000 Ohm 1/2 W.
16Z	W-37778	Condenser, 12 Mfd. 25 V. Electrolytic	49B	33344	Resistor, 400,000 Ohm 1/2 W.
16Y	W-37778	Condenser, 12 Mfd. 25 V. Electrolytic	50A	-35600	Resistor, 100,000 Ohm 1/2 W.
17	G6-34002	Condenser, .000025 Mfd. (Molded)	50B	-35600	Resistor, 1.5 Megohm 1/2 W.
18A	G2-34002	Condenser, .0001 Mfd. (Molded)	51	37215	Resistor, 350 Ohm 1/2 W. Flex.
18B	G2-34002	Condenser, .0001 Mfd. (Molded)	52	W-28589	Resistor, 500 Ohm 1/2 W. Flex.
19C	G2-34002	Condenser, .0001 Mfd. (Molded)	53	W-28105	Resistor, 500 Ohm 1/2 W. Flex.
19	W-32780B	Condenser, .05 Mfd. 400 V.	54	W-23012A	Resistor, 40 Ohm 1/2 W. Flex.
20	G2-34002	Condenser, .0005 Mfd. (Molded)	55	W-41193	Resistor, 1 Ohm 2 1/2 W. Flex.
21	W-37732	Condenser, .3 Mfd. 160 V.	56	W-23013	Resistor, 2,000 Ohm 1 1/2 W. Flex.
22A	W-31219	Condenser, .023 Mfd. 200 V.	57	W-21273A	Resistor, 60,000 Ohm 1/2 W.
22B	W-31219	Condenser, .023 Mfd. 200 V.	58	W-37987	Resistor, 15,000 Ohm 1 W. Wire Wound
23A	W-36541	Condenser, .02 Mfd. 160 V.	59	W-41225	4 Section Candohm
23E	W-36541	Condenser, .02 Mfd. 160 V.	60A	G151-36400	Socket Type 6K7
24	W-30188	Condenser, .02 Mfd. 400 V.	60B	G151-36400	Socket Type 6K7
25	W-32378	Condenser, .01 Mfd. 400 V.	61	G156-36400	Socket Type 6A8
26A	W-35936	Condenser, .05 Mfd. 200 V.	62	G164-36400	Socket Type 6R7
26B	W-35936	Condenser, .05 Mfd. 200 V.	63A	G152-36400	Socket Type 6C5
27	W-30805	Condenser, .01 Mfd. 400 V.	63B	G152-36400	Socket Type 6C5
28	W-32590	Condenser, .05 Mfd. 400 V.	64A	G165-36400	Socket Type 6N6
29	W-37891	3 Section Shunt Trimmer Assembly	64B	G165-36400	Socket Type 6N6
30	W-35951	B. C. Osc. Series Trimmer Cond.	65	G167-36400	Socket For W41187
31	W-35951	B. C. Osc. Series Trimmer Cond.	66	G154-36400	Socket Type 5Z1
32Z	W-37874	Pol. Osc. Series Trimmer Cond.	67	W-733C14	Speaker
33	C18-34000	H. F. Fixed Series Condenser	68	W-41446	Switch Multiway Control
34	G47-32002	Dial Drive Assembly Complete	69	C-37958E	Switch Band Selector
	MG51-41022	Dial Drive Assembly Complete	70	G27-26719	Ant. & Grd. Terminal Board Assembly
	C-41151	Drive Unit (only)	71	G1-37995	Audio Input Transformer
	C-41149	Drive Unit (only)	72	G43-25669	Power Supply Transformer (110V 60Cy.)
	C-41137	Dial Mask	73	G48-24628	Audio Output Transformer
	W-40801	Dial Glass Cushion	74Y	W-41259	Tuning Meter
	-41144	Long Hand	75	-37685A	Universal Power Transformer
	-41146	Short Hand	76	W-41445	Condenser, .036 Mfd. 400 V.
	-40486	Hand Mt. Screw	77	W-34647	Condenser, .005 Mfd. 400 V.
	-40537	Coupling Unit		C-41219	Escutcheon
	-41157	Belt (Drive)		B-41233	Escutcheon Retaining Spring
	-40538	Indicator Cable		B-41234	Dial Lens
35Z	-41417	Volume Control 1st A. F. 3 Meg.		W-40365	Lens Retaining Spring
36Z	-41417	Volume Control 2nd A. F. 1 Meg.		W-37339	Escutcheon Felt
36Y	-37966	Tone Control		W-40192B	Knob (3 required)
		A. C. Switch			Knob (2 required)

MODEL-1026 ONLY

Escutcheon Ret. Spring  
Dial Lens (Escutcheon Glass)  
Lens Retaining Spring  
Escutcheon Felt  
Knob (3 required)  
Knob (2 required)

B B B W W W W

Speaker, Type 633C14 "M"  
Cone Assembly, Item 40193  
Field Coil for 40193

67

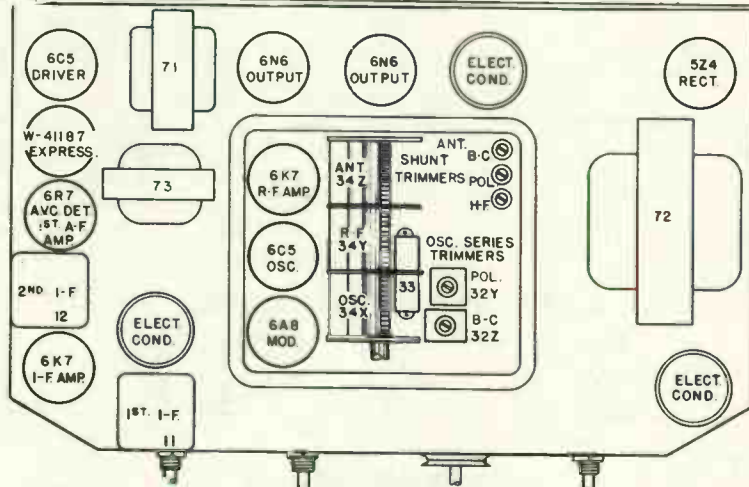


Fig. 2. Top View 1016

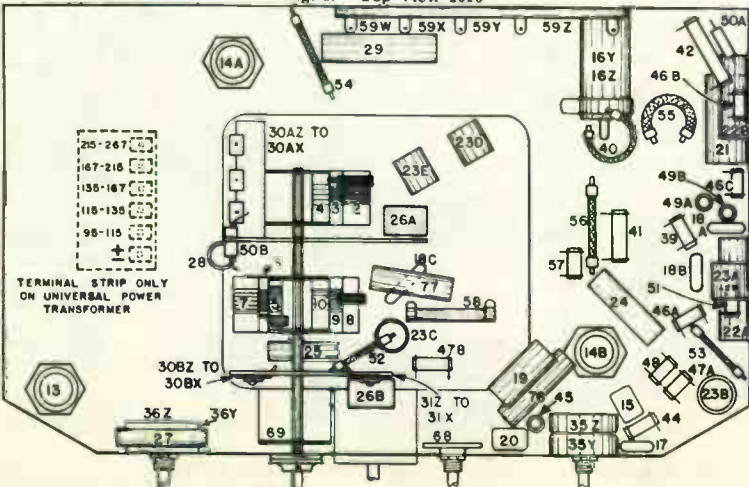


Fig. 3. Bottom View 1016

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 85 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

Tuning I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

Aligning R. F. Amplifier

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for

series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (d) below.

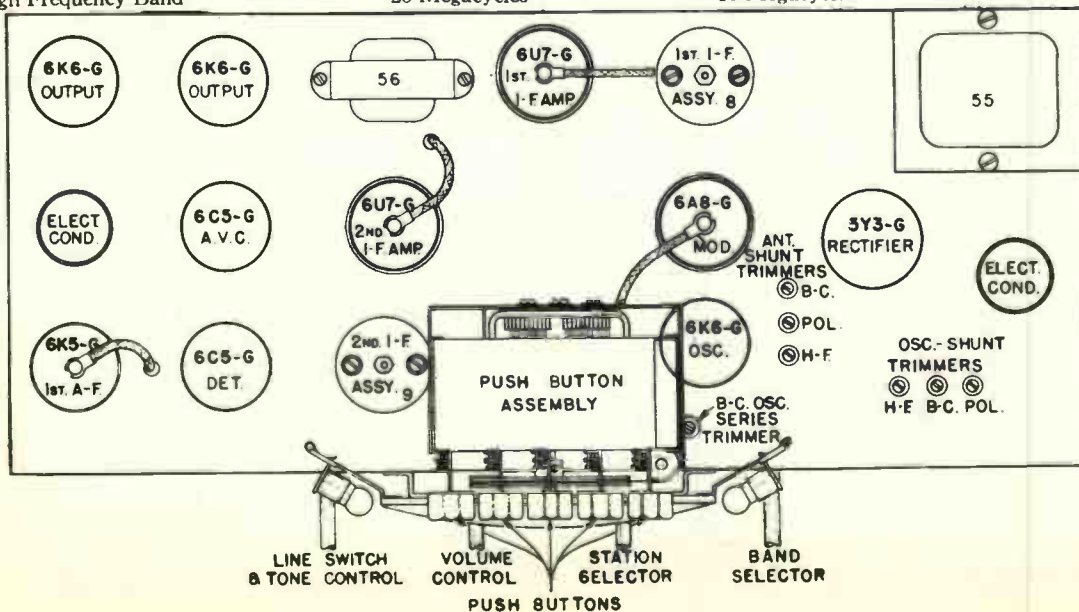
(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (d) is heard (it is not necessary that the receiver tune through this signal).

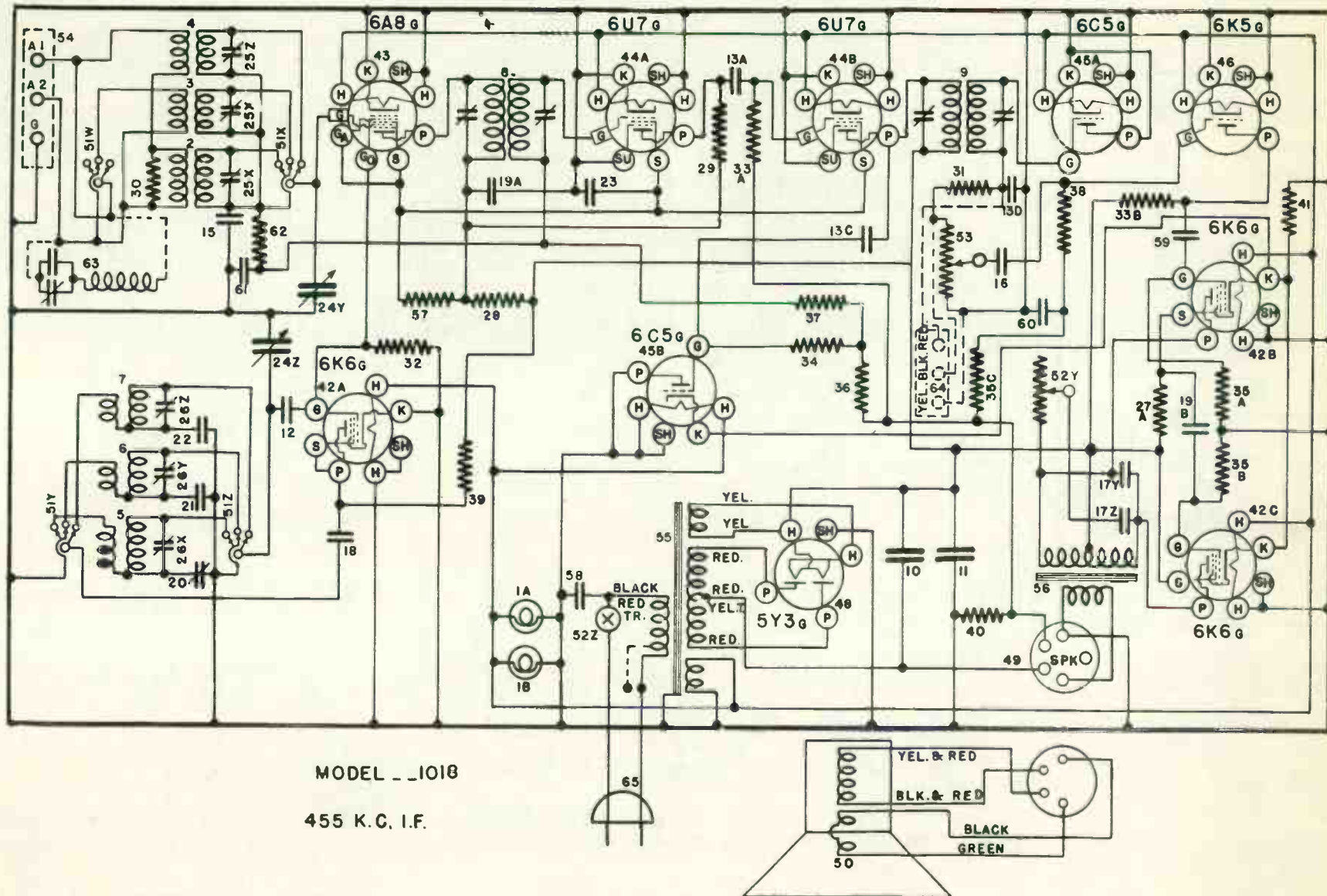
(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (d) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (d) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and a 6000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

(D) SIGNAL INPUT FREQUENCIES

Band	Min. Cap. Signal	Shunt Align.	Series Align.
American Broadcast Band	1725 Kilocycles	1400 Kilocycles	600 Kilocycles
Police & Amateur Band	6400 "	6000 "	
High Frequency Band	20 Megacycles	18 Megacycles	





MODEL - \_1018  
455 K.C. I.F.

FIG. 1—WIRING DIAGRAM—MODEL 1018



## MODEL 1018

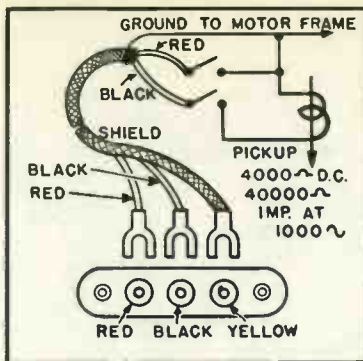


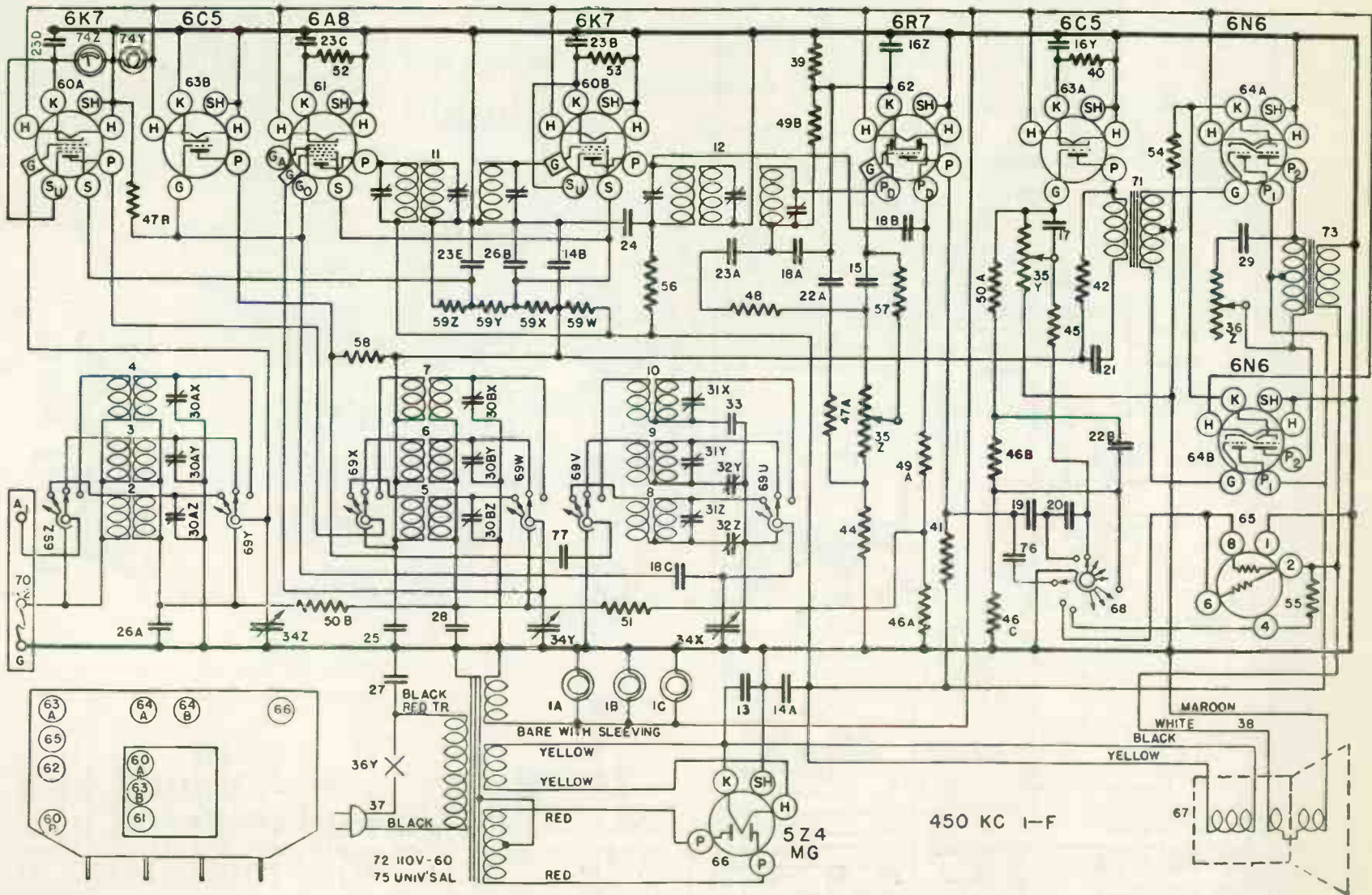
Fig. 4 Phonograph Pickup

### PARTS LIST — MODEL 1018

Item No.	Part No.	Description	Item No.	Part No.	Description
		Figures in first column refer to parts in Diagrams.			
1AB	W —43567	Dial Light Bulb	38	—26577	Resistor, 3 Megohm ¼W. Carb.
	G6 —45398	Dial Light Socket Assy.	39	—44008	Resistor, 10,000 Ohm 2W. Carb.
2	G169—32000	Ant. Coil—535—1850 Kc.	40	W —37631	Resistor, 32 Ohm ½W. Flex.
3	G168—32000	Ant. Coil—1850—6600 Kc.	41	W —22873	Resistor, 220 Ohm 2½W. Flex.
4	G170—32000	Ant. Coil—6.2—22 Mc.	42ABC	G172—36400	Socket, Type 6K6
5	G169—32002	Osc. Coil—535—1850 Kc.	43	G156—36400	Socket, Type 6A8
6	G168—32002	Osc. Coil—1850—6600 Kc.	44AB	G171—36400	Socket, Type 6U7
7	G170—32002	Osc. Coil—6.2—22 Mc.	45AB	G152—36400	Socket, Type 6C5
8	G162—32004	1st I-F Assembly—455 Kc.	46	G9 —43900	Socket, Type 6K5
9	G155—32004	2nd I-F Assembly—455 Kc.	47	NONE	NONE
10	W —44054	Condenser, 30 Mf. 350 V.	48	G173—36400	Socket, Type 5Y3
11	W —36057B	Condenser, 40 Mf. 300 V.	49	G103—28807	Socket for Speaker
12	G13 —34002	Condenser, .000035 Mf. Molded	W —27981A	W —27981A	Tube Shield Base
13ACD	G2 —34002	Condenser, .0001 Mf. Molded	W —40911	W —40911	Tube Shield
14	NONE	NONE	50	566BP18 "M"	Speaker, Spec. No. 1-D-1052
15	W —35936	Condenser, .05 Mf. 200 V.		—44275	V. C. and Cone Assy. for 566BP18 "M"
16	W —41461	Condenser, .0014 Mf. 200 V.			Spkr.
17Z	W —31052	Condenser, .05 Mf. 400 V.		—44276	Field Coil Assy. for 566BP18 "M" Spkr.
17Y	W —31052	Condenser, .004 Mf. 400 V.	51	—44049A	Band Selector Switch
18	W —35139	Condenser, .004 Mf. 400 V.	52Z		Line Switch
19AB	W —23615	Condenser, .05 Mf. 400 V.	52Y		Tone Control (100,000 Ohm)
20	—40769	B-C. Osc. Series Trimmer (520 Mmf.)	53	—44081	Volume Control—1 Meg.
21	G23 —34000	Pol. Osc. Series Cond. (1560 Mmf.)	54	G27 —26719	Ant. and Gnd. Term. Assy.
22	G20 —34000	H-F. Osc. Series Cond. (4910 Mmf.)	55	—44101	Power Trans., 110 V. 60 Cy.
23	W —22688	Condenser, .1 Mf. 400 V.		—44104	Power Trans., 110 V. 50 Cy.
24	G51 —33001	2 Sect. Gang Cond.		—44105	Power Trans., 220 V. 50 Cy.
	—45593A	Dial Face (Glass)		—44102	Power Trans., 110 V. 25 Cy.
	W —44262	Ring—Dial Support (Cardboard)		—44103	Power Trans., 220 V. 25 Cy.
	W —44263	Arc—Dial Support (Cardboard)	56	G77 —24628	Output Transformer
	W —45587A	Mask—Dial (Metal)	57	—4921C	Resistor, 10,000 Ohm 1W.
	C —44110C	Dial Mtg. Bracket	58	W —30805	Condenser, .01 Mf. 400 V.
	W —44127	Pointer (Dial Hand)	59	W —30488	Condenser, .02 Mf. 400 V.
	—2045	Shake Proof Washer (Pointer)	60	W —34712	Condenser, .25 Mf. 160 V.
	W —40486	Screw—Pointer Mtg.	61	W —28621	Condenser, .02 Mf. 200 V.
	W —45630	Shaft—Pointer	62	—35600	Resistor, 100,000 Ohm ¼W.
	W —50325A	Retaining Ring (Pointer Shaft)	63	G164—32004	Wave Trap
	G10 —43564	Pulley and Hub Assy. (Pointer Shaft)			<b>PUSH BUTTON PARTS</b>
	G11 —43564	Pulley, Gear and-Hub Assy.	G1	—45683	Push Button Unit Assy.
	W —45632	Gear—Take-up Spring	G32	—45683	Key and Toggle Assy.
	W —44500A	Bearing Plate (Drive Shaft)	W	—50542A	Key Clip (Lock Clamp)
	W —43542B	Bracket—Drive Shaft	W	—50607	Spring (Key Return)
	W —45716	Drive Shaft	W	—45717	Adj. Screw (Lock Clamp)
	W —43549	Retaining Ring (Drive Shaft)	W	—50547	Key Plate (Rear Guide)
	W —44701C	Rubber Grommet	W	—45646A	Clip (Front Guide) 1 Req.
	G16 —41582	Drive Cord (38 Inches)	G31	—45683	Rocker Plate Assy.
	W —50573A	Tension Spring (D. Cord)	W	—50561	¼"—6-40 Screw (R. Plate Bearing)
	MG34—45584	Bracket and Pulley Assy. (Cond. Mtg.)	W	—45711	Felt Strip (Unit Front)
	W —46290	Cord Clamp	W	—45589A	Push Button
	W —35951A	3 Sect. Ant. Shunt Trimmer Assy.	W	—45763	Celluloid Covers
25		H-F. Osc. Shunt Trimmer	W	—43882	Screw P.K. (Adj. Clip Mtg.)
26Z		Pol. Osc. Shunt Trimmer	W	—50588	Clip (Front Guide) 4 Req.
26Y	W —45713	B-C Osc. Shunt Trimmer (Temp. Compensated)	W	—50841	Station Call List
26X			W	—45605	Instructions (60 Cycle)
27A	—44009	Resistor, 3,000 Ohm ¼W. Carb.	W	—43553	Rubber Mtg. Foot
28	W —23013	Resistor, 2,000 Ohm 1¼W. Flex.	W	—41380B	Knob (2)
29	—44165	Resistor, 5,000 Ohm ½W. Carb.	W	—44426A	Knob (2) (Pointer)
30	—22196	Resistor, 20,000 Ohm ¼W. Carb.	W	—43552	Spkr. Plug Clamp
31	—36320	Resistor, 120,000 Ohm ¼W. Carb.	B	—44207B	Escutcheon—Dial
32	—21237A	Resistor, 60,000 Ohm ¼W. Carb.		—7WB	Cabinet
33AB	—21875	Resistor, 100,000 Ohm ¼W. Carb.	B	—45626C	Push Button Escutcheon
34	—34020	Resistor, 250,000 Ohm ¼W. Carb.	W	—45623A	P. B. Support Brkt.
35ABC	—23785	Resistor, 500,000 Ohm ¼W. Carb.	W	—45580	Grommet (P. B. Sup. Brkt.)
36	—37590	Resistor, 750,000 Ohm ¼W. Carb.	W	—45620	Headed Bushing (P. B. Sup. Brkt.)
37	—21454	Resistor, 1 Megohm ¼W. Carb.	W	—23880A	Thumb Screw

For alignment procedure and parts list, refer to pages 461-463.

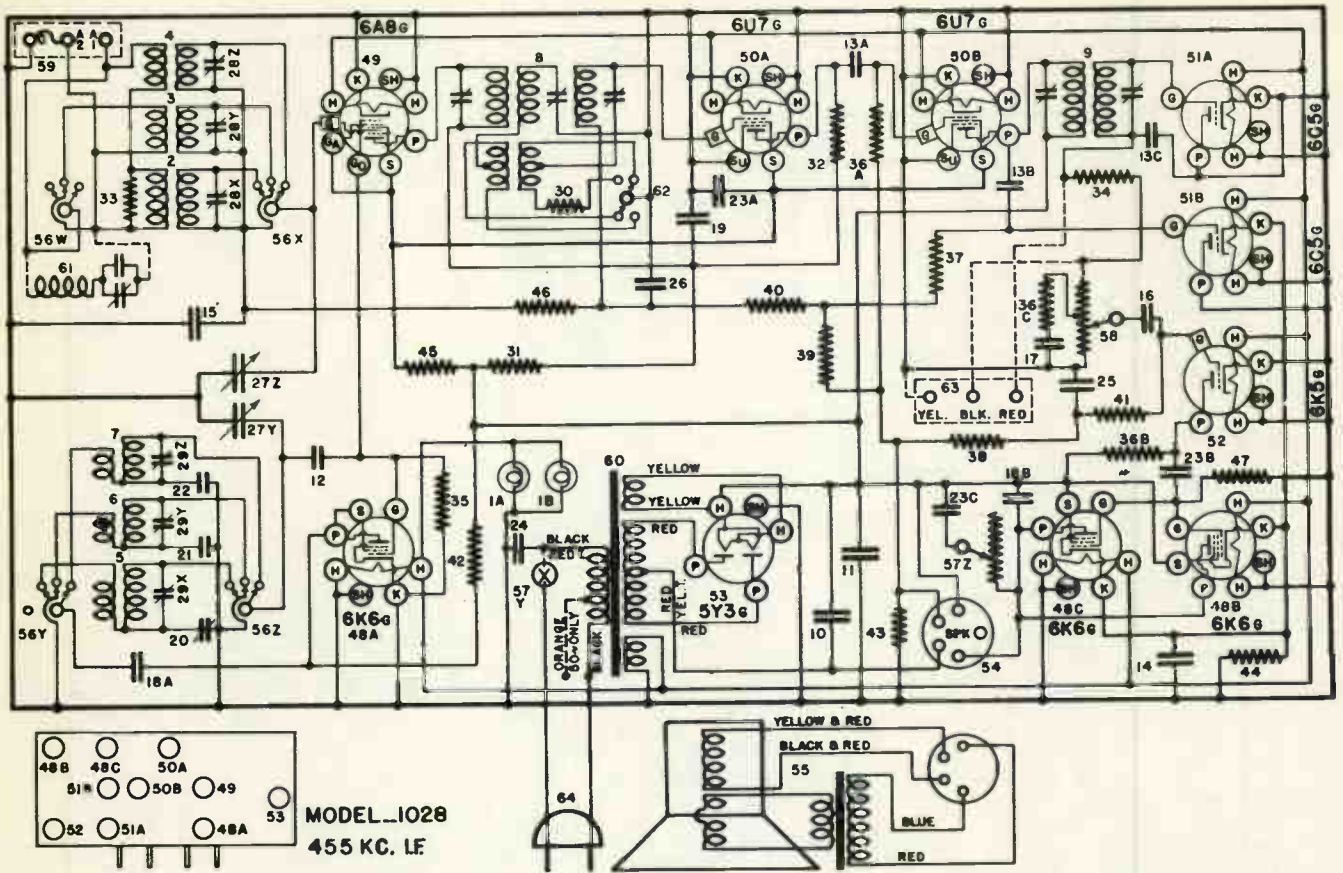
467



MODEL 1026

FIG. 1—WIRING DIAGRAM—MODEL 1026

# MODEL 1028



**MODEL 1028**  
**455 KC. LF**

- |     |            |                            |     |         |                               |     |             |                              |           |
|-----|------------|----------------------------|-----|---------|-------------------------------|-----|-------------|------------------------------|-----------|
| 1A  | W-43567    | Bulb Dial Light 6-8V       | 30  | #42401B | Resis. 99 Ohm 1/2 W. Ins.     | 48A | G172-36400B | Socket                       | 6K5       |
| 1B  |            | Bulb Dial Light 6-8V       | 31  | W-25013 | Resis. 2000 Ohm 1/4 W. Flex.  | 48B |             | Socket                       | 6K5       |
| 2   | G169-32000 | Coil. B.C. Ant.            | 32  | #44165  | Resis. 5000 Ohm 1/2 W. Carb.  | 48C |             | Socket                       | 6K6       |
| 3   | G168-32000 | Coil. Pol. Ant.            | 33  | #22196  | Resis. 20 M Ohm 1/5 W. Carb.  | 49  | G156-36400  | Socket                       | 6A8       |
| 4   | G170-32000 | Coil. H.F. Ant.            | 34  | #56520  | Resis. 120M Ohm 1/2 W. Ins.   | 50A | G171-36400  | Socket                       | 607       |
| 5   | G169-32002 | Coil. B.C. Osc.            | 35  | #21257A | Resis. 60 M 1/5 W. Carb.      | 50B |             | Socket                       | 607       |
| 6   | G168-32002 | Coil. Pol. Osc.            | 36  | #21875  | Resis. 100M Ohm 1/5 W. Carb.  | 51A | G152-36400  | Socket                       | 6C5       |
| 7   | G170-32002 | Coil. H.F. Osc.            | 36A |         | Resis. 100M Ohm 1/5 W. Carb.  | 51B |             | Socket                       | 6C5       |
| 8   | G161-32004 | 1st I.F. Trans.            | 36B |         | Resis. 100M Ohm 1/5 W. Carb.  | 52  | G199-36400  | Socket                       | 6K5       |
| 9   | G154-32004 | 2nd I.F. Trans.            | 36C |         | Resis. 100M Ohm 1/5 W. Carb.  | 53  | G173-36400  | Socket                       | 5Y3       |
| 10  | W-44054    | Cond. 30 M.F. 350 V. Elec. | 37  | #34020  | Resis. 250M Ohm 1/5 W. Carb.  | 54  | G103-28807  | Socket                       | Spkr.     |
| 11  | W-36057B   | Cond. 40 M.F. 500 V. Elec. | 38  | #23785  | Resis. 500M Ohm 1/5 W. Carb.  | 55  | #44675      | Speaker                      | 571-SP-18 |
| 12  | G13-34002  | Cond. 35 M.F. Mica         | 39  | #26577  | Resis. 5 M Ohm 1/5 W. Carb.   | 56W | #44049A     | Band Chg. Switch. Ant. Pri.  |           |
| 13A | G2-34002   | Cond. 100 M.F. Mica        | 40  | #44008  | Resis. 1.0 M Ohm 2 W. Carb.   | 56X |             | Band Chg. Switch. Ant. Sec.  |           |
| 13B |            | Cond. 100 M.F. Mica        | 41  | W-37631 | Resis. 32 Ohm 1/2 W. Flex.    | 56Y |             | Band Chg. Switch. Osc. Plate |           |
| 13C |            | Cond. 100 M.F. Mica        | 42  | W-22873 | Resis. 220 Ohm 2 1/2 W. Flex. | 56Z |             | Band Chg. Switch. Osc. Grid  |           |
| 14  | W-41598    | Cond. 50 MF. 25 V. Elec.   | 43  | #4921-C | Resis. 1.0M Ohm 1 W. Carb.    | 57Z | #44024B     | Tone Control 100 M Ohm       |           |
| 15  | W-35936    | Cond. .05 MF. 200V. Paper  | 44  | #35600  | Resis. 100M Ohm 1/5 W. Carb.  | 57Y |             | Switch, S.P.S.T. Power       |           |
| 16  | W-41461    | Cond. .0014 MF. 200V.      | 45  | #34018  | Resis. 200M Ohm 1/5 W. Carb.  | 58  | #44674      | Volume Cont. 1. Meg.         |           |
| 17  | W-28619    | Cond. .006 MF. 200V. Paper | 46  |         |                               | 59  | G27-26719   | Term. Strip (A1-A2-G)        |           |
| 18A | W-35139    | Cond. .004 MF. 400V. Paper | 47  |         |                               | 60  | #44511      | Power Trans. 110V. 60 Cy.    |           |
| 18B |            | Cond. .004 MF. 400V. Paper |     |         |                               | 60  | #44731      | Power Trans. 110V. 50 Cy.    |           |
| 19  | W-23615    | Cond. .05 MF. 400V. Paper  |     |         |                               | 60  | #44732      | Power Trans. 220V. 50 Cy.    |           |
| 20  | #40769     | Pad. Cond. 520 M.F.        |     |         |                               | 60  | #44729      | Power Trans. 110V. 25 Cy.    |           |
| 21  | G23-34000  | Pad. Cond. 1560 M.F.       |     |         |                               | 60  | #44730      | Power Trans. 220V. 25 Cy.    |           |
| 22  | G20-34000  | Pad. Cond. 4910 M.F.       |     |         |                               | 61  | G164-32004  | Wave Trap                    |           |
| 23A | W-22688    | Cond. .1MF. 400V. Paper    |     |         |                               | 62  | #44796      | Switch I.F. Expanding        |           |
| 23B |            | Cond. .1MF. 400V. Paper    |     |         |                               | 63  | G37-26719   | Phono. Term. Board           |           |
| 23C |            | Cond. .1MF. 400V. Paper    |     |         |                               | 64  | B-33906A    | Cord & Plug (Power)          |           |
| 24  | W-30805    | Cond. .01MF. 400V. Paper   |     |         |                               |     |             |                              |           |
| 25  | W-34712    | Cond. .25 MF. 160V. Paper  |     |         |                               |     |             |                              |           |
| 26  | W-28621    | Cond. .02 MF. 200V. Paper  |     |         |                               |     |             |                              |           |
| 27Z | G51-33001  | Var. Cond. Ant. Section    |     |         |                               |     |             |                              |           |
| 27Y |            | Var. Cond. Osc. Section    |     |         |                               |     |             |                              |           |
| 28Z | W-35951A   | Trim. Cond. H.F. Ant.      |     |         |                               |     |             |                              |           |
| 28Y |            | Trim. Cond. Pol. Ant.      |     |         |                               |     |             |                              |           |
| 28X |            | Trim. Cond. B.C. Ant.      |     |         |                               |     |             |                              |           |
| 29Z | W-45713    | Trim. Cond. H.F. Osc.      |     |         |                               |     |             |                              |           |
| 29Y |            | Trim. Cond. Pol. Osc.      |     |         |                               |     |             |                              |           |
| 29X |            | Trim. Cond. B.C. Osc.      |     |         |                               |     |             |                              |           |

**GROSLY**  
*Twice Tested*  
**SERVICE PARTS**

**MISCELLANEOUS**

- 78A Cabinet
- W-44432 Knob, T. Contr.
- W-44381A Knob, Vol. Contr.
- W-45062 Knob, Loc. Dist. Sw.
- W-44386B Knob (2) Tuning-Band Change
- W-44377B Knob, Station Sel.
- W-45614 Bushing
- W-45589 Push Button (5)
- 45694 Instructions

# MODEL 1055

Tube	Function	TUBE SOCKET VOLTAGE READINGS							
		H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.2	250	103	6	0	6	—	—
6A8	Modulator	6.2	250	103	—	0	6	-1 to -30	107
6C5	Oscillator	6.2	75	—	—	—	0	—	—
6K7	I-F Amp.	6.2	250	103	3	0	3	—	—
6H6	Detector & AVC	6.2	—	—	—	—	0	—	—
6C5	1st. A-F Amp.	6.2	70	—	—	0	3	—	—
6F6	2nd. A-F Amp.	6.2	218	218	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
5Z4	Rectifier	4.9	365	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

Power Consumption Approximately 123 Watts.

## 1. Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the right.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle (tert.) trimmer condenser on the 1st I-F transformer. (Fig. 2.)

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

(i) Reduce the output of the signal generator and adjust the middle (tert.) trimmer on the 1st. I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

## 2. Aligning R-F Amplifier.

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather Band and Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc," "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band.

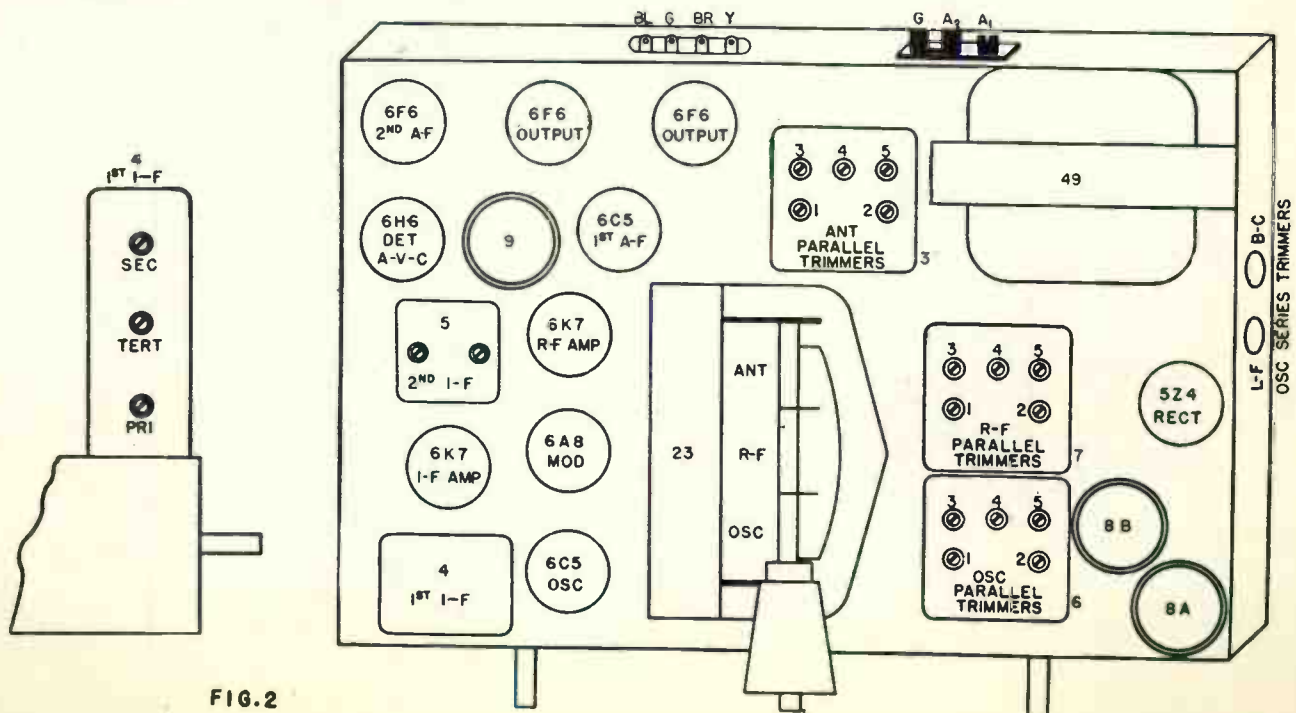
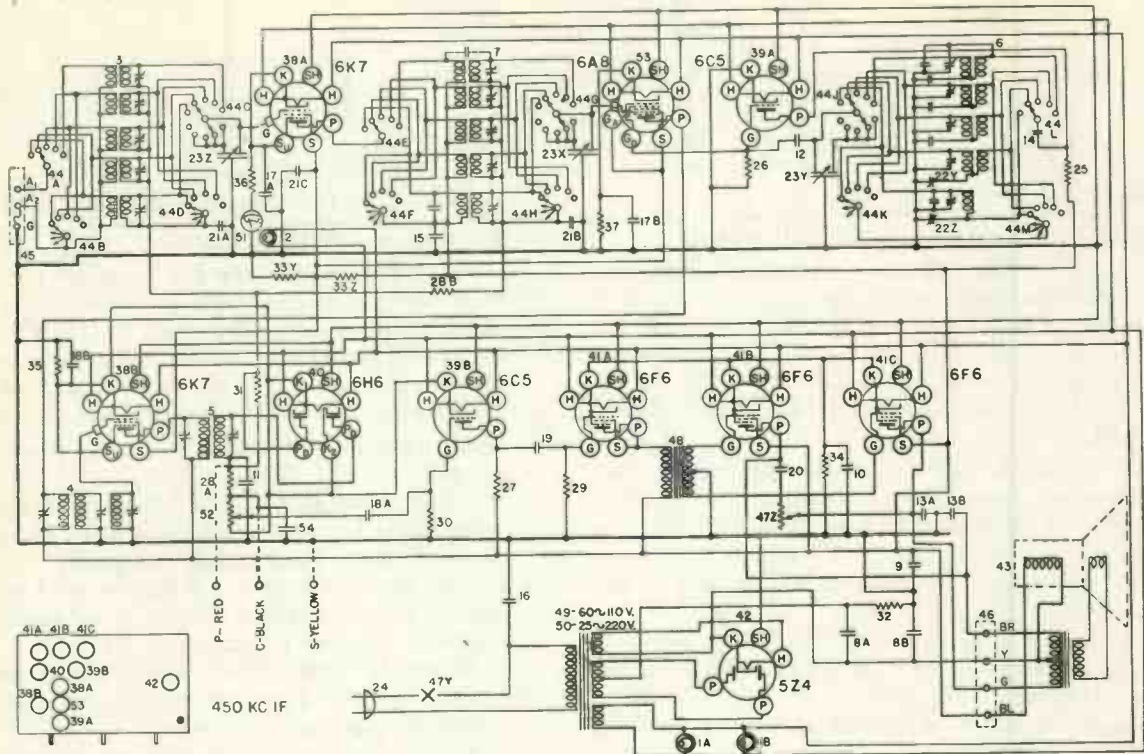


FIG. 2

MODEL 1055

(b) Signal Input Frequencies.

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police & Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—



Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	36504	Dial Light Socket Assm.	23 Z	G37 —33002	Var. Tuning Condenser Gang.
1B	36504	Dial Light Socket Assm.	23 Y		
2	W —36557	Tuning Meter Bulb	23 X		
3	G83 —32000	Ant. Coil Assm. Complete		—37376	Dial Drive Assembly.
G84 —32000	Ant. Coil only 150-400 Kc. (W. B.)			—37375A	Dial Face only.
G88 —32000	Ant. Coil only 540-1500 Kc. (B. B.)			—37551	Dial Hand.
G85 —32000	Ant. Coil only 1500-4000 Kc. (P. B.)			—37554	Second Hand.
G67 —32000	Ant. Coil only 4-10 Mc. (S. W. B.)			—37484	Dial Hand Screw.
G66 —32000	Ant. Coil only 10-22 Mc. (S. W. B.)			—37543	Dial Hand Washer.
MG26 —36542	Coil Support Base			B —33906A	A. C. Cord & Plug.
W —36028	5 Section Trimmer Cond. Assm.		24	W —36545	Resistor 30,000 Ohm.
MG9 —36168	Shield.		25	W —22196	Resistor 20,000 Ohm.
G86 —32004	1st I. F. Trans. Assm.		26	W —23403	Resistor 150,000 Ohm.
G87 —32004	2nd I. F. Trans. Assm.		27	W —21455	Resistor 300,000 Ohm.
G54 —32002	Osc. Coil Assm. Complete		28B	W —21455	Resistor 300,000 Ohm.
G55 —32002	Osc. Coil only 150-400 Kc.		29	W —23785	Resistor 500,000 Ohm.
G56 —32002	Osc. Coil only 540-1500 Kc.		30	W —35927	Resistor 2 Megohm.
G57 —32002	Osc. Coil only 1500-4000 Kc.		31	W —36688	Resistor 3 Megohm.
G59 —32002	Osc. Coil only 4-10 Mc.		32	W —36549	Resistor 200 Ohm 8 Watt.
G58 —32002	Osc. Coil only 10-22 Mc.		33Z	W —32301	Resistor 10,000 Ohm.
MG26 —36542	Coil Support Base		33Y	W —22873	Resistor 220 Ohm (Flex.)
W —36028	5 Section Trimmer Cond. Assm.		34	W —25937	Resistor 275 Ohm (Flex.)
G7 —34007	Condenser 1750 mmf.		35	W —21964	Resistor 165 Ohm (Flex.)
G8 —34007	Condenser 4350 mmf. (2)		36	W —22514	Resistor 750 Ohm (Flex.)
G6 —34002	Condenser 25 mmf. (2)		37	G151 —36400	Socket, 6K7.
MG9 —36168	Shield.		38A	G151 —36400	Socket, 6K7.
MG9 —32001	R. F. Coil Assm. Complete		38B	G152 —36400	Socket, 6C5.
G40 —32001	R. F. Coil only 150-400 Kc.		39A	G152 —36400	Socket, 6C5.
G44 —32001	R. F. Coil only 540-1500 Kc.		40	G153 —36400	Socket, 6H6.
G41 —32001	R. F. Coil only 1500-4000 Kc.		41A	G153 —36400	Socket, 6F6.
G43 —32001	R. F. Coil only 4-10 Mc.		41B	G153 —36400	Socket, 6F6.
G42 —32001	R. F. Coil only 10-22 Mc.		41C	G153 —36400	Socket, 6F6.
MG27 —36542	Coil Support Base		42	G154 —36400	Socket, 5Z4.
W —36028	5 Section Trimmer Cond. Assm.		43	427CL —22	Speaker, Table Model.
MG9 —36168	Shield.		44	627CL —27	Speaker, Console.
W —36055	Condenser 35 mfd. 400 Volts.		45	W —36547A	Band Change Switch.
W —36055	Condenser 35 mfd. 400 V.		46	G27 —26719	Ant.-Grnd. Terminal.
W —36057	Condenser 40 mfd. 300 V.		G5	—31128	Speaker Terminal.
W —36548	Condenser 25 mfd. 25 V.		W —34627	Terminal Board Insulator.	
G2 —34002	Condenser 0.0001 mfd. 200 V.		W —34628	Terminal Board Cover.	
G1 —34002	Condenser 0.00025 mfd. 200 V.		47Z	—32063	Tone Control.
W —35758	Condenser 0.006 mfd. 400 V.		47Y	—32062	On-Off Switch.
W —35758	Condenser 0.008 mfd. 400 V.		G22 —24628	A. F. Transformer.	
W —35647	Condenser 0.006 mfd. 400 V.		G42 —25669	Power Transformer 60 Cy. 110 V.	
W —32378	Condenser 0.01 mfd. 400 V.		B —35007B	Universal Power Transformer.	
W —30805	Condenser 0.01 mfd. 400 V.		W —38500	Tuning Meter.	
W —36541	Condenser 0.02 mfd. 160 V.		W —36501	Tuning Meter Bracket.	
W —28621	Condenser 0.02 mfd. 160 V.		W —22062	Volume Control.	
W —28621	Condenser 0.02 mfd. 200 V.		G156 —36400	Socket, 6A8.	
W —32780	Condenser 0.05 mfd. 400 V.		G6 —34002	Condenser 0.000025 mfd.	
W —23615	Condenser 0.05 mfd. 400 V.		B —36515	Escutcheon.	
W —35936	Condenser 0.05 mfd. 200 V.		W —36564	Escutcheon indicator	
W —35936	Condenser 0.05 mfd. 200 V.		W —36311	Band Change Escutcheon.	
W —35936	Condenser 0.05 mfd. 200 V.		W —36519	Knob, Tuning.	
W —35936	Condenser 0.05 mfd. 200 V.		W —36520A	Knob, Vernier.	
G27 —33006	Condenser-trimmer		W —36518	Knob (Tail) Band Change.	
			W —36521	Knob (2)	

CHASSIS MODEL 1117

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6G5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a .00025 mfd. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, pp (d) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (d) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (d) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (d) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

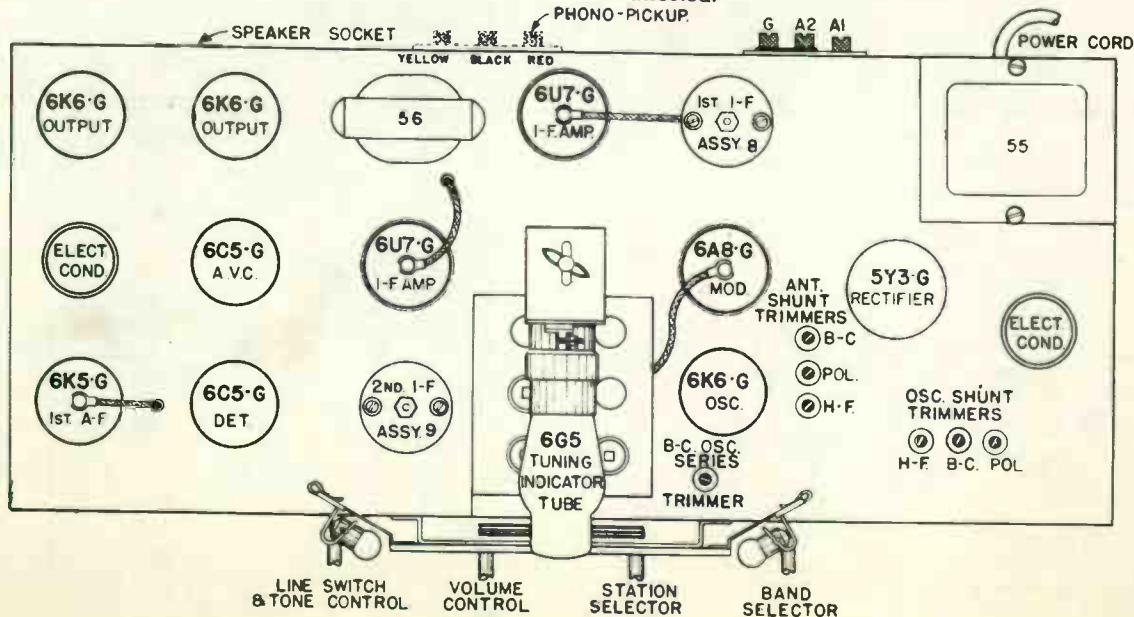


Fig. 2 Top View Model 1117

## CHASSIS MODEL 1117 (D) SIGNAL INPUT FREQUENCIES

American Broadcast Band  
Police & Amateur Band  
High Frequency Band

Min. Cap. Signal  
1850 Kilocycles  
6600 " "  
22 Megacycles

Shunt Align.  
1700 Kilocycles  
6000 " "  
18 Megacycles

Series Align.  
600 Kilocycles

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb	36	—37590	Resistor, 750,000 Ohm 1/4 W. Carb.
	G3 —44363	Dial Light Socket Assy.	37	—21454	Resistor, 1 Megohm 1/4 W. Carb.
2	G139—32000	Ant. Coil—535—1850 Kc.	38	—26577	Resistor, 3 Megohm 1/4 W. Carb.
3	G138—32000	Ant. Coil—1850—6600 Kc.	39	—44008	Resistor, 10,000 Ohm 2W. Carb.
4	G141—32000	Ant. Coil—6.2—22 Mc.	40	W —37631	Resistor, 32 Ohm 1/2 W. Flex.
5	G139—32002	Osc. Coil—535—1850 Kc.	41	W —22873	Resistor, 220 Ohm 1 1/2 W. Flex.
6	G138—32002	Osc. Coil—1850—6600 Kc.	42ABC	G172—36400	Socket, Type 6K6
7	G141—32002	Osc. Coil—6.2—22 Mc.	43	G156—36400	Socket, Type 6A8
8	G162—32004	1st 1-F Assembly—455 Kc.	44AB	G171—36400	Socket, Type 6U7
9	G155—32004	2nd 1-F Assembly—455 Kc.	45AB	G152—36400	Socket, Type 6C5
10	W —44054	Condenser, 30 Mf. 350 V.	46	G9 —43900	Socket, Type 6K5
11	W —36057B	Condenser, 40 Mf. 300 V.	47Z	W —44121	Socket, Type 6G5
12	G13 —34002	Condenser, .000035 Mf. Molded	47Y	W —44121	1 Meg. Resistor in Socket
13ACD	G2 —34002	Condenser, .0001 Mf. Molded	48	G173—36400	Socket, Type 5Y3
14		NONE	49	G103—28807	Socket for Speaker
15	W —35936	Condenser, .05 Mf. 200 V.	W	—27981A	Tube Shield Base
16	W —41461	Condenser, .0014 Mf. 200 V.	W	—40911	Tube Shield
17Z	W —31052	Condenser, .05 Mf. 400 V.	MG17—44099	Bracket Assy. with 6G5 Socket	
17Y	W —31052	Condenser, .004 Mf. 400 V.	W	—44137	Bracket for MG17-44099
18	W —35139	Condenser, .004 Mf. 400 V.	W	—23880A	Thumb Screw
19AB	W —23615	Condenser, .05 Mf. 400 V.	50	566BP18 "M"	Speaker, Spec. No. 1-D-1052
20	W —40769	B-C. Osc. Series Trimmer (520 Mmf.)		—44275	V. C. and Cone Assy. for 566BP18 "M" Spkr.
21	G23 —34000	Pol. Osc. Series Cond. (1560 Mmf.)			Field Coil Assy. for 566BP1 "M" Spkr.
22	G20 —34000	H-F. Osc. Series Cond. (4910 Mmf.)		—44276	
23	W —22688	Condenser, .1 Mf. 400 V.	51	—44049	Band Selector Switch
24	G40 —33001	2 Section Var. Tuning Condenser	52Z	—44024	Line Switch
	MG14—44099	Cond. Mounting Bracket	52Y	—44024	Tone Control (100,000 Ohm)
	D —44143B	Dial Face (Glass)	53	—44081	Volume Control—1 Meg.
	W —44146A	Dial Mask	54	G27 —26719	Ant. and Gnd. Term. Assy.
	C —44110B	Dial Support Brkt.	55	—44101	Power Trans., 110 V. 60 Cy.
	W —44127	Dial Hand (Pointer)		—44104	Power Trans., 110 V. 50 Cy.
	W —40486	Hand Mtg. Screw		—44105	Power Trans., 220 V. 50 Cy.
	W —44262	Dial Glass Support Ring		—44102	Power Trans., 110 V. 25 Cy.
	W —44263	Dial Glass Support Arc		—44103	Power Trans., 220 V. 25 Cy.
	—41582	Drive Cord - 20 Inches		—44103	Output Transformer
	W —44134	Drive Shaft	56	G77 —24628	Resistor, 10,000 Ohm 1W.
	W —43549	Shaft Retaining Ring	57	—4921C	Condenser, .01 Mf. 400 V.
	W —43542B	Shaft Bracket	58	W —30805	Condenser, .02 Mf. 400 V.
	W —44500	Shaft Bearing	59	W —30488	Condenser, .25 Mf. 160 V.
	G1 —43564	Drive Pulley Assy.	60	W —34712	Condenser, .02 Mf. 200 V.
25	W —35951	3 Section Shunt Trimmer Assy.	61	W —28621	Resistor, 100,000 Ohm 1/4 W.
26	B —33906A	Power Cord and Plug	62	—35600	Wave Trap
27	—44009	Resistor, 3,000 Ohm 1/4 W. Carb.	63	G164—32004	Rubber Mtg. Foot
28	W —23013	Resistor, 2,000 Ohm 1 1/4 W. Flex.		W —43553	Knob (2)
29	—44165	Resistor, 5,000 Ohm 1/2 W. Carb.		W —44380	Knob (2) (Pointer)
30	—22196	Resistor, 20,000 Ohm 1/4 W. Carb.		W —44426	Spkr. Plug Clamp
31	—36320	Resistor, 120,000 Ohm 1/4 W. Carb.		W —43552	Escutcheon—Dial
32	—21237A	Resistor, 60,000 Ohm 1/4 W. Carb.		B —44207A	Escutcheon—Tun. Indic. Tube
33AB	—21875	Resistor, 100,000 Ohm 1/4 W. Carb.		W —44208B	Cabinet
34	—34020	Resistor, 250,000 Ohm 1/4 W. Carb.		—7W	
35ABC	—23785	Resistor, 500,000 Ohm 1/4 W. Carb.			

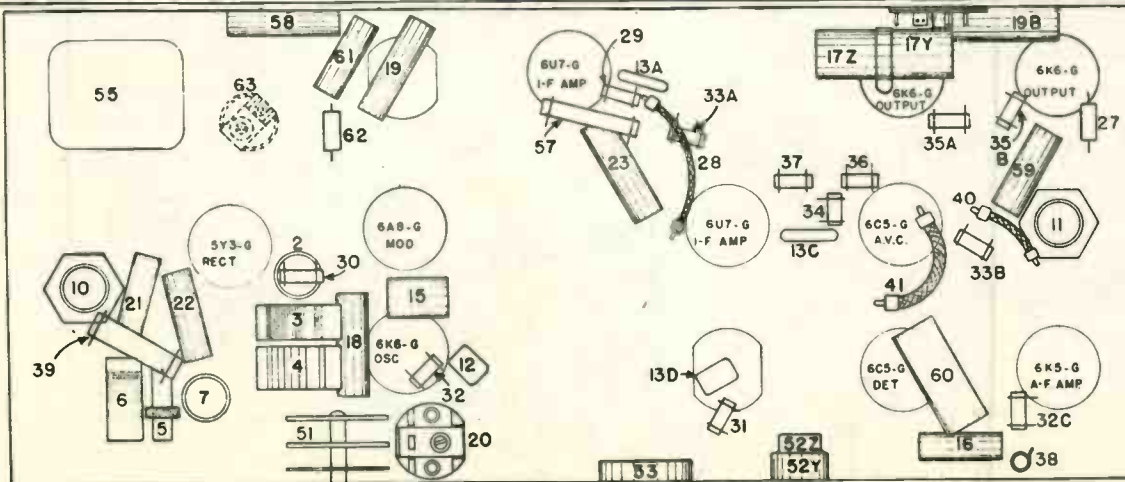


Fig. 3 Bottom View Model 1117

CIRCUIT CHANGES

Fig. 1-A is a revised Wiring Diagram, showing the following circuit changes after serial No. 1343902:  
 Item 13B Part No. G2-34002, 100 mmf. cond. deleted.  
 " 14 Part No. G1-34002, 250 mmf. cond. deleted.  
 " 27B Part No. 44009, 3000 ohm 1/4-w resistor deleted.

" 41 Part No. W-21965, 375 ohm 1 W resistor superseded by Part No. 22873.  
 " 61 Part No. W-20621 added.  
 " 62 Part No. 35600 added.  
 In the later series a shielded lead between items 16 and 53 was found to reduce audio degeneration and thus materially improve the tone quality.

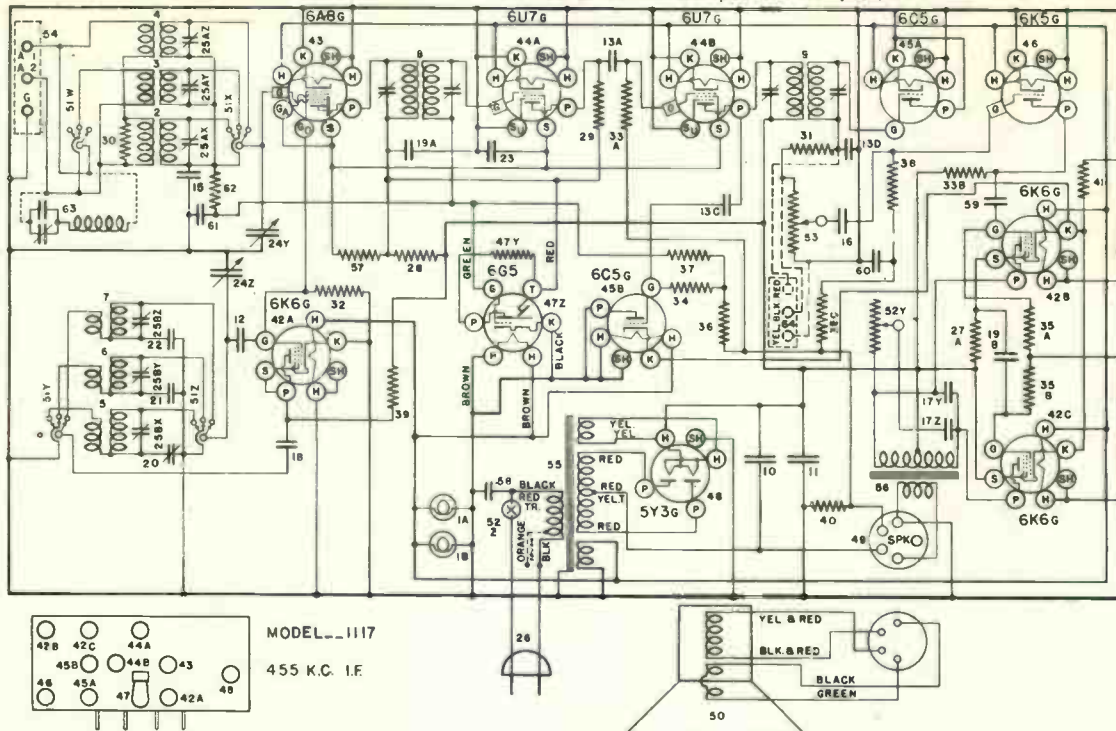


FIG. 1-A—WIRING DIAGRAM—MODEL 1117 SERIES 2

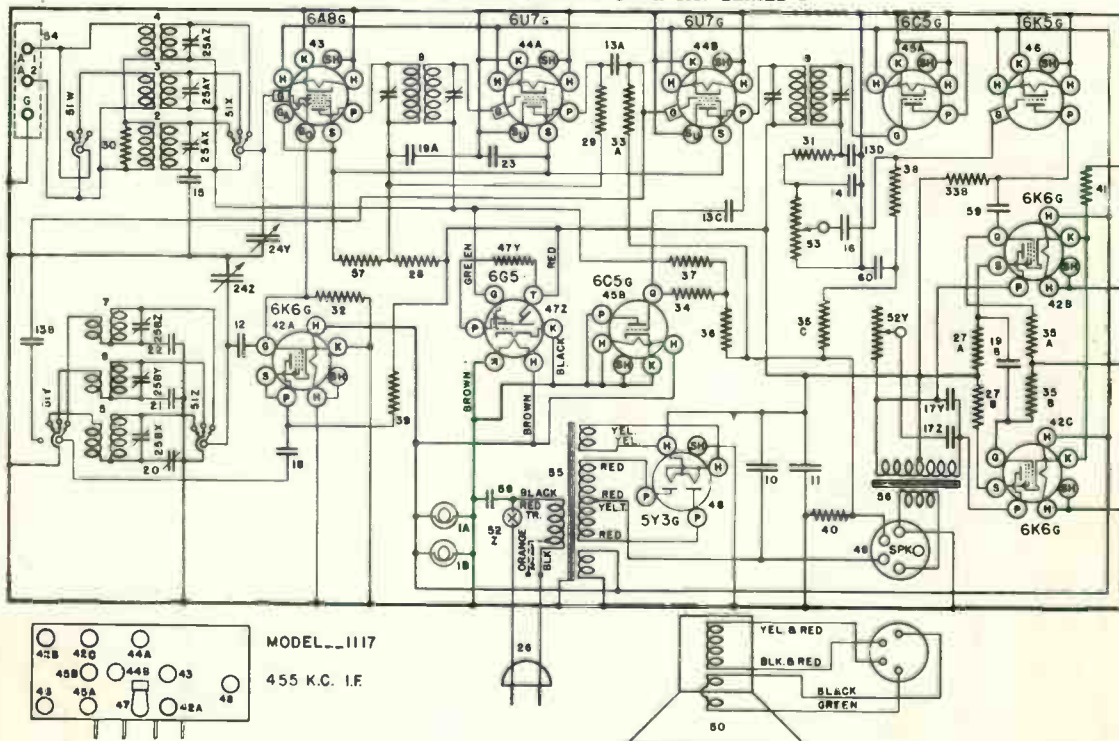


FIG. 1-B—WIRING DIAGRAM—MODEL 1117 SERIES 1

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram, Item 63, Fig. 1A.

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .00025 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.



CHASSIS MODEL 1118 AND 1128

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	A.V.C. Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6C5G	"Squelch"	6.3	0	—	—	0	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 90 watts at 117.5 volts.  
Power output approximately 10 watts.  
Voltage drop across speaker field 60 volts.

Tuning The I-F Amplifier To 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance Switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

Aligning The R-F Amplifier

When aligning the R-F amplifier the output lead

from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a 200 muf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. DO NOT READJUST THE OSCILLATOR TRIMMER.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight reposition of the grid lead of the antenna coil in the Band affected.

(D) SIGNAL INPUT FREQUENCIES

Min. Cap. Signal  
1850 Kilocycles  
6600 Kilocycles  
22 Megacycles

Shunt Align.  
1700 Kilocycles  
6000 Kilocycles  
18 Megacycles

Series Align.  
600 Kilocycles

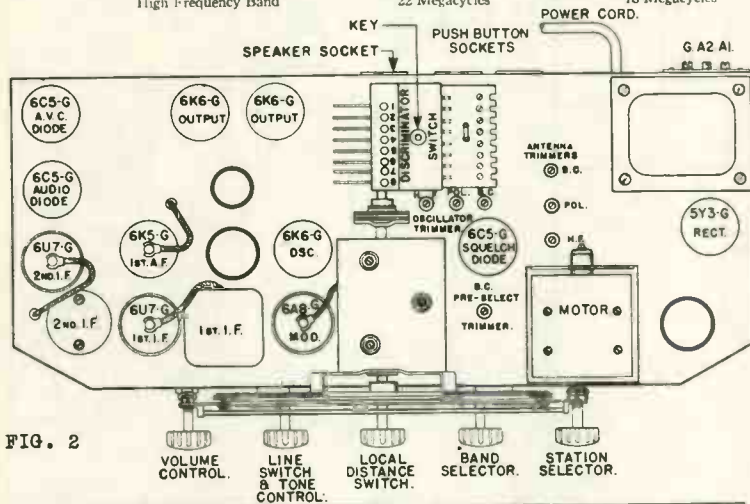


FIG. 2

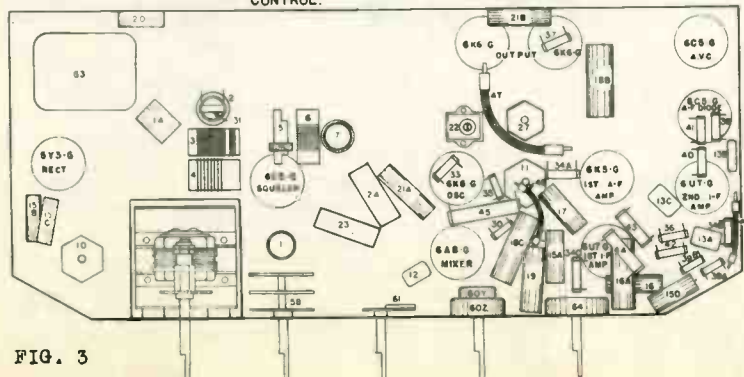
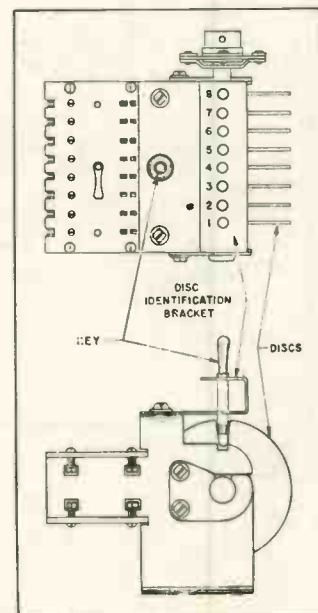


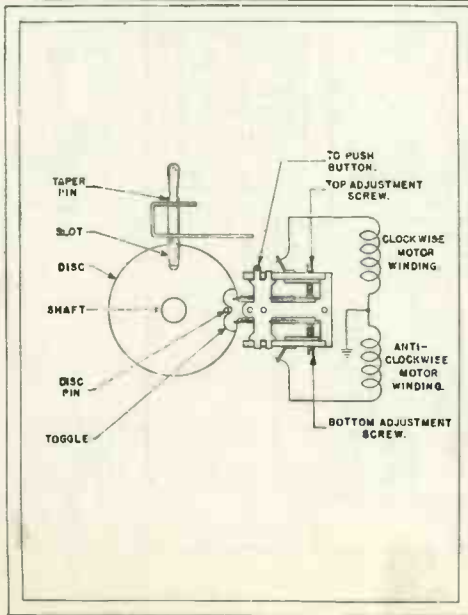
FIG. 3



PARTS LIST — MODEL 1118

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G97 - 32001	Pre-Selector Coil, B.C.	35	-37400	Resistor, 100,000 Ohm 1/2 W. Carb.
2	G138 - 32080	Antenna Coil, B.C.	36	-38320	Resistor, 120,000 Ohm 1/2 W. Carb.
3	G151 - 32090	Antenna Coil, Police	37	-34018	Resistor, 200,000 Ohm 1/2 W. Carb.
4	G150 - 32080	Antenna Coil, H.F.	38	-34020	Resistor, 250,000 Ohm 1/2 W. Carb.
5	G139 - 32092	Oscillator Coil, B.C.	39A	-23785	Resistor, 500,000 Ohm 1/2 W. Carb.
6	G154 - 32062	Oscillator Coil, Police	39B	-23785	Resistor, 500,000 Ohm 1/2 W. Carb.
7	G133 - 32032	Oscillator Coil, H.F.	40	-37340	Resistor, 750,000 Ohm 1/2 W. Carb.
8	G161 - 32091	1st I.F., 455 Kc. Assy.	41	-21154	Resistor, 1 Megohm 1/2 W. Carb.
9	G154 - 32091	2nd I.F., 455 Kc. Assy.	42	-20577	Resistor, 3 Megohm 1/2 W. Carb.
10	W - 14051	Condenser, 30 Mf. 350 V.	43	-41165	Resistor, 5,000 Ohm 1/2 W. Carb.
11	W - 38057B	Condenser, 40 Mf. 300 V.	44	-4921C	Resistor, 10,000 Ohm 1/2 W. Carb.
12	G1 - 41886	Condenser, Bimetal Temp. Control	45	-44008	Resistor, 10,000 Ohm 2W. Carb.
13A	G2 - 34002	Condenser, .0001 Mf. Molded	46	W - 37631	Resistor, 32 Ohm 1/2 W. Flex.
13B	G2 - 34002	Condenser, .0001 Mf. Molded	47	W - 45381	Resistor, 300 Ohm 2W. Flex.
13C	G2 - 34002	Condenser, .0001 Mf. Molded	48	W - 23013	Resistor, 2,000 Ohm 1/2 W. Flex.
14	W - 35936	Condenser, .05 Mf. 200 V.	49		
15A	W - 28621	Condenser, .02 Mf. 200 V.	50	G178 - 26400	Socket, 8 Prong Octal.
15B	W - 28621	Condenser, .02 Mf. 200 V.	51		
15C	W - 28621	Condenser, .02 Mf. 200 V.	55	G103 - 28807	Socket, Speaker
16	W - 28621	Condenser, .02 Mf. 200 V.	56	G16 - 28807	Socket, Push Button Cable
17	W - 41161	Condenser, .001 Mf. 200 V.		W - 41007	Cable Clamp, P. B. Cable
18A	W - 22688	Condenser, .1 Mf. 400 V.		W - 40911	Tube Shield
18B	W - 22688	Condenser, .1 Mf. 400 V.	57	671B1-18-"M"	Speaker, Sigs. No. 1-D-1180
18C	W - 22688	Condenser, .1 Mf. 400 V.		-45184	V. C. and Cone Assembly
19	W - 23615	Condenser, .05 Mf. 400 V.		-45185	Field Coil (515 Ohm)
20	W - 30805	Condenser, .01 Mf. 400 V.		-41678	Output Transformer
21A	W - 35139	Condenser, .005 Mf. 400 V.		-43680	Cone Mounting Ring
21B	W - 35139	Condenser, .005 Mf. 400 V.	W	24715	Elastic Mounting Nuts
22	-40769	Condenser, B.C. Osc. Series Trimmer	W	-25903	Rubber Washer
23	G23 - 34000	Condenser, .00150 Mf. Pol. Gsc. Fixed Trimmer	W	-34065	Steel Washer
24	G20 - 34000	Condenser	58	-44049	Band Selector Switch
25	W - 35951A	3 Section Shunt Trimmer Assy.	59	G1 - 44628	Switch, Discriminator, Assy. Complete
26	G60 - 33002	3 Section Var. Tuning Cond. (1118)	60	G2 - 44628	Flexible Coupling
26	G60 - 33002	3 Section Var. Tuning Cond. (1128)		-4402413	Tone Control (300,000 Ohm) and Line Switch
	W - 41891B	Dial Face (Glass) (1118)	61	-46086	Switch, Local Distance (1128)
	W - 45587A	Mask (Polished Metal) (1118)	61	-44665A	Switch, Local Distance (1118)
	C - 44110C	Support Bracket (Dial Glass) (1118)	62	G27 - 26719	Ant. and Grd. Terminal Assy.
	W - 41262	Ring (Glass Support) (1118)		-44910	Power Transformer, 110 V. 60 Cycle
	W - 44263	Arc (Glass Support) (1118)	63	-44915	Power Transformer, 110 V. 50 Cycle
	W - 41127	Pointer (1118)		-44916	Power Transformer, 220 V. 50 Cycle
	G5 - 43564	Screw—Pointer Mtg. (1118)		-45527	Power Transformer, Universal
	W - 43564	Pulley and Hub Assy. (1118)	64	-41702	Volume Control, 1 Megohm Tapped
	W - 41582	Drive Cord (1118)	65A	G8 - 45228	Push Button—Cable and Plug Assy. (R.H.) (1118)
	W - 45448	Drive Belt (1118)	65B	G9 - 45228	Push Button—Cable and Plug Assy. (L.H.) (1118)
	W - 44907A	Idler Pulley (1118)		W - 45478	Trip Bar and Connecting Link (P. B. Switch) (1118)
	W - 44908	Idler Mtg. Stud (1118)		G37 - 26719	Phone Terminal Assy.
	D - 46239	Dial Face (Glass) (1128)		B - 33940A	Line Cord and Plug
	W - 46091	Dial Glass Support (1128)	66	W - 45567	Dial Light Bulb, 6.8 Volt (1118)
	W - 46099	Dial Glass Clip (2) (1128)	68	W - 37922	Dial Light Bulb, 6.8 Volt (1128)
	W - 46096	Dial Glass Clip, R.H. (1128)	71	G9 - 44363	Dial Light Socket Assy.
	W - 46095	Dial Glass Clip, L.H. (1128)	72	MG45 - 46081	Push Button—Cable and Plug Assy. (1128)
	W - 46203	Dial Pointer (1128)	73		
	W - 46097	Dial Pointer Guide (1128)		7P - Cabinet (1118)	
	G - 41582	Drive Cord (50-Inch) (1128)		B - 45652A	Escutcheon (Dial) (1118)
	W - 46941	Dial Glass Cushion (1128)		-45667	Escutcheon (Push Button) L.H. (1118)
	G13 - 43564	Pulley and Hub Assy. (1128)		-45666	Escutcheon (Push Button) R.H. (1118)
	MG14 - 46080	Idler Pulley and Brkt. Assy. (1128)		W - 44360B	Knob, Vol. Cont. and Tuning (2) (1118)
	W - 44989	Cord Tension Spring (1128)		W - 44266A	Knob, T. C.—L. D. Sw. and B. C. Sw. (3) (1118)
	W - 46477	Tubing—Drive Shaft (1128)		W - 44871A	Push Button (Bakelite) (1118)
	W - 45448	Drive Belt (1128)		B - 44876A	Switch (Push Button) Only (1118)
	W - 44907B	Idler Pulley (Dual) (1128)		8Q - Cabinet (1128)	
	W - 44908	Idler Stud (1128)		8QA - Cabinet (1128)	
	D - 46949	Dial Glass (Foreign Only) (1128)		C - 46229C	Escutcheon (1128)
	W - 46290	Drive Cord Clamp (1128)		-46360A	Knob, Vol. Cont. and Tuning (2) (1128)
	W - 41598	Condenser, 50 Mf. 25 V.		-46362A	Knob, T. C.—L. D. Sw. and B. C. Sw. (3) (1128)
	W - 44516	Condenser, Pre-Select Shunt		W - 45171	Push Button (Bakelite) (1128)
27	MG105 - 44879	Motor Assembly (50-60 Cycle)		B - 46221	Switch (Push Button) Only (1128)
28	W - 45168	Motor		W - 44876A	Celluloid Cover (Button)
29	W - 45165	Motor Foot		W - 44902	Call Letter Sheet
	W - 45164	Motor Mounting Bracket		W - 45533	Rubber Mounting Foot
	W - 20800	Shaker of Washer		W - 45532	Clamp (Speaker Plug)
	-6875	W. H. Machine Screw, 1/4" Long		-45604	Instructions (1118)
	-6876	W. H. Machine Screw, 3/8" Long		45003	Instructions (1128)
	-44497	Headed Bushing—Brkt. Mtg.			
	W - 36180	Rubber Sleeve—Brkt. Mtg.			
30	-42401A	Resistor, 480 Ohm 1/2 W. Ins.			
31	-21296	Resistor, 20,000 Ohm 1/2 W. Carb.			
33	-21237A	Resistor, 60,000 Ohm 1/2 W. Carb.			
34A	-21875	Resistor, 100,000 Ohm 1/2 W. Carb.			
34B	-21875	Resistor, 100,000 Ohm 1/2 W. Carb.			
34C	-21875	Resistor, 100,000 Ohm 1/2 W. Carb.			



SETTING PUSH BUTTONS

To set the electric tuning system, turn the receiver "ON" and depress No. 1 push button. When the dial pointer stops rotating, the key slot in No. 1 disc on the selector switch will be in the "UP" position. Remove the key from its mounting and place it (knob up) through No. 1 hole in the disc identification bracket. If it does not drop into the slot in the disc, push it in with the fingers.

Turn the Local-Distance switch to the "Distance" position. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE, the station whose call letters have been placed in No. 1 push button. Then remove the key.

NOTE: On Model 1128 the push button on the extreme right (manual) serves as a release for all other push buttons and should be depressed before operating the manual tuning control.

NOTE: On Model 1118 the push button which will ordinarily be used for Police calls does not lock in the depressed position. It serves as a release for all other buttons and should be depressed before operating the manual tuning control.

By means of the manual tuning knob, turn the dial pointer to some other position. Then check the setting by pressing the button which has been set. If the pointer stops too soon or goes too far, a second setting will be necessary.

To make the second setting, observe how far the pointer stops from the correct position for that station. Replace the key in the disc and tune far enough to one side of the correct position to make allowance for the difference noted in the first setting.

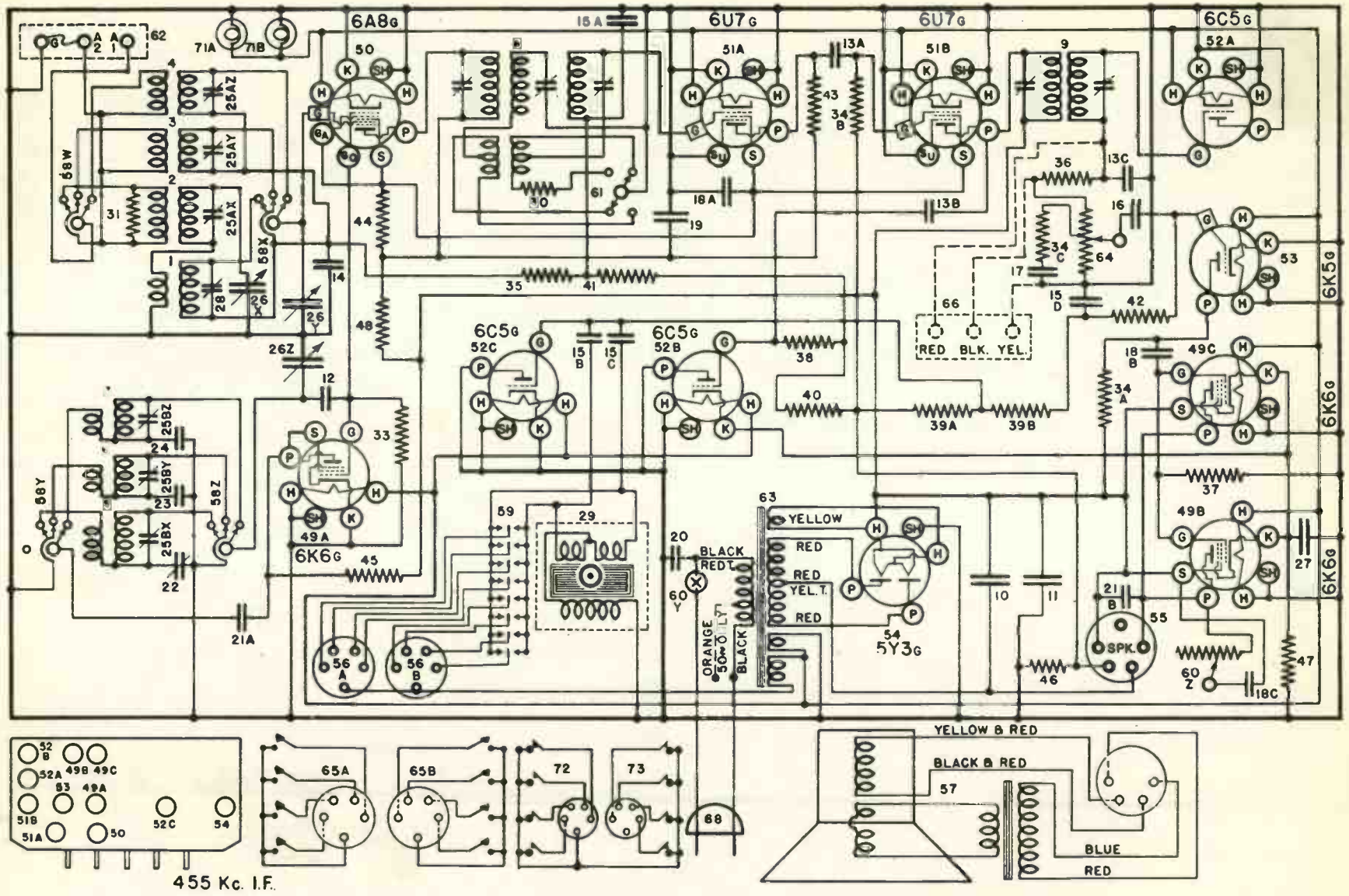


FIG. 1—WIRING DIAGRAM—MODEL 1118 AND 1128

Tube	Function	TUBE SOCKET VOLTAGE READINGS							
		H	P1	P2	S	Su	K	Ga	Go
6K7	R-F Amplifier	6.3	80	—	105	3.5	3.5	—	—
6A8	Oscillator-Modulator	6.3	235	—	105	—	3	150	4 to -12
6J7	AFC Control	6.3	150	—	137	10.7	10.7	—	—
6K7	I-F Amplifier	6.3	228	—	104	3.4	3.4	—	—
6H6	AFC Diode	6.3	—	—	—	—	4.2	—	—
8R7	A-F Amplifier	6.3	150	—	—	—	6.0	—	—
6N6	(2) Output	6.3	235	345	—	—	5.2	—	—
5Z4	Rectifier	5.0	—	—	—	—	345	—	—
W42419A	Neon Tuning Tube	—	155	80	—	—	—	—	—
W41187	Auto-Expressionator Tube	—	—	—	—	—	—	—	—

Varies with power output.  
Voltage drop across speaker field 110 volts.  
Power output approximately 15 watts.  
Power consumption approximately 123 watts.  
All readings taken on 117.5 volt power supply.

**TUNING I-F AMPLIFIER**

- (a) Connect the output meter.
- (b) Check the 6J7 cathode bias which should be approximately 6.5 volts with no signal applied.
- (c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the "GND" terminal of the receiver chassis.
- (d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.
- (e) Set the signal generator to 450 kilocycles.
- (f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).
- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.
- (j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.
- (k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.
- (l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.
- (m) Insert a 0.5 milliammeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 milliammeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF." If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON," the AFC is properly aligned.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC," "RF" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, 39Z and 39Y—Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

Shunt Alignment	Series Alignment
1,480 Kilocycles	600 Kilocycles
5,040 Kilocycles	2000 Kilocycles
18,040 Kilocycles	

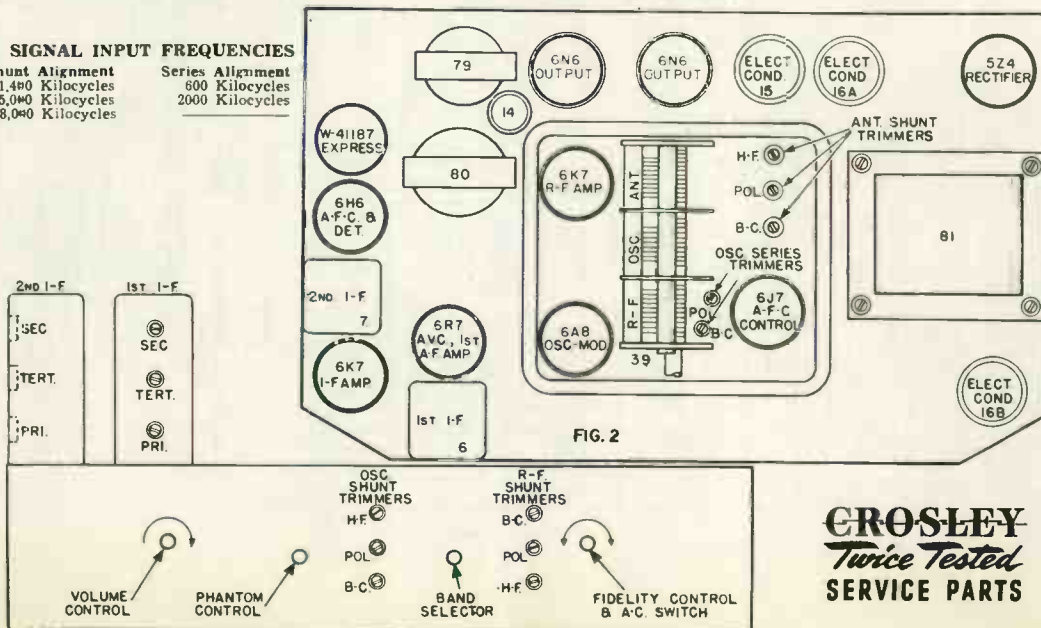
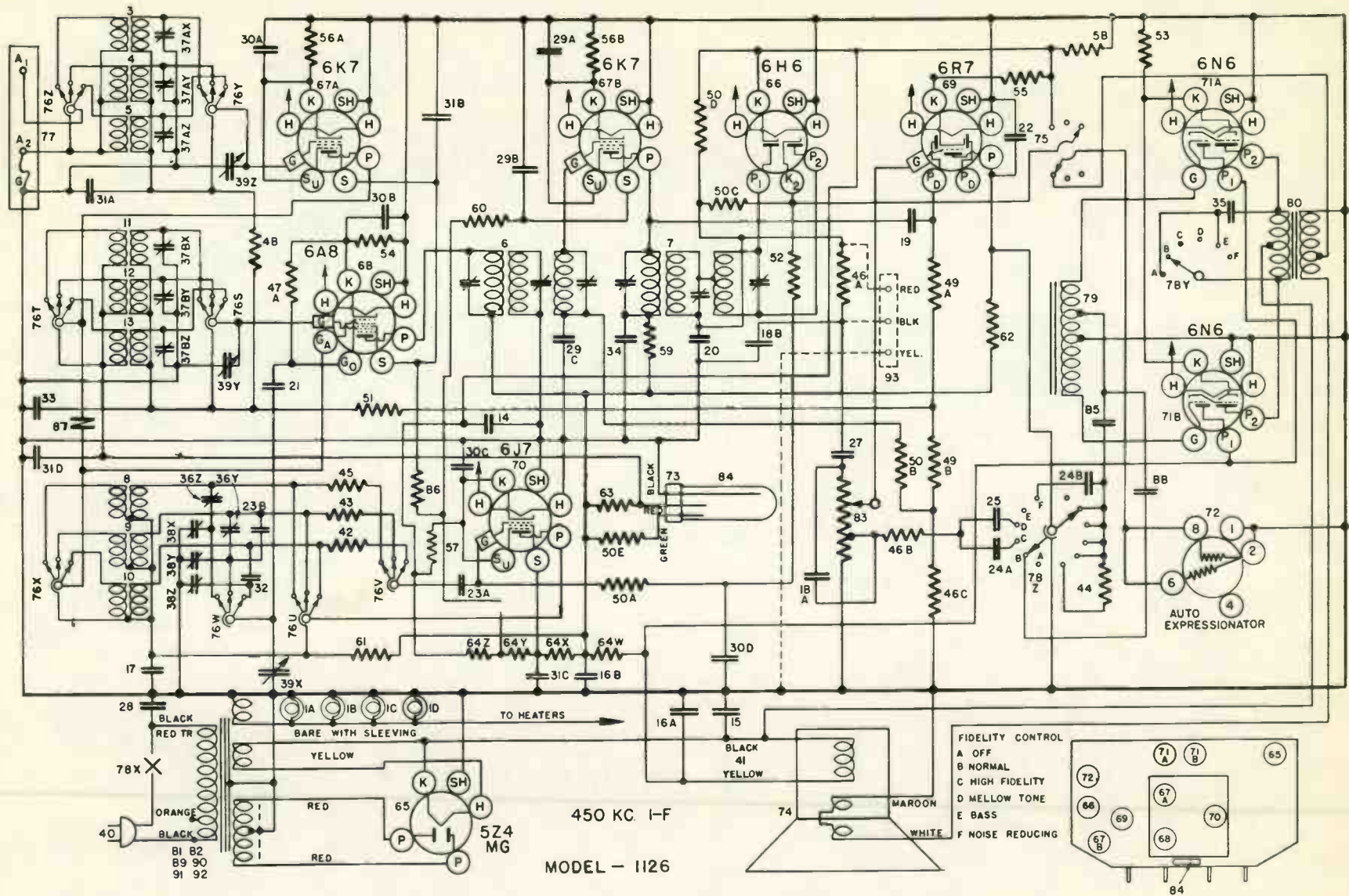


Fig. 3 Front View—1126

**CROSLLEY**  
*Twice Tested*  
**SERVICE PARTS**



MODEL 1126

Fig. 1. Circuit Diagram—Model 1126

## PARTS LIST—MODEL 1126

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABCD	W —37922	Dial Light Bulb. 6.3V.	45	—34019	Resistor, 75,000 Ohm. $\frac{1}{4}$ W.
	G3 —37965	Socket, Dial Light	46ABC	—35600	Resistor, 100,000 Ohm. $\frac{1}{4}$ W.
	W —40570	Shield, Dial Light	47A	—35930	Resistor, 200,000 Ohm. $\frac{1}{4}$ W.
2	W —41187	Expressionator Tube	48	—35601	Resistor, 300,000 Ohm. $\frac{1}{4}$ W.
3	G94 —32000	Antenna Coil—B. C. B.	49AB	—36321	Resistor, 400,000 Ohm. $\frac{1}{4}$ W.
4	G108 —32000	Antenna Coil—Pol. B.	50A	—36322	Resistor, 500,000 Ohm. $\frac{1}{4}$ W.
5	G107 —32000	Antenna Coil—H. F. B.	to		
6	G90 —32004	1st I-F Assembly	50E	—36322	Resistor, 500,000 Ohm. $\frac{1}{4}$ W.
7	G126 —32004	2nd I-F Assembly	51	—21454	Resistor, 1 Megohm. $\frac{1}{4}$ W.
8	G97 —32002	Osc. Coil—B. C. B.	52	—36688	Resistor, 3 Megohm. $\frac{1}{4}$ W.
9	G96 —32002	Osc. Coil—Pol. B.	53	W —32961	Resistor, 100 Ohm. 3W. Flex.
10	G95 —32002	Osc. Coil—H. F. B.	54	W —25937	Resistor, 275 Ohm. $\frac{1}{2}$ W. Flex.
11	G68 —32001	R-F Coil—B. C. B.	55	W —34900	Resistor, 68 Ohm. $\frac{3}{4}$ W. Flex.
12	G75 —32001	R-F Coil—Pol. B.	56AB	W —28589	Resistor, 350 Ohm. $\frac{1}{2}$ W. Flex.
13	G74 —32001	R-F Coil—H. F. B.	57	—24814	Resistor, 7,000 Ohm. $\frac{1}{4}$ W. Carbon
14	W —41598	Condenser, 50 Mf. 25V. (Elect.)	58	W —42518	Resistor, 150 Ohm. $\frac{1}{2}$ W. Flex.
15	W —36055	Condenser, 35 Mf. 400V. (Elect.)	59	W —21452	Resistor, 1,100 Ohm. $\frac{3}{4}$ W. Flex.
16A	W —42386	Condenser, 20 Mf. 300V. (Elect.)	60	W —27503	Resistor, 1,400 Ohm. $\frac{3}{4}$ W. Flex.
16B	W —42386	Condenser, 20 Mf. 300V. (Elect.)	61	—4921	Resistor, 10,000 Ohm. 1W. Carbon
17	G18 —34000	Condenser, 5600 Mmf. H-F Osc. Series	62	—36952	Resistor, 30,000 Ohm. 1W. Carbon
18A	G5 —34002	Condenser, .00005 Mf. Mica 200V.	63	W —42516	Resistor, 20,000 Ohm. 1W. W. W.
18B	G5 —34002	Condenser, .00005 Mf. Mica 200V.	64Z		4,000 Ohm. }
19	G10 —34002	Condenser, .00005 Mf. Mica 300V.	64Y		1,000 Ohm. }
20	G2 —34002	Condenser, .0001 Mf. Mica 200V.	64X	W —41966	3,000 Ohm. } Candohm
21	G6 —34002	Condenser, .000025 Mf. Mica 200V.	64W		200 Ohm. }
22	G1 —34005	Condenser, .00025 Mf. Mica 300V.	65	G154—36400	Socket Type 5Z4
23A	G3 —34002	Condenser, .0005 Mf. Mica 200V.	66	G155—36400	Socket Type 6H6
23B	G3 —34002	Condenser, .0005 Mf. Mica 200V.	67AB	G151—36400	Socket Type 6K7
24A	W —35758	Condenser, .008 Mf. 400V.	68	G156—36400	Socket Type 6A8
24B	W —35758	Condenser, .008 Mf. 400V.	69	G164—36400	Socket Type 6R7
25	W —41461	Condenser, .0014 Mf. 200V.	70	G157—36400	Socket Type 6J7
26		None	71AB	G165—36400	Socket Type 6N6
27	W —28621	Condenser, .02 Mf. 200V.	72	G167—36400	Socket Type Expressionator
28	W —30805	Condenser, .01 Mf. 400V.	73	G2 —42584	Socket Neon Tube
29A	W —27216	Condenser, .05 Mf. 200V.	74	649CJ4 "M"	Speaker Spec. 1-D-668
29B	W —27216	Condenser, .05 Mf. 200V.		—40701	Cone Assy. for above Speaker
29C	W —27216	Condenser, .05 Mf. 200V.		—40699	Field Coil for above Speaker
30A	W —36541	Condenser, .02 Mf. 160V.		634CJ4 "M"	Speaker Spec. 1-D-244
to				—40268	Cone Assy. for above Speaker
30D	W —36541	Condenser, .02 Mf. 160V.		—40272	Field Coil for above Speaker
31A	W —35936	Condenser, .05 Mf. 200V.	75	W —41029B	Phantom Control Switch
to			76	C —41235A	Band Sel. Switch
31D	W —35936	Condenser, .05 Mf. 200V.	77	G27 —26719	Ant. & Gnd. Terminal Assy.
32	W —41209	Condenser, .048 Mf. 200V.	78	B —42295A	Fidelity & Line Switch
33	W —32380	Condenser, .05 Mf. 200V.	79	G64 —24628	Choke, Audio Input
34	W —32780B	Condenser, .05 Mf. 400V.	80	G60 —24628	Output Transformer
35	W —22688	Condenser, .1 Mf. 400V.	81		Power Trans. 60 Cy. 110V.
36	W —41218	Trimmer Cond. B.C. & Pol. Osc. Ser.			Power Trans. 50 Cy. 110V.
37A	W —37891	Trimmer Cond. 3 Sect. Shunt			Power Trans. 50 Cy. 220V.
37B	W —37891	Trimmer Cond. 3 Sect. Shunt			Power Trans. 25 Cy. 110V.
38	W —35951	Trimmer Cond. 3 Sect. Shunt			Power Trans. 25 Cy. 220V.
39	G47 —33002	Cond. Gang—3 Sect. Var. Tuning	82		None
	MG12 —42411	Dial Drive Assembly	83		Vol. Cont. 3 Meg. Tap 1 Meg.
	C —42421	Dial Glass (Calibrated)	84	W —42419A	Neon Tube
	—42598A	Dial Mask (Paper Backing)		W —42589	Tube Cover
	—42325B	Dial Drive Unit (only)		—42592	Cover Gasket
	W —41144	Dial Hand—Long	85	W —42554	Condenser .12 Mf. 160V.
	W —42180	Dial Hand—Short	86	—6705	Resistor, 3,500 Ohm. 1W.
	W —40486	Screw—Hand Mtg.	87	G101—34403	R-F Neutralizer Assembly
	E —13647	Mystic Hand, etc., Flipper (L. H.)	88	W —43091	Condenser .07 Mf. 160V.
	E —13648	Fidelity, etc., Flipper (R. H.)		G37 —26719	Phono Terminal Assembly
	W —42308	Flipper Pulley (2)		C —43134	Escutcheon
	W —37909A	Band Indi. Pulley		—42043	Escutcheon Rubber Strip
	—43081	L. H. Flipper Control Cable		C —42044	Escutcheon Lens
	—43080	R. H. Flipper Control Cable		D —30	Mtg. Screws, Escutcheon
	—40638	Band Indicator Control Cable		W —37339	Knob, V. C. & Sta. Sel.
	—41157	Drive Belt		W —40192	Knob, Bd. Sel. & Phantom Cont.
	—40537	Drive Flexible Coupling		W —42490	Knob, Fidelity Cont.
40	B —33906A	Power Cord & Plug		W —36117	Rubber Mtg. Foot
41	G2 —37918	Speaker Cable		W —40230B	Emblem
42	—36760	Resistor, 20,000 Ohm. $\frac{1}{4}$ W.		W —32620	Nut, Emblem Mtg.
43	—33390	Resistor, 30,000 Ohm. $\frac{1}{4}$ W.		—6-W	Cabinet
44	—21453	Resistor, 40,000 Ohm. $\frac{1}{4}$ W.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	250	0	22	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—
6T5	Tuning Indicator	6.3	Variable	—	—	—	—	—

Power consumption approximately 90 watts at 117.5 volts. (Tuning Motor 50 Watts Additional)  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead

from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "Ant" trimmer.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7,000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

**(D) SIGNAL INPUT FREQUENCIES**

	Min. Cap. Signal	Shunt Align.	Series Align.
American Broadcast Band	1850 Kilocycles	1700 Kilocycles	600 Kilocycles
Police & Amateur Band	6600 Kilocycles	6000 Kilocycles	
High Frequency Band	22 Megacycles	18 Megacycles	

**WAVE TRAP**

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram. Item 61, Fig. 1.

The wave trap should not be adjusted until all other

adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 200 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for minimum output.

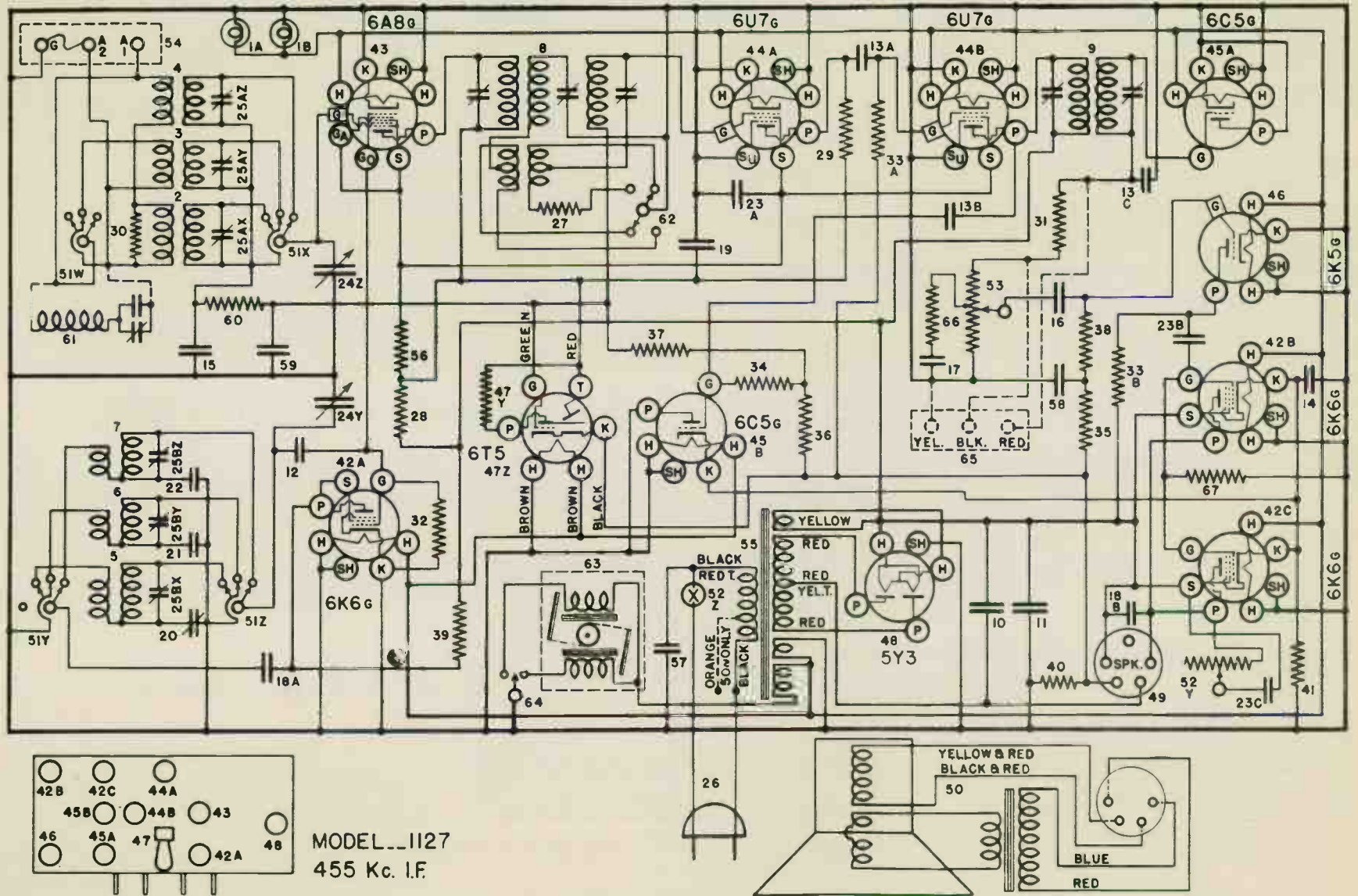


FIG. 1—WIRING DIAGRAM—MODEL 1127



PARTS LIST—MODEL 1127

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1AB	W -43567	Dial Light 6-8 V.	43	G156 -36400	Socket Type 6A8
2	G139 -32000	Ant. Coil B. C.	44AB	G171 -36400	Socket Type 6U7
3	G156 -32000	Ant. Coil Pol.	45AB	G152 -36400	Socket Type 6C5
4	G139 -32002	Ant. Coil H. F.	46	G9 -43900	Socket Type 6K5
5	G138 -32002	Osc. Coil B. C.	47Z	W -44121	Socket Type 6T5
6	G138 -32002	Osc. Coil Pol.	47Y	W -44121	Resistor 1 Meg in Socket
7	G160 -32002	Osc. Coil H. F.	48	G173 -36400	Socket Type 5Y3
8	G161 -32004	1st I-F Assy.	49	G103 -28807	Socket Speaker
9	G154 -32004	2nd I-F Assy.	W	-40911	Tube Shield
10	W -44054	Condenser 30 Mf. 350 V.	MG17	-44099	Indic. Tube Bracket (Clamp Assy.)
11	W -36057B	Condenser 40 Mf. 300 C.	W	-44137	Indic. Tube Mtg. Brkt.
12	G13 -34002	Condenser .000035 Mf. Molded	W	-23880A	Thumb Screw
13A	G2 -34002	Condenser .0001 Mf. Molded	W	-571BP18"M"	Speaker Spec. No. 1-D-1128
13B	G2 -34002	Condenser .0001 Mf. Molded	50	-44677	V. C. & Cone Assy.
13C	G2 -34002	Condenser .0001 Mf. Molded	W	-44276	Field Coil
14	W -41598	Condenser 50 Mf. 25 V.	W	-44678	Output Transformer
15	W -35936	Condenser .05 Mf. 200 V.	W	-43678	Cone Mtg. Ring (Card board)
16	W -41461	Condenser .0014 Mf. 200 V.	W	-43552	Spk. Plug Clamp
17	W -28619	Condenser .006 Mf. 200 V.	51	-44049A	Band Selector Switch
18A	W -35139	Condenser .004 Mf. 400 V.	52Z	W -44024B	Tone Control (100,000 Ohm)
18B	W -35139	Condenser .004 Mf. 400 V.	52Y	W -44674	Line Switch
19	W -23815	Condenser .05 Mf. 400 V.	53	W -26719	Volume Control (1 Meg.)
20	W -40769	Trimmer B. C. Osc. Series	54	G27 -26719	Ant. & Gnd. Term. Assy.
21	G23 -34000	Condenser .001560 Mf.	55	W -44511	Power Trans. 110 V. 60 Cy.
21	G20 -34000	Condenser .004910 Mf.	W	-44731	Power Trans. 110 V. 50 Cy.
23A	W -22688	Condenser .1 Mf. 400 V.	W	-44732	Power Trans. 220 V. 50 Cy.
23B	W -22688	Condenser .1 Mf. 400 V.	W	-44729	Power Trans. 110 V. 25 Cy.
23C	W -22688	Condenser .1 Mf. 400 V.	W	-44730	Power Trans. 220 V. 25 Cy.
24	G40 -33001	2 Sect. Var. Tuning Cond.	56	W -4921C	Resistor 10,000 Ohm 1 W. Carb.
W	-44475A	Dial Face (Glass)	57	W -30805	Condenser .01 Mf. 400 V.
W	-44127	Pointer	58	W -34712	Condenser .25 Mf. 160 V.
W	-40486	Screw (Pointer Mtg.)	59	W -28621	Condenser .02 Mf. 200 V.
W	-44146A	Dial Mask (Metal Disc.)	60	W -35600	Resistor 100,000 Ohm 1/4 W. Ins.
W	-2045	(Pointer) Shakeproof Washer	61	G184 -32004	Wave Trap
C	-44110C	Dial Glass Support Brkt.	62	W -44796	Switch (Local-Distance)
W	-44479	Drive Shaft Bracket	G2	-44476	Toggle L.-D. Sw. (Female)
W	-44480A	Drive Shaft Sleeve	G3	-44470	Toggle L.-D. Sw. (Male)
MG21	-44464	Drive Shaft & Coupling	G1	-44416	Dynatrol Motor
G1	-43564	Pulley & Hub Assy.	W	-44317	Pulley
W	-41582	Drive Cord	W	-4012	Set Screw (Pulley)
W	-43561	Spring Cord Tension	W	-44382	Friction Spring (Shaft)
G1	-44470	Switch Arm & Hub Assy.	W	-43622	Felt Washer (Shaft)
W	-44262A	Dial Support Ring	W	-44493	Shaft (Motor)
W	-44263A	Dial Support Arc.	W	-44319	Belt Anchor (Hook)
25	W -35961A	3 Sect. Trimmer Assy.	W	-44701	Grommet (Anchor Hook)
26	B -33906A	Power Cord & Plug	W	-44976A	Guide Brkt. (Belt)
27	W -42401B	Resistor 99 Ohm 1/4 W. Ins.	W	-24074	Stop Nut (Anchor Ret.)
28	W -23013	Resistor 2,000 Ohm 1/4 W. Flex.	W	-7378	Tubing 1/4" (Anchor Hook)
29	W -44165	Resistor 5,000 Ohm 1/2 W. Carb.	W	-44384A	Shock Pad
30	W -22196	Resistor 20,000 Ohm 1/3 W. Carb.	W	-45218	Vibrator Drive Unit (Right or Left)
31	W -36320	Resistor 120,000 Ohm 1/4 W. Ins.	64	G1 -44476	Motor Switch Assembly.
32	W -21237A	Resistor 60,000 Ohm 1/3 W. Carb.	65	G37 -26719	Phono. Term. Board
33A	W -21875	Resistor 100,000 Ohm 1/3 W. Carb.	66	W -21875	Resistor 100,000 Ohm 1/3 W. Carb.
33B	W -21875	Resistor 100,000 Ohm 1/3 W. Carb.	67	W -34018	Resistor 200,000 Ohm 1/3 W. Carb.
34	W -34020	Resistor 250,000 Ohm 1/3 W. Carb.	B	-44207B	Escutcheon (Dial)
35	W -23785	Resistor 500,000 Ohm 1/3 W. Carb.	W	-44208C	Escutcheon (Tun. Indic. Tube)
36	W -37590	Resistor 750,000 Ohm 1/3 W. Carb.	W	-43553	Rubber Mtg. Foot
37	W -21454	Resistor 1. Megohm 1/3 W. Carb.	W	-45067	Call Letter Sheet
38	W -26577	Resistor 3. Megohm 1/3 W. Carb.	W	-44386B	Knob (2) (Vol. Cont. & Station Select.)
39	W -44008	Resistor 10,000 Ohm 2 W. Carb.	W	-44387B	Knob (Motor Control)
40	W -37631	Resistor 32 Ohm 1/2 W. Flex.	W	-44381B	Knob (Line Sw. & Tone Con.)
41	W -22873	Resistor 220 Ohm 2 1/2 W. Flex.	W	-44432	Knob (Band Select. Sw.)
42ABC	G172 -36400	Socket Type 6K6	W	-45062	Knob (Local Distance Sw.)

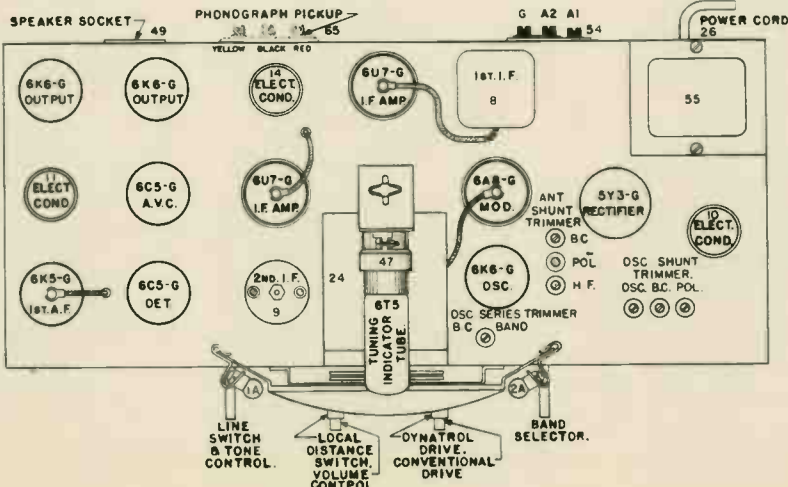


Fig. 2—Top View Model 1127

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Go	Ga
6K6G	Oscillator	6.3	147	147	-36	0	—	—
6A8G	Modulator	6.3	224	110	—	0	-36	110
6U7G	1st I-F Amplifier	6.3	174	110	—	0	—	—
6U7G	2nd I-F Amplifier	6.3	270	110	—	0	—	—
6C5G	Diode Detector	6.3	0	—	—	0	—	—
6C5G	AVC Diode	6.3	0	—	—	0	—	—
6K5G	1st A-F Amplifier	6.3	190	—	—	0	—	—
6K6G	Output	6.3	263	250	0	22	—	—
6K6G	Output	6.3	263	270	0	22	—	—
6C5G	"Squelch"	6.3	0	—	—	0	—	—
5Y3G	Rectifier	5.0	—	—	—	270	—	—

Power consumption approximately 90 watts at 117.5 volts.  
 Power output approximately 10 watts.  
 Voltage drop across speaker field 60 volts.

**Tuning The I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance Switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output. **DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.**

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

**Aligning The R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT"

**(D) SIGNAL INPUT FREQUENCIES**

	Min. Cap. Signal	Shunt Align.	Series Align.
American Broadcast Band	1850 Kilocycles	1700 Kilocycles	600 Kilocycles
Police & Amateur Band	6600 Kilocycles	6000 Kilocycles	
High Frequency Band	22 Megacycles	18 Megacycles	

**SETTING PUSH BUTTONS**

To set the electric tuning system, turn the receiver "ON" and hold No. 1 push button in the depressed position until the dial pointer stops. The key slot in No. 1 disc on the selector switch will now be in the "UP" position. Remove the key from its mounting and place it (knob up) through No. 1 hole in the disc identification bracket. If it does not drop into the slot in the disc, push it in with the fingers.

Turn the Local-Distance switch to the "Distance" po-

terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. **DO NOT READJUST THE OSCILLATOR TRIMMER.**

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

sition. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE, the station whose call letters have been placed in No. 1 push button. Then remove the key.

The electric tuning system is now correctly set for the 1st station. Follow through with this same procedure until the proper adjustments have been made for all eight of the favorite stations. When tuning the receiver by means of the push buttons, the Local-Distance switch should be turned to the "Local" position.

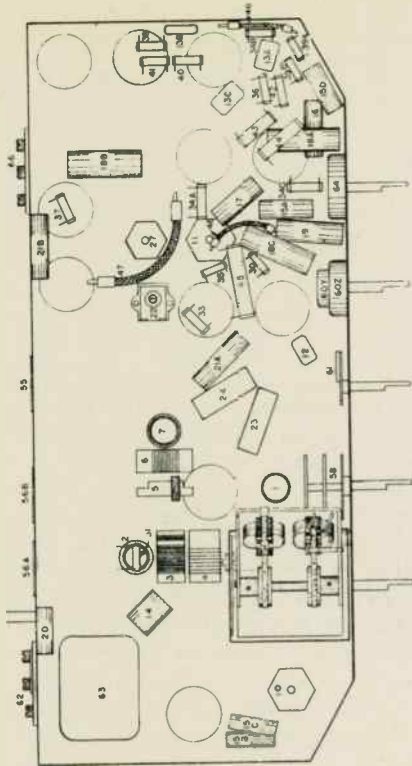


Fig. 3 Bottom View Model 1137

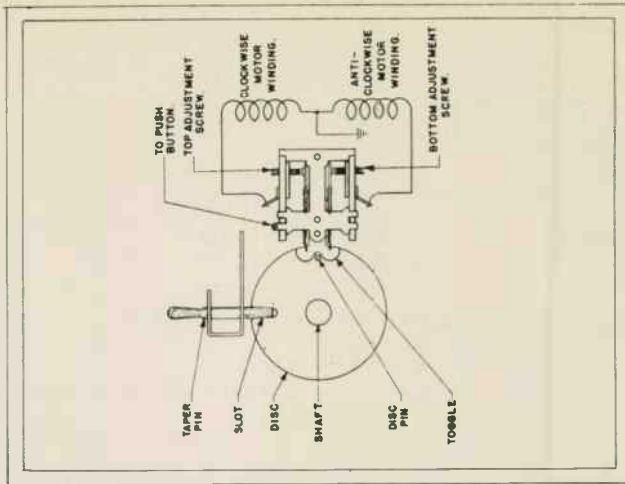


Fig. 6

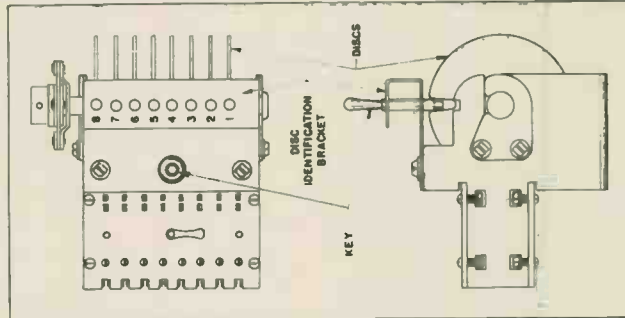


Fig. 7

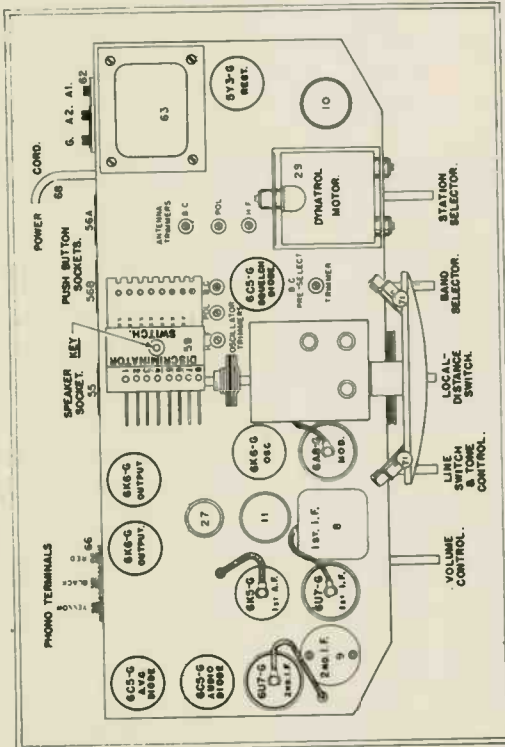


Fig. 2 Top View Model 1137

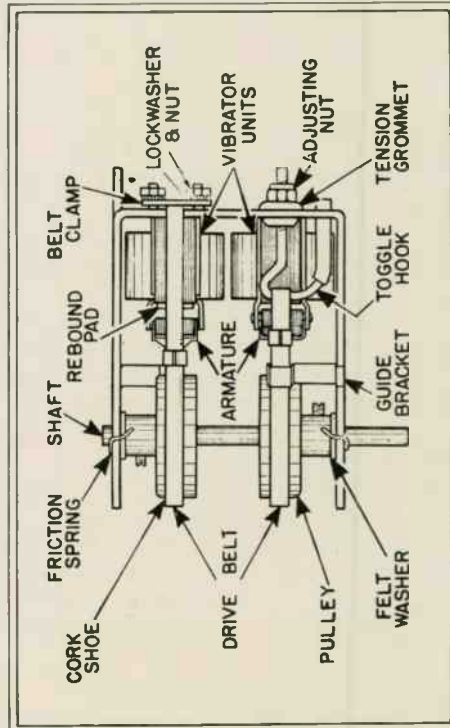


Fig. 5

**Dynatrol Motor**

Should either vibrator unit of the Dynatrol motor need readjustment the following procedure should be carefully followed:

- (a) Loosen the adjustment nut until the belt is loose on the pulley. The gap between the armature and "F" laminations should be approximately 3/16".
- (b) With the motor running, tighten the adjustment nut until chatter stops. Care should be taken, however, not to tighten this adjustment too tight as an unstable condition will be reached wherein a slight change may result in a locked motor. On the other hand, the

adjustment should not be so loose that the armature actually hits the rebound pad.

(c) Check the time required for the dial pointer to travel between two points on the dial. The adjustment nuts should be set so that approximately eight or nine seconds are required for the pointer to travel from one end of the dial to the other in either direction. If it is only convenient to check the speed of the pointer over a portion of the dial, the time required will be in direct proportion to the length of the dial scale traversed. That is, approximately 6 seconds will be required to travel two-thirds of the scale, etc.

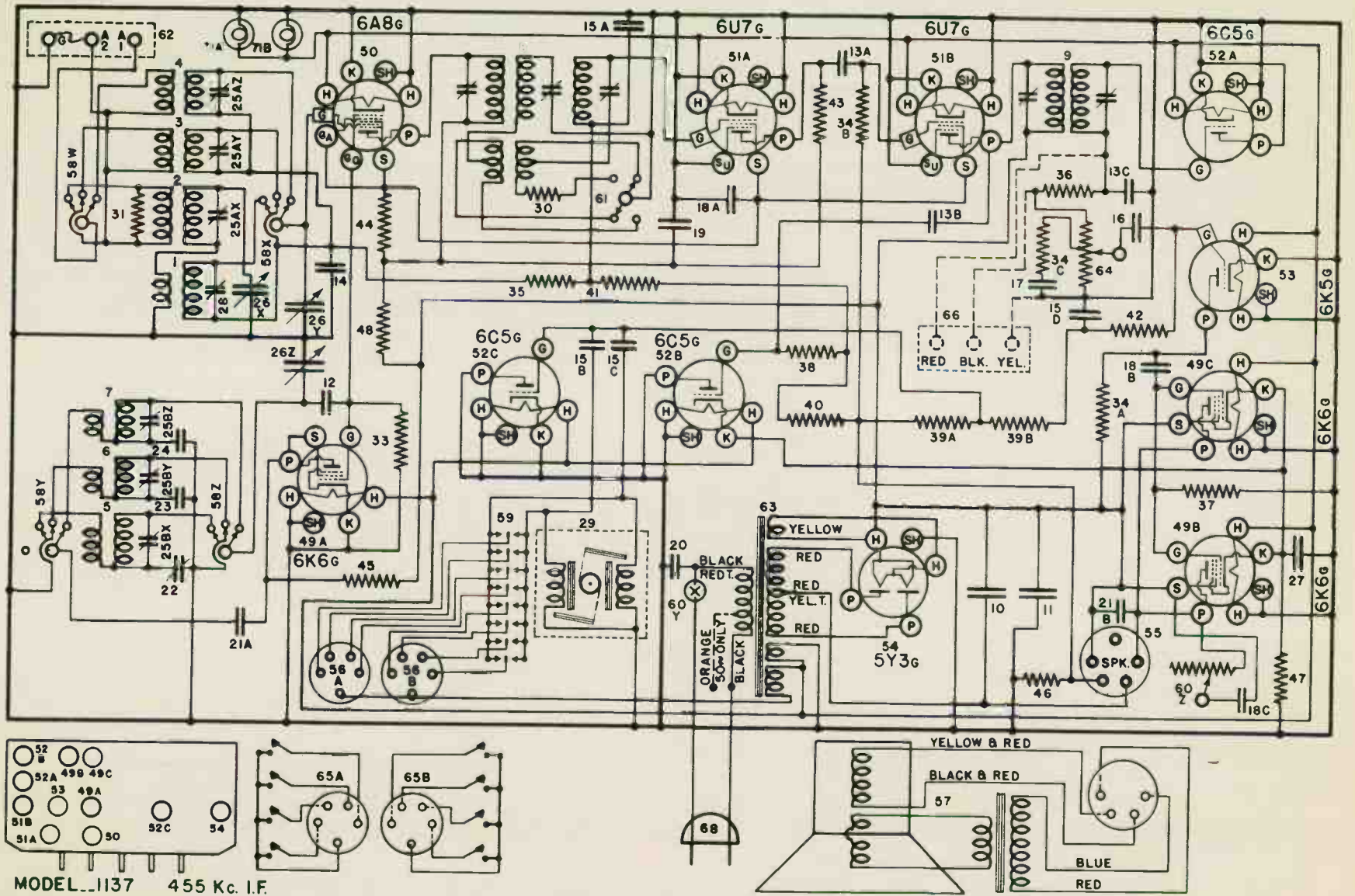


FIG. 1—WIRING DIAGRAM—MODEL 1137

## PARTS LIST—MODEL 1137

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G97—32001	Pre-Selector Coil B-C.	36	—36320	Resistor 120,000 Ohm ¼ W. Ins.
2	G138—32000	Ant. Coil B-C.	37	—34018	Resistor 200,000 Ohm 1/3 W. Carb.
3	G151—32000	Ant. Coil Pol.	38	—34020	Resistor 250,000 Ohm 1/3 W. Carb.
4	G150—32000	Ant. Coil H-F.	39A	—23785	Resistor 500,000 Ohm 1/3 W. Carb.
5	G139—32002	Osc. Coil B-C.	39B	—23785	Resistor 500,000 Ohm 1/3 W. Carb.
6	G154—32002	Osc. Coil Pol.	40	—37590	Resistor 750,000 Ohm 1/3 W. Carb.
7	G153—32002	Osc. Coil H-F.	41	—21454	Resistor 1 Megohm 1/3 W. Carb.
8	G161—32004	1st I-F 455 Kc.	42	—26577	Resistor 3 Megohm 1/3 W. Carb.
9	G154—32004	3rd I-F 455 Kc.	43	—44165	Resistor 5,000 Ohm ½ W. Carb.
10	W—44054	Condenser 30 Mf. 350 V.	44	—4921C	Resistor 10,000 Ohm 1 W. Carb.
11	W—36057B	Condenser 40 Mf. 300 V.	45	—44008	Resistor 10,000 Ohm 2 W. Carb.
12	G1—44886	Condenser Bimetal Temp. Control	46	W—37631	Resistor 32 Ohm ½ W. Flex.
13A	G2—34002	Condenser .0001 Mf. Molded	47	W—22873	Resistor 220 Ohm 2½ W. Flex.
13B	G2—34002	Condenser .0001 Mf. Molded	48	W—23013	Resistor 2,000 Ohm 1¼ W. Flex.
13C	G2—34002	Condenser .0001 Mf. Molded	49	G172—36400	Socket Type 6K6
14	W—35936	Condenser .05 Mf. 200 V.	50	G156—36400	Socket Type 6A8
15A	W—28621	Condenser .02 Mf. 200 V.	51	G171—36400	Socket Type 6U7
15B	W—28621	Condenser .02 Mf. 200 V.	52	G152—36400	Socket Type 6C5
15C	W—28621	Condenser .02 Mf. 200 V.	53	G9—43900	Socket Type 6K5
15D	W—28621	Condenser .02 Mf. 200 V.	54	G173—36400	Socket Type 5Y3
16	W—41461	Condenser .0014 Mf. 200 V.	55	G103—28807	Socket Speaker
17	W—28619	Condenser .006 Mf. 200 V.	56	G16—28807	Socket Push Button Cable
18A	W—22688	Condenser .1 Mf. 400 V.	57	W—41007	Cable Clamp, P. B. Cable
18B	W—22688	Condenser .1 Mf. 400 V.		—671BP18"M"	Speaker Spec. No. 1-D-1180
18C	W—22688	Condenser .1 Mf. 400 V.		—45184	V. C. & Cone Assern.
19	W—23615	Condenser .05 Mf. 400 V.		—45185	Field Coil
20	W—30805	Condenser .01 Mf. 400 V.		—44678	Output Transformer
21A	W—35139	Condenser .004 Mf. 400 V.		—43680	Cone Mtg. Ring
21B	W—35139	Condenser .004 Mf. 400 V.		—44049	Band Selector Switch
22	—40769	Condenser B. C. Osc. Series Trimmer	58	G1—44628	Switch Discriminator Assy. Complete
23	G23—34000	Condenser .001560 Mf. Pol. Osc. Fixed Trimmer	59	G2—44628	Flex. Coupling
24	G20—34000	Condenser .004910 Mf. H-F. Osc. Fixed Trimmer	60	—44024B	Tone Control (300,000 Ohm) & Line Switch
25	W—35951A	3 Sec. Shunt Trimmer Assy.	61	—44665A	Switch Local-Distance
26	G60—33002	3 Sec. Var. Tuning Cond. Dial Face (Glass)	62	G27—26719	Ant. & Gnd. Terminal Assy.
	—44891B	Mask (Polished Metal)	63	—44910	Power Trans. 110 V. 60 Cy.
	W—44146A	Support Brkt. (Dial Glass)		—44915	Power Trans. 110 V. 50 Cy.
	C—44110C	Ring (Glass Support)		—44913	Power Trans. 110 V. 25 Cy.
	W—44262	Arc (Glass Support)		—44916	Power Trans. 220 V. 50 Cy.
	W—44263	Pointer		—44914	Power Trans. 220 V. 25 Cy.
	W—44127	Screw—Pointer Mtg.	64	—44702	Volume Cont. 1 Meg. Tapped
	W—40486	Pulley & Hub Assy.	65A	W—44877A	Push Button—Cable & Plug Assy.
	G5—43564	Drive Cord	65B	W—44877A	Push Button—Cable & Plug Assy.
	—41582	Drive Belt	66	G37—26719	Phono. Terminal Assy.
	W—44813	Idler Pulley	67		
	W—44907A	Idler Mtg. Stud	68	B—33906A	Line Cord & Plug
	W—44908	Condenser 50 Mf. 25 V.	69		
27	W—41598	Condenser Pre-Select. Shunt	70		
28	—44516	Vibrator Motor Assy. (50-60 Cy.)	71	W—43567	Dial Light Bulb 6-8 V.
29	G4—44416	Vibrator Drive Unit (Left or Right)		G12—44363	Dial L. Socket Assy. Cabinet
	W—45218	Pulley (Vib. Motor)		—7P	
	W—44317A	Felt Washer (Shaft)		W—43552	Clamp—Spk. Plug
	W—43622	Friction Spring (Shaft)		W—43553	Rubber Mtg. Foot
	W—44382	Toggle Hook (Belt)		W—44380B	Knob (2)
	W—44319	Tubing ⅜" (For Hook)		W—44426A	Knob (3)
	—7593	Grommet (Tension)		C—44883B	Escutcheon (Dial)
	W—44701C	Nut—Adjusting		G1—45228	Push Button & Cable Assy.
	W—24074	Rubber Pad (Rebound)		W—44871A	Push Button (Bakelite)
	W—44384A	Clamp Plate (Belt)		B—44876A	Switch (Push Button) Only
	W—44745	Resistor 99 Ohm ¼ W. Ins.		W—44875	Celluloid Cover (Button)
30	—42401A	Resistor 20,000 Ohm 1/3 W. Carb.		—44902	Call Letter Sheet
31	—22196	Resistor 60,000 Ohm 1/3 W. Carb.		B—44873B	Escutcheon, Push Button
32		Resistor 100,000 Ohm 1/3 W. Carb.		W—40911	Tube Shield
33	—21237A	Resistor 100,000 Ohm 1/3 W. Carb.			
34A	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
34B	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
34C	—21875	Resistor 100,000 Ohm 1/3 W. Carb.			
35	—35600	Resistor 100,000 Ohm ¼ W. Ins.			

MODEL 1155

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go
6K7	R. F. Amplifier	6.3	238	100	3	0	3	—
6L7	Modulator	6.3	230	100	—	0	3.5	—5 to —30
6C5	Oscillator	6.3	140	—	—	—5 to —30	—	—
6K7	I-F Amplifier	6.3	230	95	3	0	3	—
6H6	Diode Detector	6.3	—	—	—	—	—	—
6Q7	A. F. Amplifier	6.3	155	—	—	0	2	—
6F6	Output Driver	6.3	210	210	—	0	17	—
6F6	(2) Output	6.3	360	235	—	0	17	—
5Z4	(2) Rectifiers	5.0	360	—	—	—	—	—

Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver chassis.

(b) Set the band selector switch to the broadcast band and rotate the station selector to 60 on the Broadcast Band. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the expressionator control knob to the left (OFF).

(c) Set the signal generator to 450 kilocycles.

(d) Close the middle trimmer condenser on the 2nd I-F transformer (Tert. Fig 4) so that it is moderately tight. (Do not force adjusting screw).

(e) Adjust the top and then the bottom trimmers (Sec. and Pri.) of the 2nd I-F transformer for maximum output.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube leaving the tube's grid clip in place.

(g) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the screw does not become dislodged from the nut).

(h) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(j) Adjust the middle trimmer of the 2nd I-F transformer by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

(k) Adjust the middle trimmer of the 1st I-F transformer by closing condenser until maximum output is obtained.

Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE, RED and GREEN, bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (BLUE, RED and GREEN bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" parallel trimmers (Fig. 4 and 2) in the order given for maximum put. Tune the station selector slightly to the generator signal for maximum output and then check the adjustments of the "R-F" (Fig. 4) and "ANT" trimmers (Fig. 2) in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the "series" trimmers (Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. Tune the station selector slightly to the generator output. Adjust the series trimmer while rotating the station selector back and forth slightly until no further improvement in output can be obtained.

(c) Signal Input Frequencies for Alignment:

	Shunt Alignment	Series Alignment
Weather Band (BLUE)	400 Kc	150 Kc
American Broadcast Band (RED)	1700 Kc	600 Kc
Police Band (GREEN)	6000 Kc	2500 Kc
High Frequency Band (VIOLET)	18000 Kc	

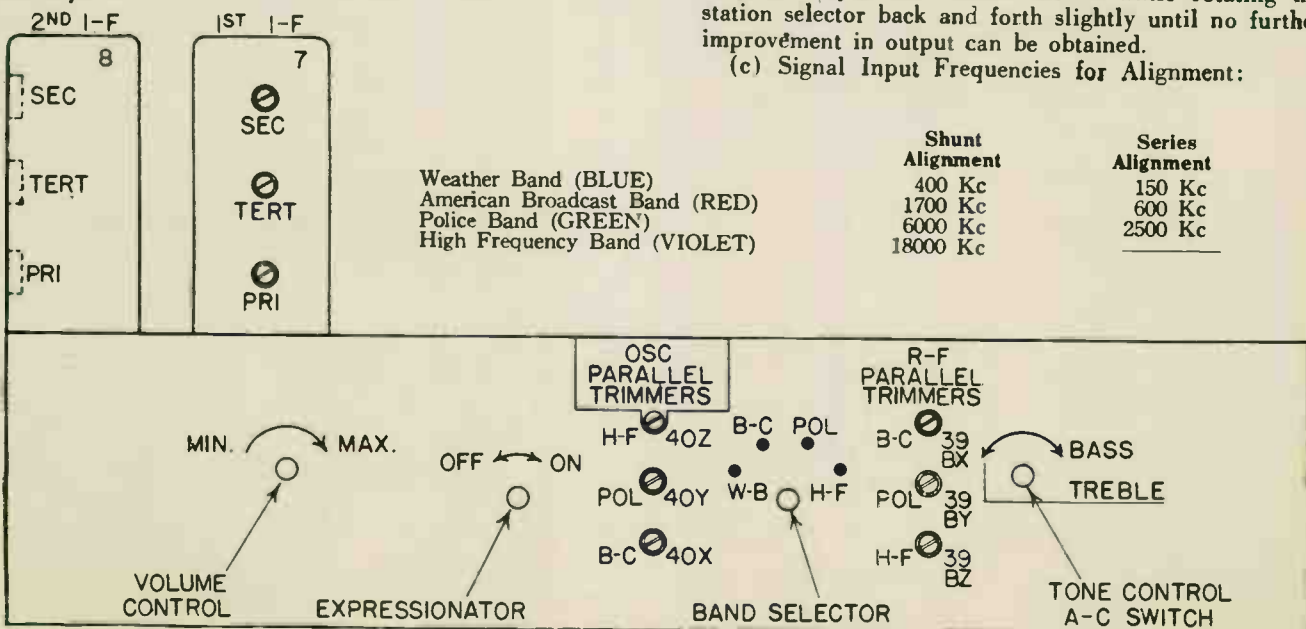


Fig. 4. Front View 1155

# PARTS LIST—MODEL 1155

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Description	Item No.	Part No.	Name	Description
1A	W -37922	Bulb	Dial Light	49B	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.
B	W -37922		Dial Light	49C	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.
C	W -37922		Dial Light	50	-33334	Resistor	400,000 Ohms, 1/4 W. Carbon
D	W -37922		Indicator Light	51A	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
2A	W -10145	Bulb	Auto-Expressionator Ballast	51B	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
B	W -10145	Bulb	Auto-Expressionator Ballast	51C	-36322	Resistor	500,000 Ohms, 1/4 W. Carbon
3	G2 -37965	Socket	Auto-Expressionator Ballast	52	-21454	Resistor	1.0 Megohm, 1/4 W. Carbon
4	G6 -32000	Coil	Ant. 150-400 Kc.	54A	W -37933	Resistor	1.0 Ohms, 1 Watt
5	G94 -32000	Coil	Ant. 540-1900 Kc.	54B	W -37933	Resistor	1.0 Ohms, 1 Watt
6	G95 -32000	Coil	Ant. 1900-6000 Kc.	55	W -22873	Resistor	220 Ohms, 2 1/2 W. Flex.
7	G93 -32000	Coil	Ant. 6-18 Mc.	56	None		
8	G66 -32004	Coil	1st I. F. Assem.	57A	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
9	G91 -32004	Coil	2nd I. F. Assem.	57B	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
10	G79 -32002	Coil	Osc. 150-400 Kc.	57C	W -28589	Resistor	350 Ohms, 1/4 W. Flex.
11	G80 -32002	Coil	Osc. 540-1900 Kc.	58	W -32337	Resistor	20 Ohm., Wire Wound
12	G81 -32002	Coil	Osc. 1900-6000 Kc.	59Z	W -37955	Resistor	4000 Ohms, Wire Wound
13	G78 -32002	Coil	Osc. 6-18 Mc.	59Y	W -37955	Resistor	4000 Ohms, Wire Wound
14	G67 -32001	Coil	R. F. 150-400 Kc.	60	W -30960	Resistor	2600 Ohms, 1 1/2 W. Flex.
15	G68 -32001	Coil	R. F. 540-1900 Kc.	61	W -27503	Resistor	1400 Ohms, 1/4 W.
16	G69 -32001	Coil	R. F. 1900-6000 Kc.	62	W -22180	Resistor	1650 Ohms, 1 1/4 W.
17Z	G66 -32001	Coil	R. F. 6-18 Mc.	63	W -23013	Resistor	2000 Ohms, 1 1/4 W.
18A	W -37632	Condenser	25 Mfd., 25 Volt	64	W -37987	Resistor	15000 Ohms, 1 W.
18B	W -36055	Condenser	12 Mfd., 25 Volt	65	-21876	Resistor	10,000 Ohms, 1/4 W.
19	W -36057	Condenser	35 Mfd., 400 Volt	66A	G54 -36400	Socket	Type 5Z4
20	G18 -34000	Condenser	35 Mfd., 400 Volt	66B		Socket	Type 5Z4
21	G6 -34002	Condenser	40 Mfd., 300 Volt	67	G152 -36400	Socket	Type 6C5
22A	G2 -34002	Condenser	.0056 Mfd., 300 Volt	68A		Socket	Type 6F6
22B	G2 -34002	Condenser	.000025 Mfd., 200 Volt	68B	G153 -36400	Socket	Type 6F6
23	G1 -34002	Condenser	.0001 Mfd., 200 Volt	68C		Socket	Type 6F6
24	G1 -34005	Condenser	.0001 Mfd., 200 Volt	69	G155 -36400	Socket	Type H6
25	W -34647	Condenser	.00025 Mfd., 200 Volt	70A	G151 -36400	Socket	Type 6K7
26A	W -35139	Condenser	.00025 Mfd., 300 Volt	70B	G159 -36400	Socket	Type 6K7
26B	W -35139	Condenser	.006 Mfd., 400 Volt	71		Socket	Type 6L7
27	W -30805	Condenser	.004 Mfd., 400 Volt	72	None		
28A	W -32378	Condenser	.01 Mfd., 400 Volt	73	-634CJ4	Speaker	
28B	W -32378	Condenser	.01 Mfd., 400 Volt	74	W -37956	Switch	Auto-Expressionator
29A	W -36541	Condenser	.01 Mfd., 400 Volt	75Z		Switch	
29B	W -36541	Condenser	.01 Mfd., 400 Volt	75Y	C -37957-A	Switch	Band Selector
30	W -28621	Condenser	.02 Mfd., 160 Volt	75X		Switch	
31A	W -35936	Condenser	.02 Mfd., 160 Volt	76	G27 -26719	Ter. Board	Ant. and Ground
31B	W -35936	Condenser	.02 Mfd., 200 Volt	77Y		Tone Con.	
31C	W -35936	Condenser	.05 Mfd., 200 Volt	77Z	-37966	On-off	
32	W -32380	Condenser	.05 Mfd., 200 Volt	78		Switch	
33A	W -27216	Condenser	.05 Mfd., 200 Volt	79	G34 -24628	Transformer	Audio
33B	W -27216	Condenser	.05 Mfd., 200 Volt	80	G36 -24628	Transformer	Base Compensator
34A	W -32780	Condenser	.05 Mfd., 200 Volt	81	G1 -37900	Transformer	60 Cycle, 110 V. Power
34B	W -32780	Condenser	.05 Mfd., 400 Volt	82	G2 -37900	Transformer	Universal Power
35	W -23615	Condenser	.05 Mfd., 400 Volt	83	G35 -24628	Transformer	Push-pull Output
36	W -37732	Condenser	.05 Mfd., 400 Volt	84Z	W -37962	Tuning Ind.	Shadow-graph
37	W -37954	Condenser	.3 Mfd., 160 Volt	84Y		Volume	1st A. F. Grid
38Z	W -37986	Condenser	Single Ant. Trimmer	85	-37907	Control	Driver Grid
39AZ		Condenser	Double Section Osc. Trimmer	86	G160 -36400	Socket	Type 6Q7
39AY	W -37891	Condenser	R. F. Trimmer	87	-27086	Resistor	6400 Ohms
39AX		Condenser	Ant. Triple Sec. 11. F. Trimmer	88	W -37983	Condenser	.017 Mfd., 200 Volt
39BZ		Condenser	Pol. Trimmer	89	W -30270	Condenser	.001 Mfd., 400 Volt
39BY	W -37891	Condenser	R. C. Trimmer	89	-27121	Resistor	5,000 Ohms, 1/4 Watt
39BX		Condenser	11. F. Trimmer	90	-31018	Resistor	200,000 Ohms 1/4 Watt
40Z		Condenser	R. F. Triple Sec. Pol. Trimmer		-37945	Dial Assem	Complete
40Y	W -35951	Condenser	B. C. Trimmer		-40531	Belt	Drive
40X		Condenser	11. F. Trimmer		-40537	Coupling	Flex. Drive
41	-37917	Condenser	Triple Sec. Osc. Pol. Trimmer		-40195	Face	Celluloid Dial
42Z	-37874	Condenser	L. F. Osc., Series Trimmer		-37968	Face	Glass Dial
42Y		Condenser	H. C. Osc. Series Trimmer		-40485	Pointer	Long
43Z		Condenser	Pol. Osc. Series Trimmer		-40484	Pointer	Short
43Y	G47 -33002	Condenser	3 Section Var. Tuning		-40486	Screw	Pointer Retaining
43X		Condenser			-37898	Ring	Glass
44	B -33906-A	Cable	Power Supply		-37897	Ring	Lens Retaining
45	G1 -37918	Cable	Speaker		-37894	Escutcheon	Escutcheon Retaining
46	-21453	Resistor	40,000 Ohms, 1/4 W.		-37896	Spring	Rubber Mgt.
47A	-35600	Resistor	100,000 Ohms, 1/4 W. Insul.		W -37117	Foot	Indicator Control
47B	-35600	Resistor	100,000 Ohms, 1/4 W. Insul.		W -22334	Cable	3 required
48	None				W -37339	Knob	2 required
49A	-35601	Resistor	300,000 Ohms, 1/4 W. Insul.		W -40192	Knob	Band Selector Switch
					W -37909	Pulley	Dial Light Assem.
					G2 -37965	Socket	Indicator Light
					G3 -37965	Socket	

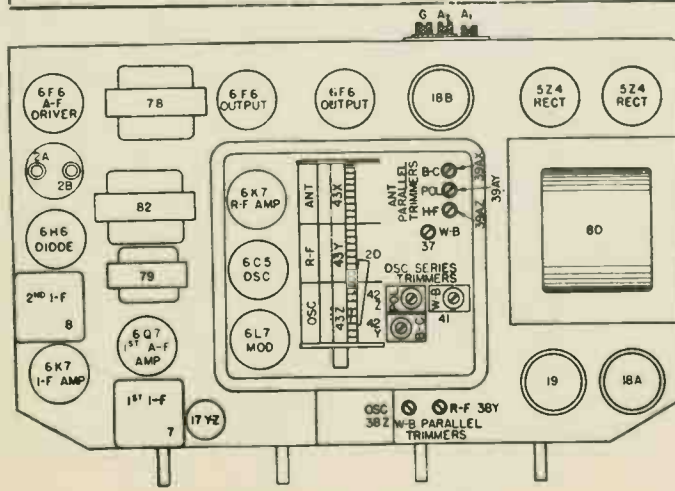


Fig. 2. Top View 1155

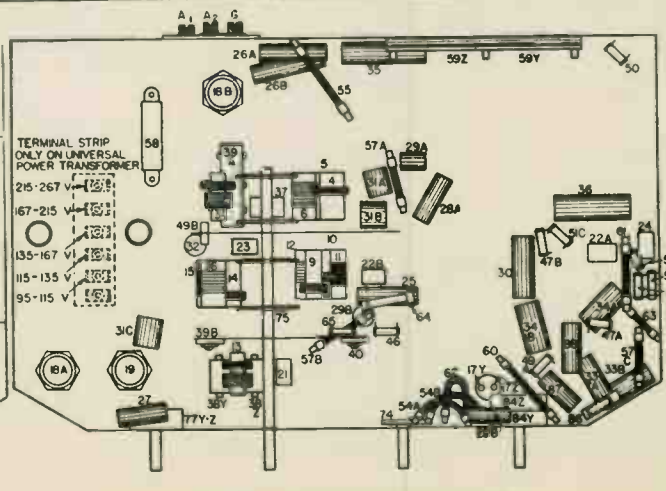


Fig. 3. Bottom View 1155

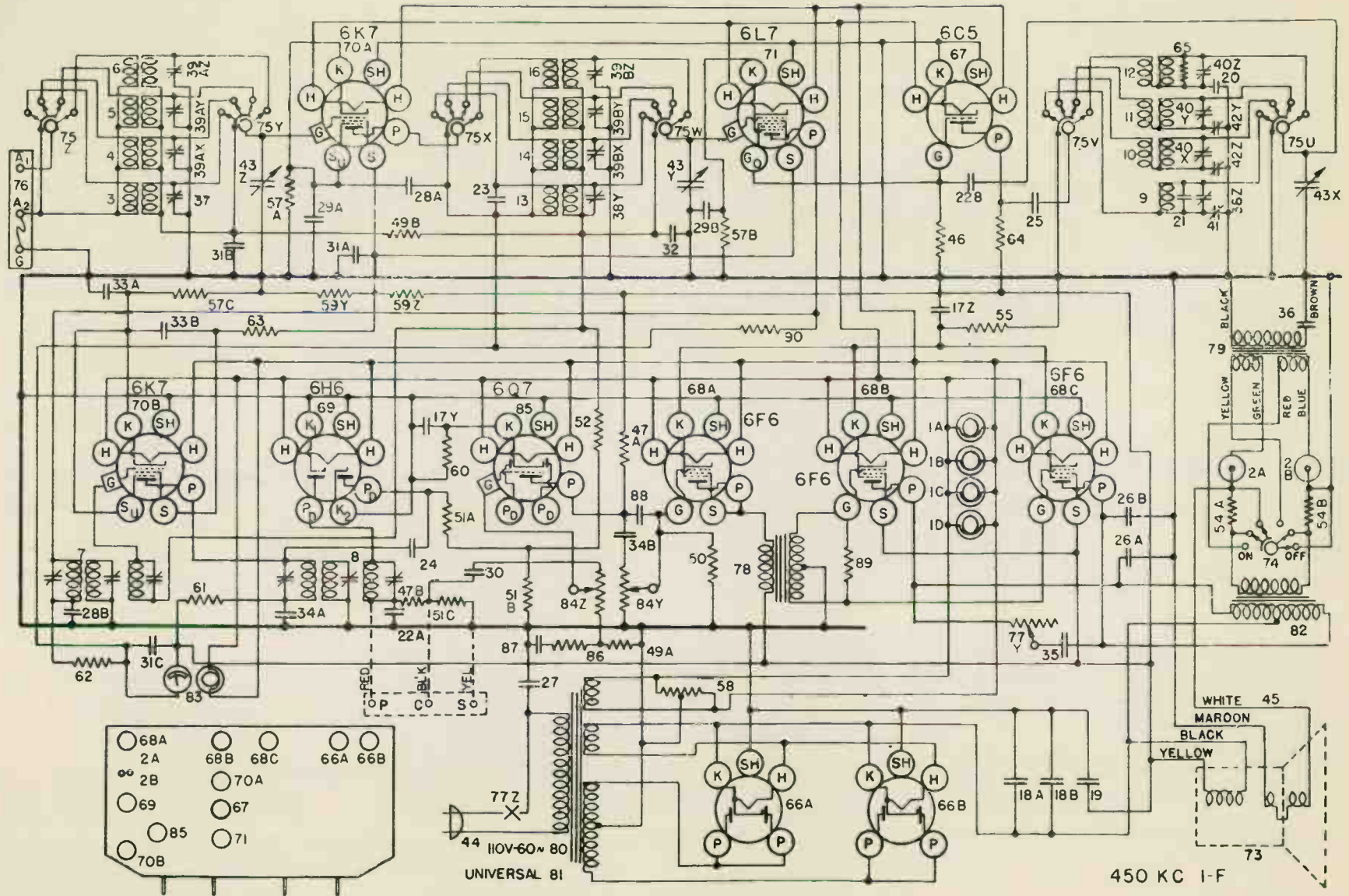


FIG. 1—WIRING DIAGRAM—MODEL 1155



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	S <sub>u</sub>	K	G <sub>a</sub>	G <sub>o</sub>
6K7	R-F Amplifier	6.3	100	—	110	3.3	3.3	—	—
6A8	Oscillator-Modulator	6.3	250	—	110	—	3.8	175	-4 to -12
6J7	AFC Control	6.3	160	—	140	6.3	6.3	—	—
6K7	I-F Amplifier	6.3	240	—	108	3.0	3.0	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—	—
6R7	Diode and 1st A-F Amplifier	6.3	75	—	—	—	2.3	—	—
6C5	A-F Driver	6.3	170	—	—	—	5.2	—	—
6N6	(2) Output	6.3	250	370	—	—	6.0	—	—
5Z4	Rectifier	5.0	—	—	—	—	270	—	—
W42419A	Tuning Tube	—	100-170	170	—	—	—	—	—
W41187	Auto-Expressionator Tube	—	Varies with power output.		—	—	—	—	—

Voltage drop across speaker field 120 volts.  
 Power output approximately 20 watts.  
 Power consumption approximately 123 watts.  
 All readings taken on 117.5 volt power supply.

TUNING I-F AMPLIFIER

- (a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic to P2 of the other 6N6 Output tube.
- (b) Check the 6J7 cathode bias which should be approximately 6.5 volts with no signal applied.
- (c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the "G" terminal of the receiver chassis.
- (d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.
- (e) Set the signal generator to 450 kilocycles.
- (f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.
- (g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.
- (h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).
- (i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.
- (j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.
- (k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.
- (l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.
- (m) Insert a 0.5 milliammeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 milliammeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF". If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON", the AFC is properly aligned.

Aligning R-F Amplifier.

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC.", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers, "Osc. Series"—Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

(c) SIGNAL INPUT FREQUENCIES

American Broadcast Band (BLUE)	Shunt Alignment	Series Alignment
Police and Amateur Band (RED)	1,400 Kilocycles	600 Kilocycles
High Frequency Band (GREEN)	5,000 Kilocycles	2000 Kilocycles
	18,000 Kilocycles	

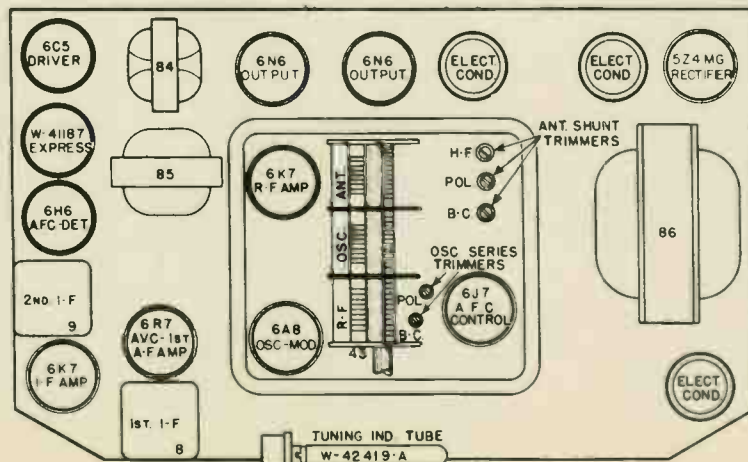


Fig. 2 Top View—1216

PARTS LIST—MODEL 1216

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1 ABCD	W -37922	Dial Light Bulb	45	G 2 -37918	Speaker Cable
	G 3 -37965	D. L. Socket	46	-35760	Resistor, 20,000 Ohm 1/4 W.
	W -4057	D. L. Shield	47	-33390	Resistor, 30,000 Ohm 1/4 W.
2	W -41187	Auto Express. Tube	48 AB	-35928	Resistor, 60,000 Ohm 1/4 W.
3	W -42119A	Neon Tuning Indi. Tube	49	-34019	Resistor, 75,000 Ohm 1/4 W.
	G 2 -42584	Neon Socket Assembly	50 ABC	-35500	Resistor, 100,000 Ohm 1/4 W.
	W -42589	Neon Tube Cover	51	-35530	Resistor, 200,000 Ohm 1/4 W.
	W -42592	Cover Gasket. (N. T.)	52	-35601	Resistor, 300,000 Ohm 1/4 W.
4		None	53 AB	-36321	Resistor, 400,000 Ohm 1/4 W.
5	G 94 -32000	Antenna Coil, B. C. B.	54 AB	-36322	Resistor, 500,000 Ohm 1/4 W.
6	G 108 -32000	Antenna Coil, Pol. B.	55	-36176	Resistor, 1.3 Megohm 1/4 W.
7	G 107 -32000	Antenna Coil, H. F. B.	56	-21451	Resistor, 1.1 Megohm 1/4 W.
8	G 90 -32001	1st I-F Assembly	57	-36688	Resistor, 3.1 Megohm 1/4 W.
9	G 126 -32001	2nd I-F Assembly	58	-32951	Resistor, 100 Ohm 3 W. Flex.
10	G 97 -32002	Osc. Coil, B. C. B.	59	W -25937	Resistor, 275 Ohm 1/4 W. Flex.
11	G 96 -32002	Osc. Coil, Pol. B.	60 AB	W -28589	Resistor, 350 Ohm 1/4 W. Flex.
12	G 95 -32002	Osc. Coil, H. F. B.	61	W -22514	Resistor, 750 Ohm 1/4 W. Flex.
13	G 68 -32001	R-F. Coil, B. C. B.	62 AB	W -21452	Resistor, 1100 Ohm 1/4 W. Flex.
14	G 75 -32001	R-F. Coil, Pol. B.	63	W -23013	Resistor, 2000 Ohm 1/4 W. Flex.
15	G 74 -32001	R-F. Coil, H. F. B.	64	W -23907	Resistor, 750 Ohm 1/4 W. Flex.
16 Z	W -37778	Condenser, 12 Mf. 25V.	65	-4921C	Resistor, 10,000 Ohm 1 W.
17	W -36055	Condenser, 35 Mf. 400V.	66	-36952	Resistor, 30,000 Ohm 1 W.
18 AB	W -42386	Condenser, 20 Mf. 300V.	67	W -42516	Resistor, 20,000 Ohm 1 W.
19	G 18 -34000	Condenser, 5000 Nmf.	68 Z		Resistor, 4,000 Ohm
20	G 5 -34002	Condenser, .00005 Mf. 200V.	68 X	W -11966	Resistor, 1,000 Ohm (Candohm)
21	G 10 -34002	Condenser, .00005 Mf. 300V.	68 W		Resistor, 3,000 Ohm
22	G 2 -34002	Condenser, .0001 Mf. 200V.	69	G 134 -36400	Socket Type, 5Z4
23	G 6 -34002	Condenser, .00025 Mf. 300V.	70	G 155 -36400	Socket Type, 6H6
24	G 1 -34005	Condenser, .00025 Mf. 300V.	71 AB	G 151 -36400	Socket Type, 6K7
25 AB	G 3 -34002	Condenser, .0005 Mf. 300V.	72	G 156 -36400	Socket Type, 6A8
26	W -35758	Condenser, .008 Mf. 400V.	73	G 164 -36400	Socket Type, 6R7
27	W -41461	Condenser, .0014 Mf. 200V.	74	G 157 -36400	Socket Type, 6I7
28	W -30805	Condenser, .01 Mf. 400V.	75 AB	G 165 -36400	Socket Type, 6N6
29		NONE	76 AB	G 152 -36400	Socket Type, 6C5
30 AB	W -36541	Condenser, .02 Mf. 100V.	77	G 167 -36400	Socket Type, Auto Expressionator
CD	W -28621	Condenser, .02 Mf. 200V.	78		See Item 3
31	W -41209	Condenser, .048 Mf. 200V.	79	649CJ4 "M"	Speaker, Spec. 1-D-668
32	W -35936	Condenser, .05 Mf. 200V.	80	-10701	Cone Assembly for above Spk.
33 AB	W -32380	Condenser, .05 Mf. 300V.	81	W -10295A	Field Coil for above Spk.
34	W -27216	Condenser, .05 Mf. 200V.	82	C -41235A	Phantom Control Switch
35 AB	W -32780B	Condenser, .05 Mf. 400V.	83	G 27 -26719	Band Selector Switch
CDE	W -43094	Condenser, .011 Mf. 160V.	84	W -42679	Ant. and Gnd. Terminal Assembly
36 AB	W -22688	Condenser, .1 Mf. 200V.	85	G 1 -37995	Resistor, 245 Ohm 1/2 W. Flex.
37	W -42554	Condenser, 12 Mf. 160V.	86	G 60 -34628	A-F Driver Transformer
40 Z	W -41218	R. C. Osc. Series Trimmer		-42557	Out-Put Transformer
40 Y	W -37891	Pol. Osc. Series Trimmer		-43088	Pwr. Trans., 60 Cy. 110V.
41	W -35951	3 Section Trimmer (Shunt)		-43089	Pwr. Trans., 50 Cy. 110V.
42	G 47 -33002	3 Section Trimmer (Shunt)		-43008	Pwr. Trans., 50 Cy. 220V.
43	MG 12 -42411	3 Section Var. Tuning Cond. Gang		-43170	Pwr. Trans., 25 Cy. 220V.
	C -42421	Dial Drive Assembly	87		See Item 86
	W -42325A	Dial Glass (Calibrated)	88 Z	-41375	Vol. Cont., 3 Meg.
	W -41144	Drive Unit	88 Y		Vol. Cont., 1 Meg.
	W -42180	Dial Hand (Long)	89	B -42295A	Fidelity Cont. and Line Switch
	W -40486	Dial Hand (Short)	90	G 101 -34403	Neutralizing Cond. Assembly
	W -13648	Hand Mtg. Screw	91	W -6705	Resistor, 3500 Ohm 1 W.
	E -13647	R. H. Indic. Flipper	92	W -24049A	Condenser, 1 Mf. 200V.
	W -13647	L. H. Indic. Flipper		C -31134	Escutcheon
	W -42308	Flipper Pulley		D -42043	Escutcheon Gasket
	W -43081	L. H. Flipper Cont. Cable		C -42041	Escutcheon Lens
	W -43080	R. H. Flipper Cont. Cable		D -30	Screws Escut. Mtg.
	W -40638	Indi. Cont. Cable		W -37339	Knob, V. C. and Station Selector
	W -11157	Drive Belt		W -40192B	Knob, Bd. Sel. and Phantom Cont.
	W -23877	Flex. Coupling		W -42490	Knob, Fid. Cont.
	W -37909A	Band Sel. Pulley		W -36117	Rubber Mtg. Feet
44	B -33406A	Power Cord and Plug		-6-P	Cabinet

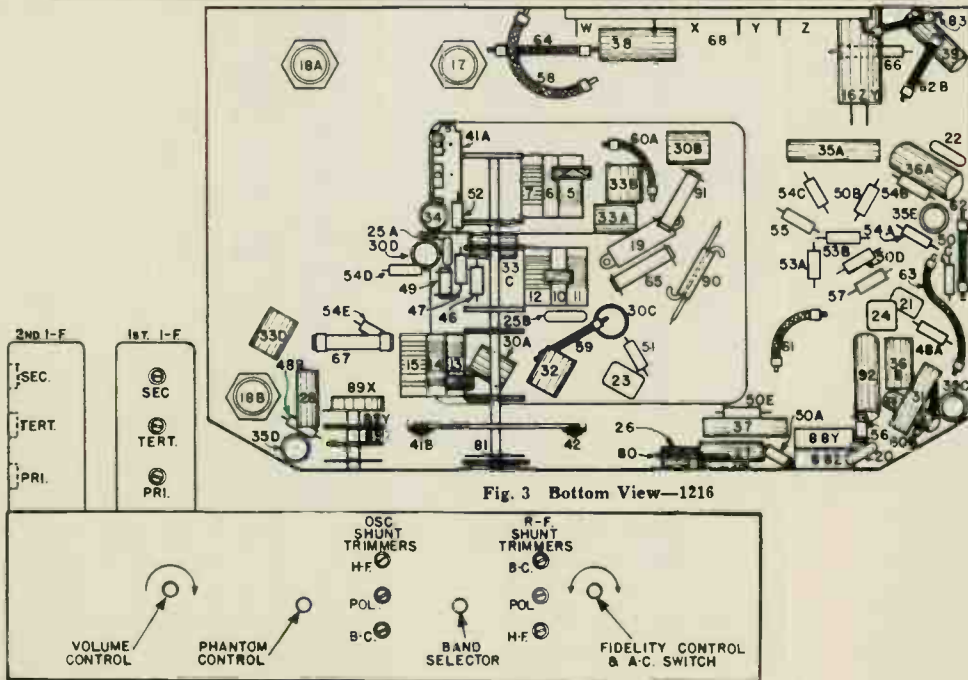


Fig. 4 Front View—1216

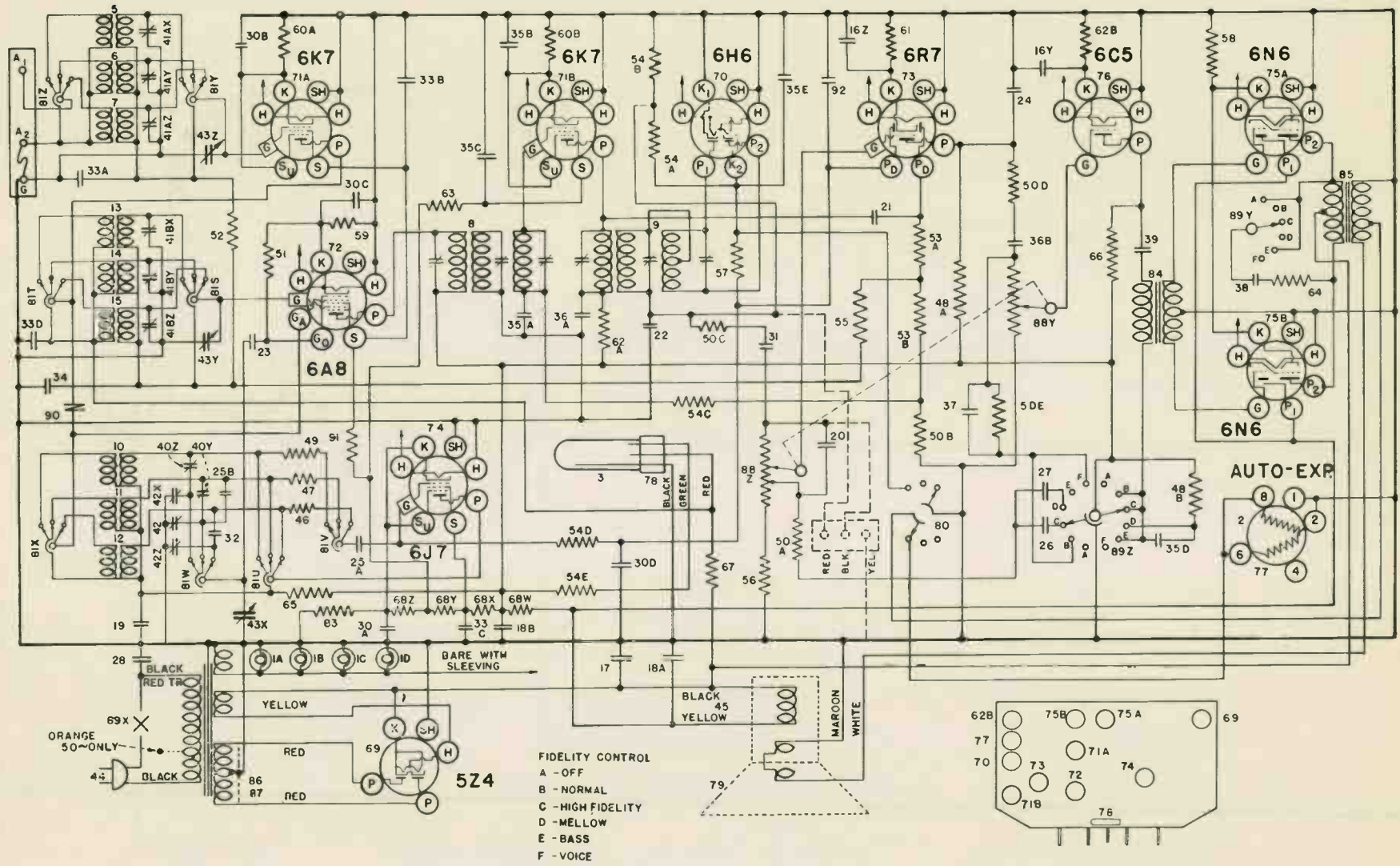


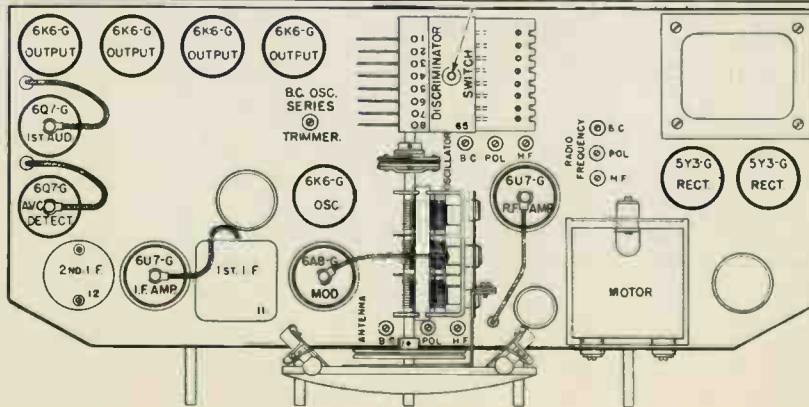
Fig. 1. Circuit Diagram—Model 1216

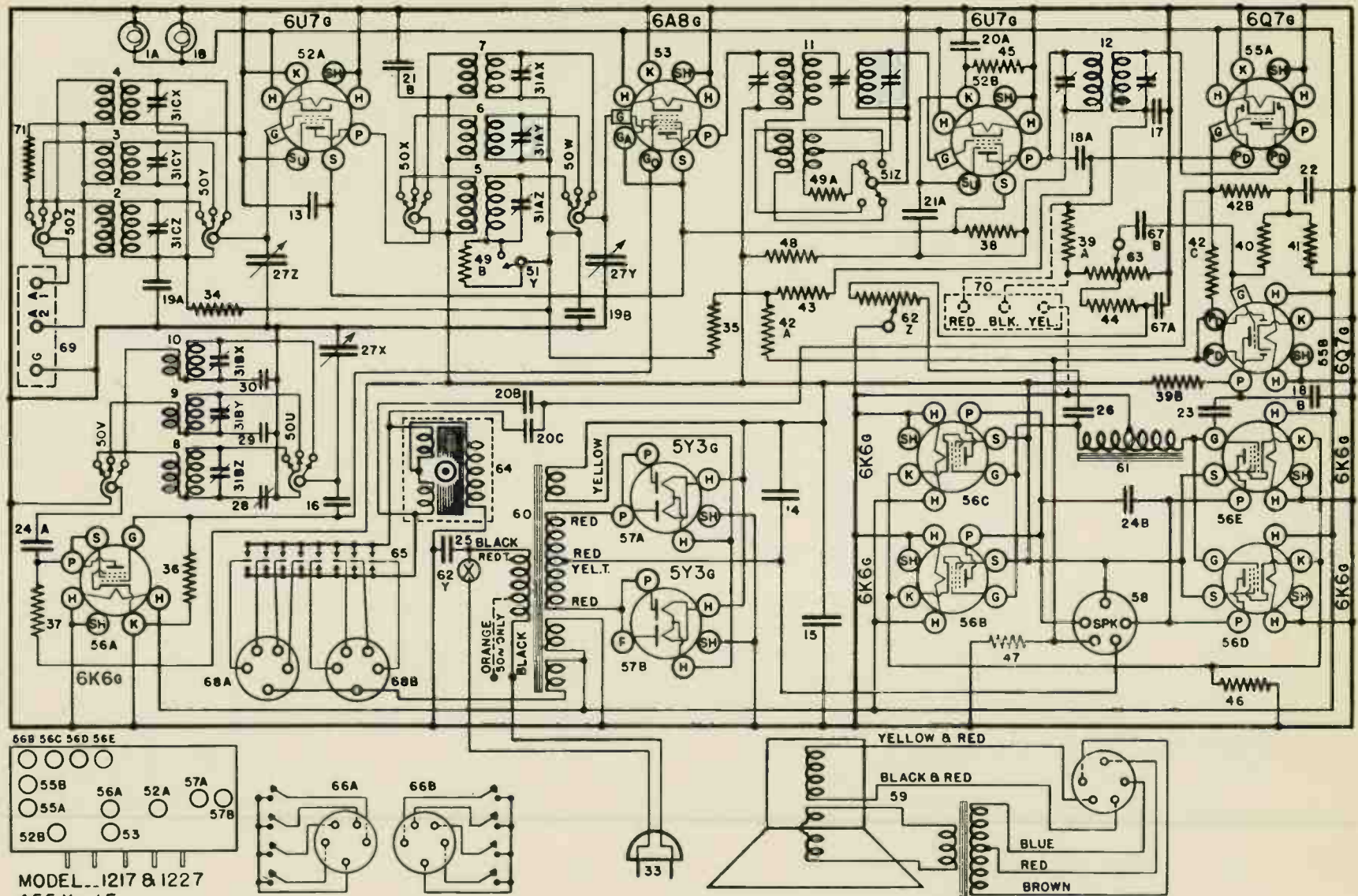
For Alignment Procedure, See Page 483

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6U7G	R. F. Amplifier	6.3	255	95	0	0	—	—
6A8G	Modulator	6.3	255	95	0	0	95	95
6K6G	Oscillator	6.3	125	125	—	—	—	—
6U7G	I. F. Amplifier	6.3	255	95	3	3	—	—
6Q7G	Det., AVC & "Squelch"	6.3	0	—	—	0	—	—
6Q7G	1st A. F. Amplifier	6.3	175	—	—	0	—	—
6K6G	(4) Output	6.3	245	255	—	—	32	—
5Y3G	(2) Rectifier	5.0	—	—	—	255	—	—

Item No.		Part No.	Description	Item No.	Part No.	Description	
1AB	W	-43567	Dial Light Bulb	57AB	G173-36400	Socket, Type 5Y3	
	G8	-45308	Dial Light Socket Assy	58	G103-28807	Socket Sprocket	
2	G145	-32000	Ant. Coil, B-C	W	40911	Tube Shield	
3	G146	-32000	Ant. Coil, Pol.	59	668RP18"MF"	Speaker, Mfg. Spec. 1-D-1154	
4	G117	-32000	Ant. Coil, H-F		45180	V. C. and Core Assy.	
5	G94	-32001	R-F. Coil, B-C		45181	Field Coil (50 Ohms -125 M. A.)	
6	G95	-32001	R-F. Coil, Pol.		45182	Output Trans.	
7	G96	-32001	R-F. Coil, H-F		44682	Speaker Plug	
8	G148	-32002	Osc. Coil, B-C		43980	Cardboard Ring—Cone Mfg.	
9	G149	-32002	Osc. Coil, Pol.	60	44705	Power Trans., 110 V. 60 Cy.	
10	G150	-32002	Osc. Coil, H-F		44793	Power Trans., 110 V. 50 Cy.	
11	G161	-32004	1st I-F. Assy.		44791	Power Trans., 220 V. 50 Cy.	
12	G166	-32004	2nd I-F. Assy.		44794	Power Trans., 220 V. 50 Cy.	
13	W	41672	Condenser, .40 Mf. 125 V.		44792	Power Trans., 220 V. 25 Cy.	
14	W	41054	Condenser, .30 Mf. 350 V.	61	G20-29535	Audio Input Choke	
15	W	-36057B	Condenser, .40 Mf. 300 V. (1217 only)	62	44704A	Tone Control (1 Meg.) and Line Switch	
15	W	41438A	Condenser, .40 Mf. 300 V. (1227 only)	63	44773	Volume Control (1 Meg.) and Line Switch	
16	G1	-44886	Condenser, Term. Compensating	64	45168	Motor—1217 only (50-60 Cy.)	
17	G5	-34002	Condenser, .00025 Mf. Molded		45169	Motor—1227 only (50-60 Cy.)	
18A	G1	-34002	Condenser, .00025 Mf. Molded	W	45165	Mtc. Foot—Motor	
18B	G1	-34002	Condenser, .00025 Mf. Molded	W	45164	Bracket—Motor Mfg.	
19A	W	35936	Condenser, .05 Mf. 200 V.	G1	44528	Discriminator Switch Assy.	
19B	W	35936	Condenser, .05 Mf. 200 V.	W	44898	Pin. Switch Adjust.	
20A	W	-28621	Condenser, .02 Mf. 200 V.	66AB	W	44877	Cable and Plug—Push Button
20B	W	-28621	Condenser, .02 Mf. 200 V.	67A	W	29619	Condenser, .006 Mf. 200 V.
20C	W	-28621	Condenser, .02 Mf. 200 V.	67B	W	29619	Condenser, .006 Mf. 200 V.
21A	W	-32378	Condenser, .01 Mf. 400 V.	68AB	G16	-28807	Socket—Push Button Plug
21B	W	-32378	Condenser, .01 Mf. 400 V.	69	G27	-26719	Ant. and Gen. Terminal Assy.
22	W	29910A	Condenser, .25 Mf. 200 V.	70	G37	-26719	Phone Terminal Assy.
23	W	-21049C	Condenser, .1 Mf. 200 V.	71	—22196	Resistor, 20,000 Ohm 1/2 W. Carb.	
24A	W	35139	Condenser, .004 Mf. 400 V.		7R	Cabinet (1227 only)	
24B	W	35139	Condenser, .004 Mf. 400 V.		7PF	Cabinet (1217 only)	
25	W	-30935	Condenser, .01 Mf. 400 V.	W	-43562	Sok. Plug Clamp	
26	W	-37988	Condenser, .017 Mf. 400 V.	W	-33533	Rubber Mtg. Foot (5-1217) (2-1227)	
27	G58	-33002	3 Section Var. Tun. Condenser	B	44207B	Escutcheon (Dial)	
	B	44815P	Dial Face (Glass)	W	44724	Extruded Rub. Spacer—Brkt. Mtg. 1227	
	B	44146B	Dial Mask (Metal)	B	45477	Escutcheon (2 Req.) Push Button	
	C	44814A	Dial Support Bracket	B	44876A	Push Button Switch only	
	W	45417	Ring—Dial Glass Support	W	44877A	Push Button Cable	
	W	44127	Dial Hand (Pointer)	W	44871A	Push Button (1227)	
	W	40486	Screw (Hand Mtg.)	W	45171	Push Button (1217)	
	G1	43564	Pulley and Hub Assy. (Drive Cord)	W	44390B	Knob—V. Cont.—Tuning (1227)	
	W	41582	Drive Cord (23 in.)	W	4426A	Knob—T. Cont.—Loc. Dist. (1227)	
	W	44908	Idle Stud	W	44751A	Knob—Band Sel. (1227)	
	W	44989	Spring—Drive Cord Tension	W	45105	Knob—V. Cont.—Tuning (1217)	
	W	44907A	Idle Pulley	W	45104	Knob—T. Cont.—Loc. Dist. (1217)	
	W	45448	Drive Belt	W	45103A	Knob—Band Sel. (1217)	
	W	45448	Friction Tubing—Motor Shaft	W	44875	Celluloid Cover	
	W	40769	B-C Osc. Series Trimmer (.00052 Mf.)	W	44902	Station Call Letter Sheet	
28			Variable	C	44404	Chassis Mtg. Bracket (1227)	
29	G23	34000	Pol. Osc. Fixed Series Condenser (.00156 Mf.)		7662	Screws—Brkt. Mtg. (1227)	
30	G24	34000	H-F. Osc. Fixed Series Condenser (.00525 Mf.)	<b>NON-INTERLOCKING PUSH BUTTONS</b>			
31	W	35951A	3 Section Shunt Trimmer Assy.	<b>Part No.</b>	<b>Description</b>		
32				G2	45228	Push Button Assy. Complete (2) (1217)	
33	B	33906A	Power Cord and Plug	B	44876A	Push Button Switch only (1217)	
34		35930	Resistor, 200,000 Ohm 1/2 W. Ins.	W	44877A	Push Button Cable and Plug only (1217)	
35		34883	Resistor, 2 Megohm 1/2 W. Carb.	W	45171	Push Button only (1217)	
36		21237A	Resistor, 60,000 Ohm 1/2 W. Carb.	G1	45228	Push Button Assy. Complete (1227)	
37		41008	Resistor, 10,000 Ohm 2 W. Carb.	B	448761J	Push Button Switch only (1227)	
38		23616	Resistor, 15,000 Ohm 1 W. Carb.	W	44877A	Push Button Cable and Plug only (1227)	
39A		35600	Resistor, 100,000 Ohm 1/2 W. Ins.	W	44871A	Push Button only (1227)	
39B		35600	Resistor, 100,000 Ohm 1/2 W. Ins.	W	44873B	Push Button Escutcheon (2) (1217 and 1227)	
40		37583	Resistor, 2.5 Megohm 1/2 W. Carb.	<b>INTERLOCKING PUSH BUTTONS</b>			
41		37215	Resistor, 1.5 Megohm 1/2 W. Carb.	<b>Part No.</b>	<b>Description</b>		
42A		23783	Resistor, 500,000 Ohm 1/2 W. Carb.	G1	45228	R. H. Push Button Assy. (1) (1217)	
42B		23783	Resistor, 500,000 Ohm 1/2 W. Carb.	B	45177	Push Button Escutcheon R. H.	
42C		23783	Resistor, 500,000 Ohm 1/2 W. Carb.	G5	45228	L. H. Push Button Assy. (1) (1217)	
43		21453	Resistor, 300,000 Ohm 1/2 W. Carb.	W	44873B	Push Button Escutcheon L. H.	
44		37472	Resistor, 50,000 Ohm 1/2 W. Carb.	W	45178	Trip Bar Connecting Link (1) (1217, 1227)	
45	W	28589	Resistor, 350 Ohm 1/2 W. Flex.	R	77	Screw—Trip Bar Mtg. (1217 and 1227)	
46	W	44455	Resistor, 250 Ohm 3 W. Flex.	W	44877A	P. B. Cable and Plug (1217 and 1227)	
47	W	37630	Resistor, 21 Ohm 1/2 W. Flex.	B	45475	R. H. Push Button Switch only (1217, 1227)	
48	W	23013	Resistor, 2,000 Ohm 1/2 W. Flex.	B	45176	L. H. Push Button Switch only (1217, 1227)	
49A		42401B	Resistor, 90 Ohm 1/2 W. W. Ins.	W	45171A	Push Button only (8) (1217)	
49B		42401B	Resistor, 90 Ohm 1/2 W. W. Ins.	G6	45228	R. H. Push Button Assy. (1) (1227)	
50		41532A	Band Selector Switch	G7	45228	L. H. Push Button Assy. (1) (1227)	
51		44771	Local Distance Switch	W	44871A	Push Button only (8) (1227)	
52AB	G171	36400	Socket, Type 6U7	W	44875	Celluloid Covers (8) (1217 and 1227)	
53	G156	36400	Socket, Type 6AB	W	45483	Shock Pad—P. B. Sw. (8) (1217 and 1227)	
55AB	G160	36400	Socket, Type 6Q7				
56A							
BCDE	G172	36400	Socket, Type 6K6				





MODELS 1217, 1227, 1228

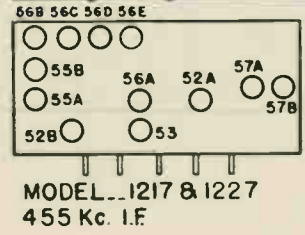


FIG. 1—WIRING DIAGRAM—MODELS 1217 and 1227 and 1228

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Gc
6K7	R-F Amplifier	6.3	238	105	2.5	2.5	—	—
6A8	Oscillator-Modulator	6.3	235	105	2.5	2.5	170	5 to 12
6J7	A. F. C. Control	6.3	170	105	—	1.8	—	—
6K7	Signal I-F Amplifier	6.3	220	100	3.0	3.0	—	—
6K7	AFC AVC I-F Amplifier	6.3	220	100	3.0	—	—	—
6H6	AFC Detector	6.3	0	0	—	—	—	—
6R7	Diode 1st A-F Amplifier	6.3	80	—	—	3.0	—	—
6C5	A-F Driver	6.3	220	—	—	5.8	—	—
6N6	(2) Output	6.3	350	—	—	2.6	—	—
5Z4	(2) Rectifier	4.6	—	240	—	—	—	—
Phantom Conductor Tube — Varies with power output.						348		

Voltage drop across speaker field 108 volts.

Power Output approximately 17 watts.

Power Consumption approximately 130 watts.

All readings taken on 117.5 volt power supply.

## ALIGNMENT PROCEDURE

This model receiver should be turned-on and allowed to "warm-up" for about 15 minutes before aligning its circuits.

It is a High Fidelity receiver and in order to secure maximum performance the alignment should be done with precision instruments. The alignment condensers should not be readjusted just to determine if they are properly tuned. Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier was slightly mistuned while Fig. 6, shows a curve made from actual measurements of a receiver employing a triple-tuned I-F amplifier which was properly aligned with the use of a FREQUENCY MODULATED R-F signal generator and an oscilloscope.

The alignment of the AFC circuit may be checked by means of a modulated signal generator and output meter as follows:

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf. or larger, condenser—not electrolytic—to P2 of the other 6N6 Output tube.

(b) Connect the output of the signal generator through a .00025 mf. condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.

(c) Rotate the Phantom Control to the left-hand position (NORMAL).

(d) Adjust the frequency of the signal generator in the region of 450 kilocycles for maximum reading on the output meter.

(e) Without altering the connections or adjustments of the signal generator or output meter connect an antenna to the antenna terminal "A1" and tune-in a local broadcast station. Turn off modulation of signal generator. Adjust station selector slightly for zero beat.

(f) Rotate the Phantom Control to its middle position and listen to the beat note. If the note is less than 200 cycles, or the equivalent of some tone below middle C on the piano, the AFC alignment is satisfactory.

(g) If the beat note is higher than middle C re-alignment is necessary.

(h) In cases where the beat note is not more than about two octaves above middle C or from 1000 to 1500 cycles the AFC circuit may be aligned for zero beat by making a slight adjustment of the rear trimmer condenser on the AFC I-F transformer (Fig. 2, Item No. 81). This circuit is very critical and a slight adjustment will produce a great change in the beat note.

(i) Where the AFC is considerably out of alignment as evidenced by a beat note of higher than 1500 cycles the standard alignment procedure outlined below should be followed.

## Tuning I-F Amplifier.

The I-F amplifier employs two triple-tuned signal I-F transformers and one double-tuned AFC I-F transformer.

## I. Conventional Method.

(a) Connect the output meter and signal generator as outlined above in (a) and (b) except that the signal generator should be connected through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place.

(b) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the fidelity control to its middle position and turn the phantom control to the left (NORMAL).

(c) Set the signal generator to 450 kilocycles.

(d) Close the middle trimmer condenser of the 2nd I-F transformer (Fig. 4, item No. 7) so that it is moderately tight. (Do not force adjustment screw).

(e) Adjust the top trimmer and then the bottom trimmer (Sec. & Pri.) of the 2nd I-F transformer for maximum output. Do not readjust the middle trimmer. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc. Mod. tube, leaving the tube's grid clip in place.

(g) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw, from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(h) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and increase the output of the signal generator if necessary.

(j) Adjust the middle trimmer of the 2nd I-F transformer, by opening, until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

(k) Adjust the middle trimmer of the 1st I-F transformer, by closing, until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

(l) To adjust the AFC system it will be necessary to remove the signal generator lead from the receiver and adjust the 6J7 cathode bias to 4.8 volts by means of the variable control (Illustration No. 73—Fig. 3) in this cathode circuit. The cathode voltage is measured between the cathode terminal and chassis.

(m) Turn the phantom control to the left (NORMAL) and connect the signal output lead through a .02 mf. condenser to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(n) Adjust the signal generator to 450 kilocycles.

(o) Adjust the front trimmer (plate winding) of the AFC I-F transformer for minimum reading on the output meter. It will be necessary to retard the volume control of the receiver in order to prevent AVC action. A fairly strong I-F signal will be required. (An insulated screw driver should be used for aligning the AFC I-F amplifier system).

(p) Insert an 0 - 5 milliammeter in series with the lead to the cathode terminal of the 6J7 socket and note the current reading.

(q) Turn the phantom control to its middle position and increase the output of the signal generator to approximately 100,000 microvolts.

(r) Transfer the output lead of the signal generator from the 6A8 tube to the top cap of the 6K7 AFC I-F amplifier tube, leaving the tube's grid clip in place.

(s) Adjust the rear trimmer of the AFC I-F transformer for the same value of cathode current as obtained in (p) above. This value of current will be obtained with the trimmer closed, with it open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used.

(t) To check on the AFC adjustment, disconnect the equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC ON and OFF. If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 20 kilocycles of the station selector setting with the AFC ON, the AFC is properly aligned. If distortion is noted and the set will not automatically tune-in stations as described, the AFC alignment should be rechecked.

## II. Oscilloscope Method.

(a) Connect the output of a FREQUENCY MODULATED R-F signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the receiver chassis. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The binding post marked "GND" should be connected to the receiver chassis and the other binding post should be connected to the plate of the 6R7 tube. (Be sure the oscilloscope is protected from D. C. by connecting a condenser, .1 mf. to .05 mf., in series with the lead connected to the plate of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control knob to the right (ON), turn the fidelity control to the middle position and turn the phantom control to the left (NORMAL).

(d) Set the signal generator to 450 kilocycles. See instructions supplied with signal generator and oscilloscope.

(e) Close the middle trimmer condenser on the 2nd I-F transformer so that it is moderately tight. (Do not

force adjustment screw).

(f) Adjust the top trimmer of the 2nd I-F transformer so that the nose of the selectivity curve is centered on the resonance axis (R) of the transparent scale supplied with the oscilloscope.

(g) Adjust the bottom trimmer of the 2nd I-F transformer for maximum amplitude of the selectivity curve on resonance line (R).

(h) Reduce the output of the signal generator and adjust the middle trimmer of the 2nd I-F transformer for maximum amplitude and symmetry of the selectivity curve about the resonance line.

NOTE: Keep the base of the selectivity curve centered on the transparent scale from -15 to +15 and keep the signal generator output as low as possible in order to prevent AVC action in the receiver.

(i) Readjust the bottom trimmer of the 2nd I-F transformer for maximum symmetry and amplitude.

(j) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(k) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw from the closed position. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(l) Increase the output of the signal generator and adjust the top trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(m) Adjust the bottom trimmer of the 1st I-F transformer for maximum amplitude.

(n) Reduce the output of the signal generator and adjust the middle trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(o) Carefully repeat operations (h), (i) and (m) for more accurate adjustments. (See Fig. 6).

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 100 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and the "ANT" trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, 34Z and 34Y — Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)  
Police and Amateur Band (RED)  
High Frequency Band (GREEN)

**Shunt Alignment**  
1,400 Kilocycles  
5,000 Kilocycles  
18,000 Kilocycles

**Series Alignment**  
600 Kilocycles  
2000 Kilocycles

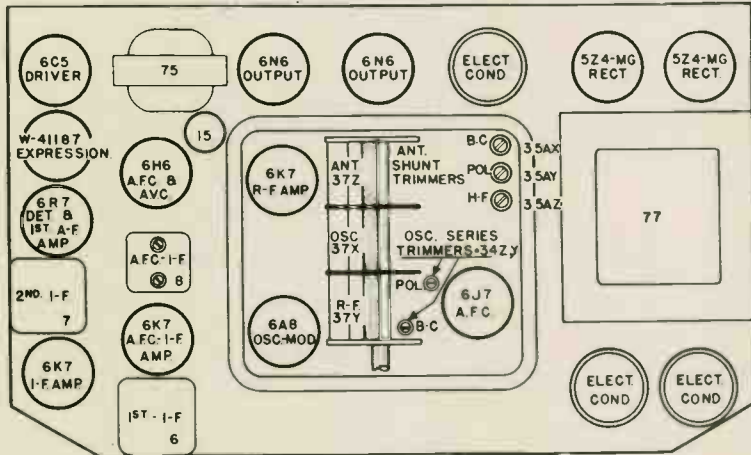


Fig. 2. Top View—1316

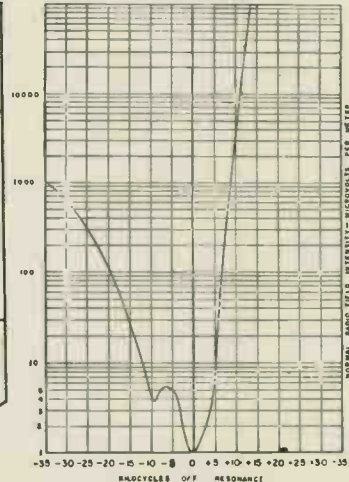


Fig. 5

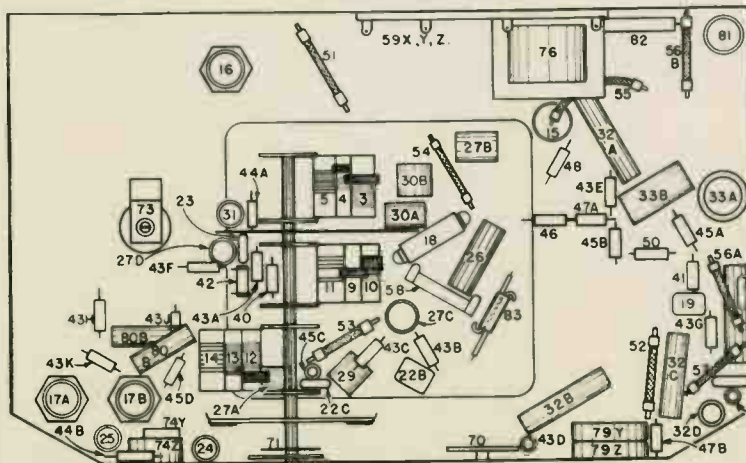


Fig. 3. Bottom View—1316

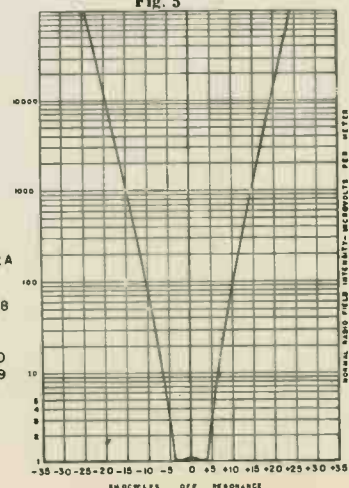


Fig. 6

PARTS LIST—MODEL 1316

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light	43A)		
	G3 -37965	Light Socket Assembly	To	-35600	Resistor 100,000 Ohm 1/4 W. Insulated
	W -40570	Light Shield	43K		
2	W -41187	Phantom Conductor Tube	44A	35601	Resistor 300,000 Ohm 1/4 W. Insulated
3	G94 -32000	Ant. Coil -B-C-B	44B	35601	Resistor 300,000 Ohm 1/4 W. Insulated
4	G10F -32000	Ant. Coil -Pol-B	45A	36322	Resistor 500,000 Ohm 1/4 W. Insulated
5	G10F -32000	Ant. Coil -H-F-B	45B	36322	Resistor 500,000 Ohm 1/4 W. Insulated
6	G107 -32001	1st I-F Assembly	45C	36322	Resistor 500,000 Ohm 1/4 W. Insulated
7	G91 -32001	2nd I-F Assembly	45D	36322	Resistor 500,000 Ohm 1/4 W. Insulated
8	G10F -32004	A-F-C. I-F Assembly	46	37500	Resistor 750,000 Ohm 1/4 W. Insulated
9	G97 -32002	Osc. Coil B-C-B	47A	-35602	Resistor 1. Megohm 1/4 W. Insulated
10	G96 -32002	Osc. Coil Pol.-B	47B	-35602	Resistor 1. Megohm 1/4 W. Insulated
11	G95 -32002	Osc. Coil H-F-B	48	36176	Resistor 1.3 Megohm 1/4 W. Insulated
12	G68 -32001	R-F Coil B-C-H	49	NONE	
13	G75 -32001	R-F Coil Pol.-B	50	36688	Resistor 3. Megohm 1/4 W. Insulated
14	G74 -32001	R-F Coil H-F-B	51	W -23012A	Resistor 40 Ohm 1/2 W. Flexible
15Z	W -37632	Condenser 12 Mfd. 25 V. Electrolytic	52	W -21964	Resistor 165 Ohm 1/2 W. Flexible
15Y		Condenser 25 Mfd. 25 V. Electrolytic	53	W -25937	Resistor 275 Ohm 1/2 W. Flexible
16	W -36055	Condenser 35 Mfd. 400 V. Electrolytic	54	W -28589	Resistor 350 Ohm 1/2 W. Flexible
17A	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	55	W -28106	Resistor 500 Ohm 1/2 W. Flexible
17B	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	56A	W -21452	Resistor 1100 Ohm 1/4 W. Flexible
18	G18 -34000	H-F Osc. Fixed Series Cond. (5500Mmfd)	56B	W -21452	Resistor 1100 Ohm 1/4 W. Flexible
19	G8 -34002	Condenser .00001 Mfd. (Molded)	57	W -23013	Resistor 2000 Ohm 1/2 W. Flexible
20	NONE		58	W -37987	Resistor 15000 Ohm 1W Wire Wound
21	G10 -34002	Condenser .00005 Mfd. (Molded)	59Z		4000 Ohm
22A	G2 -34002	Condenser .0001 Mfd. (Molded)	59Y	W -11260	4000 Ohm Candi-hm
22B	G2 -34002	Condenser .0001 Mfd. (Molded)	59X		200 Ohm
22C	G2 -34002	Condenser .0001 Mfd. (Molded)	60A	G154 -36400	Socket Type 5Z4
23	G3 -34002	Condenser .0005 Mfd. (Molded)	60B	G154 -36400	Socket Type 5Z4
24	W -25435	Condenser .003 Mfd. 400 V. Tubular	61	G155 -36400	Socket Type 6H6
25	W -30835	Condenser .01 Mfd. 400 V. Tubular	62A	G151 -36400	Socket Type 6K7
26	W -37988	Condenser .017 Mfd. 200 V. Tubular	62B	G151 -36400	Socket Type 6K7
27A	W -36541	Condenser .02 Mfd. 160 V. Tubular	62C	G151 -36400	Socket Type 6K7
27B	W -36541	Condenser .02 Mfd. 160 V. Tubular	63	G156 -36400	Socket Type 6A8
27C	W -36541	Condenser .02 Mfd. 160 V. Tubular	64	G164 -36400	Socket Type 6R7
27D	W -36541	Condenser .02 Mfd. 160 V. Tubular	65	G157 -36400	Socket Type 6J7
28	W -28621	Condenser .02 Mfd. 200 V. Tubular	66A	G165 -36400	Socket Type 6N6
29	W -11209	Condenser .048 Mfd. 200 V. Tubular	66B	G165 -36400	Socket Type 6N6
30A	W -35936	Condenser .05 Mfd. 200 V. Tubular	67	G152 -36400	Socket Type 6C5
30B	W -35936	Condenser .05 Mfd. 200 V. Tubular	68	G167 -36400	Socket Type 5 prong 11am
31	W -32380	Condenser .05 Mfd. 200 V. Tubular	69		Speaker -734-CJ-4
32A	W -27216	Condenser .05 Mfd. 200 V. Tubular		-41603	Speaker Cone Assembly
32B	W -27216	Condenser .05 Mfd. 200 V. Tubular		-41601	Speaker Field Coil
32C	W -27216	Condenser .05 Mfd. 200 V. Tubular	70	W -41029	Phantom Control
32D	W -27216	Condenser .05 Mfd. 200 V. Tubular	71	C -41235	Band Selector Switch
33A	W -32780B	Condenser .05 Mfd. 400 V. Tubular	G27	26719	Ant & Grid. Terminal Assembly
33B	W -32780B	Condenser .05 Mfd. 400 V. Tubular	73	W -41287	A-F-C Bias Control
34Z	W -11218	B-C Osc Series Condenser (200 Mmfd)	74Z		Fidelity Control
34Y		Pol. Osc Series Condenser (2000 Mmfd.)	74Y		A-C Switch
35	W -37819	3 Section Trim. Assy. (Ant & R-F Shunt)	75	G2 -37995	Audio Driver Transformer
36	W -35951	3 Section Trimmer Assy. (Osc. Shunt)	G52	-24628	Audio Output Transformer
37	G47 -33002	3 Section Var. Tuning Condenser	77	G1 -37900	Power Transformer 110 V. 60 Cy.
	MG12 -11211	Dial Drive Assembly Complete	78	G2 -37900	Universal Power Transformer
	C -41150	Dial Glass	79Z		Volume Control 1st A-F Grid
	W -11138	Dial Mask	79Y		Volume Control 2nd A-F Grid
	W -40804	Cushion, Dial Glass	80A	W -41461	Condenser .0014 Mfd. 200 V. Tubular
	W -41144	Long Pointer	80B	W -41461	Condenser .0014 Mfd. 200 V. Tubular
	W -41146	Short Pointer	81	W -37732	Condenser .3 Mfd. 160 V. Tubular
	W -40486	Pointer Mtg. Screw	82		Resistor 20,000 Ohm 1W. Carbon
	W -41157	Drive Belt	83	G101 -34403	1.9 Mmfd. Coupling Condenser
	W -40638	Indicator Control Cable		C -41219	Escutcheon
38	B -33906A	Power Cord & Plug		B -41233	Escutcheon Retaining Spring
39	G2 -37918	Speaker Cable		W -40365	Escutcheon Felt
40	W -36760	Resistor 20,000 Ohm 1/4 W. Insulated		B -41232	Dial Lens
41	W -36761	Resistor 40,000 Ohm 1/4 W. Insulated		W -41234	Lens Retaining Spring
42	W -37472	Resistor 50,000 Ohm 1/4 W. Carbon		W -36117	Mounting Foot (Rubber)
				W -37339	Knob (3 used)
				W -40192B	Knob (2 used)

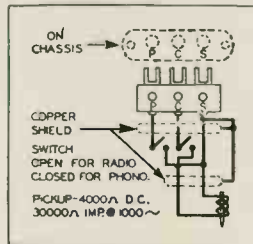


Fig. 7. Phonograph Pickup

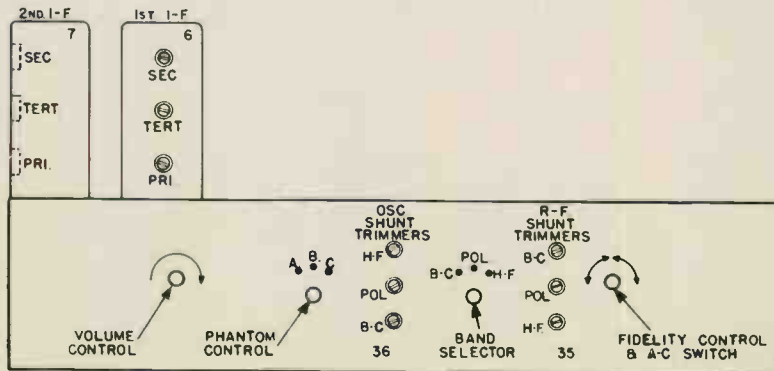
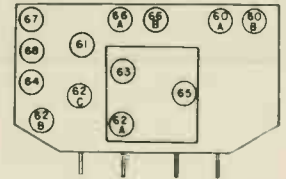
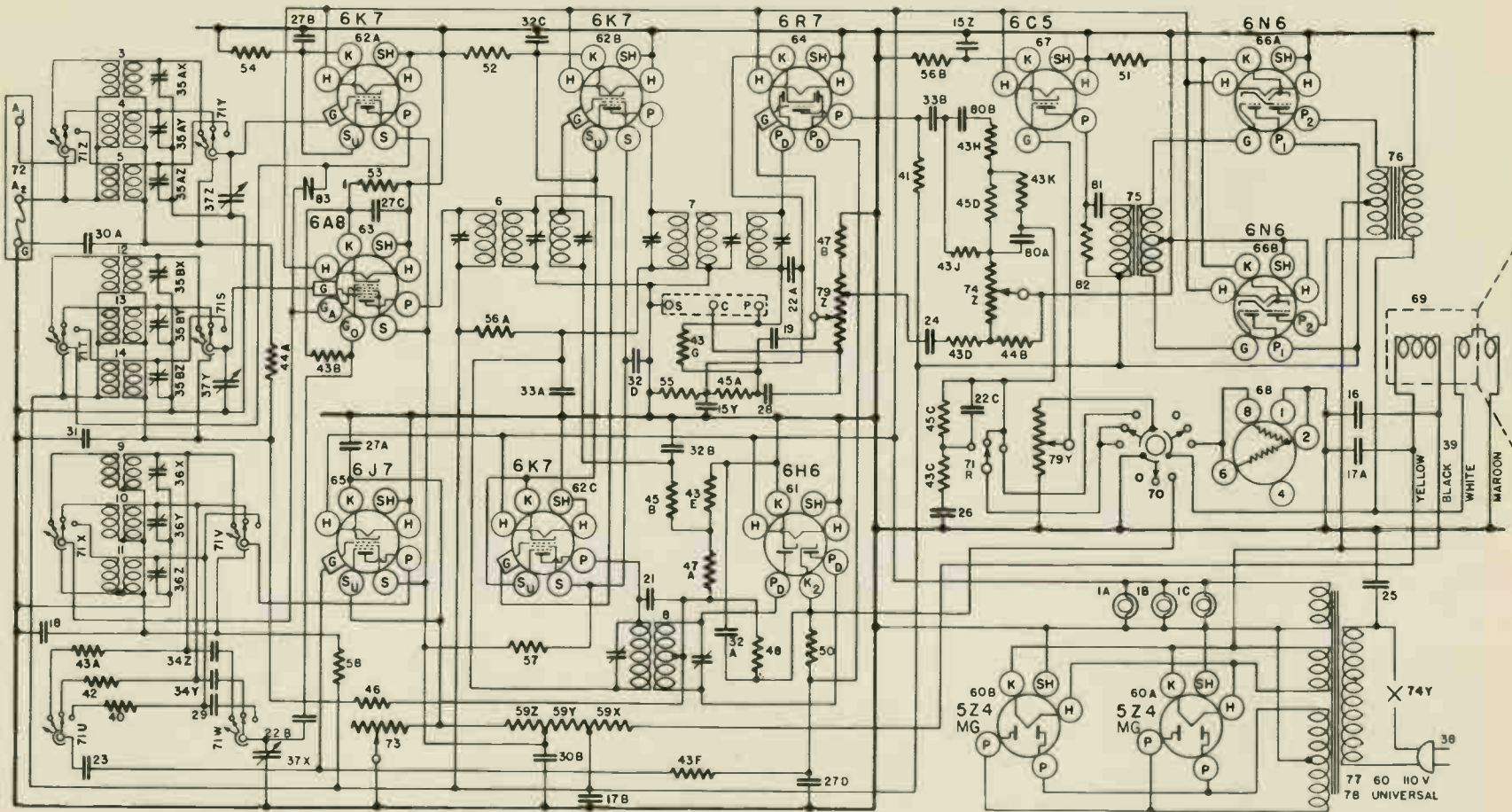


Fig. 4. Front View 1316





450 KC. I-F

Fig. 1. Circuit Diagram—Model 1316

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	Ca	Co
6K7	R-F Amplifier	6.3	235	—	106	2.2	2.2	—	—
6A8	Oscillator-Modulator	6.3	235	—	106	—	3.1	140	6 to -12
6J7	AFC Control	6.3	110	—	137	6.5	6.5	—	—
6K7	I-F Amplifier	6.3	225	—	100	—	2.7	—	—
6H6	AFC Detector	6.3	0	—	—	—	0	—	—
6R7	Diode and 1st A-F Amplifier	6.3	85	—	—	—	2.1	—	—
6C5	A-F Driver	6.3	150	—	—	—	5.0	—	—
6N6	(2) Output	6.3	235	340	—	—	5.2	—	—
6C5	Tuning Indicator Amplifier	6.3	100-200	—	—	—	0	—	—
5Z4	Rectifier	5.0	—	—	—	—	350	—	—
W42419A	Tuning Indicator Tube	—	100-200	150	—	—	0	—	—
W41187	Expander Tube	—	Varies with power output.		—	—	0	—	—

Voltage drop across speaker field 105 volts.  
 Power output approximately 25 watts.  
 Power consumption approximately 135 watts.  
 All readings taken on 117.5 volt power supply.

TUNING I-F AMPLIFIER

This model receiver should be turned-on and allowed to "warm-up" for about 15 minutes before aligning its circuits.

It is a High Fidelity receiver and in order to secure maximum performance the alignment should be done with precision instruments. The alignment condensers should not be readjusted just to determine if they are properly tuned. Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier was slightly mistuned while Fig. 6, shows a curve made from actual measurements of a receiver employing a triple-tuned I-F amplifier which was properly aligned with the use of a FREQUENCY MODULATED R-F signal generator and an oscilloscope.

The alignment of the AFC circuit may be checked by means of a modulated signal generator and output meter as follows:

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf., or larger, condenser—not electrolytic to P2 of the other 6N6 Output tube.

(b) Connect the output of the signal generator through a .00025 mf. condenser to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis.

(c) Rotate the Phantom Control to the left-hand position (NORMAL).

(d) Adjust the frequency of the signal generator in the region of 450 kilocycles for maximum reading on the output meter.

(e) Without altering the connections or adjustments of the signal generator or output meter connect an antenna to the antenna terminal "A1" and tune-in a local broadcasting station. Turn off modulation of signal generator. Adjust station selector slightly for zero beat.

(f) Rotate the Phantom Control to the Mystic Hand position and listen to the beat note. If the note is less than 200 cycles, or the equivalent of some tone below middle C on the piano, the AFC alignment is satisfactory.

(g) If the beat note is higher than middle C realignment is necessary.

(h) In cases where the beat note is not more than about two octaves above middle C or from 1000 to 1500 cycles the AFC circuit may be aligned for zero beat by making a slight adjustment of the top trimmer condenser on the 2nd I-F transformer. This circuit is very critical and a slight adjustment will produce a great change in the beat note.

(i) Where the AFC is considerably out of alignment as evidenced by a beat note of higher than 1500 cycles the standard alignment procedure outlined below should be followed.

TUNING I-F AMPLIFIER

I. Conventional Method.

(a) Connect the output meter as outlined above in (a).

(b) Adjust the 6J7 cathode bias to 6.5 volts with no signal applied, by means of the variable control item, No. 83, Fig. 3.

(c) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead of the signal generator to the "G" terminal of the receiver chassis.

(d) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control all the way to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.

(e) Set the signal generator to 450 kilocycles.

(f) Adjust the middle trimmer and then the bottom trimmer of the 2nd I-F transformer for maximum reading on the output meter. Caution: do not attempt to adjust the top trimmer at this time. ALWAYS USE THE LOWEST GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube leaving the tube's grid clip in place.

(h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Adjust the top trimmer and then the bottom trimmer of the 1st I-F transformer for maximum reading on the output meter.

(j) Adjust the middle trimmer of the 1st I-F transformer by closing until maximum reading is obtained on the output meter.

(k) Transfer the output lead of the signal generator from the 6A8 tube to the antenna terminal "A1" of the receiver and recheck the adjustment of the bottom trimmer of the 1st I-F transformer.

(l) To adjust the AFC system it will be necessary to transfer the output lead of the signal generator back to the top cap of the 6K7 I-F amplifier tube. The .02 mf. condenser should still be connected in series with this lead.

(m) Insert a 0.5 milliammeter in series with the cathode circuit of the 6J7 tube and with a strong 450 kilocycle signal from the signal generator, the reading of the cathode current should be recorded.

(n) Turn the Phantom Control to the MYSTIC HAND position and without changing the output of the signal generator, adjust the top trimmer condenser of the 2nd I-F transformer so that the reading of the 0.5 milliammeter is the same as was recorded with the Phantom Control in the NORMAL position. This value of current will be obtained with the trimmer closed, with the trimmer open and at some intermediate position. A very slight adjustment while in the intermediate position will cause the meter to read from 0 to 1.5 milliamperes. This is the setting that should be used. An insulated screw driver should be used in adjusting the AFC trimmer condenser.

(o) As a final check on the AFC adjustment, disconnect the test equipment and tune-in a fairly weak broadcast station in the region of 1500 kilocycles. Turn the AFC "ON" and "OFF". If reception is the same in both positions and will automatically tune-in strong stations within approximately plus or minus 10 kilocycles of the station selector setting with AFC "ON", the AFC is properly aligned. If distortion is noted and the receiver will not automatically tune-in stations as described, the AFC alignment should be rechecked.

II. Oscilloscope Method.

(a) Connect the output of a FREQUENCY MODULATED R-F signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows: The "High" side should be connected to the plate of the 6R7 tube and the "Low" side should be connected to the receiver chassis. (Be sure the oscilloscope is protected from D.C. by connecting a condenser, .1 mf. to .05 mf., in series with the lead of the 6R7 tube).

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control to the right (clockwise), turn the fidelity control to HIGH FIDELITY and the Phantom Control to NORMAL.

(d) Set the signal generator to 450 kilocycles. See

instructions supplied with signal generator and oscilloscope.

(e) Adjust the middle trimmer of the 2nd I-F transformer so that the nose of the selectivity curve is centered on the resonance axis (R) of the transparent scale supplied with the oscilloscope.

(f) Adjust the bottom trimmer of the 2nd I-F transformer for maximum amplitude of the selectivity curve on resonance axis (R).

(g) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(h) Open the middle trimmer of the 1st I-F transformer three or four turns of the adjustment screw. (Care should be taken that the adjustment screw does not become dislodged from the nut).

(i) Increase the output of the signal generator and adjust the top trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(j) Adjust the bottom trimmer of the 1st I-F transformer for maximum amplitude.

(k) Reduce the output of the signal generator and adjust the middle trimmer of the 1st I-F transformer for maximum symmetry and amplitude.

(l) Carefully repeat operations (f) and (k) for more accurate adjustments.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal "A1" of the receiver. For the BLUE and RED

bands a .00025 mf. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated in "C" below for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check in the order given. **DO NOT READJUST THE "OSC" TRIMMER.**

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, "osc. series" Fig. 2, set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. At the time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output is obtained.

**(c) SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)  
Police and Amateur Band (RED)  
High Frequency Band (GREEN)

Shunt Alignment  
1,400 Kilocycles  
5,000 Kilocycles  
18,000 Kilocycles

Series Alignment  
600 Kilocycles  
2000 Kilocycles

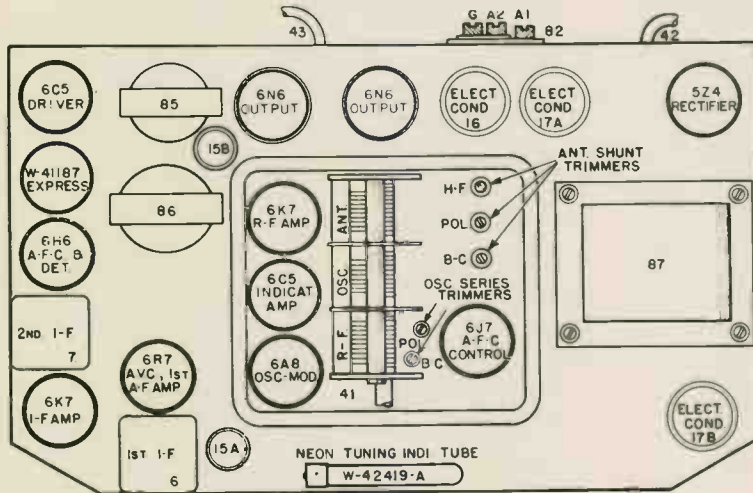


Fig. 2. Top View—1336

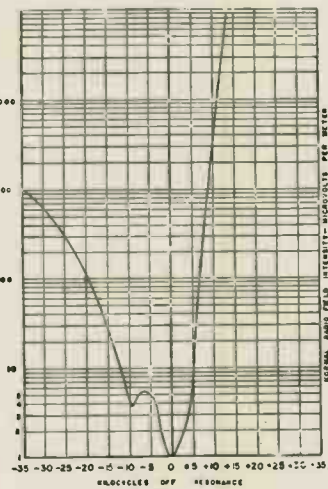


Fig. 5

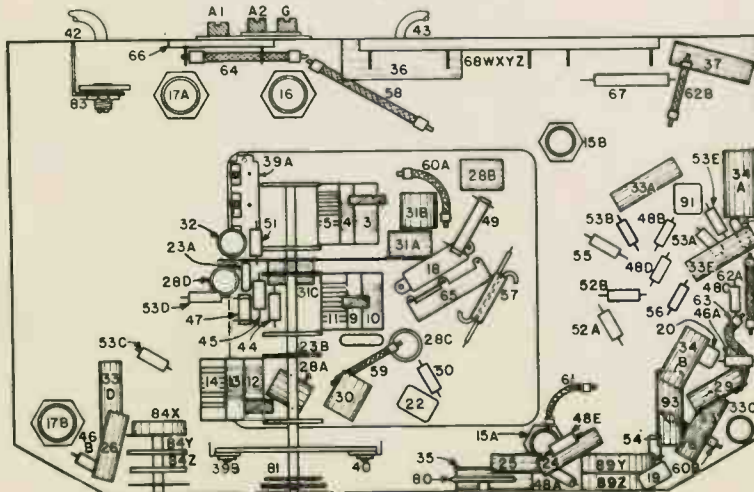


Fig. 3. Bottom View—1336

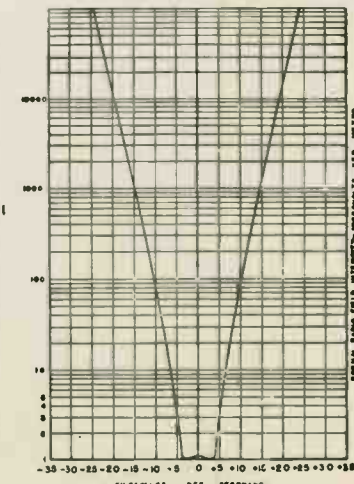


Fig. 6

PARTS LIST—MODEL 1336

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1 ABCD	W -37922	Dial Light Bulb	52AB	-36321	Resistor, 400,000 Ohm 1/4 W.
	G 3 -37965	Dial Light Socket	53AB	36322	Resistor, 500,000 Ohm 1/4 W.
	W -40570	Dial Light Shield	CDE	-21454	Resistor, 1 Megohm 1/4 W.
2	W -11187	Auto Expressionator Tube	51	-36176	Resistor, 1.3 Megohm 1/4 W.
3	G 94 -32000	Antenna Coil, R. C. B.	55	-36688	Resistor, 3 Megohm 1/4 W.
4	G10R -32000	Antenna Coil, Pol. B.	56	G101 -34403	R. F. Neutralizing Condenser
5	G107 -32000	Antenna Coil, H. F. B.	58	W -32926	Resistor, 100 Ohm 3W Flex.
6	G 90 -32004	1st I-F Assembly	59	W -25937	Resistor, 275 Ohm 1/2 W. Flex.
7	G126 -32001	2nd I-F Assembly	57	W -28589	Resistor, 350 Ohm 1/2 W. Flex.
9	G 97 -32002	Osc. Coil, R. C. B.	60AB	W -22514	Resistor, 750 Ohm 1/2 W. Flex.
10	G 96 -32002	Osc. Coil, Pol. B.	61	W -21452	Resistor, 1100 Ohm 3/4 W. Flex.
11	G 95 -32002	Osc. Coil, H. F. B.	62AB	W -23013	Resistor, 2000 Ohm 1 1/2 W. Flex.
12	G 68 -32001	R. F. Coil, R.C.B.	63	W -23907	Resistor, 750 Ohm 1 1/2 W. Flex.
13	G 75 -32001	R. F. Coil, Pol. B.	64	W -4921C	Resistor, 10,000 Ohm 1W.
14	G 71 -32001	R. F. Coil, H. F. B.	65	W -12418A	Resistor, 30,000 Ohm 4W.
15AH	W -41594	Condenser, 50 Mf. 25V.	66	W -36952	Resistor, 30,000 Ohm 1W.
16	W -36955	Condenser, 35 Mf. 400V.	67		Resistor, 4,000 Ohm
17AH	W -36957	Condenser, 40 Mf. 300V.	68Z		Resistor, 1,000 Ohm
18	G 18 -34000	Condenser, 5600 Mmf. 300V.	68Y	W -11966	Resistor, 3,000 Ohm / Candohm
19	G 5 -34002	Condenser, .00050 Mf. 200V.	68X		Resistor, 200 Ohm
20	G 10 -34002	Condenser, .00050 Mf. 200V.	68W		Socket Type, 524
21	G 2 -34002	Condenser, .001 Mf. 200V.	69	G154 -36400	Socket Type, 6H6
22	G 6 -34002	Condenser, .00025 Mf. 200V.	70	G155 -36400	Socket Type, 6K7
23AB	G 3 -34002	Condenser, .005 Mf. 200V.	71AB	G151 -36400	Socket Type, 6AB
24	W -34713	Condenser, .025 Mf. 160V.	72	G156 -36400	Socket Type, 6R7
25	W -41461	Condenser, .0014 Mf. 300V.	73	G164 -36400	Socket Type, 6J7
26	W -30805	Condenser, .01 Mf. 400V.	74	G157 -36400	Socket Type, 6N6
27		NONE	75AB	G165 -36400	Socket Type, 6CS
28AB	W -36541	Condenser, .02 Mf. 160V.	76AB	G152 -36400	Auto Expressionator
CD	W -28621	Condenser, .02 Mf. 200V.	77	G 1 -42584	Neon Tube Socket Assembly
29	W -41209	Condenser, .018 Mf. 200V.	78	W -12589	Neon Tube Cover
30	W -35936	Condenser, .05 Mf. 200V.	79	W -12592	Cover Rubber Gasket
31ABC	W -32380	Condenser, .05 Mf. 200V.		734CJ4 "M"	Speaker Sprock. 1-D-437
32	W -27216	Condenser, .05 Mf. 200V.		-41603	Cone Assembly For above Spk.
33AB	W -32780B	Condenser, .05 Mf. 400V.		-41601	Field Coil
CDE	W -35758	Condenser, .008 Mf. 400V.	80	W -41029	Phantom Cont. Switch
34AB	W -22688	Condenser, 1 Mf. 400V.	81	W -41235	Band Select. Switch
35	W -2554	Condenser, .12 Mf. 160V.	82	G 27 -26719	Ant. and Grd. Terminal Assembly
36	W -41218	B. C. and Pol. Osc. Series Trimmer	83	W -42285A	300 Ohm 1/2 W. A-F-C Bias Resistor
37	W -37891A	3 Section Shunt Trimmer	84	B -42285A	Fidelity and Line Switch
38	W -35951A	3 Section Shunt Trimmer	85	G 2 -37995	A-F Transformer
39AB	W -35951A	3 Section Shunt Trimmer	86	G 10 -24628	Out-Put Transformer
40	G 47 -33002	3 Gang Var. Tuning Cond.		-12557	Power Trans. 60 Cv. 110V.
41	MG12 -12411	Dial Drive Assembly, Complete		-43008	Power Trans. 25 Cv. 110V.
	C -12421	Dial Glass (Calibrated)		-43088	Power Trans. 50 Cv. 110V.
	W -42325	Dial Drive Unit only		-43089	Power Trans. 50 Cv. 230V.
	W -41144	Dial Hand (Long)	89Z		Vol. Cont. 3 Meg. Tap 1 Meg.
	W -12180	Dial Hand (Short)	89Y	-41375B	Vol. Cont. 1 Meg.
	W -40186	Screw, Hand Mtg.	90	W -42419A	Neon Tuning Indic. Tube
	E -13648	R.H. Indicator Flipper (Phan. Cont.)	91	G 5 -34005	Condenser, .0005 Mf. 300V.
	E -13647	L.H. Indicator Flipper (Fidelity Cont.)	92	G 37 -26719	Phono Terminal
	W -42308	Indicator Control Pulley (2)	93	W -24049	Condenser, .1 Mf. 200V.
	-43080	R.H. Indicator Cont. Cable Assy.	C	-41219	Escutcheon
	-43081	L.H. Indicator Cont. Cable Assy.	B	-41232	Escutcheon Lens
	-41157	Band Indic. Cont. Cable	A	-41233	Escutcheon Retaining Spring
	-40537	Flexible Coupling	B	-41234	Lens Retaining Spring
42	B -33906A	Power Cord and Plug		-4134A	Escutcheon
43	G 2 -37918	Speaker Cable	C	-42044	Escutcheon Lens
44	W -36760	Resistor, 20,000 Ohm 1/4 W.	C	-42043	Escutcheon Rubber Ring
45	W -33390	Resistor, 30,000 Ohm 1/4 W.	W	-7870	Escutcheon Mtg. Screw
46AB	W -35928	Resistor, 60,000 Ohm 1/4 W.	W	-37339	Knob, V. C. and Station Sel.
47	W -34019	Resistor, 75,000 Ohm 1/4 W.	W	-40192B	Knob, Band Sel. and Phantom Cont.
48AB	W -35600	Resistor, 100,000 Ohm 1/4 W.	W	-42490	Knob, Fidelity Control
CDE	W -6705	Resistor, 3,500 Ohm 1W.	W	-36117	Rubber Mtg. Foot
49	W -35930	Resistor, 200,000 Ohm 1/4 W.	W	-40230B	Emblem
50	W -35601	Resistor, 300,000 Ohm 1/4 W.	W	-42620	Nut, Emblem Mtg.
51			W	-6-Q	Cabinet

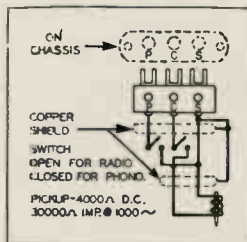


Fig. 7 Phonograph Pickup

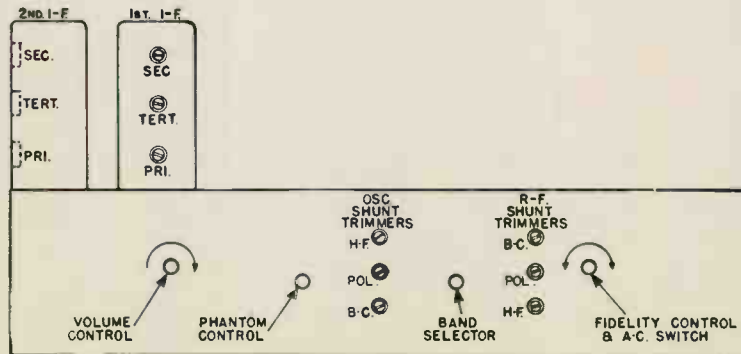


Fig. 4 Front View—1336

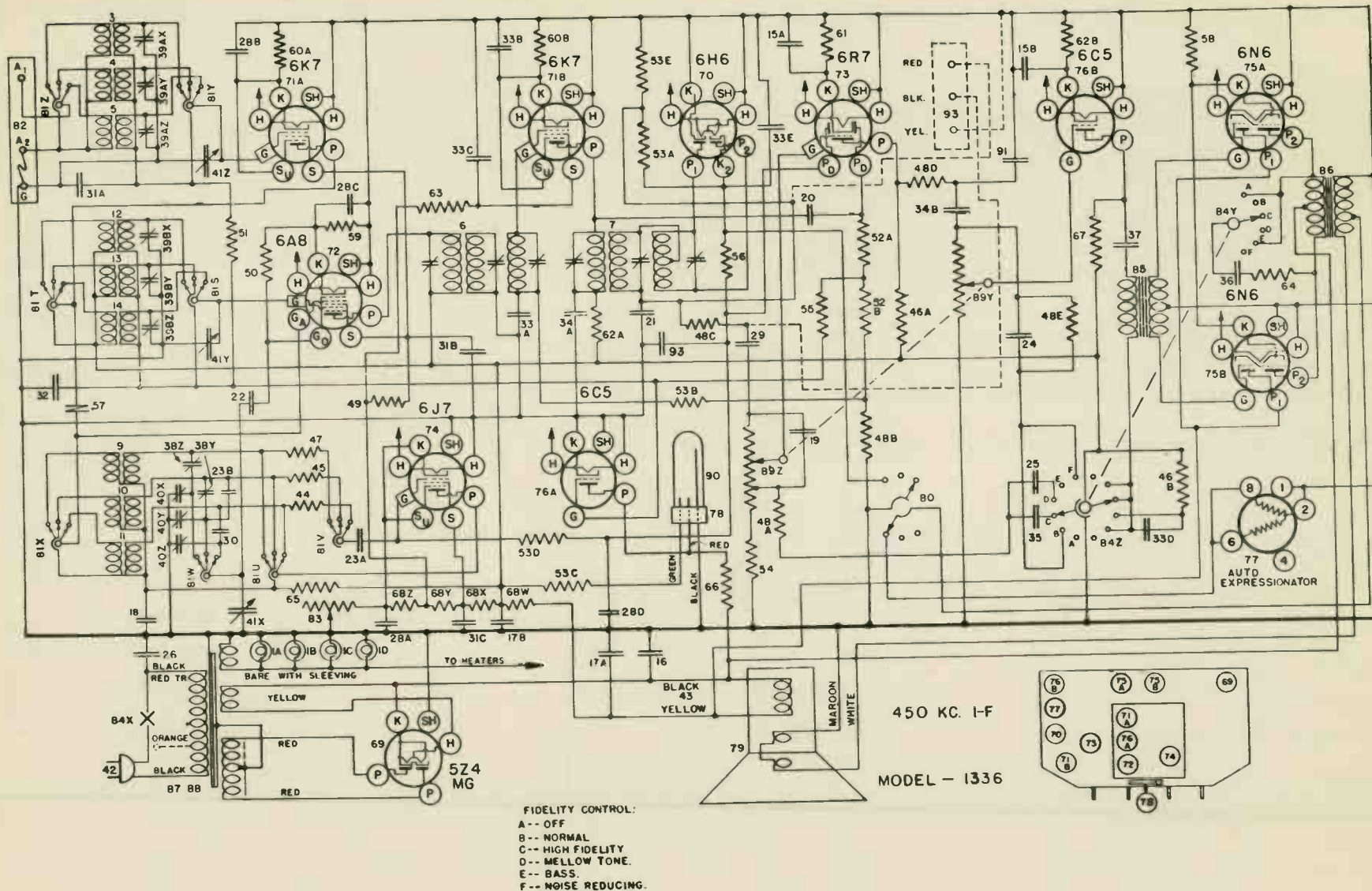


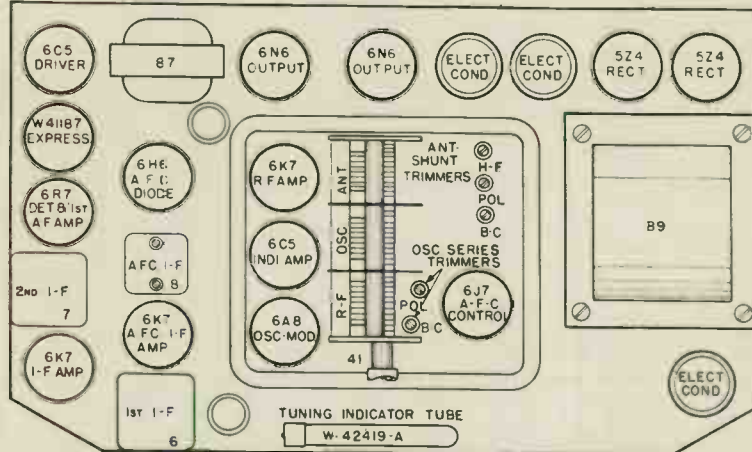
Fig. 1. Circuit Diagram—Model 1336

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	G <sub>a</sub>	G <sub>o</sub>
6K7	R-F Amplifier	6.3	238						
6A8	Oscillator-Modulator	6.3	238		10.5	2.5	2.5		
6J7	AFC Control	6.3	170		130		2.5	170	5 to 12
6K7	I-F Amplifier	6.3	230		105	3.0	3.0		
6K7	AFC Diode and I-F Amplifier	6.3	230		100	3.0	3.0		
6H6	AFC Detector	6.3							
6R7	Diode and 1st A-F Amplifier	6.3	80				2.0		
6C5	A-F Driver	6.3	230				6.8		
6N6	(2) Output	3.3	238	350			2.6		
5Z4	(2) Rectifiers	5.0					5.5		
6C5	Tuning Indicator Amplifier	6.3	150				0		
W-42419A	Neon Tuning Tube		150				0		
W-41187	Auto-Expressionator Tube	Varies with power output.							

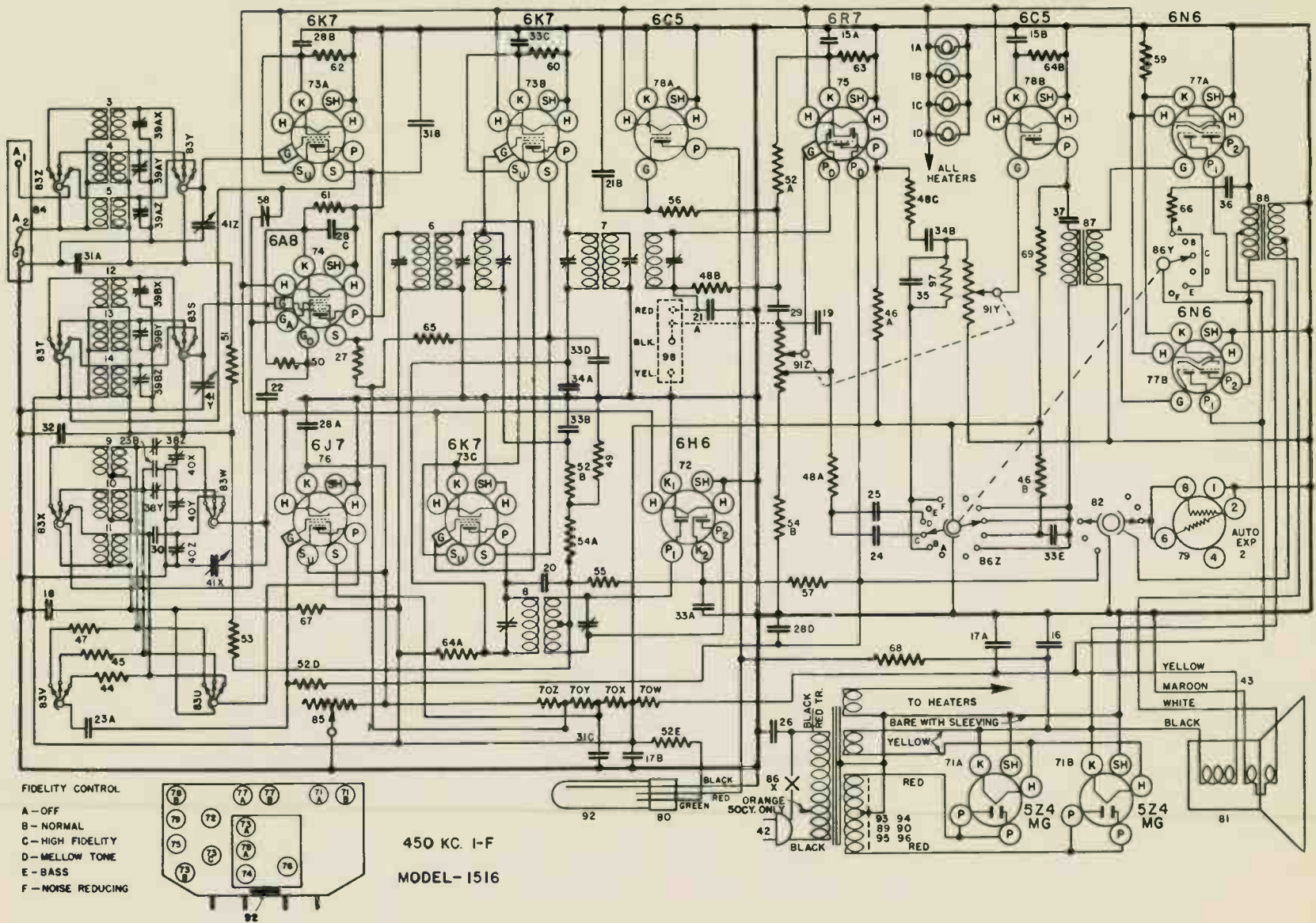
Voltage drop across speaker field 112 volts.  
Power output approximately 25 watts.  
Power consumption approximately 142 watts.  
All readings taken on 117.5 volt power supply

For Alignment Procedure, See Pages 495 & 496



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A B C D	W 37922	Dial Light Bulb	30	35990	Resistor, 200,000 Ohm, 1/2 W.
	W 40570	Dial Light Shield	31	35991	Resistor, 300,000 Ohm, 1/2 W.
2	W 41187	Auto-Expressionator Tube	32	36322	Resistor, 300,000 Ohm, 1/2 W.
3	G 94	32000 Antenna Coil B, C, B.	33	36623	Resistor, 750,000 Ohm, 1/2 W.
4	G 107	32000 Antenna Coil H, F, B.	34	36812	Resistor, 1 Megohm, 1/2 W.
5	G 107	32001 1st I-F Assembly	35	36176	Resistor, 1.5 Megohm, 1/2 W.
6	G 91	32001 2nd I-F Assembly	36	NONE	
7	G 108	32004 A-F-C I-F Assembly	37	36888	Resistor, 3 Megohm, 1/2 W.
8	G 97	32002 Oscillator Coil B, C, B.	38	34403	R-F Neutralizing Cond.
9	G 96	32002 Oscillator Coil Pol. B.	39	W 23012A	Resistor, 40 Ohm, 1/2 W. Flex.
10	G 95	32002 Oscillator Coil H, F, B.	40	W 23037	Resistor, 22 Ohm, 1/2 W. Flex.
11	G 88	32001 R-F Coil H, C, B.	41	W 23049	Resistor, 275 Ohm, 1/2 W. Flex.
12	G 75	32001 R-F Coil Pol. B.	42	W 23106	Resistor, 250 Ohm, 1/2 W. Flex.
13	G 74	32001 R-F Coil H, F, B.	43	W 23132	Resistor, 1100 Ohm, 1/2 W. Flex.
14	W 41188	Condenser, 50 Mf. 25V.	44	W 23013	Resistor, 2000 Ohm, 1/2 W. Flex.
15A B	W 36035	Condenser, 35 Mf. 400V.	45	W 22967	Resistor, 750 Ohm, 1/2 W. Flex.
16	W 36037	Condenser, 40 Mf. 360V.	46	W 3621C	Resistor, 10,000 Ohm, 1W.
17A B	G 18	34002 Condenser, 5000 Mmf.	47	W 42418	Resistor, 30,000 Ohm, 1W.
18	G 5	34002 Condenser, .00005 Mf. 200V	48	36852	Resistor, 4000 Ohm, 1W.
19		NONE	49		
20			50		
21A B	G 2	34002 Condenser, .0001 Mf. 200V.	51	70Z	Resistor, 4000 Ohm, 1W.
22	G 6	34002 Condenser, .00025 Mf. 200V.	52	70Y	Resistor, 1000 Ohm, 1W.
23A B	G 3	34002 Condenser, .0005 Mf. 200V.	53	W 11966	Resistor, 3000 Ohm, Candohm
24	W 35758	Condenser, .008 Mf. 400V.	54	70W	Resistor, 200 Ohm.
25	W 41161	Condenser, .01 Mf. 400V.	55	G154 36440	Socket Type 5Z4
26	W 36905	Resistor, 3300 Ohm 1W.	56	G155 36400	Socket Type 6H6
27	6705		57	G156 36500	Socket Type 6K7
28A B	W 36541	Condenser, .02 Mf. 160V.	58	G157 36500	Socket Type 6A8
29	W 28621	Condenser, .02 Mf. 200V.	59	G164 36400	Socket Type 3R7
30	W 41209	Condenser, .048 Mf. 200V.	60	G157 36400	Socket Type 6J7
31A B C	W 33936	Condenser, .05 Mf. 200V.	61	G165 36400	Socket Type 6N6
32	W 32380	Condenser, .05 Mf. 200V.	62	G152 36400	Socket Type 6C5
33A B	W 27216	Condenser, .05 Mf. 200V.	63	G167 36400	Auto-Expressionator Socket
34	W 32780B	Condenser, .05 Mf. 400V.	64	G2	42581 Tuning Indic. Socket
35	W 28804	Condenser, .001 Mf. 200V.	65	W 11603	Speaker Spec. 14-137
36	W 22498	Condenser, .1 Mf. 400V.	66	W 41801	Cone Assembly for above Speaker
37	W 12554	Condenser, .12 Mf. 160V.	67	W 41029B	Field Coil for above Speaker
38Z	W 11218	Pat. Osc. Series Trimmer	68	W 41235A	Phantom Control Switch
39Y	W 37891	3 Section Shunt Trimmer Cond.	69	W 41235A	Band Selector Switch
40	W 35951	3 Section Shunt Trimmer Cond.	70	G27 26719	Ant. and Gnd. Terminal Assembly
41	G47	30002 3 Gang Var. Tuning Cond.	71	W 41287	A-F-C Bias Control, 300 Ohm 1/2 W.
	MG12	12425 Dial Drive Assembly Complete	72	G2	37993 Fidelity and Line Switch
		12421 Dial Glass (Calibrated)	73	G62	24628 A-F Driver Transformer
		12253B Drive Unit only	74	G1	37900 Out-Put Transformer
		12368A Dial Mask - Paper Backing	75	G5	37900 Power Transformer, 60 Cy. 110V.
		11144 Hand - Long Dial	76	G6	37900 Power Transformer, 25 Cy. 110V.
		12180 Hand - Short Dial	77	G7	37900 Power Transformer, 50 Cy. 220V.
	W 40186	Screw - Hand Mounting	78	G8	37900 Power Transformer, 30 Cy. 110V.
	E 13648	R. H. Mystic Hand Flipper	79	G2	37900 Power Transformer, 25 Cy. 220V.
	F 13947	L. H. Fidelity Flipper	80	91Z	Vol. Control, 2 M-2, Tap 3 Mex.
	W 43980	Flipper Control Cable Assembly	81	91Y	Vol. Control, 1 Mex.
	W 12308A	Flipper Cont. Cable Pulley	82	W 42419	Neon Tuning Indic. Tube
	W 40938	Hand Indic. Cont. Cable	83	W 21257A	Resistor, 60,000 Ohm, 1/2 W.
	40537	Flexible Coupling Unit	84	G37 26719	Phono Terminal Assembly
	41157	Drive Belt	85	C 42434A	Escutcheon
42	B 33945A	Power Cord and Plug	86	W 42943	Lens, Escutcheon
43	G2	37918 Power Cable	87	W 36117	Escutcheon Rubber Mounting
44		36700 Resistor, 20,000 Ohm, 1/2 W.	88	W 42400	Rubber Mounting Foot
45		33990 Resistor, 30,000 Ohm, 1/2 W.	89	W 42400	Knob - Fidelity
46A B		36761 Resistor, 40,000 Ohm, 1/2 W.	90	W 37331	Knob (Station and Volume)
47		34019 Resistor, 75,000 Ohm, 1/2 W.	91	W 40192	Knob (Band Sel and A-F-C)
48A B C		35600 Resistor, 100,000 Ohm, 1/2 W.	92	W 40220B	Emblem
49		35929 Resistor, 150,000 Ohm, 1/2 W.	93	W 32930	Nut, Emblem Mounting
			94	W 35922	Grille Cloth
			95	6-R	Cabinet



MODEL 1516

FIG. 1. Circuit Diagram—Model 1516

CHASSIS MODEL 1516-13 To 53

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P <sub>1</sub>	P <sub>2</sub>	S	Su	K	Ga	Co
6K7	R-F Amplifier	6.3	238	—	105	2.5	2.5	—	—
6A8	Oscillator-Modulator	6.3	238	—	105	—	2.5	170	5 to 12
6J7	AFC Control	6.3	170	—	130	—	5.8	—	—
6K7	I-F Amplifier	6.3	220	—	105	3.0	3.0	—	—
6K7	AFC Diode and I-F Amplifier	6.3	220	—	100	3.0	3.0	—	—
6H6	AFC Detector	6.3	—	—	—	—	—	—	—
6R7	Diode and 1st A-F Amplifier	6.3	80	—	—	—	2.0	—	—
6C5	A-F Driver	6.3	220	—	—	—	6.8	—	—
6N6	(2) Output	6.3	238	300	—	—	—	—	—
5Z4	(2) Rectifiers	5.0	—	—	—	—	350	—	—
6C5	Tuning Indicator Amplifier	6.3	150	—	—	—	0	—	—
W—42419A	Neon Tuning Tube	—	150	—	—	—	0	—	—
W—41187	Auto-Expressionator Tube	Varies with power output.							

Voltage drop across speaker field 112 volts.  
Power output approximately 25 watts.  
Power consumption approximately 142 watts.  
All readings taken on 117.5 volt power supply.

For Alignment Procedure, See Pages 495 & 496

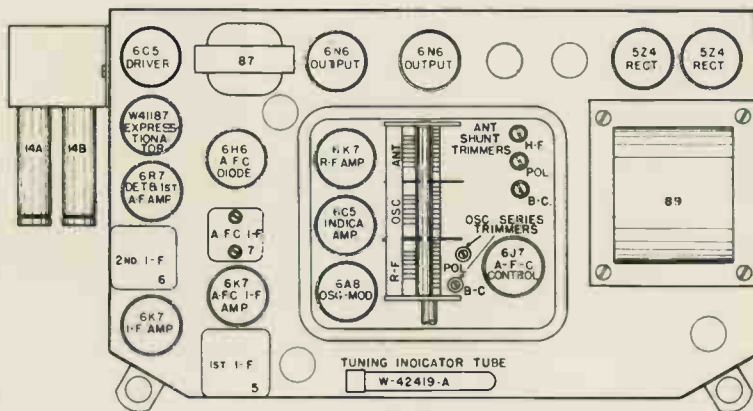


Fig. 2 Top View—1516-13 to 53

Item No.	Part No.	Description	Item No.	Part No.	Description
1ABC	W -37922	Dial Light Bulb	49	-21237A	Resistor, 60,000 Ohm 1/4W.
2	G94 -32000	Ant. Coil—B-C	50	-34019	Resistor, 75,000 Ohm 1/4W.
3	G108 -32000	Ant. Coil—Pol.	51ABC	-35500	Resistor, 100,000 Ohm 1/4W.
4	G107 -32000	Ant. Coil—H-F	52	-35929	Resistor, 150,000 Ohm 1/4W.
5	G107 -32004	1st I-F Assembly	53AB	-35930	Resistor, 200,000 Ohm 1/4W.
6	G91 -32004	2nd I-F Assembly	54	-35501	Resistor, 300,000 Ohm 1/4W.
7	G108 -32004	A-F-C I-F Assembly	55AB	-36322	Resistor, 500,000 Ohm 1/4W.
8	G97 -32002	Osc. Coil—B-C	CD	-38523	Resistor, 750,000 Ohm 1/4W.
9	G96 -32002	Osc. Coil—Pol.	56AB	-35602	Resistor, 1 Megohm 1/4W.
10	G85 -32002	Osc. Coil—H-F	57AB	-36176	Resistor, 1.3 Megohm 1/4W.
11	G68 -32001	R-F Coil—B-C	58	-35927	Resistor, 2 Megohm 1/4W.
12	G75 -32001	R-F Coil—Pol.	59	-36688	Resistor, 3 Megohm 1/4W.
13	G74 -32001	R-F Coil—H-F	60	W -23012A	Resistor, 40 Ohm 1/4W. Flex.
14AB	W -41598	Condenser, 50 Mfd. 25 V.	61	W -35467	Resistor, 220 Ohm 1/4W. Flex.
15	W -36055	Condenser, 35 Mfd. 400 V.	62	W -25937	Resistor, 275 Ohm 1/4W. Flex.
16AB	W -36057	Condenser, 40 Mfd. 300 V.	63	W -28589	Resistor, 350 Ohm 1/4W. Flex.
17	G18 -34000	Condenser, 5000 Mmf.	64	W -28106	Resistor, 500 Ohm 1/4W. Flex.
18	G101 -34403	Condenser, Neutralizing	65	W -23907	Resistor, 750 Ohm 1/4W. Flex.
19	G6 -34002	Condenser, .000025 Mfd. 200 V.	66	W -21152	Resistor, 1100 Ohm 1/4W. Flex.
20AB	G5 -34002	Condenser, .00005 Mfd. 200 V.	67AB	W -23013	Resistor, 2000 Ohm 1/4W. Flex.
21	NONE	NONE	68	W -43114	Resistor, 3000 Ohm 4W. Candohm
22AB	G2 -34002	Condenser, .0001 Mfd. 200 V.	69		Resistor, 400 Ohm
23AB	G3 -34002	Condenser, .0005 Mfd. 200 V.	70Z		Resistor, 1000 Ohm
24	W -28904	Condenser, .0014 Mfd. 200 V.	70Y		Resistor, 300 Ohm
25	W -28904	Condenser, .004 Mfd. 200 V.	70X	W -43113	Resistor, 200 Ohm
26	W -35758	Condenser, .008 Mfd. 400 V.	70W		Resistor, 200 Ohm
27	W -30805	Condenser, .01 Mfd. 400 V.	71AB	G154 -36400	Socket Type 5Z4
28AB	W -36541	Condenser, .02 Mfd. 160 V.	72	G155 -36400	Socket Type 6H6
29	W -28621	Condenser, .02 Mfd. 200 V.	73ABC	G151 -36400	Socket Type 6K7
30	W -41208	Condenser, .048 Mfd. 200 V.	74	G156 -36400	Socket Type 6A8
31ABC	W -35936	Condenser, .05 Mfd. 200 V.	75	G164 -36400	Socket Type 6R7
32	W -32380	Condenser, .05 Mfd. 200 V.	76	G157 -36400	Socket Type 6J7
33AB	W -27216	Condenser, .05 Mfd. 200 V.	77AB	G165 -36400	Socket Type 6N6
34AB	W -32780B	Condenser, .05 Mfd. 400 V.	78AB	G152 -36400	Socket Type 6C5
35	W -22688	Condenser, .1 Mfd. 400 V.	79	G167 -36400	Socket Auto-Expressionator
36	W -42554	Condenser, .12 Mfd. 160 V.	80	G1 -42584	Socket Tunalite
37ZY	W -41254	Condenser, Osc. Series Trimmer	81	734CJ4 "W"	Speaker Spec. No. 1-D-437
38AB	W -37891A	Condenser, 3 Sect. Shunt Trimmer		-41603	Cone Assembly for above Speaker
39	W -35951	Condenser, 3 Sect. Shunt Trimmer	82	W -41029B	Phantom Control Switch
40	G47 -33002	3 Sect. Var. Tuning Condenser	83	C -41235A	Band Selector Switch
	MG12 -42425	Dial Drive Assembly Complete	84	G27 -26719	Ant. and Gnd. Terminal Board
	-42325B	Drive Unit Only	85	W -41287	Resistor, A-F-C Var. Bias 300 Ohm 1/4W.
	C -42421	Glass Dial Calibrated	86	B -42295A	Fidelity Switch
	-42598A	Mask—Dial Backing	87	G64 -24628	Audio Choke
	-41144	Pointer—Long	88	G62 -24628	Output Transformer
	-42180	Pointer—Short	89	G1 -37900	Power Transformer 60 Cy. 110 V.
	W -40486	Screw—Pointer Mtg.		G5 -37900	Power Transformer 25 Cy. 110 V.
	W -40380	Flipper Control Cable Assembly		G6 -37900	Power Transformer 50 Cy. 220 V.
	E -13648	R. H. (Fidelity) Flipper		G7 -37900	Power Transformer 50 Cy. 110 V.
	E -13647	L. H. (Fidelity) Flipper		G8 -37900	Power Transformer 25 Cy. 220 V.
	-40638	Band Indicator Control Cable	90Z		Volume Control, 3 Meg. Tap 3 Meg.
	-40637	Flexible Coupling	90Y		Volume Control, 1 Meg.
	-41157	Drive Belt	91	G37 -26719	Phono Terminal
41	B -33906A	Power Cord and Plug	92	W -42419	Tunalite Tube
42	G7 -37918	Speaker Cable		C -43134A	Escutcheon
43	- 6705	Resistor, 3500 Ohm 1W.		-42043	Rubber—Escutcheon Mtg.
44	- 4921C	Resistor, 10,000 Ohm 1W.		C -42044	Lens—Escutcheon
45	- 36952	Resistor, 30,000 Ohm 1W.		W -37339	Knob—V. C. and S. S.
46	- 36760	Resistor, 20,000 Ohm 1/4W.		W -40192B	Knob—E. S. Sw. and Phantom Cont.
47	- 33390	Resistor, 30,000 Ohm 1/4W.		W -42490	Knob—Fidelity Cont.
48AB	- 36761	Resistor, 40,000 Ohm 1/4W.		- 7676	Screws—Escutcheon Mtg.





# MODEL 3716

## SPECIFICATIONS

### Chassis Functions

L-1 chassis contains the tuning unit, R.F., I.F., and initial audio amplifiers, A.V.C., A.F.C., variable and fixed tone compensation and volume expander circuits. It also contains its own power rectifier which supplied field excitation for the 65ODT4 twelve inch speaker.

L-2 chassis contains three individual band pass audio amplifiers in addition to the microphone pre-amplifier. It also contains its own filament supply transformer.

L-3 chassis serves as a power supply for rectified current to chassis L-2 and the field of the 651DT4 twelve inch speaker which is in series with the "B" supply to the high frequency audio amplifier.

L-4 chassis serves as a power supply for rectified current to the fields of the three small "tweeter" speakers and to the field of the large "auditorium" speaker. It also supplies power for the four auxiliary channel control lights.

The L-1 chassis contains all the tuned circuits of the receiver and is the only chassis which need be removed from the cabinet during alignment. All normal connections should be maintained. An output meter may be connected across the plates of the two 6N6 tubes in the output stage of this chassis.

### Tube Socket Voltage Readings

Tube	Item	Function	L-1 CHASSIS							
			H	P1	P2	S	SU	K	GA	GO
6K7	73A	R-F Amplifier	6.3	238	-	105	2.5	2.5	-	-
6A8	74	Osc. - Mod.	6.3	238	-	105	-	2.5	170	-5 to -12
6J7	76	AFC Control	6.3	170	-	130	-	5.8	-	-
6K7	73B	I-F Amplifier	6.3	220	-	105	3.0	3.0	-	-
6K7	73C	AFC Diode & I-F Amplifier	6.3	220	-	100	3.0	3.0	-	-
6H6	72	AFC Detector	6.3	-	-	-	-	-	-	-
6R7	75	Diode & 1st A-F Amplifier	6.3	80	-	-	-	2.0	-	-
6C5	78B	A-F Driver	6.3	220	-	-	-	6.8	-	-
6N6	77 A&B	(2) Output	6.3	238	350	-	-	2.6	-	-
5Z4	71 A&B	(2) Rectifiers	5.0	-	-	-	-	350	-	-
6C5	78A	Tuning Indicator Amplifier	6.3	150	-	-	-	0	-	-
W42419A	92	Neon Tuning Indicator Tube								
W41187	79	Auto-Expressionator Tube	Varies with power output							
			Voltage drop across speaker field 112 volts.							

### L-2 CHASSIS

Tube	Item	Function	H	P1	P2	S	K
6F6	40B	P.P. Medium & Low Frequency Amplifier	6.3	170	-	-	15
6F6	40C		6.3	170	-	-	15
6N6	41G		6.3	255	290	-	3.5
6N6	41H	P.P. Parallel Low Frequency Output	6.3	255	290	-	3.5
6N6	41I		6.3	255	290	-	3.5
6N6	41J		6.3	255	290	-	3.5
6N6	41E		6.3	290	290	-	0
6C5	39B	H.F. Amplifier	6.3	145	-	-	8.0
6F6	40A	H.F. Driver	6.3	170	-	-	15
6N6	41C		6.3	295	300	-	0
6N6	41D	P.P. H.F. Output	6.3	295	300	-	0
6J7	42	Microphone Input Amplifier	6.3	125	-	70	1.5
6C5	39A	Phase Inverter	6.3	140	-	-	12
6C5	39C	Microphone Amplifier Driver	6.3	140	-	-	8
6N6	41A		6.3	290	295	-	4
6N6	41B	P.P. Microphone Output	6.3	290	295	-	4

"B" Supply drain approximately 610 milliamperes.

### L-3 CHASSIS

Tube	Item	Function	H	K
5Z4MG	7A	Rectifier	5.0	350
5Z4MG	7B	Rectifier	5.0	350
5Z4MG	7C	Rectifier	5.0	370

### L-4 CHASSIS

Tube	Item	Function	H	K
5Z4MG	5A	Rectifier	5.0	240
5Z4MG	5B	Rectifier	5.0	240

For alignment procedure, see pages 499 & 500.

MODEL 3716

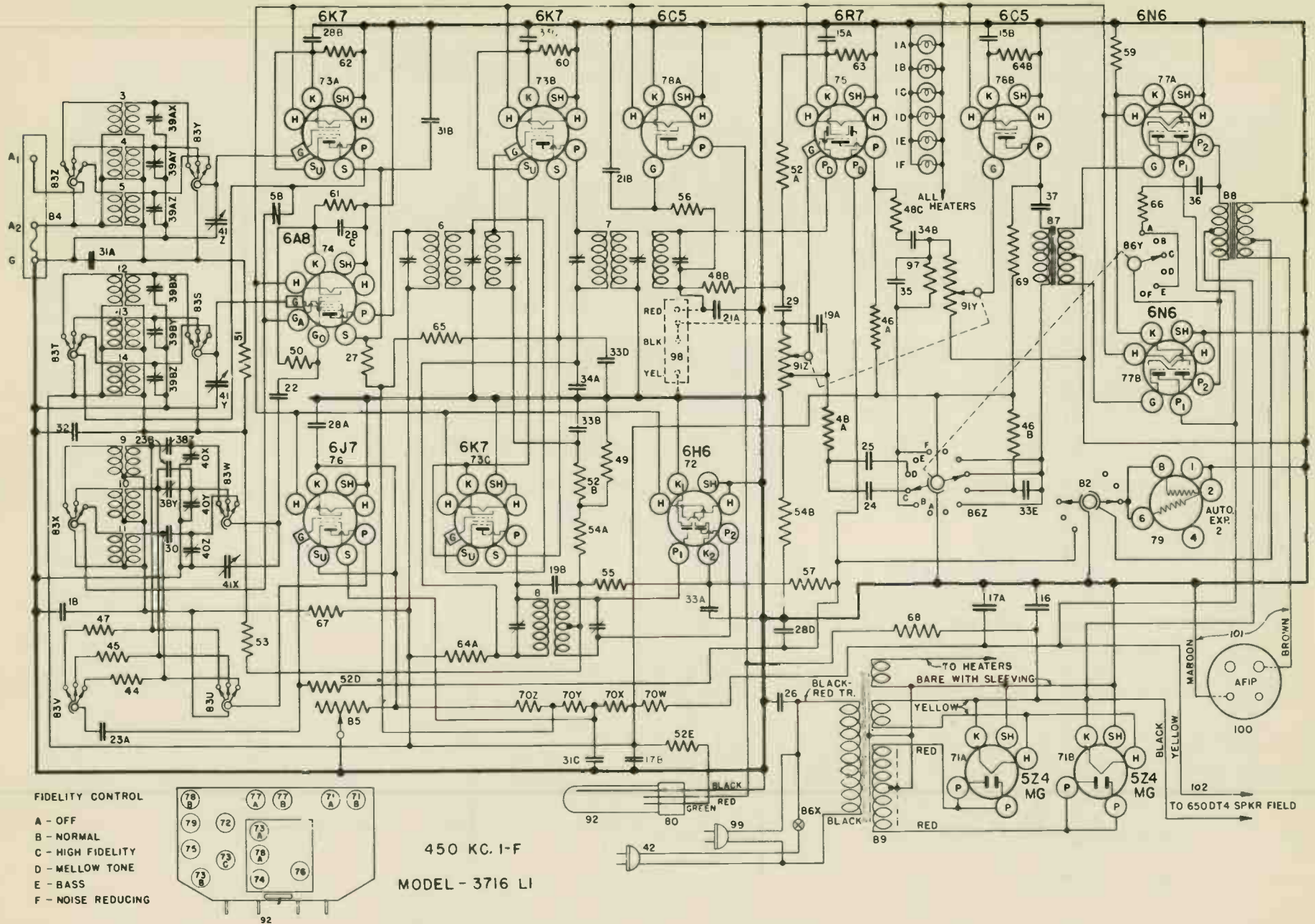
L-1 CHASSIS			PARTS LIST --- L-1 CHASSIS			L-1 CHASSIS (cont)		
Item No.	Part No.	Description	Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-37922	Dial Light Bulb	80	G3-42584	Tuning Indicator Socket			
	W-40570	Dial Light Shield	82	W-41029-B	Phantom Cont. Sw.			
2	W-41187	Auto-Expressionator Tube	83	41235-A	Band Selector Sw.			
3	G94-32000	Ant. Coil B.C.B.	84	G27-26719	Ant. & Gnd. Term. Assy.			
4	G108-32000	Ant. Coil Pol. B.	85	W-41287	AFC Bias Cont., 300 ohm 1/2 w.			
5	G107-32000	Ant. Coil H.F.B.	86	B-42295-A	Fidelity Line Sw.			
6	W-42739	1st I.F. Assy.	87	G3-37995	A-F Driver Trans.			
7	W-42740	2nd I.F. Assy.	88	G62-24628	Output Trans.			
8	G132-32004	A.F.C.I.F. Assy.	89	G3-37900	Power Trans. 60 cy. 110 v			
9	G97-32002	Osc. Coil B.C.B.	91Z	41375	3 meg. Tap 3 meg. Vol. Cont.			
10	G96-32002	Osc. Coil Pol. B.						
11	G95-32002	Osc. Coil H.F.B.	91Y		1 meg. Vol. Cont.			
12	G68-32001	R.F. Coil B.C.B.	92	W-42419	Neon Tuning Indicator Tube			
13	G75-32001	R.F. Coil Pol. B.						
14	G74-32001	R.F. Coil H.F.B.	97	21237-A	60,000 ohm 1/2 w. Res.			
15	W-42738	50 mf. 25 v. Cond.	98	G37-26719	Phono. Term. Assy,			
16	W-42737	35 mf. 400 v. Cond.			Escutcheon			
17	W-42736	40 mf. 300 v. Cond.			C-43041			
18	G18-34000	5600 mmf. Cond.			C-43043	Lens, Escutcheon		
19	G5-34002	.00005 mf. 200 v. Cond.			43042	Escutcheon Rubber Mtg.		
21	G2-34002	.0001 mf. 200 v. Cond.			W-43230	Knob ( 2 req.)		
22	G6-34002	.000025 mf. 200 v. Cond.			W-43231	Knob ( 3 req.)		
23	G3-34002	.0005 mf. 200 v. Cond.			6WK	Cabinet		
24	W-35758	.008 mf. 400 v. Cond.			D-30	Screws- Escutcheon Mtg.		
25	W-41461	.0014 mf. 200 v. Cond.	99	42902	Power Cord & Plug (short)			
26	W-30805	.01 mf. 400 v. Cond.	100	MG73-42708	"AFIP" Cable Assy.			
27	6705	3500 ohm 1 w. Res.	102	MG74-42708	Field Cable to 650 DT 4 Speaker			
28	W-36541	.02 mf. 160 v. Cond.	L-2 CHASSIS					
29	W-28621	.02 mf. 200 v. Cond.	1	G6-31618	Choke-Bass & Mezzo P.P. P. Input			
30	W-41209	.048 mf. 200 v. Cond.	2	G15-29535	Choke-Treble 1st A-F Input			
31	W-35936	.05 mf. 200 v. Cond.	3	G65-24628	Choke-Treble P.P. Input			
32	W-32380	.05 mf. 200 v. Cond.	4	G7-31618	Choke-Micro. P.P. Input			
32	W-27216	.05 mf. 200 v. Cond.	5	W-42736	40 mf. 300 v. Cond.			
34	W-32780-B	.05 mf. 400 v. Cond.	6	G2-34002	100mmf. Cond.			
35	W-28904	.004 mf. 200 v. Cond.	7	G6-34002	25mmf. Cond.			
36	W-22688	.1 mf. 400 v. Cond.	8	G5-34002	50mmf. Cond.			
37	W-42554	.12 mf. 160 v. Cond.	9	G1-34002	250mmf. Cond.			
38	41218	B.C. Osc. Series Tr. Pol. Osc. Series Tr.	10	W-25435	.003 mf. 400 v. Cond.			
38	W-37891	3 Sec. Shunt Tr. Cond.	11	W-3575-B	.008 mf. 400 v. Cond.			
40	W-35951	3 Sec. Shunt Tr. Cond.	12	W-36931	.2 mf. 25 v. Cond.			
41	W-42741-A	3 Gang Var. Tuning Cond.	13	W-22688	.1 mf. 400 v. Cond.			
	MG8-42708	Dial Dr. Assy. Complete	14	W-29910-A	.25 mf. 200 v. Cond.			
	D-42871	Dial Glass (Calibrated)	15	W-31935	.25 mf. 300 v. Cond.			
	D-42754	Drive Unit Only	16	W-31404	.5 mf. 300 v. Cond.			
	C-42729	Dial Mask (Pa. Backing)	17	42904	Power Cord & Plug			
	W-42730	Hand - Long Dial	18	W-43069	Microphone (complete)			
	W-42731	Hand - Short Dial	19	B-42957	Relay S.P.D.T.			
	W-40486	Screw - Hand Mtg.	20	36317	10,000 ohm 1/2 w. Res.			
	E-13761	Mystic Hand Flipper	21	4921-C	10,000 ohm 1 w. Res.			
	E-13762	Fidelity Flipper	22	27121	5,000 ohm 1/2 w. Res.			
	W-43080	Flipper Cont. Cable Assy. (4 req.)	23	40757	50,000 ohm 1/2 w. Res.			
	W-42308-A	Flipper Cont. Cable Pulley	24	35600	100,000 ohm 1/2 w. Res.			
	40638	Band Indicator Cont. Cable	25	35601	300,000 ohm 1/2 w. Res.			
	40537	Flex. Coupling Unit	26	36322	500,000 ohm 1/2 w. Res.			
42	42901	Power Cord & Plug (long)	27	W-30539	26.7 ohm 2 1/2 w. Res.			
43	G2-37918	Speaker Cable	28	W-23012-A	40 ohm 3/4 w. Flex. Res.			
44	36760	20,000 ohm 1/2 w. Res.	29	W-26049	450 ohm 3 w. Flex. Res.			
45	33390	30,000 ohm 1/2 w. Res.	30	W-25291	500 ohm 1 1/2 w. Flex. Res.			
46	36761	40,000 ohm 1/2 w. Res.	31	W-27503	1400 ohm 3/4 w. Flex. Res.			
47	34019	75,000 ohm 1/2 w. Res.	32	W-26422	1,000 ohm 4 w. Flex. Res.			
48	35600	1,000 ohm 1/2 w. Res.	33	W-32337	20 ohm 2 w. Candohm Res.			
49	35929	150,000 ohm 1/2 w. Res.	34	252DT4-J	Speaker (tweeter)			
50	35930	200,000 ohm 1/2 w. Res.	35	650DT4-M	Speaker (12 inch 1300 ohm field)			
51	35601	3,000 ohm 1/2 w. Res.	36	651DT4-M	Speaker (12 inch 525 ohm field)			
52	36322	5,000 ohm 1/2 w. Res.	37	953GT4-J	Speaker (18 inch)			
53	38623	750,000 Ohm 1/2 w. Res.	38	W-42956	S.P.D.T. Sw.			
54	35602	1 meg. 1/2 w. Res.	43	G1-42980	Socket L.P.S. (male)			
55	36176	1.3 meg. 1/2 w. Res.	44	G2-42980	Socket H.P.S. (male)			
56	35927	2 meg. 1/2 w. Res.	45	G98-28807	Socket A.F.I.P.			
57	36688	3 meg. 1/2 w. Res.	46	G99-28807	Socket M.I.P.			
58	G101-34003	R-F Neutralizing Cond.	47	G100-28807	Socket 9GT			
59	W-23012-A	40 ohm 3/4 w. Flex. Res.	48	G101-28807	Socket 6DT			
60	W-35467	220 ohm 1/2 w. Flex. Res.	49	G102-28807	Socket 2DT			
61	W-25937	275 ohm 1/2 w. Flex. Res.	50	G1-43000	Plug M.I.P. 4 Prong			
62	W-28589	350 ohm 1/2 w. Flex. Res.	51	G2-43000	Plug 9GT 5 Prong			
63	W-28106	500 ohm 1/2 w. Flex. Res.	52	G3-43000	Plug 6DT 6 Prong			
64	W-21452	1100 ohm 3/4 w. Flex. Res.	53	G4-43000	Plug 2 DT 7 Prong			
65	W-23013	2,000 ohm 1 1/2 w. Flex. Res.	54	G8-31618	Input Trans.			
66	W-23907	750 ohm 1 1/2 w. Flex. Res.	55	G9-31618	Bass Output Trans.			
67	4921-C	10,000 ohm 1 w. Res.	56	G66-24628	Mezzo Output Trans.			
68	W-42418	30,000 ohm 4 w. Res.	57	G67-24628	Treble Output Trans.			
69	36952	30,000 ohm 1 w. Res.	58	G68-24628	Mike Output Trans.			
70	W-41966	4,000-1,000-3,000-200 ohm Candohm Res.	59	G47-25669	Filament Trans.			
79	G167-36400	Auto Exp. Socket						

MODEL 3716

L-2 CHASSIS (cont)			SPEAKERS (cont)		
Item No.	Part No.	Description	Item No.	Part No.	Description
60	B-42951	500 ohm Treble Input Vol. Cont.		651DT4-M	"M" Speaker Spec. 1D708
61	B-42953-A	100,000 ohm Bass Vol. Cont. P.P.P. Grids		43174	Cone Assy.
61	B-42953-A	100,000 ohm Mezzo Vol. Cont. P.P. Grids		43178	Field Coil
62	B-42952	500,000 ohm Mike Input Vol. Cont.		43181	Terminal Cover
63	W-30321-A	1 mf. 160 v. Cond.		252DT4-J	Tweeter Speaker
64	W-30323	.01 mf. 200 v. Cond.		MG11-43029	Cable (Tweeter Field) Assy.
65	G5-43000	Plug "AFIP" (male)		MG12-43029	Cable (Tweeter Voice) Assy.
66	W-30805	.01 mf. 400 v. Cond.		MG13-43029	Cable (18"Speaker Field) Assy.
67	35928	60,000 ohm $\frac{1}{2}$ w. Res.		MG14-43029	Cable (18"Speaker Voice) Assy.
68	G6-43000	"SF" 4 Prong Socket		MG15-43029	Cable (12"Speaker Voice) Assy.
69	26578	5 meg. $\frac{1}{2}$ w. Res.			
L-3 CHASSIS			MISCELLANEOUS		
1				C-43030-A	Cont. Panel Body
1	W-42737	45 mf. 400 v. Cond.		T-134	Screw Panel Body Mtg.
2	W-42736	40 mf. 400 v. Cond.		B-43031	Escutcheon Cont. Panel
3	W-22688	.1 mf. 400 v. Cond.		D-30	Screw CP Escutcheon Mtg.
4	G45-25669	Filter Choke		B-42936	LH Dial Glass (small holes)
5	G3-33339	Fuse Panel Assy.		B-43032	LH Dial Glass (large holes)
6	W-32757	Fuse 12 Amp. Fuse Cover Cover Insulator		B-42937	RH Dial Glass (small holes)
7	G154-36400	524 Type Socket		B-43033	RH Dial Glass (large holes)
8	G4-37900	Power Trans. 60 cy. 110 v.		W-43040	Pad for Cont. Panel Glass
9	G44-25669	Power Trans. 60 cy. 110 v.		B-43034	Mask Support-Cont. Panel
10	G1-43001	Plug 4 Prong (female)		B-43035	Gasket Cont. Panel
11	G2-43001	Plug 5 Prong (female)		B-43036	Mask LH Cont. Panel
12	42905	Power Cord & Plug		B-43037	Mask RH Cont. Panel
L-4 CHASSIS				B-43038	Shield Plate Cont. Panel
1	W-37922	Dial Light Bulb		W-43039	Light Bracket Cont. Panel
2	W-42737	35 mf. 400 v. Cond.		W-43047	Microphone Clip
3	W-23615	.05 mf. 400 v. Cond.		W-43069	Microphone
4	42903	Power Cord & Plug		W-43232	Knob-Cont. Panel
5	G154-36400	524 Type Socket		43067-A	Cable Cont.-4 ft. 10 in.
6	G97-28807	SF Type Socket		43068-A	Cable Cont.-4 ft. 6 in.
7	G46-25669	Power Trans. 60 Cy. 110 v.		43076-A	Cable Cont.-7 ft. 2 in.
SPEAKERS				43077-A	Cable Cont.-7 ft.
	953GT4-J	18" Speaker		43078-A	Cable Cont.-6 ft. 10 in.
	650DT4-M	"M" Speaker Spec. 1D707		W-43046	Duplex Outlet
	43173	Cone Assy.		W-43045	AC Receptacle Plate
	43177	Field Coil		R-154	Screw Outlet Mtg.
	43180	Terminal Cover		W-23840	Screw Receptacle Plate Mtg.
	43182	Pot Cover			

Crosley supplies a general replacement line of radio parts through its national distributor organization. Do not hesitate to write to the factory for information as to where these parts may be purchased.

510

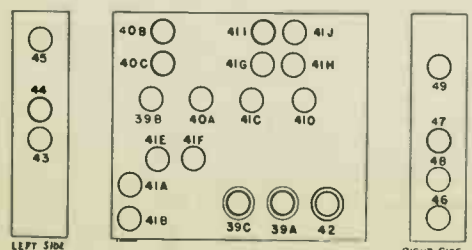
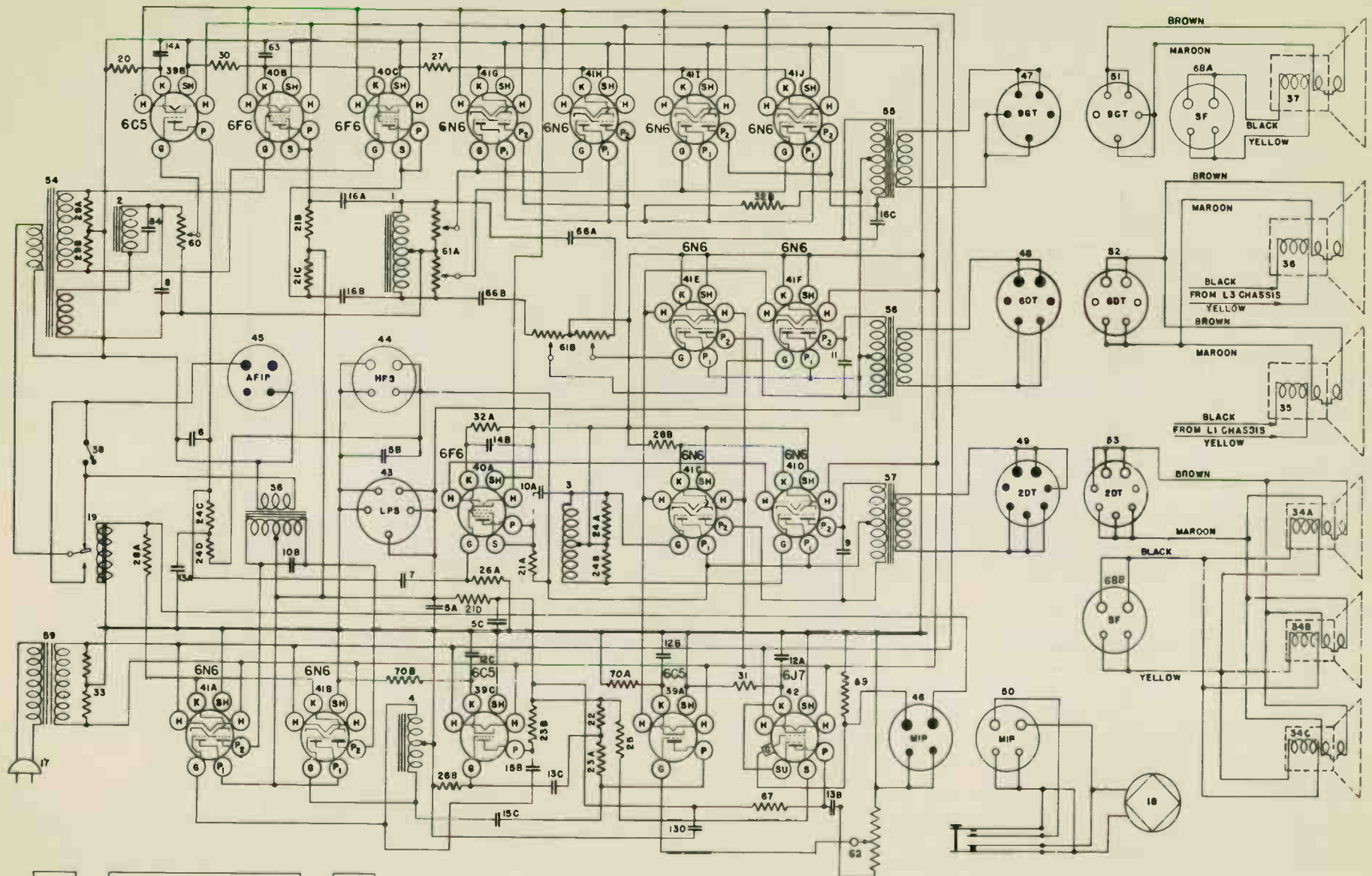


MODEL 3716

450 KC. I-F  
MODEL - 3716 LI

FIG. 1.

511

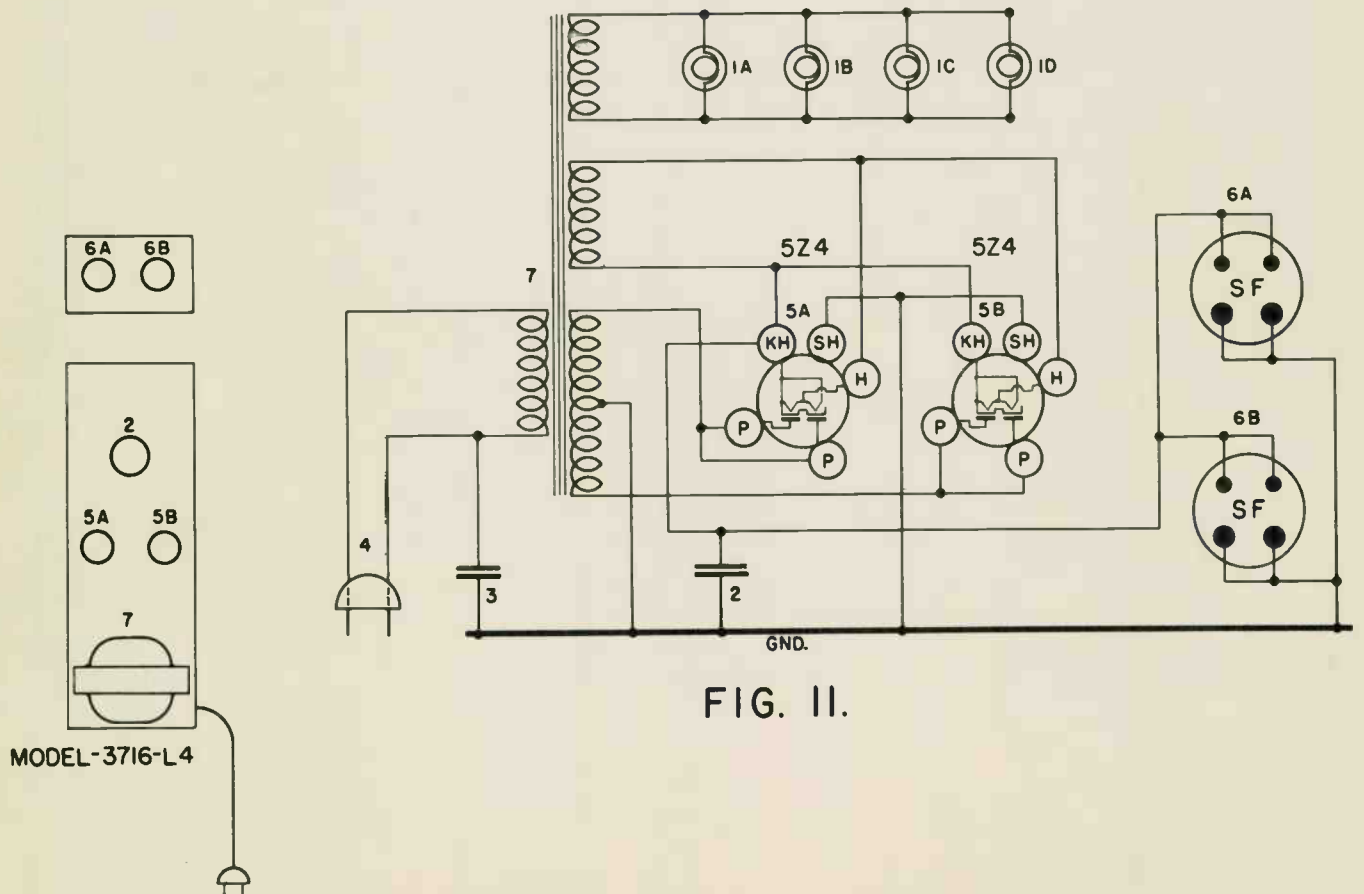
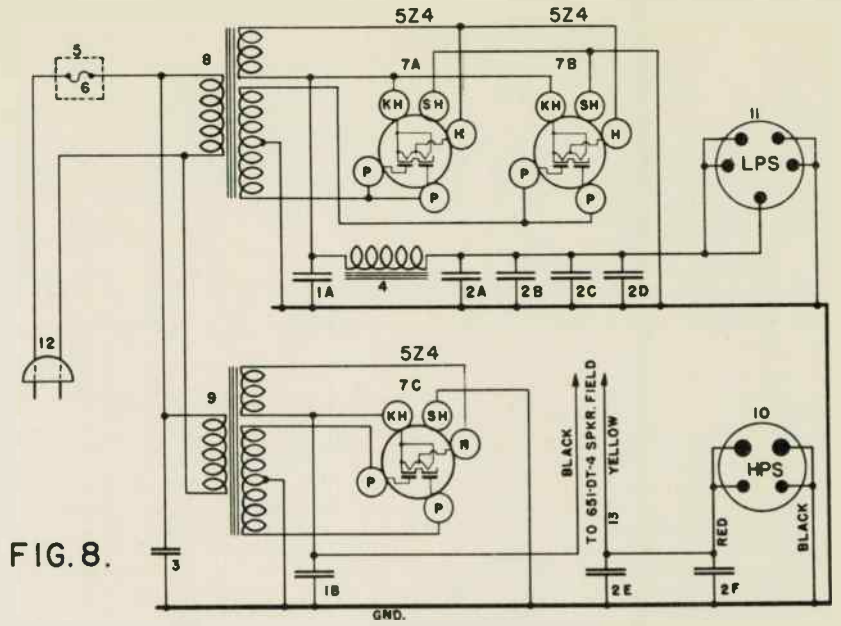
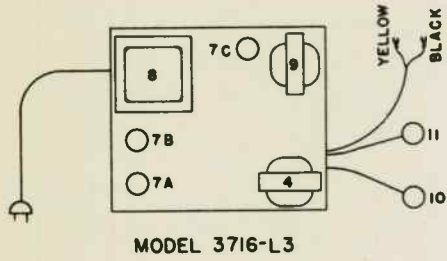


MODEL 3716-L2

FIG. 5.

MODEL 3716

MODEL 3716



TUBE SOCKET VOLTAGE READINGS 1.5 VOLTS "A"—90 VOLTS "B"

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7GT	OSC. MOD.	GND.	1.5	85	47	-5	78	GND.	J.B.
1P5GT	1st I-F Amp.	GND.	1.5	36	85	N.C.	J.B.	GND.	N.C.
1N5GT	2nd I-F Amp.	GND.	1.5	85	85	N.C.	N.C.	GND.	J.B.
1H5GT	Det., AVC, 1st A-F	N.C.	1.5	13	N.C.	Diode	85 J.B.	GND.	N.C.
1Q5GT	Output	-5 J.B.	1.5	80	85	Grid	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 34—350 Ohms.  
 Power Output Approximately 450 M.W.  
 "A" Battery Drain = 350 M.A. @ 1.5 volts.  
 "B" Battery Drain = 15 M.A. @ 90 volts.  
 GND. = Ground. N.C. = No Connection. J.B. = Junction Block.

**Tuning the I-F Amplifier To 455 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and band switch to M. W. position.
- (c) Set the signal generator to 455 kilocycles.
- (d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.
- (e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.
- (f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**Aligning the R-F Amplifier—Medium Wave Band**

- (a) Connect the output lead of the signal generator through a .0002 mf. condenser to "A" terminal of the receiver and the ground lead to the "G" terminal.
- (b) Turn band switch to medium wave (to the left looking at back of chassis), open condenser gang all the way, turn the volume control on full. Set signal generator to 1712 kilocycles—(175 meters).
- (c) Adjust the M. W. Oscillator trimmer for maximum output. Gang should just tune thru 1712 kc. signal.
- (d) Set signal generator to 1400 kilocycles (approx. 212 meters).
- (e) With tuning knob on receiver tune in 1400 kc. generator for maximum output.
- (f) Adjust the M. W. antenna trimmer condenser for maximum output.
- (g) Repeat above procedure for more accurate alignment.

**No. 1—Short Wave Band**

- Connect signal generator output lead to "A" terminal using a 250 ohm carbon resistor in place of the .0002 condenser for dummy antenna.
- (a) Set signal generator to 7250 kilocycles (41.7 meters), open gang all the way, turn band switch to middle position (SW-1) and volume control on full.
  - (b) Adjust SW-1 Oscillator trimmer to 7250 kc. (close trimmer tight; the second peak reached on opening is the correct peak for 7250 kc. signal).
  - (1) Set the signal generator to 7000 kc. (42.7 m.) then tune in generator signal with tuning condenser.
  - (c) Adjust SW-1 antenna trimmer condenser for maximum output. Slowly rock the tuning condenser

back and forth while making this adjustment.

- (d) Repeat above procedure for more accurate results.

**No. 2—Short Wave Band**

- Use same dummy antenna as for No. 1 Short Wave band (250 ohm carbon resistor) open tuning gang all the way, volume on full, etc.
- (a) Set signal generator to 23 megacycles (13.04 meters). Then adjust the SW-2 oscillator trimmer for maximum output by closing the trimmer condenser tight, then opening to the SECOND peak.
  - (b) Set signal generator to 22 megacycles (13.63 meters).
  - (c) Tune in generator signal (22 mc.) with gang; then adjust the SW-2 antenna trimmer condenser for maximum output. Slowly rock condenser gang while making this adjustment.
  - (d) Repeat (a) to (c) for more accurate adjustments.

NOTE: Make sure the short wave bands are aligned on the fundamental frequency which is approximately 910 kilocycles more than the fundamental. To check, increase signal generator output about 10 times and tune in the fundamental frequency, and then the image frequency, which will be approximately 910 kilocycles less than fundamental as indicated on the dial. In both cases image and fundamental frequencies (7 mc. and 5.9 mc. or 22 mc. and 20.90 mc.) can be heard but if correctly aligned the image frequency signal will be much weaker than the fundamental.

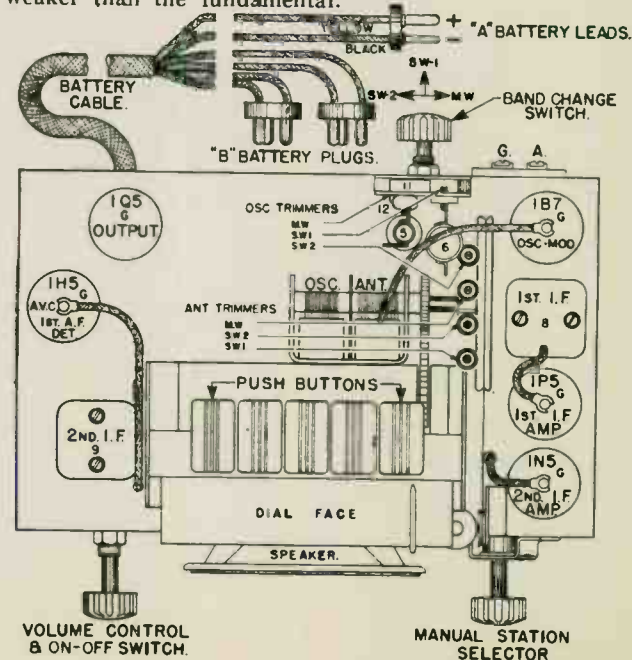
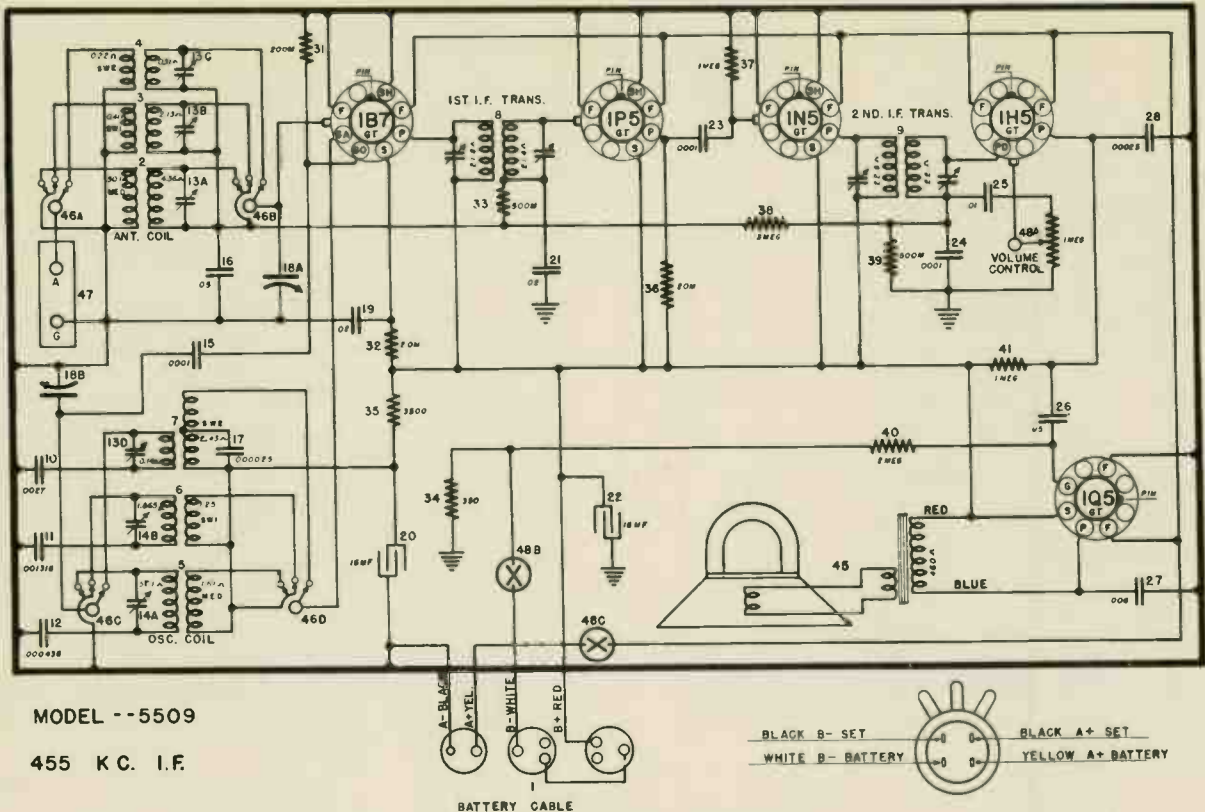


Fig. 2—Top View Model 5509





MODEL --5509  
455 K.C. I.F.

FIG. 1—WIRING DIAGRAM—MODEL 5509

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	—48312	Battery Cable and Plug	G56	—45883	Riveted Key Assy.	
2	G210—32000	Antenna Coil—540-1,712 Kc.	—50542	—50542	Clip—Toggle Lock Clamp	
3	G211—32000	Antenna Coil—2.3-7.3 Mc.	—45717	—45717	No. 6—32 x 1/16" Screw—Station Setting	
4	G212—32000	Antenna Coil—7.5-22 Mc.	—50607	—50607	Spring—Key Return	
5	G221—32002	Oscillator Coil—540-1,712 Kc.	G31	—47880	Rocker Bar and Gear Assy.	
6	G222—32002	Oscillator Coil—2.3-7.3 Mc.	—50561	—50561	No. 6—40 x 1/8" Screw—Rocker Bar Bearing	
7	G223—32002	Oscillator Coil—7.5-22 Mc.	—51146	—51146	Bronze Spring—Rocker Bar Bearing	
8	G194—32004	1st I-F. Assy.—455 Kc.	—50547	—50547	Key Plate—Rear Slide Adjustment	
9	G195—32001	2nd I-F. Assy.—485 Kc.	MG18	—47860	R. H. Bracket Assy.—P. B. Unit to Chassis	
10	G11—34005	Condenser, .00270 Mf. Mica	MG19	—47860	L. H. Bracket Assy.—P. B. Unit to Chassis	
11	G15—34005	Condenser, .001318 Mf. Mica	—45580	—45580	Rubber Grommet—P. B. Unit Mtg.	
12	G19—34002	Condenser, .000436 Mf. Mica	—46460	—46460	Headed Bushing—P. B. Unit Mtg.	
13	—41247	Condenser—4 Section Shunt Trimmer Assy.	—6495	—6495	No. 8—32 x 1/16" Screw—P. B. Unit Mtg.	
14	—37986	Condenser—2 Section Shunt Trimmer Assy.	G1	—48424	Light Guard Assy.—P. B. Shafts	
15	G2	34002	Condenser, .0001 Mf. Mica	—48341	—48341	Push Button
16	—35936	Condenser, .05 Mf. 200 V.	—46240	—46240	European Station Call Sheet	
17	G6	34002	Condenser, .000025 Mf. Mica	—47023	—47023	Blank Call Tab Sheet
18	G87	33001	Condenser—Var. Tuning Gang	—48747	—48747	Celluloid Call Tab Cover
19	—28621	Condenser, .02 Mf. 200 V.	<b>DIAL PARTS</b>			
20	—45783	Condenser, 16 Mf. 125 V.	—47875	—47875	Dial Background—Metal Brkt. (FS-71)	
21	—28621	Condenser, .02 Mf. 200 V.	—48638	—48638	Glass Dial Face	
22	—48122	Condenser, 16 Mf. 250 V.	G12	—43564	Pulley and Hub Assy.—On Gang	
23	G2	31002	Condenser, .0001 Mf. Mica	MG30	—47860	Idler Pulley and Bracket Assy.
24	G2	31802	Condenser, .0001 Mf. Mica	—46293	—46293	Idler Pulley only
25	—30323	Condenser, .01 Mf. 200 V.	—46294	—46294	Brass Stud—Idler Pulley Mtg.	
26	—32380	Condenser, .05 Mf. 200 V.	—23877	—23877	No. 8—32 x 1/16" Set Screw—Large Pulley	
27	—28519	Condenser, .006 Mf. 200 V.	—47930	—47930	Pointer—Dial Hand (FS-77)	
28	G1	34002	Condenser, .00025 Mf. Mica	G20	—41582	Drive Cord (42 3/4")
29	None			—50590	—50590	Spring—Drive Cord Tension
30	None			G30	—41582	Spring—Guide Cord Tension
31	—34018	Resistor, 200,000 Ohms 1/2 W.	—46848	—46848	Clamp—Drive Cord	
32	—36760	Resistor, 20,000 Ohms 1/2 W.	—46280	—46280	Bracket—Manual Drive Shaft Mtg.	
33	—36322	Resistor, 500,000 Ohms 1/2 W.	—43542	—43542	Drive Shaft and Pulley Assy.	
34	—28589	Resistor, 350 Ohms 1/2 W.	<b>MISCELLANEOUS PARTS</b>			
35	—30157	Resistor, 3,500 Ohms 1/2 W.	9CA	—	Cabinet	
36	—22196	Resistor, 20,000 Ohms 1/2 W.	—48110	—48110	Shipping Carton	
37	—21451	Resistor, 1 Megohm 1/2 W.	MG32	—47861	Escutcheon and Reflector Assy.	
38	—26577	Resistor, 3 Megohms 1/2 W.	—47765	—47765	Escutcheon only	
39	—36322	Resistor, 500,000 Ohms 1/2 W.	—48018	—48018	Glass Reflector only	
40	—34883	Resistor, 2 Megohms 1/2 W.	—46953	—46953	Knob (2 Req.)	
41	—21454	Resistor, 1 Megohm 1/2 W.	—47927	—47927	Knob—B. C. Switch	
42	None		—47929	—47929	Chassis Mtg. Strap	
43	None		—46212	—46212	Rubber Covered Chassis Mtg. Screws	
44	None		—48135	—48135	Screws—Escutcheon Mtg. (FS-38)	
45	274-PL-8" "B"	Speaker, Mfr. Spec. No. 55-PWS-17	—49333	—49333	Instruction Booklet	
		Output Transformer	—49281	—49281	Short Wave Station Chart	
		274-PL-8" "K"	MG31	—49268	Instruction Envelope Assy.	
		Output Transformer	CR	—28	Cresley "A" and "B" Battery Pack	
		—47911				
		Bracket—Speaker Mtg.—Rear				
16		Bracket—Speaker Mtg.—Lower Front				
		Band Change Switch				
47	G1	26719				
		Ant. and Gnd. Terminal Board				
18		—48328				
		Switch and Vol. Control (1 Meg.)				
		—46720				
		Socket—8 Prong—No Marking				
		—46147				
		Tube Shield				
		—48315				
		Ground Clip—For Tube Shield				
		<b>PUSH BUTTON UNIT PARTS</b>				
	G11	—45883				
		Push Button Unit—With Gang				
		—49763				
		Push Button Unit—Less Gang				

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Co	Ga
12A8GT	Oscillator-Modulator	12	90	48	—	3	—	—
12SK7GT	I-F. Amplifier	12	90	90	—	—	—	—
12SQ7GT	Det. AVC. A-F Amplifier	12	40	—	—	—	—	—
50L6GT	Output	50	81	90	—	6	—	—
35Z5GT	Rectifier	35	117.5	—	—	117	—	—

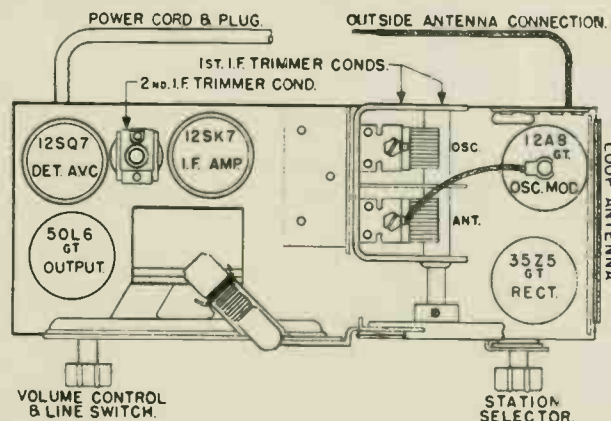
Power output approximately 2 watts.  
 Power consumption approximately 27 watts.  
 Voltage drop across speaker field 25 volts.  
 All voltages except filaments will be approximately 10% lower if measured on 117.5 volts DC power supply.

**Tuning the I-F Amplifier To 455 Kilocycles.**

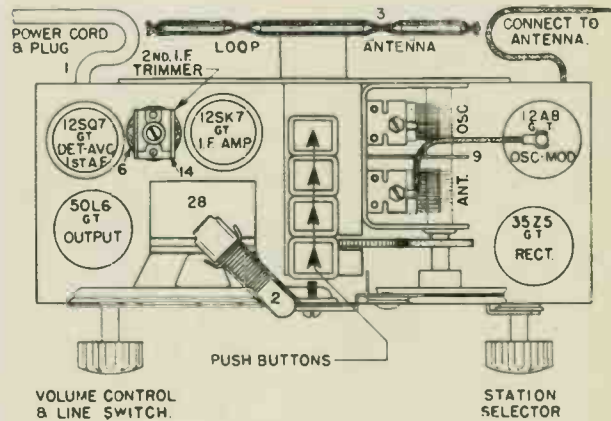
- Connect the output of the signal generator through a 50 mmf. condenser to the antenna connection on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis.
- Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).
- Set the signal generator to 455 kilocycles.
- Adjust the 2nd I-F trimmer condenser, Item 14, located on top of coil (Fig. 2) for maximum reading on the output meter.
- Adjust the 1st I-F trimmer condensers located on the rear of chassis for maximum output.

**Aligning the R-F Amplifier.**

- Set the signal generator to 1725 kilocycles.
  - With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang so that the 1725 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.
  - Set the signal generator to 1400 kilocycles.
  - Tune-in the 1400 kilocycle signal in the region of 140 on the dial for maximum output.
  - Adjust the trimmer condenser located on the "ANT" section of the gang for maximum output.
- NOTE: Do not readjust the "OSC" trimmer.
- Repeat operations (d) and (e) for more accurate adjustments.



Models 5519, J-5519, 6519



Models 5529, J-5529

Fig. 2—Top View

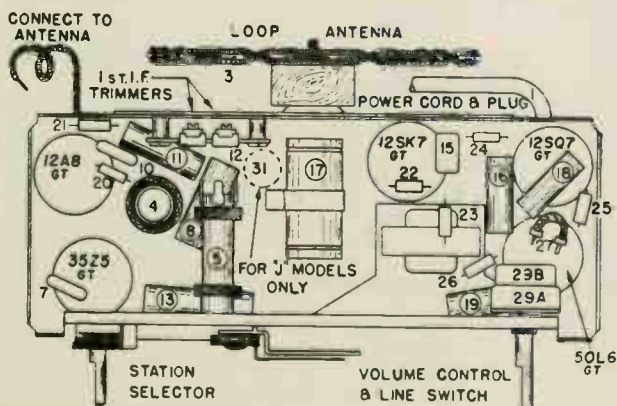


Fig. 3—Bottom View Models 5519, J-5519, 6519, 5529, J-5529

Sales No.	Cabinet No.	Color
519A	9EA	Mottled Brown
5519B	9EHA	Ivory
5519C	9EJA	Red
5519E	9EKA	Blue
5519F	9ELA	Tan
529A	9ED	Mottled Brown
5529B	9EE	Ivory
5529C	9EF	Red
5529D	9EL	Wood (Loop on Back)
5529D	9EG	Wood (Loop on End)
6519A	9EBB	Wood

For J Models prefix a J before sales NUMBER.

MODELS J5519, J5529, 6519

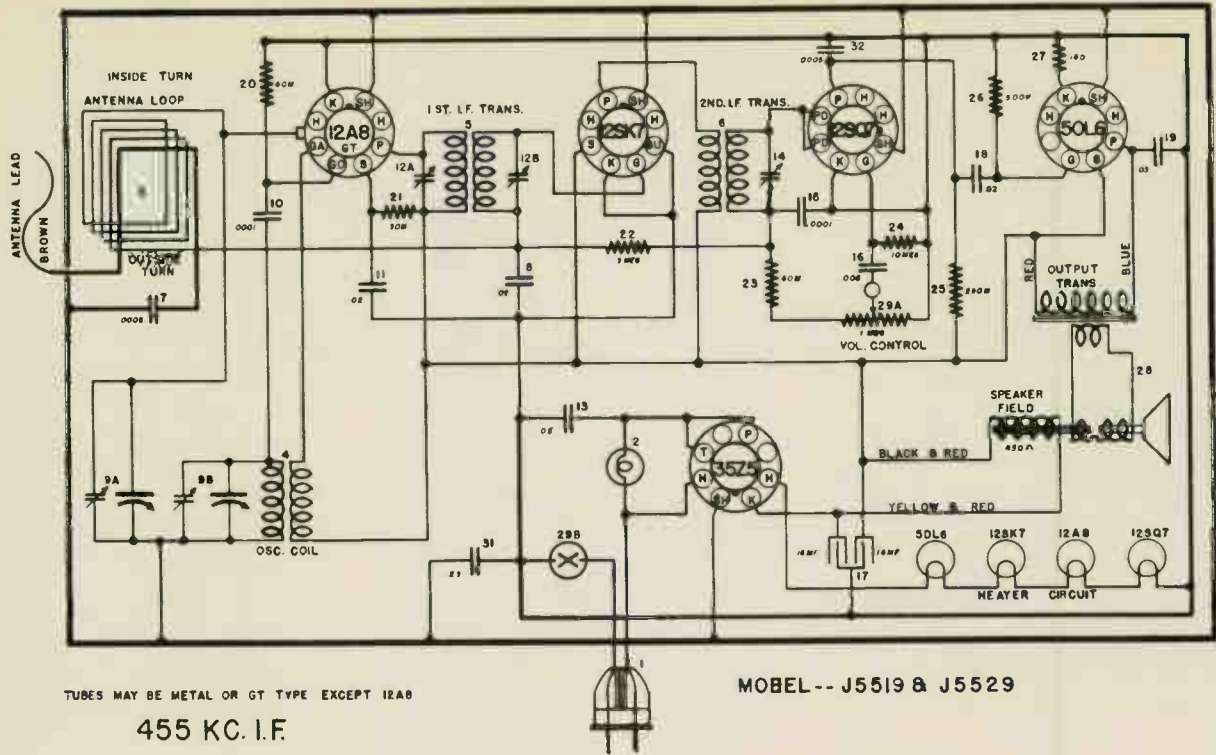


FIG. 1-B—WIRING DIAGRAM MODELS J-5519, J-5529

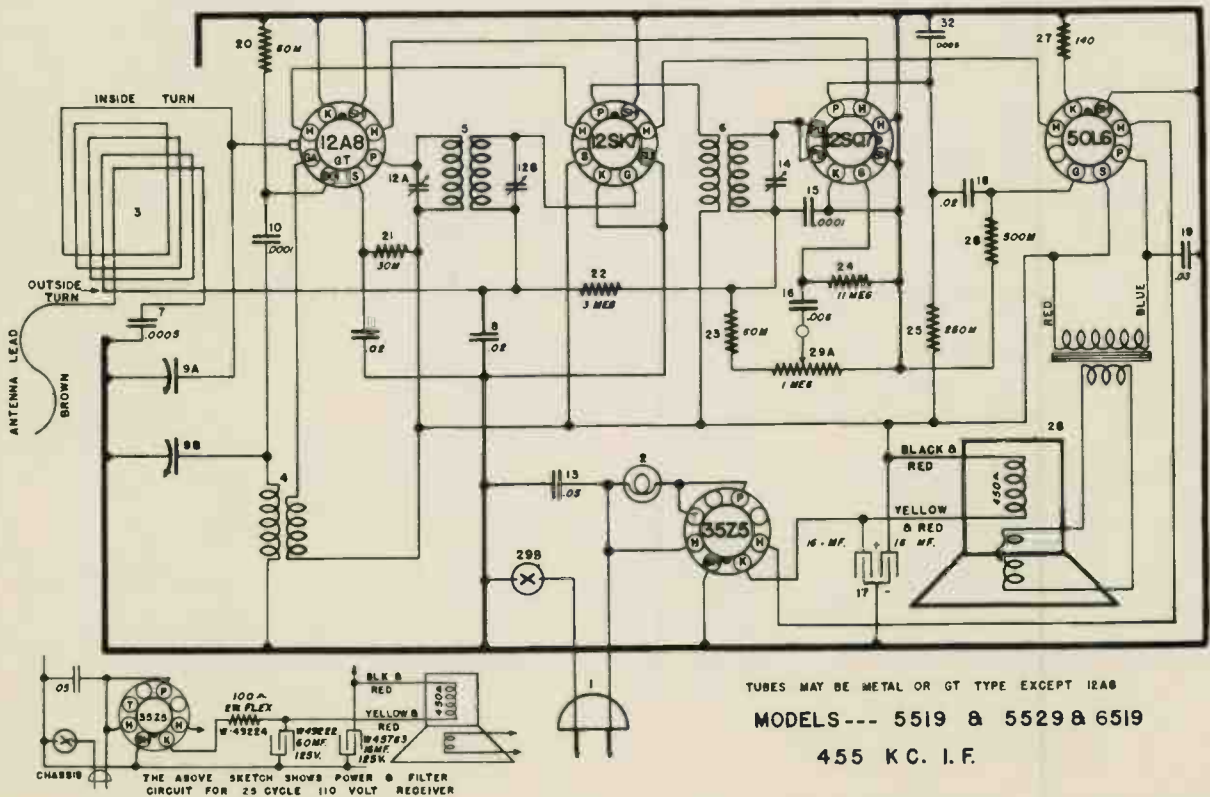


FIG. 1-A—WIRING DIAGRAM MODELS 5519, 5529 and 6519

**PARTS LIST MODELS—5519, J-5519, 6519, 5529, J-5529**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—45784	Power Cord and Plug		—47589	Push Button—Black
2	—45769	Power Cord and Plug—J Models		—47687	Pointer
	—4099	Dial Lamp		—47824	Push Button—Brown (for Wood Cab.)
	—48858	Dial Lamp—J Models		—47859	Call Letter Sheet—Black
	G6 —27134	Light Socket and Clamp Assy.		—47863	Call Letter Sheet—Brown
	—45756	Bracket—Dial Light Mtg.		—50551	Celluloid Cover—Call Letter Tab
	G3 —47431	Light Socket and Clamp Assy.—J Models	MG31—47561	Instruction Envelope Assy.—For 9ED and 9EG Cab.	
	—48855	Bracket—Dial Light Mtg.—J Models	MG32—47561	Instruction Envelope Assy.—For 9EE, 9EF, 9ECA, 9ECB Cab.	
3	G1 —47673	Loop Antenna—5519, 5529 (Spider Form)		9ED	Cabinet—Mottled Brown
	G3 —47673	Loop Antenna—J5529 (Spider Form)		9EE	Cabinet—Ivory
	G8 —47673	Loop Antenna—6519		9EF	Cabinet—Red
	—49126	Loop Antenna—J-5519 (Pancake)		9ECA	Cabinet—Blue
	—49126	Loop Antenna—Replaces G1-47673 and G3-47673		9EDA	Cabinet—Tan
	—49158	Asbestos Shield for Pancake Loops		9EL	Cabinet—Wood—For Rear Mtd. Loop
4	G186—32002	Oscillator Coil		9EG	Cabinet—Wood
5	G219—32004	1st I-F. Coil only		—47737	Cabinet Back (Rear Mtg. Loop Sets)
6	G218—32004	2nd I-F. Coil only		—47614	Cabinet Back—For 9EL or 9EG
	G233—32004	2nd I-F. Coil only		—47598	Cabinet Back—Brown
7	G3 —34002	Condenser, .0005 Mf. Mica		—47599	Cabinet Back—Ivory
8	—45780	Condenser, .02 Mf. 160 V.		—47600	Cabinet Back—Black
9	G74 —33001	2 Section Gang Cond.—5519, 6519, J-5519		—49416	Instruction Booklet
	G73 —33001	2 Section Gang Cond.—5529, J5529		—47603	Knob—Brown
10	G2 —34002	Condenser, .0001 Mf. Mica		—44934	Knob—Black
11	—45780	Condenser, .02 Mf. 160 V.	B —130	—47615	Knob—For Cab. 9EG and 9EL
12	—46738	1st I-F. Trimmer Cond. (Dual)		—20881	Screw—Back Mtg.—9EG and 9EL
	—48446	1st I-F. Trimmer Cond. (Dual) J Models		—48758	Trimount Stud—Back Mtg. (FS18 or FS13)
13	—45782	Condenser, .05 Mf. 120 V.		—47657	Shipping Carton
14	—46653	2nd I-F. Trimmer Cond. (Single)		—47669	Shipping Carton—9EL Cab. only
15	G2 —34002	Condenser, .0001 Mf. Mica		—47571	Shipping Carton—9EG Cab. only
16	—45810	Condenser, .006 Mf. 160 V.		—44827	Screw—Chassis Mtg.—9EG and 9EL
17	—46398	Condenser, 16-16 Mf. 125 V.		—30409	Flat Washer—Chassis Mtg.—9EG and 9EL
18	—45780	Condenser, .02 Mf. 160 V.			
19	—50065	Condenser, .03 Mf. 160 V.			
20	—35928	Resistor, 60,000 Ohms 1/4W.		9EGA	Cabinet—Mottled Brown
21	—49004	Resistor, 30,000 Ohms 1/4W.		9EHA	Cabinet—Ivory
22	—26577	Resistor, 3 Megohms 1/2W.		9EJA	Cabinet—Red
23	—35928	Resistor, 60,000 Ohms 1/4W.		9EKA	Cabinet—Blue
24	—50956	Resistor, 10 Megohms 1/2W.		9ELA	Cabinet—Tan
25	—38976	Resistor, 250,000 Ohms 1/4W.		—47600	Cabinet Back—Black
26	—36322	Resistor, 500,000 Ohms 1/4W.		—47599	Cabinet Back—Ivory
27	—41759	Resistor, 140 Ohms 1/2W.	B —130	—48758	Screw—Back Mtg. (FS13 or FS58)
28	284-BL-5	Speaker			Trimount Stud—Back Mtg. (FS13 or FS58)
	284-UL-5	Speaker—J Models		—44934	Knob—Black
29	—48217	Switch and Vol. Control—1 Meg.		—45324	Knob—Ivory
	—46124	Switch and Vol. Control—6519 only		—49116	Handle—Black
30	None			—49117	Handle—Ivory
31	—47413	Condenser, .25 Mf. 160 V.—J Models only		—49161	Screw—Handle Mounting
32	G3 —34002	Condenser, .0005 Mf. Mica		—49373	Instruction Booklet
	—47631	Glass Dial—Face		—49144	Shipping Carton—Single
	—46921	Speed Nut—Dial Mtg.		—47572	Shipping Carton—Single (Nursery Model)
	MG9—47560	Bracket—Dial Background		—49158	Heat Shield—J-5519
	G17—43564	Pulley and Hub Assy.		—48443	Bottom Shield—J-5519
	G18 —14582	Drive Cord (27 Inches)			
	—46087	Spring—Cord Tension			
	—47559	Drive Shaft			
	—47557	Bracket—Drive Shaft Mtg.		9EBB	Cabinet
	G26 —41582	Guide Cord (8 Inches)		—49386	Cabinet Back
	—46848	Spring—Guide Cord Tension		—20881	Screws—Back Mounting (6)
	—46290	Cord Clamp—Drive Cord		—49372	Shipping Carton
	—47582	Pointer—Dial Hand		—45020	Flat Washer—Chassis Mtg. (3) (FS58)
		<b>5529—J5529—MISCELLANEOUS</b>		—44392	Screw—Chassis Mtg. (3) (FS58)
	G36 —45683	Push Button Tuning Unit		—49385	Knob
	G59 —45683	Rocker Plate and Gear Assy.		—48432	Block—Upper Dial Mtg.
	—50561	Screws—Rocker Bearing		—48433	Block—Lower Dial Mtg.
	G58 —45683	Riveted Key Assy.		—49373	Instruction Booklet
	—45717	Screw—Station Setting			
	—50607	Spring—Key Return			
	—50542	Clamp—Toggle Lock			
	—47591	Push Button—Brown			

VOLTAGE READINGS—WITH 90 VOLTS "B" AND 6 VOLTS "A"

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	95	54	Neg.	95	—	—
1N5GT	I-F Amplifier	0	4.5	95	95	—	—	3.0	—
1H5GT	Det. AVC, 1st Audio	0	3.0	15	15	—	—	1.5	8 J.B.
1A5GT	Output	0	6.0	92	95	—	8 J.B.	4.5	—
117 Z6GT	Rectifier	0	0	0	95	0	0	0	6.0

Power Output approximately 600 M. W.  
 "A" Battery Drain 50 M. A.  
 "B" Battery Drain 8.7 M. A.

VOLTAGE READINGS—@ 117.5 VOLT LINE (A. C.)

Tube	Tube Socket Function	PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	104	62	-3	104	—	—
1N5GT	I-F Amplifier	0	4.5	104	101	—	—	3.0	—
1H5GT	Det. AVC, 1st Audio	0	3.0	17	17	—	Diode	1.5	50 J.B.
1A5GT	Output	0	6.0	100	101	—	30	4.5	—
117 Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	135	117.5 A.C.	0	0	124

Power Output approximately 900 M. W.  
 Watts @ 117.5 volts 30 watts.  
 Above readings will be approximately 10% less when checked on D.C. power circuit.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving the tube's grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a

.0001 mf. condenser to RED wire connecting to the loop and the ground lead to the receiver chassis (through a condenser).

Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

(a) Set the signal generator to 1400 kilocycles.

(b) Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.

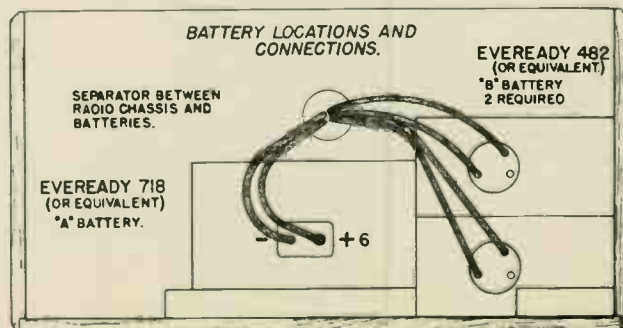
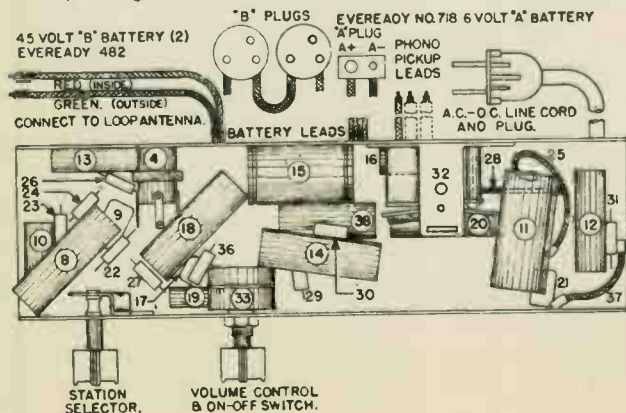
(c) Adjust antenna trimmer (front section gang) for maximum output.

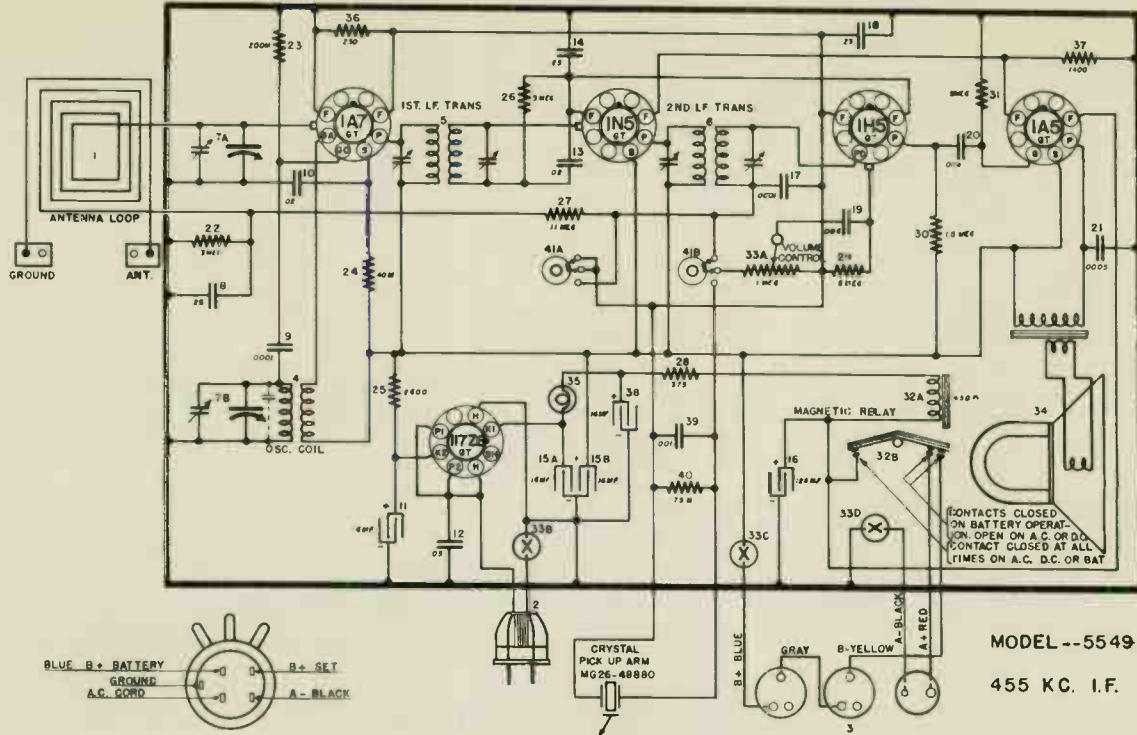
RELAY

The receiver, when plugged into 110 volt circuit, will operate on the batteries until rectifier arms up and trips the relay. When relay trips there should be no decrease or dead spot in output as rectifier should be warmed up sufficiently to carry load and give a slight increase in output due to higher plate voltage available.

The relay is insulated from the chassis and care should be exercised when probing so as not to short it.

In earlier models the relays have three sets of contacts and the single side must make contact at all times. The double side must make contact when batteries are used and both contacts (double contact side) must break when operated on 110 volt circuits. Later models the single contact side was omitted and a flexible braid connection used instead.





MODEL --5549

455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	—18969	Loop Antenna	37	—27503	Resistor, 1,400 Ohms $\frac{1}{2}$ W. Flex.
2	—48998	A. C.-D. C. Power Cord and Plug	3A	—45783	Condenser, 16 Mf. 125 V. Elect.
3	—48872	Battery Cable	33	—30270	Condenser, .01 Mf. 400 V.
4	G209—32002	Oscillator Coil	40	—36519	Resistor, 75,000 Ohms $\frac{1}{2}$ W.
5	G194—32004	1st I-F. Transformer Assembly	11	—18933	Phono-Radio Switch
6	G195—32004	2nd I-F. Transformer Assembly		—19173	Bracket—Switch Mtg.
7A	G88—33001	2 Section Var. Cond. (Antenna Sect. Oscillator Sect.)			<b>PHONO PARTS</b>
7B	—48431	Dial Face		—18904	Phono Motor (Spring Type)
	—6415	No. 8—32 x $\frac{1}{4}$ " W. Hd. Screw (Dial Face)		—49642	Motor Spring only
	0	8 Flat Washer (Dial Face)		—48916	Center Stud (Motor)
	43549	Retaining Ring (Drive Shaft)		—48917	Crank (Motor)
	—48695	Drive Shaft		—18918	Turntable (Plate)
	—14808B	Drive Shaft Bracket		—48937	Motor Mounting Board
	—6876	Screw (Drive Shaft Bracket) (2 Req.)	R	—165	No. 8—32 x $\frac{1}{2}$ " Screws—Motor Mtg.
	G19	—11582 Drive Cord (17')		—48915	Spacer—Motor Mtg.
	—41989	Drive Cord Spring		—48911	Rubber Washer—Motor Mtg.
	—46920	Drive Cord Clamp		—48912	Flat Washer—Motor Mtg.
	—49113	Dial Pointer		—48913	Drive Washer—Motor Spindle
	—49111	No. 6—32 x $\frac{1}{4}$ " Gulmit Screw (Dial Pointer)		—48911	Rubber Spindle Cover—Motor Spindle
	20800	Shakeproof Washer (Dial Pointer)		—48906	Turntable Stop
	—51108A	8 Prong Socket (No Marking)		—18809	Speed Indicator Arm
	—34712	Condenser, 25 Mf. 160 V. Paper		—48910	Speed Escutcheon (Plate)
8	G2	—34002 Condenser, .0001 Mf. Molded		—48907	Crank Handle Escutcheon
	—29621	Condenser, .02 Mf. 200 V. Paper		—48908	Escutcheon Washer
10	—46128	Condenser, 16 Mf. 250 V. Elect.		—48905	No. 3 x $\frac{3}{8}$ " Wood Screw—Escut. Mtg.
12	—23615	Condenser, .05 Mf. 400 V. Paper		—18988	Tone Arm (Pickup)
13	—28621	Condenser, .02 Mf. 200 V. Paper		—47328	Shakeproof Washer—Pickup Mtg.
14	—34712	Condenser, 25 Mf. 160 V. Paper		—47329	Nut—Pickup Mtg.
15	—46398	Condenser, 16 Mf. 125 V. Elect.		—17321	Needle Screw
	—48562	Condenser, 125 Mf. $\frac{1}{2}$ V. Elect.		—17325	Crystal Cartridge only
16	G2	—34002 Condenser, .0001 Mf. Molded		—47326	Arm and Pivot only
17	—34712	Condenser, 25 Mf. 160 V. Elect.	G216	—34403	Phono Lead Assy.
18	—28604	Condenser, .004 Mf. 200 V. Paper		—48932	Bracket—Arm Rest
19	—28904	Condenser, .004 Mf. 200 V. Paper		—17335	Rubber Locking Ring
20	—34002	Condenser, .0005 Mf. Molded	R	—156	Screw—Bracket Mtg.
21	—36688	Resistor, 3 Megohms $\frac{1}{4}$ W. Ins.		—48364	Chromium Tipped Needle
22	—35930	Resistor, 200,000 Ohms $\frac{1}{2}$ W. Ins.		—48985	Needle Cup and Cover
23	—36761	Resistor, 40,000 Ohms $\frac{1}{4}$ W. Ins.		7656	No. 6 x $\frac{5}{8}$ " Ox. Hd. Screw—Phono Board Mtg.
24	—30960	Resistor, 2,600 Ohms $\frac{1}{4}$ W. Flex.		—18981	Cup Washers—Phono Board Mtg.
25	—36688	Resistor, 3 Megohms $\frac{1}{4}$ W. Ins.			<b>MISCELLANEOUS PARTS</b>
26	—48693	Resistor, 11 Megohms $\frac{1}{4}$ W. Ins.		9EFA	Cabinet
27	—21965	Resistor, 375 Ohms 1 W. Flex.		—48650	Lid Catch
28	—17131	Resistor, 5 Megohms $\frac{1}{4}$ W. Ins.		—18845	Hinge—Lid
29	—48692	Resistor, 1 $\frac{1}{2}$ Megohms $\frac{1}{4}$ W. Ins.		—48847	Leather Handle
30	—47131	Resistor, 5 Megohms $\frac{1}{4}$ W. Ins.		—48846	Handle Mtg. Bracket (2 Req.)
31	—47131	Resistor, 5 Megohms $\frac{1}{4}$ W. Ins.		—48848	Back Plate—Handle Mtg. Bracket
32A	MG26	48390 Relay Coil		—48852	Shipping Carton
32B	—19201	Relay Insulator Strip		—48854	Rubber Foot (4 Req.) Cab. Bottom
33A	—48604	A. C.-D. C. Switch		—159	Rubber Foot (5 Req.) Cab. Side
33B	—16662	B+ Battery Switch	S	—48705	Screw—49544 Foot Mtg.
33C	—48604	Relay—Ground		—48719	Knob—Tuning—Phono Switch
33D	—48605	Pal Nut		—48605	Knob—Volume Control
	—48691	Speaker, Spec.		—48720	Speaker Screen
34	392-PL-6"W"	V. C. and Cone Assy.		—48720	Dial Lens (Celluloid)
	—48801	Optup Transformer		—48720	"Off" Indicator Tack
35	MG34—48390	Dial Light Bulb, 110 Volt		—44772	No. 8 x $\frac{1}{4}$ " P. K. Screw—Chassis Mtg.
	G1—49274	Dial Light Socket		—30409	Washer—Chassis Mtg.
	MG33—48390	Dial Lamp Shield Assy.		—49256	Crank Hole Eyelet
36	—51085	Resistor, 250 Ohms $\frac{1}{4}$ W. Ins.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	150	85	-2	0	—	—
6A7	Osc-Modulator	5.8	150	85	-2	0	120	-5 to -15
6B7	I-F Amp. & Detector	5.8	150	85	-2	0	—	—
15	A-F Amplifier	2.0	70	15	-2	0	—	—
38	Output	5.8	145	150	0	12	—	—
31	AVC Diode	2.0	—	—	—	—	—	—

"A" Battery Drain Approximately 2.5 Amperes.

Power Output Approximately .9 Watt.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser (SEC) on the 1st I-F transformer. (Fig. 2).

(f) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers (TERT and PR1) of the 1st I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

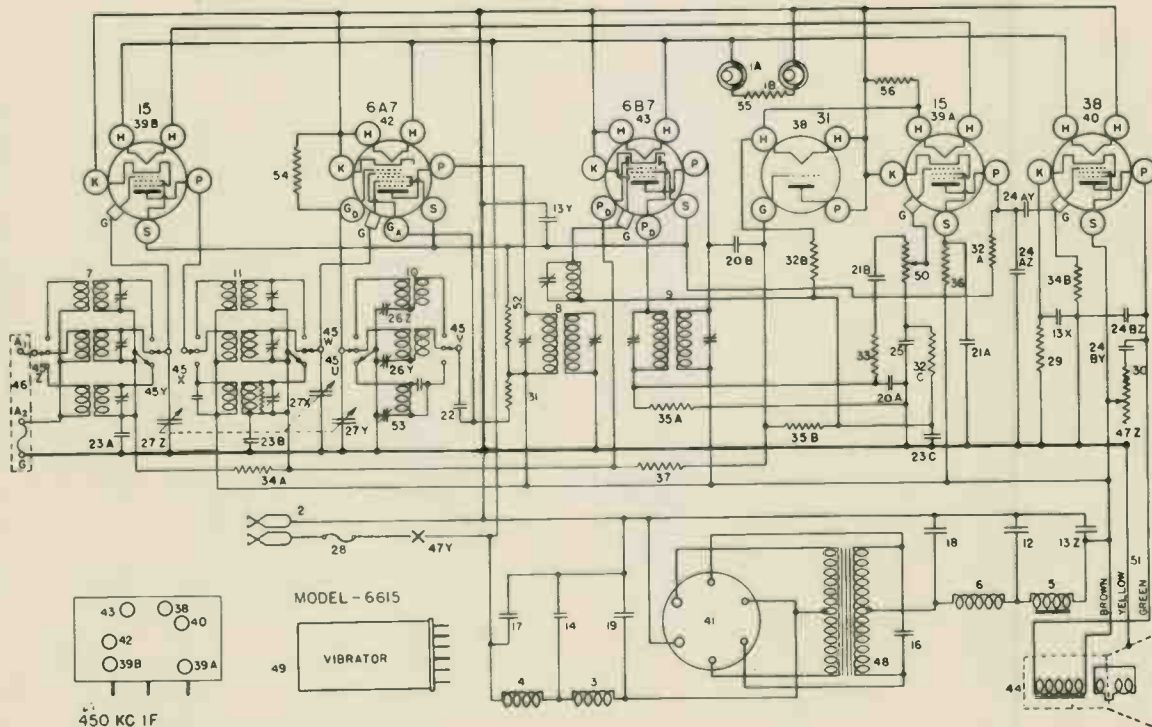
2. Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (illus. Nos. 53 top view, 26Z and 26Y side view, Fig. 2) set the signal generator to the frequency indicated and then tune-in



this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning

condenser back and forth slightly, until no further improvement in output can be obtained.

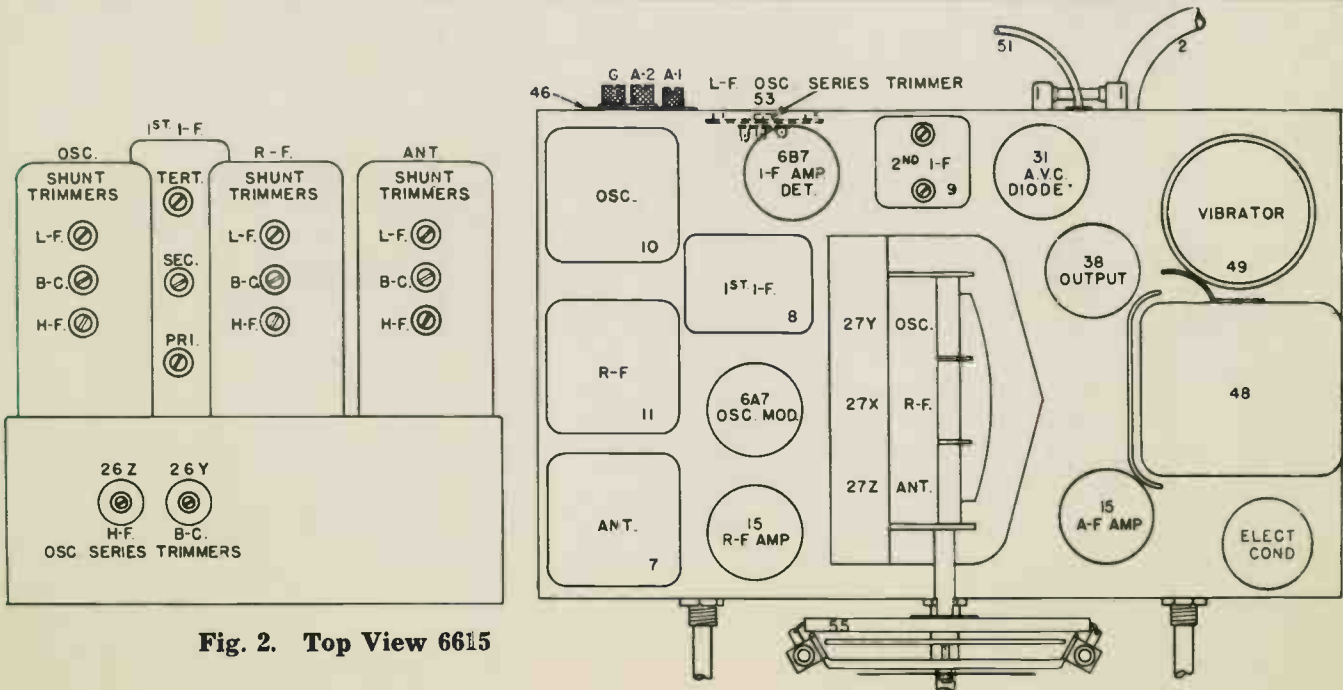
SIGNAL INPUT FREQUENCIES

	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
High Frequency Band (GREEN)	6000 Kc.	2500 Kc.

# PARTS LIST—MODEL 6615

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description			
1A	G6—27134	Dial Light Bracket Assem.	26Z	G29—33006	Condenser, I. F., Series Osc. Trimmer			
1B	G6—27134	Dial Light Bracket Assem.	26Y			G33—33002	Condenser, B. C., Series Osc. Trimmer	
2	MG25—37103	Battery Cable	27Z					3 Section Tuning Cond. Gang.
	W—34903	Battery Clip (+)	27Y					
	W—34904	Battery Clip (-)	27X					
3	W—37231	Battery Cable Clamp	28	MG25—37257	Dial Assem.			
	MG7—37103	Choke, L-F, "A" Sup. Filter		C—37439A	Dial Face			
	G10—32977	Choke, H-F, "A" Sup. Filter		W—37198	Pointer			
4	G27—24628	Choke, L-F, "B" Sup. Filter		W—32293	Pointer Nut (2)			
5	G2—24234	Choke, H-F, "B" Sup. Filter		G2—33339	Fuse Panel			
6	G80—32000	Ant. Coil Assem. Complete		W—37624	Fuse, 4 Amp.			
7	G78—32000	Ant. Coil only, 150-400 Kc.		W—33310A	Fuse Cover			
	G44—32000	Ant. Coil only, 1710-540 Kc.		W—34223	Cover Insulator			
8	G79—32000	Ant. Coil only, 2.3 - 7.5 Mc.		W—22514	Resistor, 750 Ohm, 1/2 W. Flex.			
	G12—36031	Coil Shield		W—37474	Resistor, 7,000 Ohm, 1/2 W.			
9	W—35951	3 Section Trimmer Cond.	31	Resistor, 15,000 Ohm, 1/2 W.				
	W—36033	Trimmer Cond. Bracket	32A	Resistor, 100,000 Ohm, 1/2 W.				
10	G6—36031	Support Base	32B	Resistor, 100,000 Ohm, 1/2 W.				
	G79—32004	1st. I-F Coil Assem.	32C	Resistor, 100,000 Ohm, 1/2 W.				
11	G78—32004	2nd. I-F Coil Assem.	33	Resistor, 150,000 Ohm, 1/2 W.				
	G64—32002	Osc. Coil Assem. Complete	34A	Resistor, 500,000 Ohm, 1/2 W.				
12	G62—32002	Osc. Coil only, 150-400 Kc.	34B	Resistor, 500,000 Ohm, 1/2 W.				
	G69—32002	Osc. Coil only, 1710-540 Kc.	35A	Resistor, 1.0 Megohm, 1/2 W.				
13	G63—32002	Osc. Coil only, 2.3 - 7.5 Mc.	35B	Resistor, 1.0 Megohm, 1/2 W.				
	G13—36031	Coil Shield	36	Resistor, 2.0 Megohm, 1/2 W.				
14	W—35951	3 Section Trimmer Cond.	37	Resistor, 3.0 Megohm, 1/2 W.				
	W—36033	Trimmer Cond. Bracket	38	Socket, "31"				
15	G11—36031	Support Base	39A	Socket, "15"				
	G6—34002	Condenser, 25 Mmf.	40	Socket, "38"				
16	G57—32001	R-F. Coil Assem. Complete	41	Socket, "VIP"				
	G55—32001	R-F. Coil only, 150-400 Kc.	42	Socket, "6A7"				
17	G59—32001	R-F. Coil only, 1710-540 Kc.	43	Socket, "6B7"				
	G56—32001	R-F. Coil only, 2.3 - 7.5 Mc.	44	Tube Shield (Half), (6)				
18	G12—36031	Coil Shield	45Z	Tube Shield Cap. (3)				
	W—35951	3 Section Trimmer Cond.	46	Tube Shield Base. (3)				
19	W—36033	Trimmer Cond. Bracket	47	Speaker				
	G6—36031	Support Base	48	Speaker (Console)				
20	G1—34002	Condenser, 0.00025 Mfd.	49	MG38—37257	Band Change Switch			
	G6—34002	Condenser, 25 Mmf.						
12	W—37590	Resistor, 750,000 Ohms, 1/2 W.						
13Z	W—36057	Condenser, 40. Mfd., 300 V.						
13Y	W—34896	Condenser, 12. Mfd., 250 V.						
13X	W—32904	Condenser, 8. Mfd., 250 V.						
14	W—32904	Condenser, 8. Mfd., 25 V.						
15	W—37214	Condenser, 20 Mmf.						
16	W—37190	Condenser, 0.001 Mfd., 1000 V.						
17	W—37173	Condenser, 0.02 Mfd., 160 V.						
18	W—37173	Condenser, 0.25 Mfd., 300 V.						
19	W—37174	Condenser, 0.5 Mfd., 160 V.						
20A	G2—34002	Condenser, 100 Mmf.						
20B	G2—34002	Condenser, 100 Mmf.						
21A	W—23191A	Condenser, 0.01 Mfd., 400 V.						
21B	W—23191A	Condenser, 0.01 Mfd., 400 V.						
22	W—32378	Condenser, 0.01 Mfd., 400 V.						
23A	W—32379	Condenser, 0.02 Mfd., 200 V.						
23B	W—32379	Condenser, 0.02 Mfd., 200 V.						
23C	W—32379	Condenser, 0.02 Mfd., 200 V.						
24AZ	W—25537A	Condenser, 0.001 Mfd., 400 V.						
24AY	W—25537A	Condenser, 0.03 Mfd., 400 V.						
24BZ	W—25537A	Condenser, 0.001 Mfd., 400 V.						
24BY	W—25537A	Condenser, 0.03 Mfd., 400 V.						
25	W—30321A	Condenser, 1.0 Mfd., 160 V.						
26Z		Condenser, 1.0 Mfd., 160 V.						
26Y		Condenser, 1.0 Mfd., 160 V.						
27Z		Condenser, 1.0 Mfd., 160 V.						
27Y		Condenser, 1.0 Mfd., 160 V.						
27X		Condenser, 1.0 Mfd., 160 V.						
27		Condenser, 1.0 Mfd., 160 V.						
28		Condenser, 1.0 Mfd., 160 V.						
29		Condenser, 1.0 Mfd., 160 V.						
30		Condenser, 1.0 Mfd., 160 V.						
31		Condenser, 1.0 Mfd., 160 V.						
32A		Condenser, 1.0 Mfd., 160 V.						
32B		Condenser, 1.0 Mfd., 160 V.						
32C		Condenser, 1.0 Mfd., 160 V.						
33		Condenser, 1.0 Mfd., 160 V.						
34A		Condenser, 1.0 Mfd., 160 V.						
34B		Condenser, 1.0 Mfd., 160 V.						
35A		Condenser, 1.0 Mfd., 160 V.						
35B		Condenser, 1.0 Mfd., 160 V.						
36		Condenser, 1.0 Mfd., 160 V.						
37		Condenser, 1.0 Mfd., 160 V.						
38		Condenser, 1.0 Mfd., 160 V.						
39A		Condenser, 1.0 Mfd., 160 V.						
40		Condenser, 1.0 Mfd., 160 V.						
41		Condenser, 1.0 Mfd., 160 V.						
42		Condenser, 1.0 Mfd., 160 V.						
43		Condenser, 1.0 Mfd., 160 V.						
44		Condenser, 1.0 Mfd., 160 V.						
45Z		Condenser, 1.0 Mfd., 160 V.						
46		Condenser, 1.0 Mfd., 160 V.						
47		Condenser, 1.0 Mfd., 160 V.						
48		Condenser, 1.0 Mfd., 160 V.						
49		Condenser, 1.0 Mfd., 160 V.						
50		Condenser, 1.0 Mfd., 160 V.						
51		Condenser, 1.0 Mfd., 160 V.						
52		Condenser, 1.0 Mfd., 160 V.						
53		Condenser, 1.0 Mfd., 160 V.						
54		Condenser, 1.0 Mfd., 160 V.						
55		Condenser, 1.0 Mfd., 160 V.						
56		Condenser, 1.0 Mfd., 160 V.						



**Fig. 2. Top View 6615**



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	Su	G	K	Go	Ga
6A7	Osc-Modulator	6.3	265	—	100	—	0	5.0	0	140
6D6	I-F Amplifier	6.3	265	—	120	6.2	0	2.2	—	—
6C6	Det. & A-F Amplifier	6.3	0	—	75	2.6	0	2.6	—	—
76	2nd. A-F Amplifier	6.3	140	—	—	—	0	16.0	—	—
6B5	Output	6.3	270	255	—	—	0	2.3	—	—
80	Rectifier	4.9	350	—	—	—	—	—	—	—

MEASURED ON 117.5 VOLT-60 CYCLE POWER SUPPLY.  
POWER CONSUMPTION APPROXIMATELY 80 WATTS.  
POWER OUTPUT APPROXIMATELY 3 WATTS.

Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6D6 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum output (Fig. 2.)

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(e) Transfer the output lead of the signal generator from the 6D6 tube to the top cap of the 6A7 Oscillator-Modulator tube, leaving the tube's grid clip in place.

(f) Close the middle trimmer (Text Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw).

(g) Adjust the top trimmer on the 1st. I-F transformer for maximum output.

(h) Adjust the bottom trimmer on the 1st. I-F transformer for maximum output.

(i) Transfer the signal generator output lead from the 6A7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary.

(j) Check the adjustment of the bottom trimmer of the 1st. I-F transformer. DO NOT READJUST THE

TOP TRIMMER.

(k) Adjust the middle trimmer of the 1st. I-F transformer by opening condenser until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

Aligning R-F Amplifier

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. DO NOT READJUST THE "OSC" TRIMMER.

(b) To align the series trimmers (29Y-29Z Fig. 4) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

American Broadcast Band (BLUE)	Shunt Alignment	Series Alignment
Police Band (RED)	1700 Kilocycles	600 Kilocycles
High-Frequency Band (GREEN)	6000 Kilocycles	2500 Kilocycles
	18000 Kilocycles	.....

SHUNT TRIMMERS

	Ant.	Osc.	
High-Frequency	27A	27B	High-Frequency
Police	28Z	28X	Police
Broadcast	28Y	28W	Broadcast

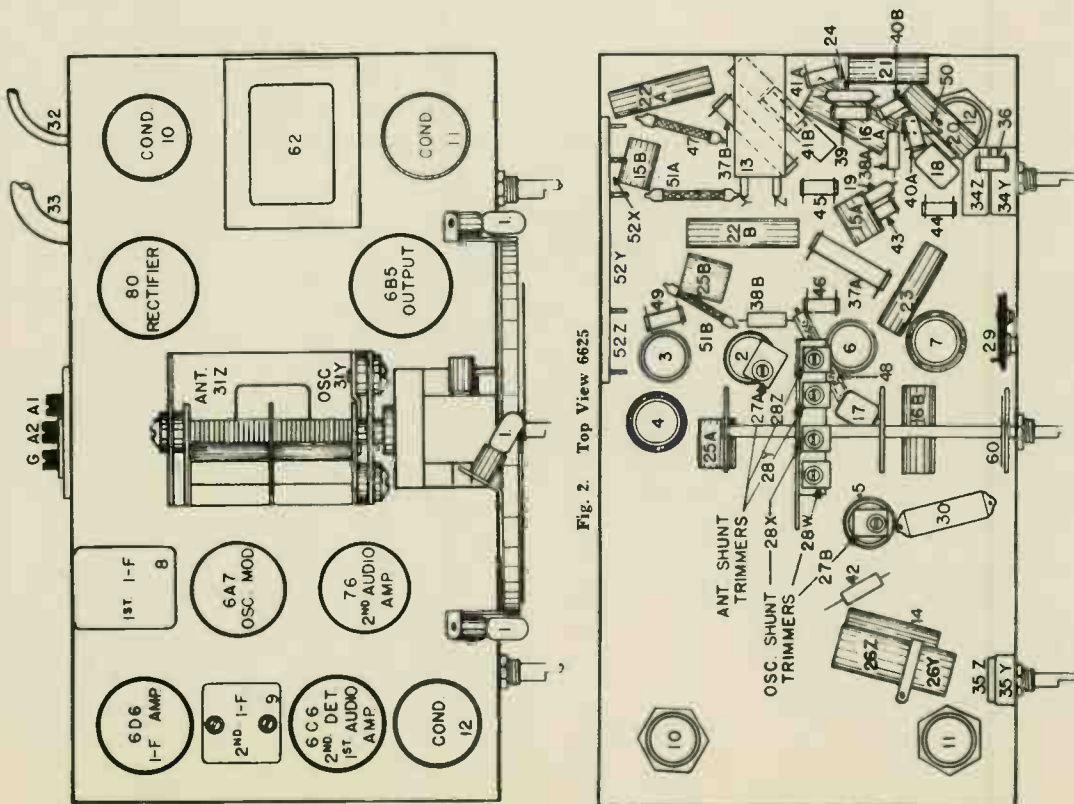


Fig. 2. Top View 6625

Fig. 3. Bottom View 6625



## MODEL 6689

This model is very similar to Model 689 receiver except for the tube compliment, ballast resistor and the slight change in rectifier circuit. This receiver is designed for 220 volt D.C. or A.C. (50-60 cycle) operation.

For replacement parts not listed below refer to parts list for Model 689.

The alignment procedure is the same as outlined for the 689, but for the following exceptions:

The OUTPUT meter is connected to the plate and screen of the 50L6GT.

The signal generator input for I-F alignment is connected to the "ANT" lead (Blue) through a 100 MMF. condenser.

TUBE SOCKET VOLTAGE READINGS							
Tube	Function	H	P	S	Su	K	Ga
12A8GT	Oscillator-Modulator	6.3	105	70	—	—	105
12K7GT	Det. AVC, A-F Amplifier	6.3	105	70	—	—	—
12SQ7GT	I-F Amplifier	6.3	35	—	—	—	—
50L6GT	Output	25.1	100	105	—	6	—
3Z5GT	Rectifier	25.1	117.5 A.C.	—	—	132	—
G11-48392	Ballast Tube	—	—	—	—	—	—

Power output approximately 2 watts.

Power consumption approximately 60 watts.

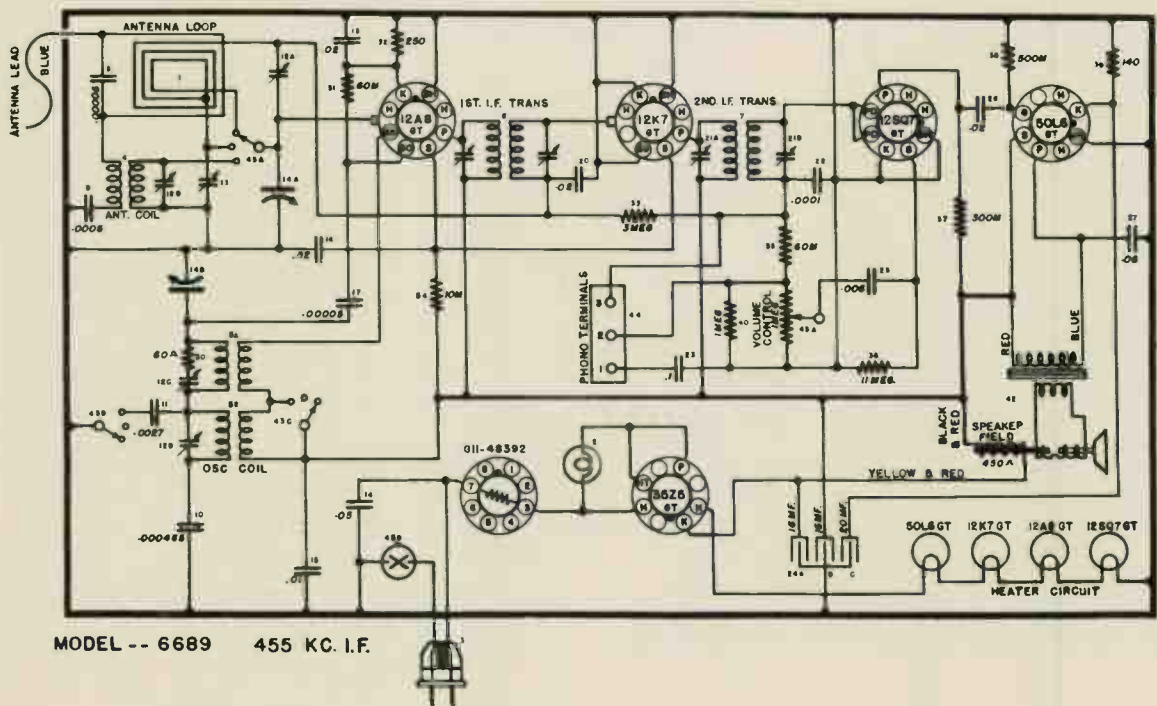
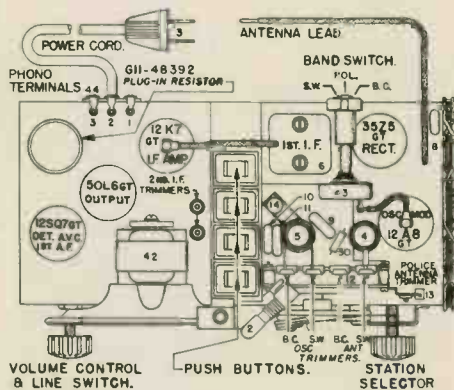
Voltage drop across speaker field 27 volts.

All voltages except filaments will be approximately 10% lower if measured on 230 volts DC power supply.

### PARTS LIST—MODEL 6689

For parts not listed refer to Model 689 Parts List.

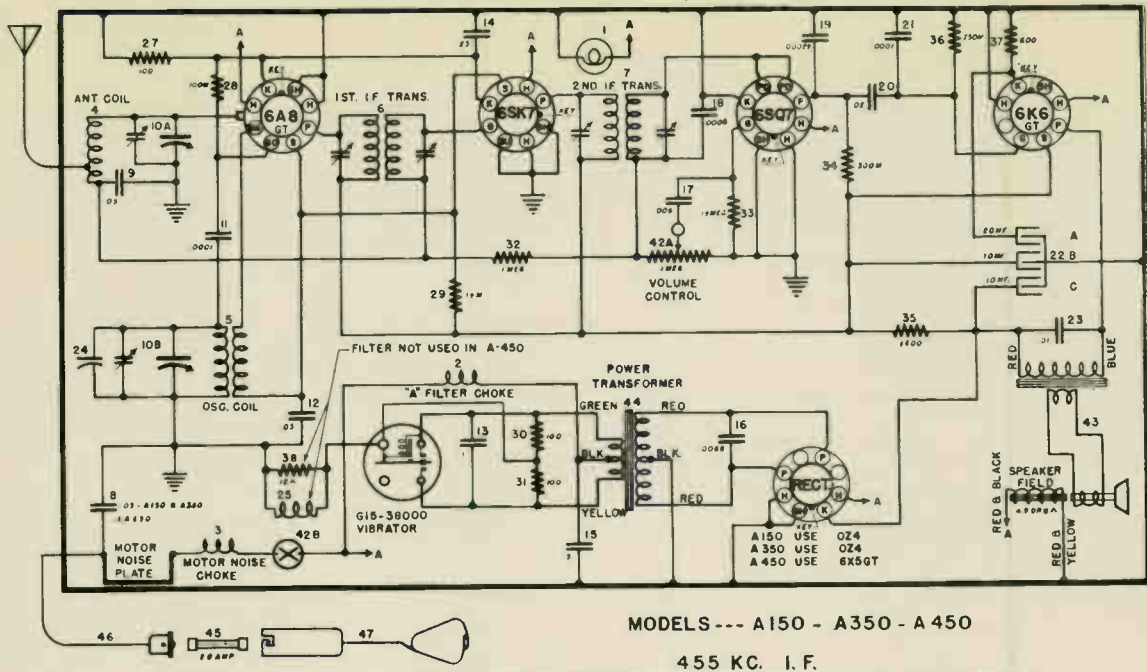
Item	Quantity	Description
9	G3-34002	Cond. .0005 MF. Molded
18	W-32780-B	Cond. .05 MF. 400 V.A.C.
32	51085	Res. 250 ohm ½ W. Wire Wound Ins.
40	35602	Res. 1 Meg. ¼ W. Ins.
	130105	Instruction Booklet
	G247-45800	Tube 12A8GT
	G249-45800	Tube 12K7GT
	G245-45800	Tube 12SQ7GT
	G244-45800	Tube 50L6GT
	G248-45800	Tube 3Z5GT
	G11-48392	Plug In Resistor
	46240	Call Letter Sheet



MODEL -- 6689 455 KC. I.F.



MODELS A-150, A-350, A-450 (ROAMIO)



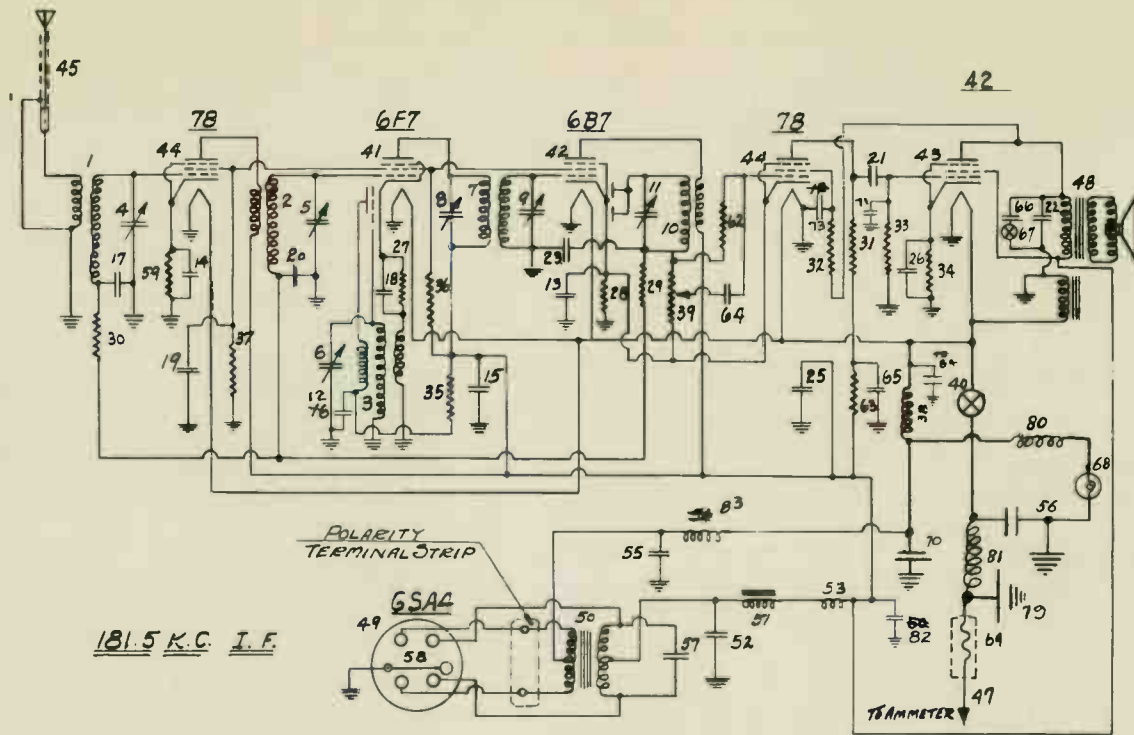
MODELS --- A150 - A350 - A450

455 KC. I.F.

Figure in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	G3 - 50631	6-8 Volt Dial Lamp (A-150)	W	-50167	Rear Mounting Bracket	
	G4 - 50631	6-8 Volt Dial Lamp (A-350)		-6213	1/4" - 20 Hex. Nut - Bracket Mtg.	
	G2 - 50631	6-8 Volt Dial Lamp (A-450)		-35065	3/4" - 20 x 1 1/4" Sq. Hd. Bolt - Bracket Mtg.	
2	G32 - 28067	"A" Filter Choke (A-150, A-350)	W	-38206	1/2" Lockwasher - Bracket Mtg.	
	G34 - 28067	"A" Filter Choke (A-450)		-25846	No. 10 x 3/4" P. K. Screw Mtg.	
3	G23 - 32977	Motor Noise Choke (A-150, A-350)	U	-51715	Front Mtg. Bracket (A-150)	
	G25 - 32977	Motor Noise Choke (A-450)		-25788	No. 8 x 3/4" P. K. Screw - Bracket to Case (A-150, A-350)	
4	G194 - 33000	Antenna Coil	O	-10	No. 18 Flat Washer - Bracket Mtg. (A-150, A-350)	
5	G200 - 33002	Oscillator Coil (A-150, A-450)	W	-51177	Front Mtg. Bracket (A-350)	
	G225 - 32002	Oscillator Coil (A-350)			<b>MODEL A-150 MISCELLANEOUS</b>	
6	G239 - 32004	1st I-F. Assy. (A-150, A-350)	MG2	-51640	Case Assembly Complete	
	G224 - 32004	1st I-F. Assy. (A-450)		-51655	Case Body only (FS-11 and FS-79)	
7	G223 - 32004	2nd I-F. Assy. (A-150)		-51656	Front Cover - Case (FS-11 and FS-79)	
	G226 - 32004	2nd I-F. Assy. (A-350)		-51184	Lid - Case (FS-11 and FS-79)	
	G225 - 32001	2nd I-F. Assy. (A-450)	W	-34736	Hole Plug (FS-79)	
8	W	-32996	Capl. .05 Mf. 200 V. (A-150, A-350)		-50605	Knob
	W	-50105	Condenser, .1 Mf. 160 V. (A-450)	C	-51649	Glass Dial Face
9	W	-45817B	Condenser, .05 Mf. 160 V.	W	-51653	Pointer - Dial
10	G92 - 33001	2 Section Tun. Cond. (A-150, A-450)	W	-51654	Light Diffuser	
	G72 - 33001	2 Section Tun. Cond. (A-350)	U	-51718	Diffuser Mtg. Studs	
11	G2 - 34002	Condenser, .0001 Mf. Molded	G22	-43564	Pulley and Hub Assy.	
12	W	-32380	Condenser, .05 Mf. 200 V.	W	-50512	Drive Shaft
13	W	-51800	Condenser, .1 Mf. 100 V. (A-150, A-350)	W	-43549	"C" Washer - Shaft Retainer
	W	-50105	Condenser, .1 Mf. 160 V. (A-450)	W	-16290	Cord Clamp
14	W	-34712	Condenser, .25 Mf. 160 V.	G13	-41582	Drive Cord (30")
15	W	-50682A	Condenser, .5 Mf. 120 V.	W	-51752	Spring - Cord Tension
16	W	-50203	Condenser, .0065 Mf. 1,000 V.		-51645	Instruction Booklet
17	W	-45810B	Condenser, .006 Mf. 160 V.		-51647	Shipping Carton
18	G3 - 34002	Condenser, .0005 Mf. Molded		-4F537	Felt Washer - Knob	
19	G1 - 34002	Condenser, .0025 Mf. Molded	MG25	-51760	Push Button Unit Assy.	
20	W	-28621	Condenser, .02 Mf. 200 V.	MG20	-51169	Rocker Plate Assy.
21	G2 - 34002	Condenser, .0001 Mf. Molded	MG31	-51760	Key Assembly	
22	W	-51139	3 Section Electrolytic Condenser		-50639	Adjusting Screw
			A - 20 Mf. 25 Volts	W	-50590	Spring - Key Return
			B - 10 Mf. 350 Volts		-48773	Manual Shaft and Pinion Assy.
			C - 10 Mf. 350 Volts	W	-51142A	Spacer Washer - Manual Shaft
	W	-50684	Condenser Clamp	W	-50325A	"C" Washer - Manual Shaft Retainer
23	W	-2191A	Condenser, .01 Mf. 400 V.	W	-51769	Glass Dial Face
24	W	-51140	Temp. Comp. Condenser (A-350 only)	W	-51211A	Mask - Dial Background
25	G39	-28067	Filter Choke	W	-51134	R. H. Clip - Dial Mtg.
26				W	-51133	L. H. Clip - Dial Mtg.
27				R	-78	No. 4 - 36 x 1/2" Screw - Clip Mtg.
28				MG19	-51760	Dial Bracket Assy.
29				W	-51132	Pointer - Dial
30				G24	-43564	Pulley and Hub Assy.
31				G5	-41582	Drive Cord (18 1/2")
32				W	-51771	Push Button
33				W	-51144A	Rod - Push Button Mtg.
34				W	-51773	Call Letter Sheet
35				W	-50960	Celluloid Cover - Call Tab
36				W	-51777	Call Letter Holder
37				W	-19428	No. 4 - 36 x 1/4" Oval C's k Hd. Screw - Holder Mtg.
38						Instruction Booklet
39				MG3	-51761	Instruction Envelope Assy.
40					-51767	Shipping Carton
41				MG2	-51760	Case Assembly
42					-51242	Case Body only (FS-11 and FS-79)
					-51218	Front Cover only (FS-11 and FS-79)
					-51184	Lid - Case (FS-11 and FS-79)
					-51772	Knob
						<b>MODEL A-450 MISCELLANEOUS</b>
43	278-BL-5"R"	Speaker (A-150, A-350)	MG2	-51750	Case Assembly	
	293-BL-7"V"	Speaker (A-450)		-50306	Knob	
44	B	-51756	Power Trans. (A-150, A-350, A-450)	W	-43882	Cover Wedge
	W	-50680	P. T. Shield (Can)	C	-51754	Dial Glass Face
45		-50469	Fuse, 20 Amp.	W	-51742	Dial Mask
46	G34	-32750	"A" Lead (Set to Fuse)	W	-50560A	R. H. Mtg. Clip - Dial Glass
47	G48	-32750	"A" Lead (Fuse to Ammeter)	W	-50545	L. H. Mtg. Clip - Dial Glass
	G15	-38000	Vibrator	B	-78	No. 4 - 36 x 1/4" Clip Mtg. Screws
		-51801	Socket Shield - Vibrator	W	-50518A	Pointer
	G178	-36400	8 Prong Socket	G13	-41582	Drive Cord (30 Inches)
	G105	-28807	Vibrator Socket	G25	-43564	Pulley and Hub Assy.
	W	-50123A	Ground Clip - Vibrator		-51741	Shipping Carton
	W	-38038D	Distributor Suppressor		-51739	Instruction Book
	W	-29754C	Generator Condenser		-50503	Case Body (FS-11 and FS-79)
	MG2	-51641	Set Mtg. Parts Kit (A-150)		-51264	Case Front (FS-11 and FS-79)
	MG2	-51761	Set Mtg. Parts Kit (A-350)			
	MG2	-51751	Set Mtg. Parts Kit (A-450)			

MODEL A-155



1	G19-32000	Ant. Coil	38	G4-28067	R.F. "A" Choke
2	G11-32001	R.F. Coil	39, 40	W-30436-A	Level Cont. Sw.
3	G14-32002	Osc. Coil	45	B-32783	Ant. Cable
4, 5, 6	G2-33002	Ant., R.F., Osc. Tuning Cond.	47	G5-31701	"A" Cable
7, 8, 9	G6-32003	1st I.F. Coil, I.F. Pri. Tuning Cond., I.F. Sec. Tuning Cond.	48	LB-32037	33-B Speaker
10, 11	G7-32003	2nd I.F. Coil, I.F. Sec. Tuning Cond.	49	G1-32769	6SA4 Syncro Tube
12, 13, 14, 15	W-32711-A	.05-.1-.1-.05 mfd., 400-200-200-400 v. Conds.	50	G11-24628	Power Trans.
17	W-32779-B	.02 mfd. 200 v. Cond.	51	W-32759	"B" Filter Choke
18	W-32781-B	.01 mfd. 200 v. Cond.	52	G1-32755	8 mfd. 300 v. Cond.
19	W-32780-B	.05 mfd. 400 v. Cond.	53	W-30366	R.F. "B" Choke
20	W-32779-B	.02 mfd. 200 v. Cond.	55, 56	W-32762-A	.5 mfd. 160 v. Cond.
21	W-32780-B	.05 mfd. 400 v. Cond.	57	G81-27975	.005 mfd. 1000 v. Cond.
22	W-23635	.006 mfd. 400 v. Cond.	58	W-21452	6SA4 Socket
23	W-32741-A	.0005 mfd. Cond., Mica	59	W-21454	1000 ohm Res.
25, 26	W-32802	8-8 mfd. 300-20 v. Conds.	62	W-21454	1 megohm $\frac{1}{3}$ w. Res.
27	W-21452	1100 ohm Res.	63	21237-A	60,000 ohm $\frac{1}{2}$ w. Res.
28	W-28589	350 ohm Res.	64, 65	W-32780-B	.05 mfd. 400 v. Cond.
29	21454	1 megohm $\frac{1}{3}$ w. Res.	66	W-32782-B	.01 mfd. 400 v. Cond.
30	21875	100,000 ohm Res.	67	W-26156-A	S.P.S.T. Sw.
31	23403	150,000 ohm Res.	69	W-32757	12 Amp. Fuse
32	21451	1 megohm Res.	70, 71	W-32741-A	.0005 mfd. Cond., Mica
33	23875	500,000 ohm Res.	73	W-24784	.25 mfd. 200 v. Cond.
34	W-25521	450 ohm Res.	79	W-38304	Cond. 20 Nut
35	32331	55,000 ohm $\frac{1}{2}$ w. Res.	80	G8-32977	Dial Light Choke
36, 37	W-26525-C	15,000-25,000 ohm Res.	81	G7-32977	"A" Motor Noise Choke
			82	G1-34002	.00025 mfd. Cond.
			83	G11-28067	R.F. "A" Choke
			84	G1-34002	.00025 mfd. Cond.

Your Crosley Distributor will be happy to give you complete information regarding Crosley Twice Tested Service Parts.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6A7	Osc.-Mod.	6.0	230	—	100	0	6.0	—	220	0 to -30
6B7	I-F, Diode Det. & AVC	6.0	230	—	100	0	2.0	—	—	—
6D6	1st A-F Amp.	6.0	55	—	20	0	2.0	—	—	—
42	Output	6.0	220	—	230	-7*	0	—	—	—
84	Rectifier	6.0	230	230	—	—	—	—	—	—

Power Output Approximately 3 Watts.

Battery Drain Approximately 6.3 Amperes at 6 volts.

\* True Bias Reading Approximately -15 Volts Measured Across Filter Choke.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 42 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illus. No. 18, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement in output can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

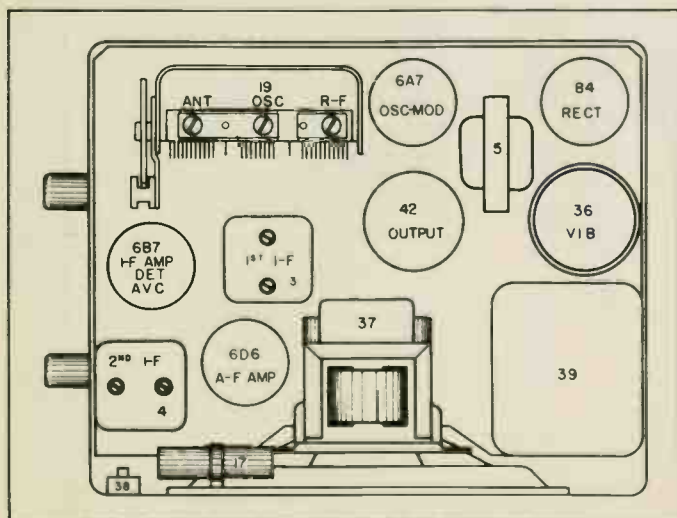


Fig. 2. Top View A-156

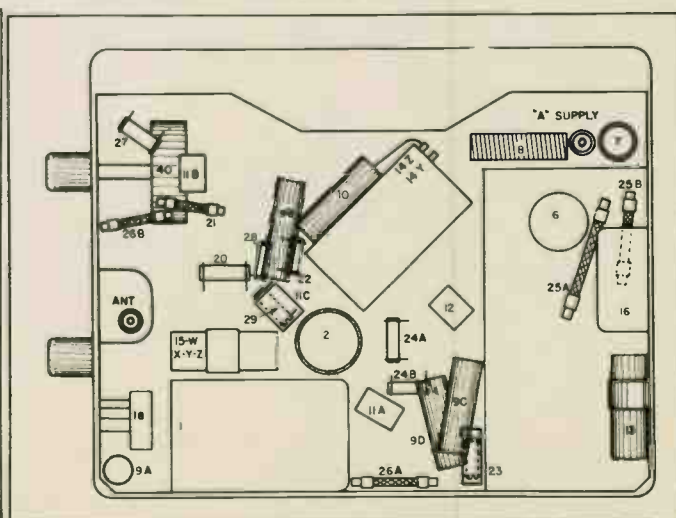
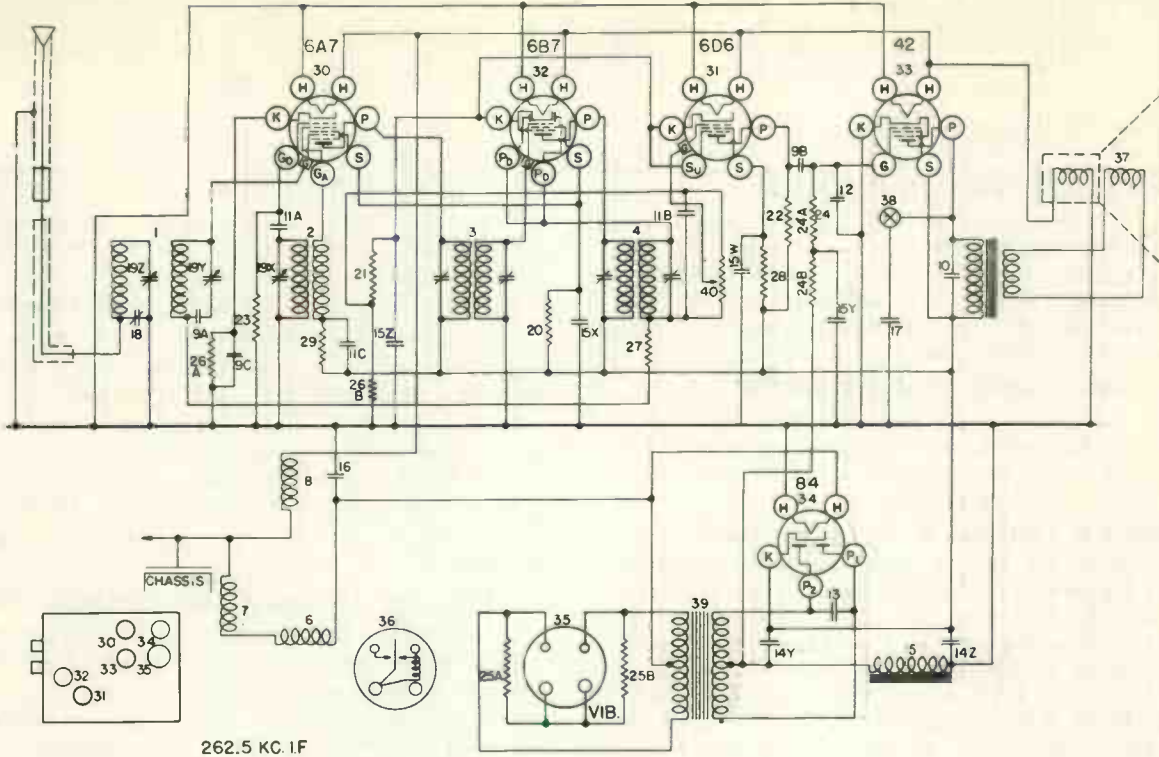


Fig. 3. Bottom View A-156



262.5 KC. 1F

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1-38274	Pre-selector Coil Assm. Complete	29	W-22196	Resistor 20,000 Ohms 1/4 W.
	G41-32000	Pre-selector Coil only	30	G47-28807	Socket 6A7
	W-38276B	Shield	31	G75-28807	Socket 6D6
	W-38277	Wood Coil Spacer (2)	32	G48-28807	Socket 6B7
	W-35400A	Rubber Band	33	G25-28807	Socket 42
2	G27-32002	Osc. Coil only	34	G45-28807	Socket 84
	W-26891	Insulating Washer	35	G1-28807	Socket VIB
	W-21541A	Retaining Ring	W-31212	Tube Shield (Half)	
	W-25025B	Shield	W-31210	Shield Ring	
	W-25200	Coil Socket	W-24394A	Shield Base	
3	G13-32005	1st I. F. Assm.	36	G6-38000	Vibrator (D. A. Corp. No. 5940000)
4	G14-32005	2nd I. F. Assm.	G2-38281	Vibrator Partition Assm.	
5	G25-24628	Filter Choke	37	BL-M	Speaker
6	G10-28067	R. F. Choke	38	W-35741	Tone Control Switch
7	G4-32977	Motor Noise Choke	39	G6-32769	Power Transformer
8	G3-32977	Motor Noise Choke	40	W-37256	Volume Control 1. Megohm
9A	W-28621	Condenser 0.02 Mfd. 200 V.	W-38257C	Cover Bracket	
9B	W-28621	Condenser 0.02 Mfd. 200 V.	C-37159	Case	
9C	W-28621	Condenser 0.02 Mfd. 200 V.	C-38220A	Top Cover	
9D	W-28621	Condenser 0.02 Mfd. 200 V.	C-38224A	Bottom Cover	
10	W-23635	Condenser 0.006 Mfd. 400 V.	W-37057	Emblem	
11A	G1-34002	Condenser 0.00025 Mfd.	W-32947	Hole Plug	
11B	G1-34002	Condenser 0.00025 Mfd.	*G1-38390	V. Remote Control Complete	
11C	G1-34002	Condenser 0.00025 Mfd.	*-38384	V. Remote Control Head Assm.	
12	G3-34002	Condenser 0.0005 Mfd.	W-38377	Dial Glass	
13	W-32762	Condenser 0.005 Mfd. 1000 Volt	*-37707	Pointer	
14Z	W-37020	Condenser 4.0 Mfd.	*W-38393	Dial Face	
14Y	W-37020	Condenser 5.0 Mfd.	*G10-23472	Knob (2)	
15Z	W-37021	Condenser 0.1 Mfd. 130 V.	-38389	Dial Light Socket Assm.	
15Y	W-37021	Condenser 0.1 Mfd. 130 V.	-38443	On-Off Switch	
15X	W-37061	Condenser 0.05 Mfd. 160 V.	-38448	Switch Cover	
15W	W-37061	Condenser 0.05 Mfd. 160 V.	G5-38390	V. Remote Control Complete	
16	W-37047	Condenser 0.50 Mfd. 160 V.	-38544	V. Remote Control Head Assm.	
17	W-32928A	Condenser Ant. Series Trimmer	-38377	Dial Glass	
18	W-32928A	Condenser Ant. Series Trimmer	-37708	Pointer Assm.	
19Z	G41-33002	3 Section Tuning Condenser Gang	-38441	Dial Face Glass	
19Y	W-38204B	Gear Assm.	G9-23472	Knobs (2)	
19X	G1-38227	Pinion & Coupling Link Assm.	-38389	Dial Light Socket Assm.	
20	-32331	Resistor 55,000 Ohms 1/2 W.	-38443	On-Off Switch	
21	W-25937	Resistor 275 Ohm (1/2 W. Flex.)	-38448	Switch Cover	
22	-35929	Resistor 150,000 Ohms 1/4 W.	G2-38310	Control Cable Assm. (Cond. Dr.)	
23	-21237A	Resistor 60,000 Ohms 1/4 W.	G3-38310	Control Cable Assm. (Level Con.)	
24A	-35601	Resistor 300,000 Ohm 1/4 W.	-32783A	Ant. Lead	
24B	-35601	Resistor 300,000 Ohm 1/4 W.	G14-32750	"A" Lead with Fuse Assm.	
25A	-27504	Resistor 100 Ohm 1/2 W.	G15-32750	"A" Lead to Set	
25B	-27504	Resistor 100 Ohm 1/2 W.	W-31103	Fuse 10 Amp.	
26A	-22514	Resistor 750 Ohm 1/2 W. Flex.	W-32956A	Mounting Stud (2)	
26B	-22514	Resistor 750 Ohm 1/2 W. Flex.	-8213	Mounting Nut (2)	
27	-34883	Resistor 2.0 Megohm 1/4 W.	W-32957	Mounting Lock Washer (2)	
28	-35602	Resistor L0 Megohm 1/4 W.	W-38336	Steering Column Brkt. Assm.	
			W-31625A	Suppressor, Distributor	
			W-29754A	Condenser 0.5 Mfd. (Elim) (2)	

\*Used on sets with serial numbers 1,064,155 to 1,065,154 inclusive.



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	220	90	—	0	90	0
6U7-G	I-F Amplifier	6.0	220	90	0	0	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	110	—	—	0	—	—
6K6-G	Output	6.0	200	220	—	0	—	—
6X5-G	Rectifier	6.0	—	—	—	220	—	—

Power Output approximately 4 Watts.  
 Battery Drain approximately 5.7 Amperes at 6 Volts.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. Fig. 2.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 9, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

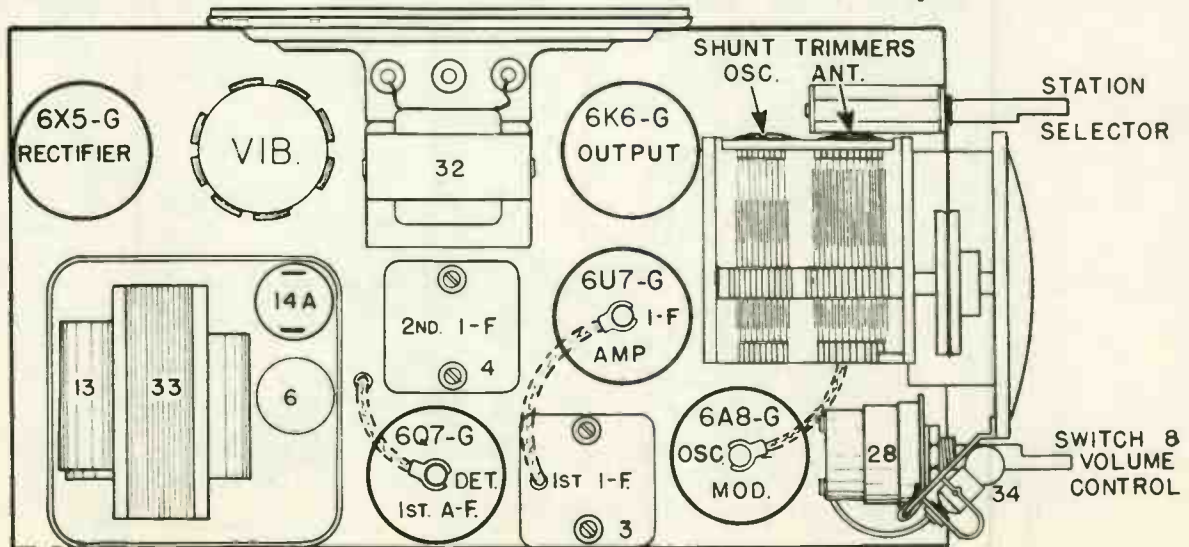
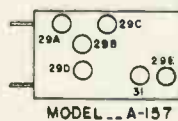
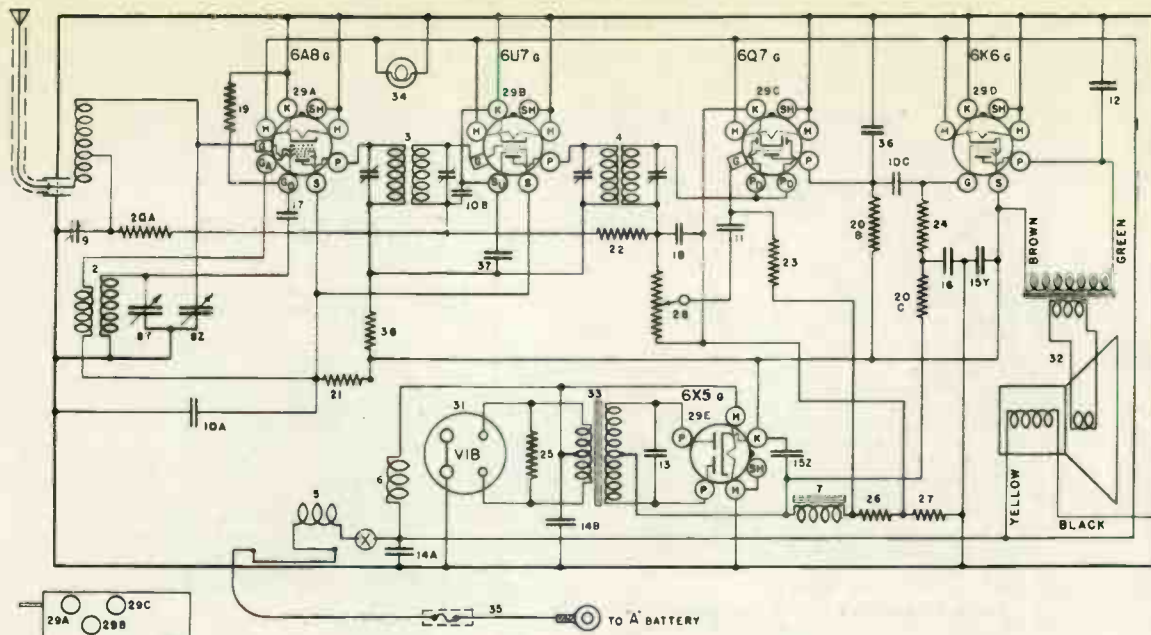


Fig. 2 Top View A-157

MODEL A-157



MODEL -- A-157

455 K.C. IF.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G137	32401 Antenna Coil	26	W	23012A Resistor 40 Ohm 1/2 W.
2	G112	32402 Oscillator Coil	27	W	21537 Resistor 60 Ohm 1/2 W.
3	G149	33001 1st I.F. Assembly, 45.5 Kc.	28	W	50012 Vol. Cont. 1 Meg. & Switch
4	G148	32001 2nd I.F. Assembly, 45.5 Kc.	29	G178	36100 Socket, Octal
5	G16	32077 Motor Noise Choke		W	50142 Tube Shield, Plain Half
6	G21	28087 "A" Filter Choke		W	50143 Tube Shield, Cut-out Half 6U7-G
7	G16	28565 "B" Filter Choke		W	31210 Tube Shield Ring
8	G36	33001 Var. Tuning Cond. 2 Section	30	G10	37000 Vibrator
	C	50137 Dial Face (Glass)	31	G205	28807 Socket (Vibrator)
	W	50135 Support Ring Dial		W	50123 Gnd. Clip (Vibrator)
	B	50136 Support Bracket Dial	32	283	31717 Speaker, Spec. 5 S-21
	W	50133 Dial Mask		W	44062 V. C. & Cone Assembly
	G2	43561 Pulley and Hub Assembly		W	44063 Output Trans.
		41582 Drive Cord	33	G15	32780 Power Transformer
	W	50131 Shaft Drive		W	50130 P. T. Shield
	W	50128 Mtg. Bracket Shaft	34	W	43567 Dial Light Bulb
	W	43549 Retaining Ring Shaft		W	43568 Bracket Dial Light
		38898A Condenser Ant. Comp.	35	G25	32740 "A" Lead Assembly
9	W	32580 Condenser .05 Mf. 200 V.		W	32737 Fuse 12 Amp
10A/BC	W	37229 Condenser .02 Mf. 100 V.		W	32777 Fuse Cap (Female)
11	W	23141A Condenser .01 Mf. 100 V. 1		W	32776 Fuse Insulator
12	W	50170 Condenser .01 Mf. 100 V.		W	31383 Fuse Cap (Male)
13	W	50161 Condenser .5 Mf. 120 V.	36	G6	34002 Condenser .00025 Mfd. 300 V.
14A/B	W	50160 Condenser 1 Mf. 300 V.	37	W	37550 Condenser .05 Mfd. 300 V.
15Z	W	50105 Condenser 1 Mf. 100 V.	38	W	2211 Resistor 750 Ohm 1/2 W.
16	G1	34002 Condenser .00025 Mf. 200 V.	38	W	22581 Resistor 700 Ohm 1/2 W.
17	G3	34002 Condenser .00025 Mf. 200 V.		W	38081D Distr. Suppressor
18		35928 Resistor 60,000 Ohm 1/2 W.		W	29731 Gen. Condenser
19		35601 Resistor 300,000 Ohm 1/2 W.		W	50167 Mtg. Bracket (Set)
20A/BC		37377 Resistor 20,000 Ohm 1/2 W.		W	28046 Mtg. Screw (Set)
21		35602 Resistor 1 Megohm 1/2 W.			6213 Mtg. Nut
22		35927 Resistor 2 Megohm 1/2 W.			38005 Mtg. Bolt
23		36322 Resistor 500,000 Ohm 1/2 W.		W	33171B Ant. Connecting Lead (Extra)
24	W	35167 Resistor 220 Ohm 1/2 W.		W	50164 Knob

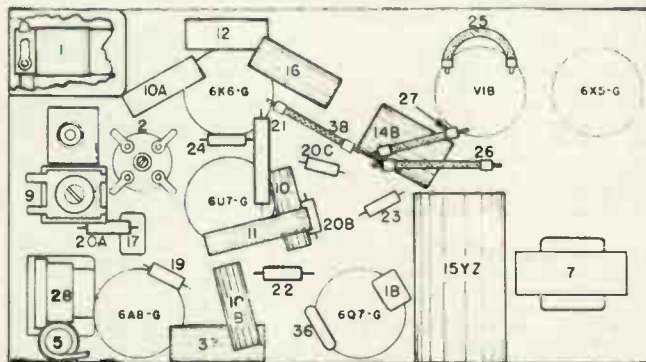


Fig. 3 Bottom View A-157

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Co
6A8-G	Oscillator-Modulator	6.0	190	100	—	0	102	0
6U7-G	I-F Amplifier	6.0	190	100	0	0	—	—
6O7-G	Diode Detector & A-F Amp.	6.0	85	—	—	-2.3	—	—
6K6-G	Output	6.0	185	200	—	0	—	—
6X5-G	Rectifier	6.0	—	—	—	200	—	—

Power Output approximately 4 Watts.  
 Battery Drain approximately 5.7 Amperes at 6 Volts.

SETTING PUSH BUTTONS

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw SECURELY.

The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 6U7G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8G Osc. Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser in the car antenna after the receiver has been installed in the car.

To replace the inner cord:

(1) After removing the broken cord, place the chassis on end with the push buttons "up" and the speaker toward you.

(2) Thread an 18" length of drive cord through the hook on one end of the tension spring which was removed from the pulley on the end of the push button rocker plate.

(3) Insert both ends of this cord through the eyelet in the rocker plate pulley from the inside. Pull the cord through until the tension spring is pulled into the pulley, then hook the free end of the spring over the catch in the pulley in the side opposite the eyelet.

(4) Open the condenser gang all the way.

(5) Pull all but approximately 4 1/2" of the cord through the eyelet. Loop the 4 1/2" end of the cord around the lower half of the pulley.

(6) Loop the long end of the cord over the top of the pulley and back over the brass idler pulley to the drive shaft. Continue the cord around the drive shaft, threading from the inside and over the top. Wrap four complete turns of the cord around the drive shaft and continue the cord over the top of the rocker plate pulley.

(7) Pull on the short end of the cord until the tension spring in the pulley is stretched to within 1/8" of the eyelet. Maintain this tension and tie a knot in the two ends of the cord over the catch which holds the spring. Loop the cord over the spring catch so that the knot is turned in. (A drop of bees' wax on the knot would be an added protection against coming untied.)

To replace the outer cord:

(1) Place the chassis in a horizontal position with the push buttons to the left and the speaker toward you.

(2) Close the condenser gang and mount the large drive pulley on the shaft. Place the pulley on the condenser shaft so that the shaft is flush with the outside of the pulley bushing and the eyelet in the pulley is horizontal with the shaft and toward the dial.

(3) Cut a 22" length of drive cord and tie a knot 1/2" from the two ends.

(4) Hook one end of the tension spring over the catch provided in the pulley and hook the other end over the drive cord at the knot.

(5) Thread the cord through the eyelet in the pulley and extend one side up and over the vertical brass pulley. Loop this lead around the horizontal idler pulley at the left-hand side of the dial and then around the idler pulley at the right-hand side of the dial and then over the top of the large drive pulley. The tension on the spring should be sufficient to stretch it to within approximately 1/2" of the eyelet.

(6) With the gang closed, move the pointer to the extreme right-hand end of the dial. Press the cord into the slots in the back of the pointer and check to see that the pointer travels from one end of the dial to the other as the gang is opened and closed. It may be advisable to place some Aratex or other liquid adhesive on the cord where it fits into the pointer.

REPLACING THE A-158 DRIVE CORD

1.—Remove the broken cord and the cord tension spring.

2.—Cut a 30 inch length of drive cord and tie the tension spring approximately 4 inches from one end. Thread both ends through the eyelet in the large pulley from the inside. Hook the other end of the spring to the catch in the pulley and bend catch to secure spring.

3.—Close the condenser gang and see that the eyelet in pulley is on top and that the end of the condenser shaft is flush with the inside of the pulley.

4.—Take the long end of cord and place on small brass idler pulley on the right side of the dial bracket. Loop around pulley in a clockwise direction and then around idler pulley on the left side of the dial bracket, continue on over the top of the large pulley and down to the drive shaft. From the under side of drive shaft wrap 2 turns around shaft in a counter-clockwise direction, bringing cord up on the left side of large pulley. Be sure the cord is on all the pulleys then tie a knot, pulling with sufficient force to stretch the tension spring to within 1/2 inch of the edge of pulley.

5.—Close gang and place the pointer on the cord at the extreme left end of the dial. Check to see that pointer travels full length of the dial. It may be advisable to place some "ARATEX" or other liquid adhesive on cord where it fits into the pointer.

MODEL A258

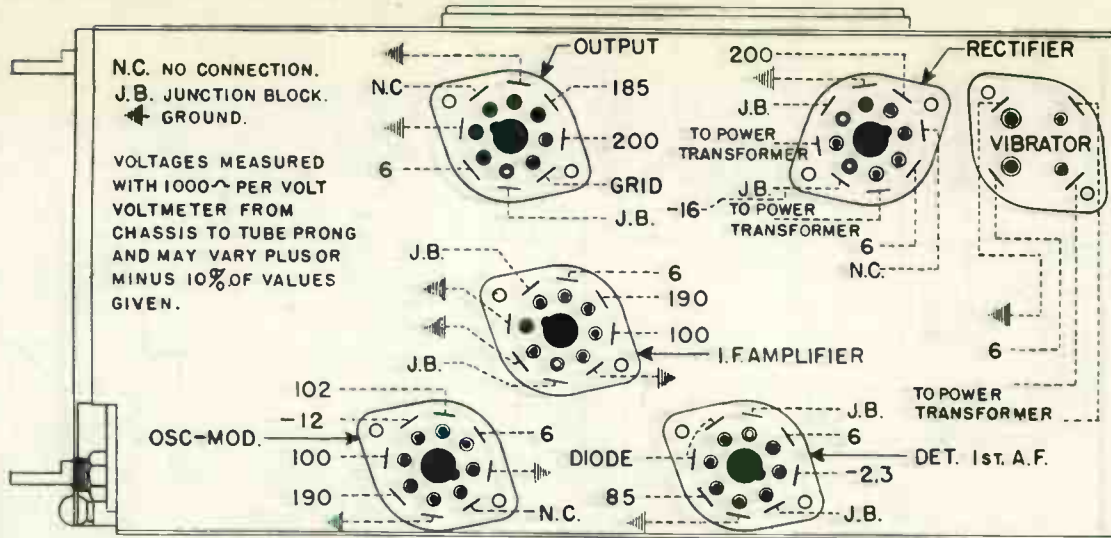


Fig. 5 Socket Voltage Layout

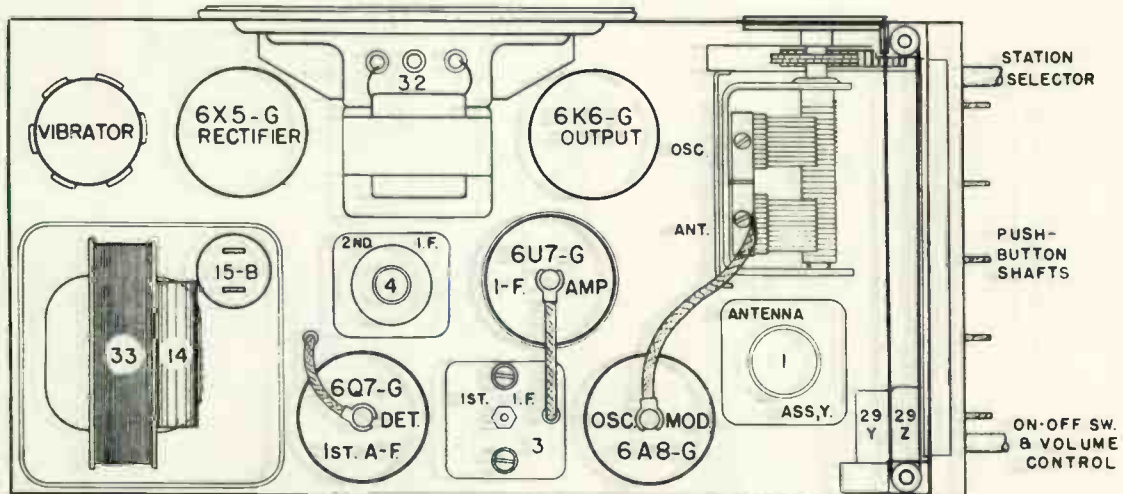


Fig. 2. Top View A-258

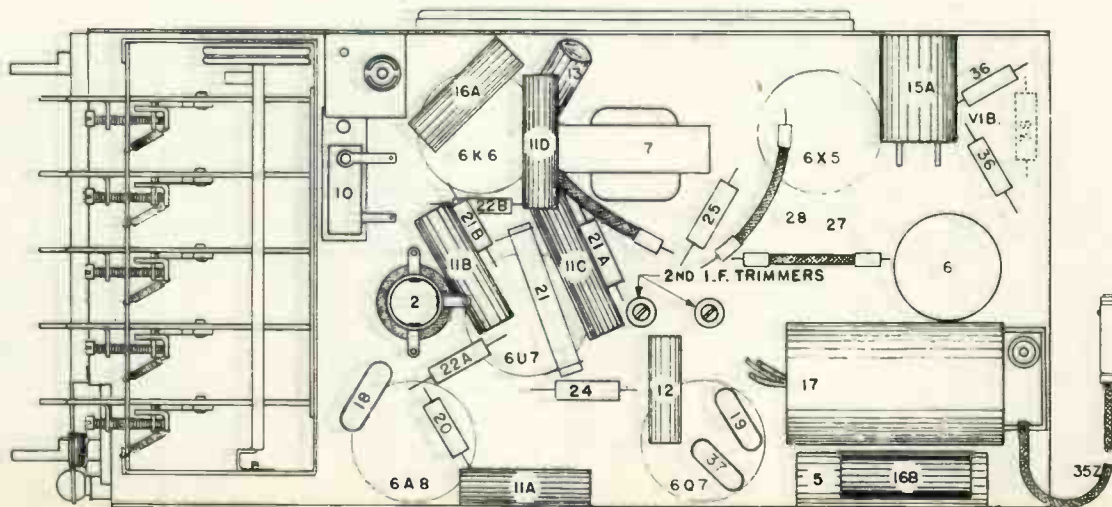
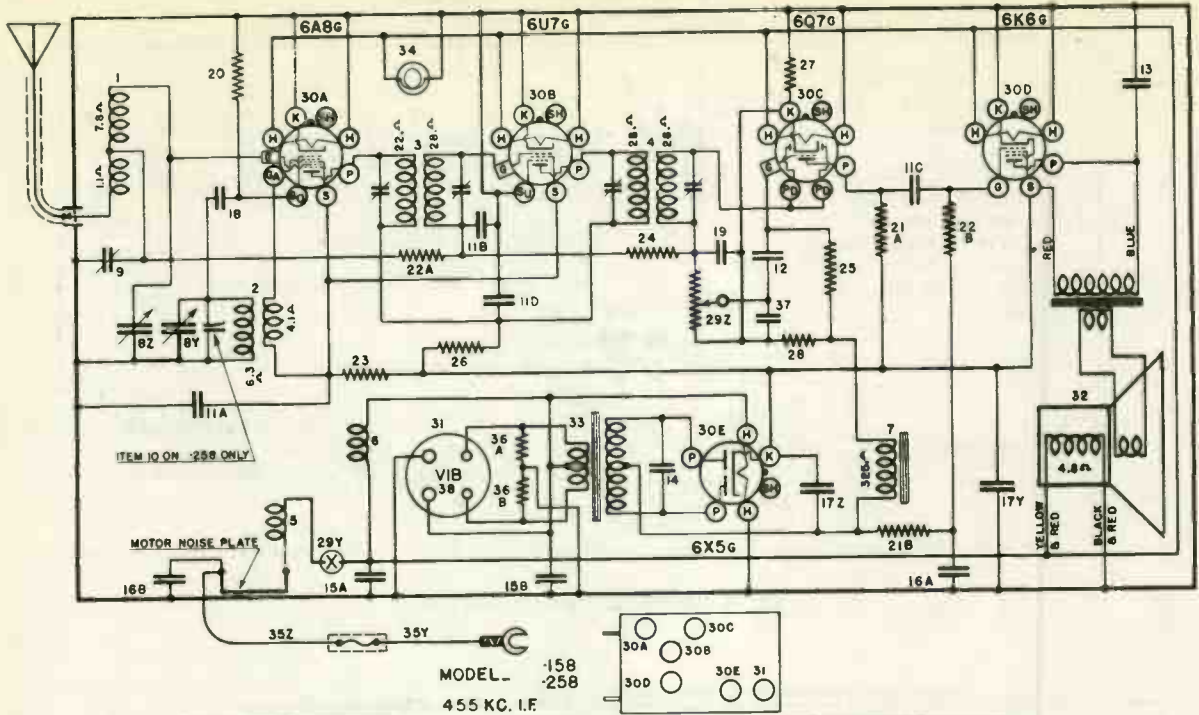


Fig. 3 Bottom View A-258

MODELS A-158 & A-258



Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	G167-32001	Ant. Coil	30	G178-36100	8 Prong Socket	
2	G167-32002	Osc. Coil	W	-50176	Tube Shield Half (2 Req.)	
3	G185-32001	1st I-F Assy., 455 Kc.	W	-31210	Tube Shield Ring	
4	G186-32001	2nd I-F Assy., 455 Kc.	31	G105-28800	Vib. Socket	
5	G19-32977	Motor Noise Check	W	-50123A	Vib. Gnd. Clip	
6	G27-29067	"A" Filter Choke	32	378-10-7-1"	Speaker, Mfg. Spec. 5B-122	
7	G16-29335	"B" Filter Choke	33	-13880	Output Trans.	
8	G30-33001	2 Section Gang Cond.	B	-50644	Power Trans.	
9	-50054B	Ant. Compensating Cond.	W	-50130	Power Trans. Can	
C	-50623	Glass Dial Face	G1	-50631	Dial Light Bulb-6.8 V.	
W	-50645	L. H. Dial Mtg. Clip	G29	-32730	"A" Lead-Set to Fuse	
W	-50660	R. H. Dial Mtg. Clip	G27	-32730	"B" Lead-Fuse to Ammeter	
W	-50517B	Dial Mask (Maroon)	38915	-38915	Resistor, 100 Ohm 1/2 W. W.	
W	-50518	Pointer	3915	-3915	Resistor, 100 Ohm 1/2 W. W.	
H	-78	Screw-Dial Clip Mte	17	G2	-54002	Condenser, .001 Mf. Molded
MG23-50500		Dial Mtg. Bracket Assy. (Riveted to Chassis)	38	G10-28000	Vibrator, Interchangeable	
MG28-50560		Manual Drive Shaft Brkt. Assy.	G13	-38000	Vibrator	
G8	-43564	Pulley and Hub Assy.	W	-32757	Fuse (12 Amp.)	
W	-23677	Set Screw-Hub	W	-32776	Fuse Insulator	
W	-43582	Drive Cord-40 Inches			<b>Miscellaneous Mechanical Parts</b>	
W	-50590	Spring-Cord Tension-Large Pulley	MG27-50530		Push Button Unit Assy.	
W	-43561	Spring-Cord Tension-Small Pulley	MG25-50530		Key Assy.	
W	-50524B	Manual Drive Shaft	W	-50512A	Key Clip (Lock Clamp)	
10	G3	Temp. Compensating Cond.	W	-50567	1/4"-6x32 Screw (Clamp)	
11A	W	-32380	Condenser, .05 Mf. 200 V.	W	-30067	Spring-(Key Return)
11B	W	-32380	Condenser, .05 Mf. 200 V.	W	-50588A	Adjusting Clip (Heart Shaped)
11C	W	-32380	Condenser, .05 Mf. 200 V.	W	-43882	1/4" No. 8 P. K. Screw (Clip Mtg.)
11D	W	-32380	Condenser, .05 Mf. 200 V.	W	-50547	Key Plate (Rear Guide)
12	W	-37226	Condenser, .02 Mf. 160 V.	MG24-50530		
13	W	-22191A	Condenser, .01 Mf. 400 V.	W	-50561	1/4"-6x40 Fl. H. Screw (Rocker Plate Bearing)
14	W	-50203	Condenser, .0065 Mf. 1,000 V.	W	-43531B	Push Button
15A	W	-50161	Condenser, .5 Mf. 150 V.	W	-50531A	Celluloid Cover
15B	W	-34161	Condenser, .5 Mf. 120 V.	W	-50549	Call Letter Sheet
16A	W	-34105	Condenser, 1 Mf. 160 V.	D	-50533B	Case (Rear Half) FS49
16B	W	-34105	Condenser, 1 Mf. 160 V.	C	-50534A	Case (Front Half) FS49
17Z	W	-50528	Condenser, 4 Mf. 350 V.	W	-50589	Felt (Dial Window)
17Y	W	-50224	Cond. Clamp	W	-50505	Knob (2 Req.)
18	G1	-34002	Condenser, .0025 Mf. Molded			<b>Mounting Parts</b>
19	G3	-34002	Condenser, .0025 Mf. Molded	W	-38038D	Distributor Suppressor
20		-35600	Resistor, 100,000 Ohm 1/2 W.	W	-29754C	Generator Condenser
21A		-35601	Resistor, 300,000 Ohm 1/2 W.	W	-25846	1/4" No. 10 P. K. Screw (Set Mtg.)
21B		-35601	Resistor, 300,000 Ohm 1/2 W.	W	-6213	1/4"-20 Hex. Nut (Brkt. Mtg.)
22A		-35322	Resistor, 500,000 Ohm 1/2 W.	W	-35065	1/4"-20 Screw (Brkt. Mtg.)
22B		-35322	Resistor, 500,000 Ohm 1/2 W.	W	-32783	1/4" Lock Washer (Brkt. Mtg.)
23		-23616	Resistor, 15,000 Ohm 1 W.	W	-50167	Ant. Cable (Accessory)
24		-35602	Resistor, 1 Megohm 1/2 W.	W	-50395	Mtg. Bracket (Set)
25		-35327	Resistor, 2 Megohm 1/2 W.	W	-38495	Case Ground Clip
26		-50641	Resistor, 750 Ohm 1/2 W.			
27		-50643	Resistor, 60 Ohm 1/2 W.			
28		-50642	Resistor, 40 Ohm 1/2 W.			
29Z		-50526	Volume Control, 1 Meg.			
29Y		-50526	On-Off Switch			

PARTS LIST — MODEL A-158

Item No.	Part No.	Description
8	G19-33001	2 Section Gang Condenser
	C-50155B	Glass Dial Face
	MG23-50500	Dial Support Bracket (Riveted to chassis)
	W-43549	Retaining Washer (Drive Shaft)
	W-50512	Drive Shaft
9	G9-43564	Pulley & Hub assembly
	W-41582	Drive Cord (30 in.)
	W-50054B	Ant. Comp. Condenser
	W-50105	Condenser 0.1 Mf. 160 V.
	W-50589	Felt (Dial window)
	D-50503B	Case (Rear section)
	C-50504B	Case (Front section)
	-50505	Knob (2 Required)

**CONNECTING OUTPUT METER**

One terminal of the output meter is connected to the plate of the 6V6GT output tube and the other terminal should be connected to the screen. **BE SURE THE OUTPUT METER IS PROTECTED FROM D. C. BY CONNECTING A CONDENSER (.1 MF. or larger—NOT electrolytic) IN SERIES WITH ONE OF THE LEADS.**

**1. Aligning The I-F Amplifier (455 Kc.)**

- (a) Connect the output of the signal generator through a .02 MF. or larger, condenser to the top cap of the 6ABGT oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis.
- (b) Set the signal generator to 455 kilocycles.
- (c) Open the tuning condenser all the way, turn the volume control on full.
- (d) Adjust both trimmers on the 2nd. I-F transformer for maximum output. (See Fig. 3).
- (e) Adjust both trimmers on the 1st I-F transformer for maximum output. (See Fig. 3).
- (f) Repeat (d) and (e) for more accurate adjustments. **ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING, TO PREVENT A. V. C. ACTION.**

**2. Aligning R-F Amplifier**

To obtain the greatest gain from the R-F amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice-versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type of built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**
- (g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser.**

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, located to right of antenna connector, for maximum output while slowly rocking the tuning condenser.
- (d) Set the signal generator to 1400 kilocycles again.
- (e) Tune in the 1400 kilocycle signal with the station selector for maximum output.
- (f) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

- (a) After the installation is complete, tune-in a WEA's station between 55 and 65 on the dial.
- (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

**SPEAKER INSTALLATION**

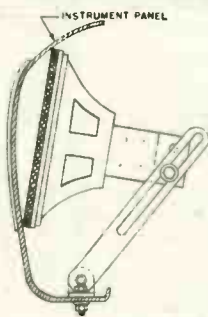


Fig. 5—Instr. Panel Mtg.

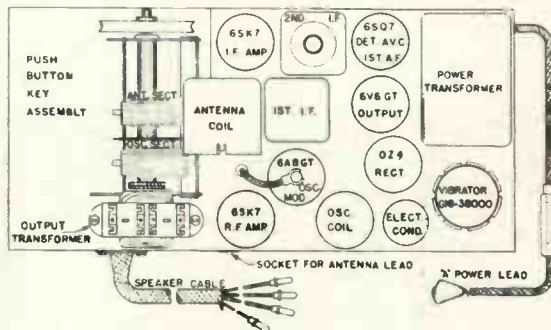


Fig. 2—Top View Model A-160

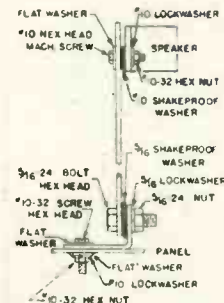


Fig. 6—Bracket Assembly

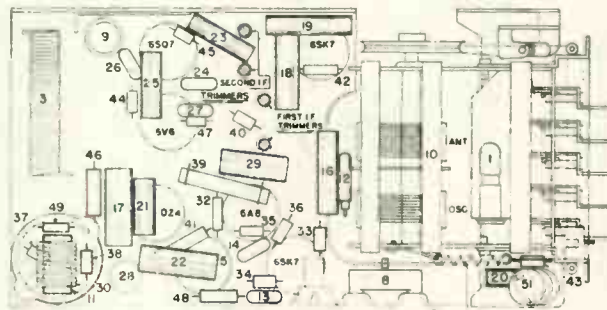


Fig. 3—Bottom View Model A-160

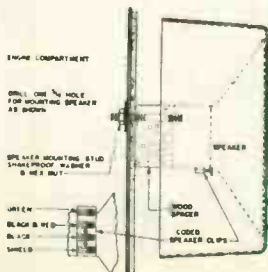


Fig. 7—Cowl Speaker Mtg.

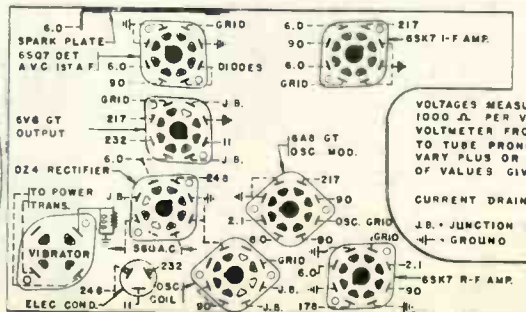
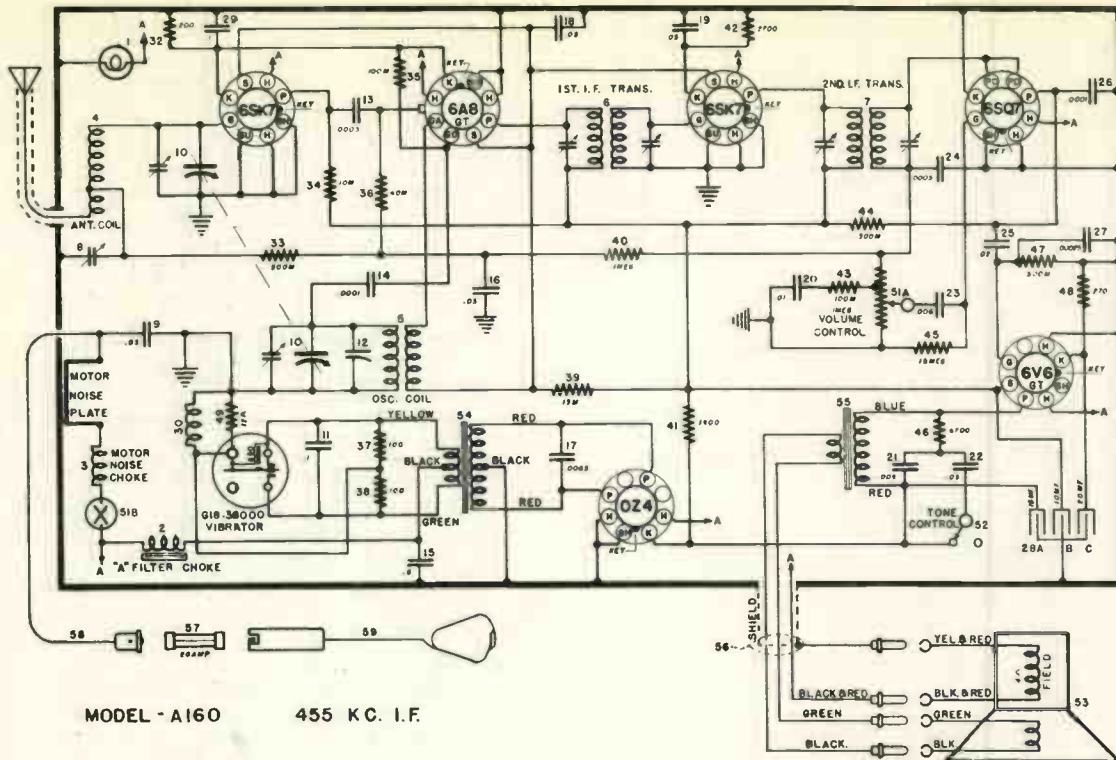


Fig. 4—Socket Voltage Chart Model A-160

MODEL A-160



MODEL - A160 455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description		
1	W-37922	Dial Lamp—6.8 Volt	N	-10	No. 10 Nut—Brkt. Mtg.		
	MG22-51670	Reflector Bracket Assy.	B	-51723	Power Transformer		
	G49	Wire and Eyelet Assy.—D. L. Socket	P. T. Shield (Can)	W	-30680	Output Transformer	
2	G38	28067	"A" Filter Choke	B	-51730	Speaker Cable—4 Wire	
3	G23	-32977	Motor Noise Choke	W	-51736	Fuse (20 Amp.)	
4	G216	-32000	Antenna Coil	55	G34	-32750	"A" Lead—Set to Fuse
5	G3	-51014	Oscillator Coil—Hermetically Sealed	56	G48	-32750	"A" Lead—Fuse to Ammeter
6	G239	-32004	1st I-F. Assy.—455 Kc.	57	G18	-38000	Vibrator
7	G236	-32004	2nd I-F. Assy.—455 Kc.	58	G105	-28807	Socket—Vibrator
8	W	-51111	Condenser—Antenna Series Trimmer	W	-50123A	Ground Clip—Vibrator	
9	W	-35936	Condenser, .05 Mf. 200 V.	W	-51801	Shield—Vibrator Socket	
10	C	-51700B	Gang and Push Button Assy.	W	-51108A	8 Prong Socket	
	-51875	Key Adjusting Screw	W	-51679	Glass Dial		
	-51786	Clamp—Key Toggle	W	-51691	Clip—Dial Mounting		
11	W	-51800	Condenser, .1 Mf. 100 V.	B	-51690A	Bezel—Dial Escutcheon	
12	W	-51140	Condenser, Temp. Compensating	W	-51692	Celluloid Dial Window	
13	G3	-34002	Condenser, .0005 Mf. Molded	MG35	-51680	Pointer Assy.—Dial Hand	
14	G2	-34002	Condenser, .0001 Mf. Molded	W	-51694	Diffuser—Dial Light	
15	W	-50682A	Condenser, 5 Mf. 120 V.	V	-51718	Studs—Diffuser Mounting	
16	W	-45817B	Condenser, .05 Mf. 160 V.	MG26	-51670	R. H. Cord Bracket Assy.	
17	W	-50233	Condenser, .0065 Mf. 1,000 V.	MG27	-51670	L. H. Cord Bracket Assy.	
18	W	-32380	Condenser, .05 Mf. 200 V.	W	-51335	Wood Idler Pulley	
19	W	-45817B	Condenser, .05 Mf. 160 V.	G23	-43564	Pulley and Hub Assy.	
20	W	-51762	Condenser, .01 Mf. 160 V.	G17	-41582	Drive Cord (37 1/2")	
21	W	-51716	Condenser, .006 Mf. 400 V.	W	-50590	Spring—Drive Cord Tension	
22	W	-32780B	Condenser, .05 Mf. 400 V.	G11	-41564	Guide Cord (15")	
23	W	-4581013	Condenser, .006 Mf. 160 V.	W	-43561	Spring—Guide Cord Tension	
24	G3	-34002	Condenser, .0005 Mf. Molded	W	-51657	Manual Shaft and Worm Assy.	
25	W	-28521	Condenser, .02 Mf. 200 V.	W	-51071	"C" Washer—Shaft Retaining	
26	G2	-34002	Condenser, .0001 Mf. Molded	W	-51710	Bracket—Manual Shaft Mtg.	
27	G1	-34002	Condenser, .00025 Mf. Molded	B	-51726	Bracket—Tuning Unit Mtg.—Front	
28	W	-51782	Condenser, 3 Section Electrolytic A—15 Mf. 350 V. B—10 Mf. 350 V. C—20 Mf. 25 V.	U	-61731	Spacer—Tuning Unit Mtg.	
29	W	-50105	Filter Choke	W	-4702	Washer—Tuning Unit Mtg.	
30	G39	-28057	Filter Choke	O	-8	Washer—No. 8 Flat—Unit Mtg.	
31				L	-8	Lockwasher—Tuning Unit Mtg.	
32	-50699	Resistor, 200 Ohms 1/4 W. W.	W	-38038D	No. 8—32 1/2" Screw—Tun. Unit Mtg.		
33	-36322	Resistor, 500,000 Ohms 1/4 W. Ins.	W	-29751C	Distributor Suppressor		
34	-36317	Resistor, 10,000 Ohms 1/4 W. Ins.	W	-50167	Generator Condenser		
35	-35600	Resistor, 100,000 Ohms 1/4 W. Ins.	W	-35065	Radio Rear Mounting Strap		
36	-36761	Resistor, 40,000 Ohms 1/4 W. Ins.	W	-6213	1/4" x 2 1/2" Screw—Strap Mtg.		
37	-38915	Resistor, 100 Ohms 1/4 W. W.	W	-38365	1/4" x 2 1/2" Nut—Strap Mtg.		
38	-38915	Resistor, 100 Ohms 1/2 W. W. W.	W	-38365	Lockwasher—Strap Mtg.		
39	-23616	Resistor, 15,000 Ohms 1 W. Carb.	U	-51715	Bracket—Case to Instr. Panel Mtg.		
40	-36602	Resistor, 1 Megohm 1/4 W. Ins.	O	-10	Flat Washer—Instr. Panel Mtg.		
41	-45388	Resistor, 1,400 Ohms 1/4 W. W.		-25846	No. 10—1/4" P. K. Screws—Instr. Panel Mtg.		
42	-36316	Resistor, 2,700 Ohms 1/4 W. Ins.		-25788	No. 8—3/8" P. K. Screws—Brkt. to Case		
43	-35600	Resistor, 100,000 Ohms 1/4 W. Ins.	MG3	-51681	Instruction Envelope Assy.		
44	-35601	Resistor, 300,000 Ohms 1/4 W. Ins.		-51687	Shipping Carton		
45	-50671	Resistor, 15 Megohms 1/4 W. Ins.		-51727	Call Letter Sheet		
46	-51783	Resistor, 4,700 Ohms 1/2 W. Carb.		-51685	Instruction Booklet		
47	-36322	Resistor, 500,000 Ohms 1/4 W. Ins.	MG2	-51680	Case Assy.		
48	-51743	Resistor, 270 Ohms 1/4 W. W.	MG7	-51681	Cowl Spkr. Kit Complete (Model 020)		
49	-51804	Resistor, 12 Ohms 1/2 W. W.	MG5	-51681	Instrument Panel Speaker Kit Complete (Model 010)		
50			G1	-51722	Speaker (8") Cowl Mtg.		
51	-51712	Volume Control and Switch A—Volume Control—1 Meg.—Tap C—.75 Meg. B—On-Off Switch		-51744	Housing—Speaker Case		
52	W	-51717			-50895	Screen—Speaker Guard (FS-27)	
53	386-BJ-4	Speaker—Instrument Panel			-51788	Screw—Speaker to Housing Mtg.	
	W	-51725	Bar—Speaker Mtg.		-30801	Washer—Under Head of 51788	
	W	-51724	Bracket—Speaker Mtg.	O	-8	Flat Washer	
	W	-12047A	1/2" x 2 1/2" Bolt—Bracket and Bar	N	-8	Nut—No. 8—32—Speaker Mtg.	
	W	-51758	1/4" Shakeproof Washer		-51795	Stud—Speaker to Dash Mtg.	
	W	-12113A	3/4" x 24 Nut—Bracket Bolt		-51789	Spacer Block	
	W	-24235A	3/4" Lockwasher		-32957	Shakeproof Washer—Speaker Mtg.	
	W	-38122	No. 10—32 x 3/4" Screw—Brkt. Mtg.		-6213	1/4" x 20 Nut—Stud Mtg.	
	W	-4702	Flat Washer—Brkt. Mtg.	MG2	-51681	Set Mtg. Parts Kit	
	L	-10	No. 10 Lockwasher—Brkt. Mtg.	MG1	-51681	Instr. Panel Spkr. Mtg. Parts Kit	
	V	-51776	Shakeproof Washer—Brkt. Mtg.		-51685	Case Body—(FS-11 and FS-79)	
					-51696	Front Cover—Case (FS-11 and FS-79)	
					-51713	Lid—Case (FS-11 and FS-79)	

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
6D6	R-F Amplifier	6.0	220	100	0	5.7	—	—
6A7	Osc.-Mod.	6.0	220	100	0	5.7	130	-5 to -10
6B7	I-F Amp. & Diode Detector	6.0	220	100	0	6.8	—	—
76	1st A-F Amp.	6.0	130	—	0	8.0	—	—
41	(2) Output	6.0	210	—	0	18.0	—	—

POWER OUTPUT APPROXIMATELY 3 WATTS.

BATTERY DRAIN APPROXIMATELY 6.2 AMPERES AT 6 VOLTS.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the 41 Output tubes and connect the other terminal to the plate of the other Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

NOTE: The receiver chassis must be in its case and a speaker similar to the one used with the receiver must be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

1. Tuning I-F Amplifier to 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates

of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC." section of the tuning condenser for maximum output. (Fig. 2).

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE "OSC" TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune-in the 600 kilocycle signal with the station selector for maximum output.

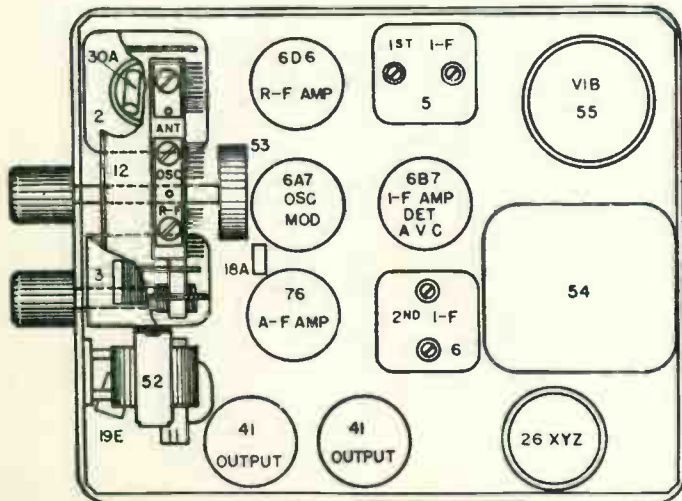


Fig. 2. Top View A-166

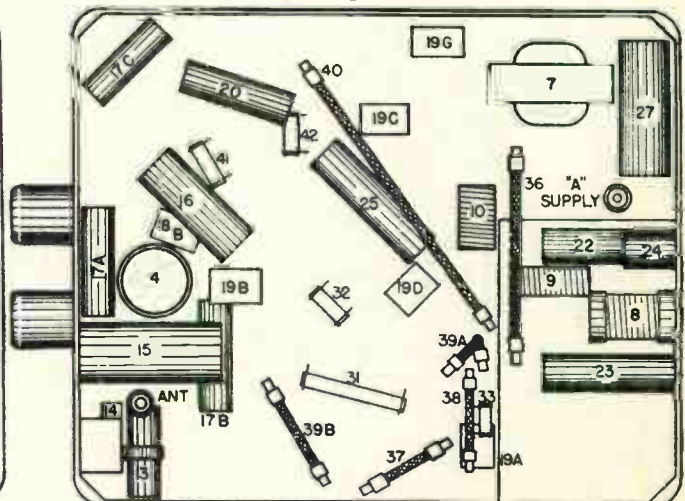
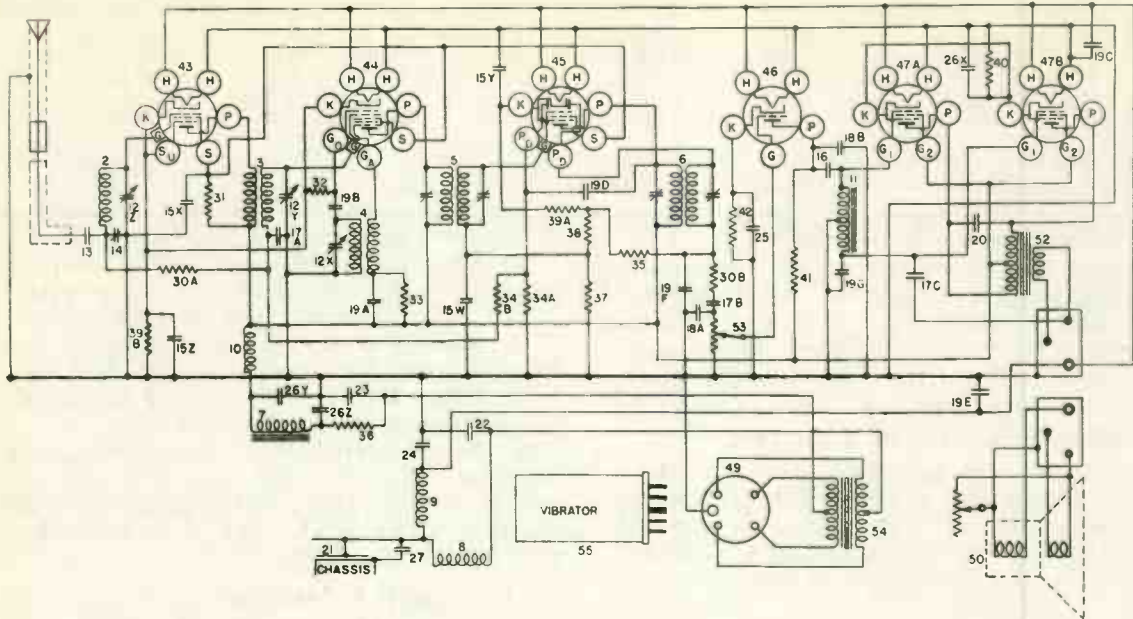


Fig. 3. Bottom View A-166



MODEL A-166



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1					
2	G83-32000	Ant. Coil	34B	-35602	Insulated Type Resistor, 1 Megohm, ¼ W., Insulated Type
	W-38420	Ant. Coil Shield			
	W-32913	Wood Coil Spacer	35	-35601	Resistor, 300,000 Ohm, ¼ W., Insulated Type
3	G22-32001	R. F. Coil			
	W-32897	R. F. Coil Shield	36	W-32961	Resistor, 100 Ohm, 3 W., Flex.
	W-32812	Wood Coil Spacer	37	W-21432	Resistor, 1100 Ohm, ¼ W., Flex.
4	G27-32002	Osc. Coil	38	W-28589	Resistor, 350 Ohm, ½ W., Flex.
	W-25025B	Osc. Coil Shield	39A	W-30127	Resistor, 450 Ohm, ½ W., Flex.
	W-25200A	Coil Socket	39B	W-30127	Resistor, 450 Ohm, ½ W., Flex.
	W-20891	Insulating Washer	40	W-26049	Resistor, 450 Ohm, 3 W., Flex.
	W-21541C	Retaining Ring	41	-36761	Resistor, 40,000 Ohm, ¼ W.
5	G16-32005	1st I. F. Coil Assem.	42	-38428	Resistor, 4,500 Ohm, ¼ W.
6	G15-32005	2nd I. F. Coil Assem.	43	G75-28807	Socket 6D6
7	G31-24628	Coil, "B" Filter Choke	44	G47-28807	Socket 6A7
8	G15-28097	Coil, "A" Filter Choke	45	G48-28807	Socket 6B7
9	G6-32997	Coil, Motor Noise Filter Choke	46	G80-28807	Socket 76
10	G5-32997	Coil, Motor Noise "B" Choke	47A	G22-28807	Socket 41
11	G11-29535	Coil, A. F. Grid Coupling Choke	47B	G22-28807	Socket 41
12Z					
12Y	G44-33002	3 Section Tuning Cond. Gang			
12X					
13	W-38367	Condenser, 0.02 Mfd. 200 V.			
14	W-38350	Condenser, Ant. Series Trimmer			
15Y					
15X	W-38419	Condenser, 0.1 Mfd. 400 V.	48	W-32895	Speaker Socket
15W			49	W-32965A	Vib. Socket
16	W-22588	Condenser, 0.05 Mfd. 400 V.			
17A	W-32779	Condenser, 0.1 Mfd. 400 V.	50	424-G1	Speaker
17B	W-32779	Condenser, 0.02 Mfd. 200 V.			
17C	W-32779	Condenser, 0.02 Mfd. 200 V.	51	W-35181A	Suppressor, 20,000 Ohm
18A	G2-34002	Condenser, 0.0001 Mfd. (Mica)	52	G28-24628	Transformer, Output
18B	G2-34002	Condenser, 0.0001 Mfd. (Mica)			
19A			53	-38425	Volume Control, 1 Megohm
19G	G1-34002	Condenser, 0.00025 Mfd. (Mica)	54	G8-32769	Power Transformer
20	W-25435	Condenser, 0.00025 Mfd. (Mica)	55	G7-38000	Vibrator, (D. A. Corp. No. 5041245)
21	W-32904	Condenser, 0.00025 Mfd. (Mica)			
22	W-38433	Condenser, 0.003 Mfd. 400 V.			
23	W-38431	Condenser, 20 Mmf.			
24	W-37190	Condenser, 0.5 Mfd. 160 V.			
25	W-38430	Condenser, 0.15 Mfd. 400 V.			
26Y					
26X	W-38427	Condenser, 0.02 Mfd. 160 V.			
27	-29910A	Condenser, 4 Mfd.			
28	W-35784A	Condenser, 8 Mfd. 350 V.			
30A	-35600	Resistor, 100,000 Ohm, ¼ W.			
30B	-35600	Resistor, 100,000 Ohm, ¼ W.			
31	-36952	Resistor, 30,000 Ohm, 1 W., Insul.			
32	-35928	Resistor, 80,000 Ohm, ¼ W., Insul.			
33	-36760	Resistor, 20,000 Ohm, ¼ W., Insul.			
34A	-35602	Resistor, 1 Megohm, ¼ W., Insul.			

## MODEL A-167

### TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	Su	K	Ga	Go
6K7G	R-F Amplifier	6.0	270	—	100	8.5	8.5	—	—
6A8G	Osc.-Modulator	6.0	270	—	100	—	8.5	100	0
6B8G	I-F Amplifier & Diode Detector	6.0	270	—	100	—	4.0	—	—
6K7G	A-F Amplifier	6.0	135	—	35	4.0	4.0	—	—
6N6G	Output	6.0	235	270	—	—	0	—	—
6X5G	Rectifier	6.0	—	—	—	—	285	—	—

Power output approximately 5 watts.  
 Battery drain approximately 8.0 amperes at 6.0 volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter to P1 and P2 of the 6N6G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

#### 1. Tuning I-F Amplifier To 262 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd. or larger, condenser to the top cap of the 6A8G Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator.
- (g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**
- (h) Repeat operations (e) and (f) for more accurate adjustments.

#### 3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
  - (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
  - (c) Adjust the antenna compensating condenser, Illustration No. 11, Fig. 3, for maximum output.
  - (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- ator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.
  - (c) Set the signal generator to 262 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

#### 2. Aligning R-F Amplifier

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.
- (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
- (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

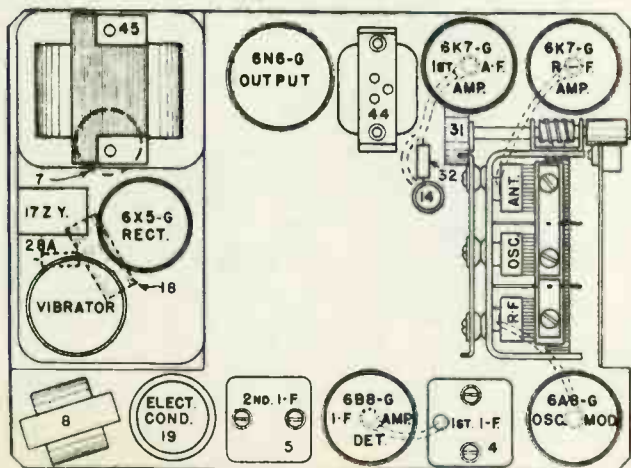


Fig. 2 Top View A-167

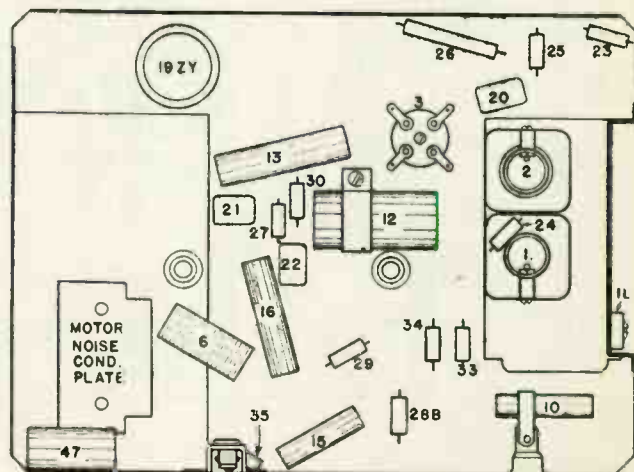


Fig. 3 Bottom View A-167



**MODEL A-268 CROSLY SAFETY-TUNE SIXER ROAMIO DELUXE**  
**MODEL A-168 CROSLY SAFETY-TUNE SIXER ROAMIO**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	K	Ga	Go	G
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.5	100	—	—
6U7-G	I-F. Amplifier	6.0	220	100	—	3.5	—	—	—
6Q7-G	Det., A. V. C. 1st A-F. Amplifier	6.0	60	—	—	—	—	—	—
6P5-G	2nd A-F. Amplifier	6.0	200	—	—	11	—	—	—
6AC5-G	Output	6.0	225	—	—	—	—	—	11
6X5-G	Rectifier	6.0	—	—	—	240	—	—	—

Power Output (max.) 6 Watts—approx.

Battery Drain 6.5 Amperes—approx.

It will be noted that certain terminals on the sockets are used as junction blocks.

**SETTING PUSH BUTTONS**

Should it become necessary to realign the circuits of the receiver, it may also be necessary to reset the push buttons. The push buttons may be quickly and accurately set, either with the receiver in the case or with the case removed.

Insert a small screw driver in the hole through each push button and loosen (do not remove) the set screw in the bottom of the hole. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the favorite station having the highest frequency—that is, the station nearest the left-hand end of the dial. Completely depress and hold the No. 1 push button on the left and tighten the set screw SECURELY.

The push button tuning system is now correctly set for the 1st station. Follow through with this same procedure, setting the other four stations in the order of their frequency (kilocycles).

**CONNECTING OUTPUT METER**

One terminal of the output meter is connected to the plate of the 6AC5-G output tube and the other terminal should be connected to the cathode of the 6X5-G rectifier tube. **BE SURE THE OUTPUT METER IS PROTECTED FROM D. C. BY CONNECTING A CONDENSER (.1 MF. or larger—NOT electrolytic) IN SERIES WITH ONE OF THE LEADS.**

**1. Tuning I-F Amplifier To 455 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7-G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8-G Osc. Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

**IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

MODELS A-168 8 A-268

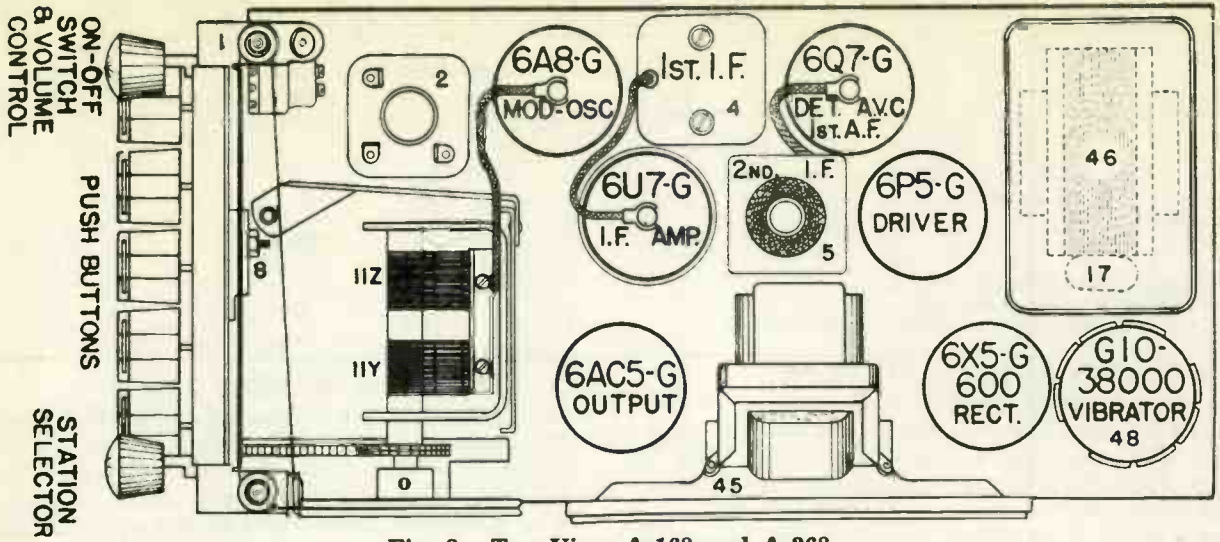


Fig. 2. Top View A-168 and A-268

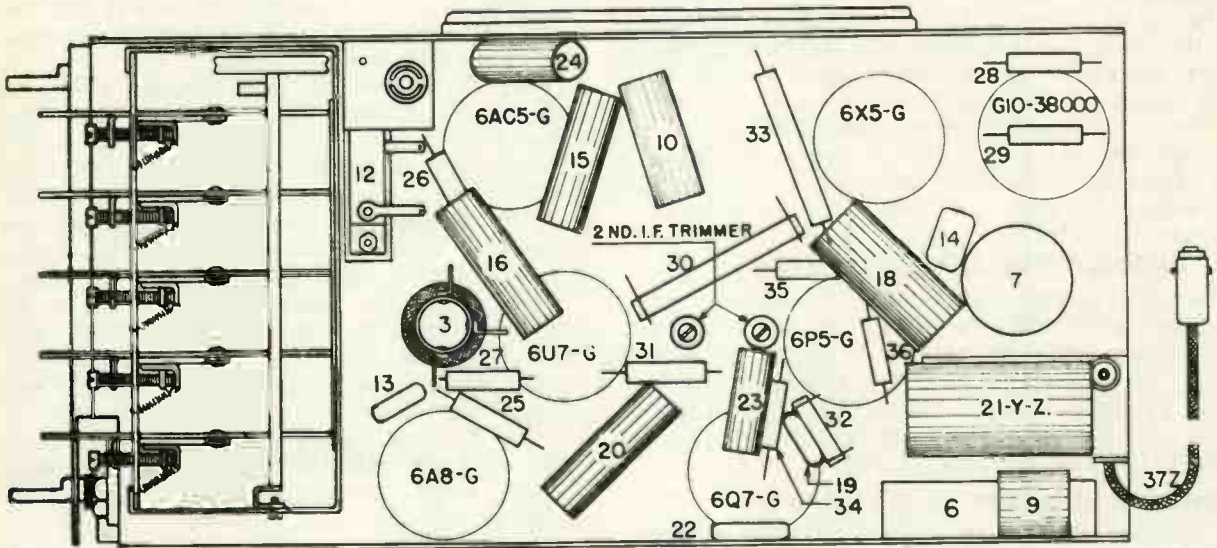


Fig. 3. Bottom View A-168 and A-268

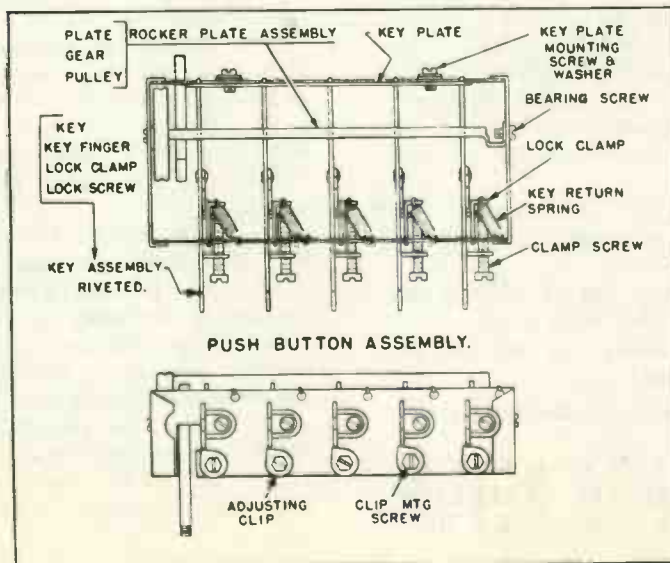


Fig. 4. Push Button Assembly



**CONNECTING OUTPUT METER**

Connect the output meter to the plate and screen of the 6K6GT output tube. Be sure the meter is protected from D.C. by connecting a condenser (0.1 mf. or larger—not electrolytic) in series with one of the meter leads.

**1. Aligning the I-F to 455 Kilocycles**

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid (pin No. 8) of the 6SA7 oscillator-modulator. Care should be exercised to keep signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis between the 6SQ7 and 6SK7 sockets.

(d) Adjust both 1st I-F trimmers for maximum output. Trimmers accessible from bottom of the chassis.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

**2. Aligning the R-F**

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "ANT" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (f) Readjust the station selector for maximum output.
- (g) Repeat operation (e) for more accurate adjustment.

**3. Adjusting Antenna Compensating Condenser on Model A-169 only.**

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, located near antenna receptacle, for maximum output.
- (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

**PARTS LIST—MODEL A-169**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light Bulb, 6-8 Volt	27	G1 —34002	Condenser, .0025 Mf. Molded
2	G175 —32000	Antenna Coil	28	—50469	20 Ampere Fuse
3	G23 —32977	Motor Noise Choke Coil	29	—36322	Resistor, 500,000 Ohms 1/2 Watt Ins.
4	G32 —28067	"A" Filter Choke Coil	30	—38915	Resistor, 100 Ohms 1/2 Watt Wire Wound
5	MG24 —51169	Push Button Solenoid Coil	31	—38915	Resistor, 100 Ohms 1/2 Watt Wire Wound
6	G2 —51014	Hermetically Sealed Oscillator Coil	32	—36317	Resistor, 10,000 Ohms 1/2 Watt Ins.
7	G216 —32004	1st I-F. Transformer Assembly	33	—36761	Resistor, 40,000 Ohms 1/2 Watt Ins.
8	G217 —32004	2nd I-F. Transformer Assembly	34	—23616	Resistor, 15,000 Ohms 1 Watt Carb.
9	W —51111	Antenna Trimmer Condenser	35	—45388	Resistor, 1,400 Ohms 1 1/2 Watt Wire Wound
10	W —35936	Condenser, .05 Mf. 200 Volt Paper	36	—35602	Resistor, 1 Megohm 1/2 Watt Ins.
11A	G171 —33001	2 Section Var. Cond. } Antenna Section	37	—36760	Resistor, 20,000 Ohms 1/2 Watt Ins.
11B			38	—38917	Resistor, 450 Ohms 1/2 Watt Wire Wound
	G18 —43564	Pulley and Hub Assembly	39	—35928	Resistor, 60,000 Ohms 1/2 Watt Ins.
	G5 —41582	Drive Cord, 18"	40	—35601	Resistor, 300,000 Ohms 1/2 Watt Ins.
	MG23 —51169	Push Button Unit Assembly	41	—50671	Resistor, 15 Megohms 1/2 Watt Ins.
	MG19 —51169	Dial Bracket Assembly	42	—38623	Resistor, 750,000 Ohms 1/2 Watt Ins.
	MG20 —51169	Rocker Plate Assembly	43	—38918	Resistor, 600 Ohms 1/2 Watt Wire Wound
	MG22 —51169	Riveted Key (5 Req.)	44	G34 —32750	"A" Lead Assembly (Fuse to Set)
	MG21 —51169	Key Assembly (5 Req.)	45	G37 —32750	"A" Lead Assembly (Fuse to Battery)
	W —51203	Dial Drive Cord Spring	46	W —51162	Switch Contact Plate
	W —23877	No. 8—32 x 3/16" Set Screw (Pulley and Hub Assy.) (2 Req.)	47	W —46159	Tone Control Switch
	W —50542E	Key Clip (5 Req.)	48	278-BL-5-"B"	Speaker, Spec. 55-WA-50
	W —50639	No. 6—32 x 1" Fil. Hd. Screw (5 Req.) (Adjusting)	49	G10 —38000	Output Transformer
	W —51122	Key Plate	50A	} —51117	Vibrator
	W —50590	Key Return Spring (5 Req.)	50B		Volume Control
	W —50561	No. 6—40 x 3/8" Fil. Hd. Screw (2 Req.) (Key Plate Screw)	G168 —34403	Volume Control Cable (Connecting Wires)	
	W —51120	No. 6—40 x 1/2" Rd. Hd. Screw (2 Req.) (Dial Clip)	W —35201	Pal Nut (Volume Control)	
	W —50989A	Contact Plate Bearing Screw	B —51155A	Power Transformer	
	W —51145	Push Button (5 Req.)	G2 —34002	Condenser, .0001 Mf. Molded	
	W —51145A	Push Button Rod	G3 —34002	Condenser, .0005 Mf. Molded	
	W —51162	Contact Plate	W —50105	Condenser, 1 Mf. 160 Volt Paper	
	—48373	Manual Tuning Shaft Assembly (Service only)	G105 —28807	Vibrator Socket	
	—51151	Tuning or Volume Control Knob	W —50123	Vibrator Ground Clip	
	C —51136	Dial Glass	W —51108A	8 Prong Socket	
	W —51137A	Dial Mask	W —51208	Tube Shield	
	W —51132	Dial Pointer	MG1 —51169	Case Assembly Complete	
	W —51134	Dial Clip (Right)	D —51149B	Front Cover	
	W —51133	Dial Clip (Left)	C —51184	Lid	
	R —78	No. 4—36 x 1/4" Rd. Hd. Screw (2 Req.) (Dial Clip)	—43882	No. 8 x 3/4" P. K. Screw (Case Fastening)	
	W —2045	No. 4 Int. Shakeproof Washer (2 Req.) (Dial Clip)	—51174	Carton	
	W —50589	Dial Window Felt	W —51175	Instruction Booklet	
	W —51146	Anti-Rattle Clip (2 Req.)	W —38038D	Distributor Suppressor	
	W —51167	Grille Cloth	W —29754C	Generator Condenser	
	W —51206	Dust Cloth (Front Cover)	W —50167	Rear Mounting Strip	
12	W —50682A	Condenser, 5 Mf. 120 Volt Paper	W —51177	Case Mounting Bracket (2 Req.)	
13	W —32380	Condenser, .05 Mf. 200 Volt Paper	—25846	No. 10 x 3/4" P. K. Screw (Mtg. Bracket) (2 Req.)	
14	G3 —34002	Condenser, .0005 Mf. Molded	—25788	No. 8 x 3/8" P. K. Screw (Mtg. Bracket) (2 Req.)	
15	G2 —34002	Condenser, .0001 Mf. Molded	—35065	1/4"—20 x 1 1/2" Sq. Hd. Screw	
16	W —51140	Thermal Condenser	—6213	1/4"—20 Hex. Nut (2 Req.)	
17	W —50203	Condenser, .0065 Mf. 1,000 Volt Oil	W —38205	1/4" Lock Washer (2 Req.)	
18	W —34712	Condenser, 25 Mf. 160 Volt Paper	—50979	Call Letter Sheet	
19	W —32380	Condenser, .05 Mf. 200 Volt Paper	W —50980	Call Letter Cover	
20	W —45810B	Condenser, .006 Mf. 160 Volt Paper	—51187	Call Letter Holder	
21	W —23191A	Condenser, .01 Mf. 400 Volt Paper	W —19428	No. 4—36 x 1/2" French Hd. Screw (Call Letter Holder) (2 Req.) F.S. 18	
22	W —45810B	Condenser, .006 Mf. 160 Volt Paper	W —50395	.5 Mf. 160 Volt Condenser	
23	G3 —34002	Condenser, .0005 Mf. Molded	MG3 —51170	Instruction Envelope Assy.	
24	W —28621	Condenser, .02 Mf. 200 Volt Paper	—32783	Antenna Cable (Export only)	
25	W —30488	Condenser, .02 Mf. 400 Volt Tubular			
26	W —51139	Condenser, 10 Mf. 350 Volt } Elect. 20 Mf. 25 Volt }			

MODELS A-259 AND A-169

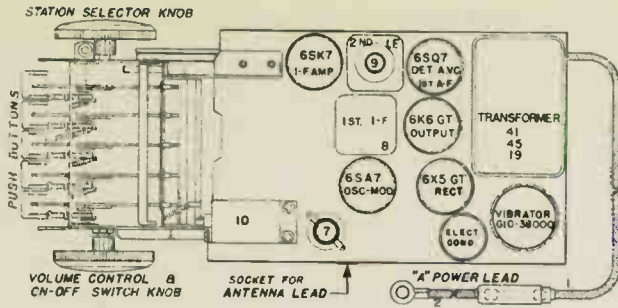


Fig. 2-A—Top View A-259

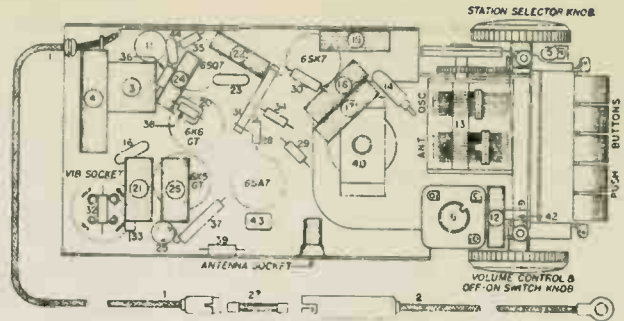


Fig. 3-A—Bottom View A-259

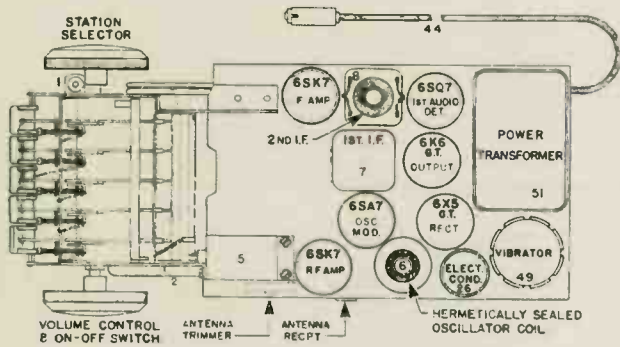


Fig. 2-B—Top View A-169

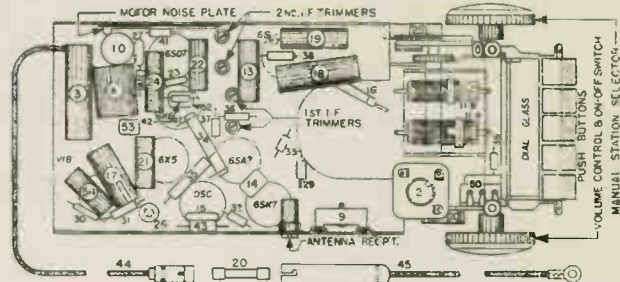


Fig. 3-B—Bottom View A-169

PARTS LIST—MODEL A-259

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	
1	G34	—32750	28	—36760	Resistor, 20,000 Ohms 1/4 Watt Ins.	
2	G37	—32750	29	—36322	Resistor, 500,000 Ohms 1/4 Watt Ins.	
3	G32	—28067	30	—38917	Resistor, 450 Ohms 1/2 Watt W. W.	
4	G23	—32977	31	—23616	Resistor, 15,000 Ohms 1 Watt Carb.	
5	W	—43567	32	—28915	Resistor, 160 Ohms 1/2 Watt W. W.	
6	G194	—32090	33	—28915	Resistor, 100 Ohms 1/2 Watt W. W.	
7	G192	—32002	34	—35672	Resistor, 1 Megohm 1/4 Watt Ins.	
8	G216	—32004	35	—50671	Resistor, 15 Megohms 1/4 Watt Ins.	
9	G223	—32004	36	—35601	Resistor, 300,000 Ohms 1/4 Watt Ins.	
10	MG24	—51169	37	—45388	Resistor, 1,400 Ohms 1 1/2 Watt W. W.	
11	W	—35936	38	—38623	Resistor, 750,000 Ohms 1/4 Watt Ins.	
12	W	—32380	39	—38918	Resistor, 600 Ohms 1/2 Watt W. W.	
13A	G72	—33001	40	278-B1-5-"B"	Speaker, Spec. 55-WA-50	
13B			41	W	—51167	Cone and V. C. Assembly
	MG19	—51169		B	—51155A	Power Transformer
	G18	—43564			—43883	No. 8 x 3/8" P. K. Screw (Trans. Fastening)
	W	—23877		42A	—51198	Volume Control, 1 Megohm
				42B		On-Off Switch
	G5	—41582		W	—35201	3/4"-32 Pal Nut (Volume Control)
	W	—51203		G2	—34002	Condenser, .001 Mf. Molded
	W	—51211A		G1	—34001	Condenser, .00025 Mf. Molded
	W	—51197		W	—50105	Condenser, .1 Mf. 160 Volt Paper
	W	—51134		W	—51108A	3 Prong Socket (No Marking)
	W	—51133		G105	—28807	Vibrator Socket
	R	—78		W	—50123A	Vibrator
	W	—2045		G10	—38000	Vibrator Ground Clip
	W	—51132		W	—46447	Tube Shield
	W	—48373		MG1	—51159	Case
	W	—50589		W	—51205	Carton
	MG23	—51159		W	—51200	Instruction Bulletin
	MG22	—51159		W	—38038D	Distributor Suppressor
	MG20	—51159		W	—29754C	Generator Condenser
	W	—50542E		W	—50167	Set Mounting Strap
	W	—50639		W	—51177	Case Mounting Bracket (2 Req.)
	W	—51122		W	—25846	No. 10 x 1/4" P. K. Screw (2 Req.)
	W	—50590		W	—35065	1/4"-20 x 1 1/2" Sq. Hd. Screw
	W	—51120		W	—6213	1/4"-20 Hex. Nut (2 Req.)
	W	—6875		W	—38205	1/4" Lock Washer (2 Req.)
	W	—51307		W	—25788	No. 8 x 3/8" Rd. Hd. P. K. Screw (2 Req.)
	W	—51194		W	—51192	Knob (2 Req.)
	W	—51144A		W	—50979	Call Letter Sheet
	W	—51162		W	—50980	Call Letter Cover
	W	—50989A		W	—51196	Call Letter Holder
	W	—51140		W	—19428	No. 4—36 x 1/4" French Hd. Screw (Call Letter Holder)
14	W	—51140		MG3	—51160	Instruction Envelope Assy.
15	W	—32380		W	—32783	Antenna Cable (Export only)
16	G3	—34002		W	—50395	.5 Mf. 160 Volt Condenser (As Ordered)
17	W	—32380				
18	W	—32380				
19	W	—50682				
20	G2	—34002				
21	W	—50203				
22	W	—45810B				
23	G3	—34002				
24	W	—28621				
25	W	—51139				
26	W	—23191A				
27	W	—50469				



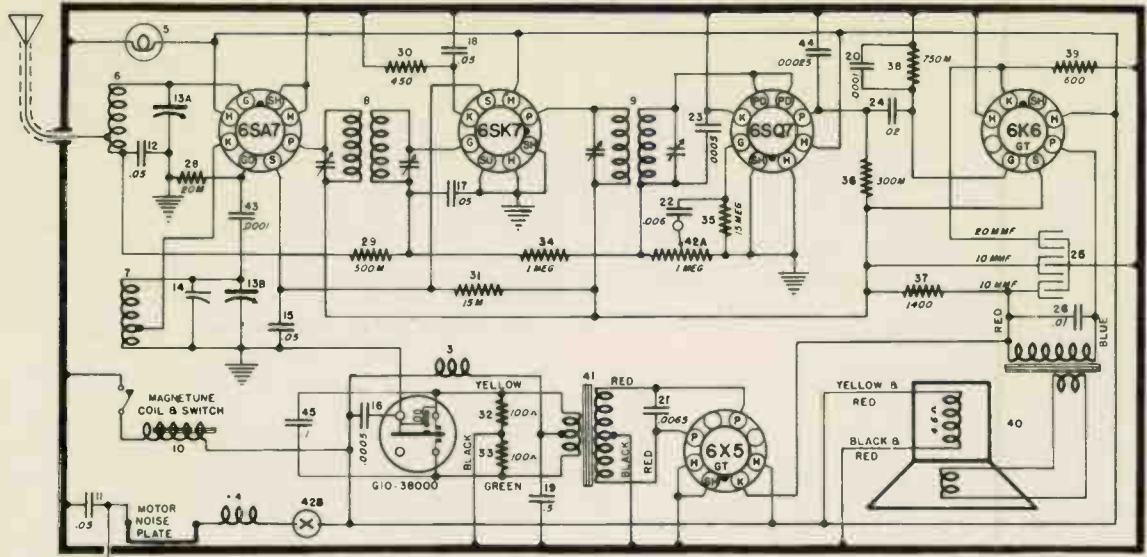


Fig. 1-A—Wiring Diagram and Socket Voltages

TUBE & FUNCTION	1	2	3	4	5	6	7	8
6SA7 OSC-MOD	GR	GR	210	100	OSC	CATH	5B5	GRND
6SK7 I.F. AMP	GR	5B5	GR	2B	100	GR	210	
6SQ7 DET-AMP 1st AF	GR	5B5	GR	OSC	SHIELD	2B	5B5	GR
6K6-GT OUTPUT	GR	5B5	220	210	5B5	J.B.	6B	15
6X5 RECT.	GR	GR	256	OSC	5B5	J.B.	5.3	240

\* 50 VOLT SCALE, 1000 OHMS PER VOLT.  
 @ A.C. TO GROUND.  
 6.5 AMPERES AT 6 VOLTS, NORMAL OPERATING CURRENT.  
 7.0 AMPERES AT 6 VOLTS, SOLENOID OPERATING CURRENT.  
 VOLTAGES MEASURED WITH 1000 Ω PER VOLT VOLT METER FROM TUBE PROBE TO CHASSIS AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 GR - GROUND  
 OPEN - NO CONNECTION  
 J.B. - JUNCTION BLOCK

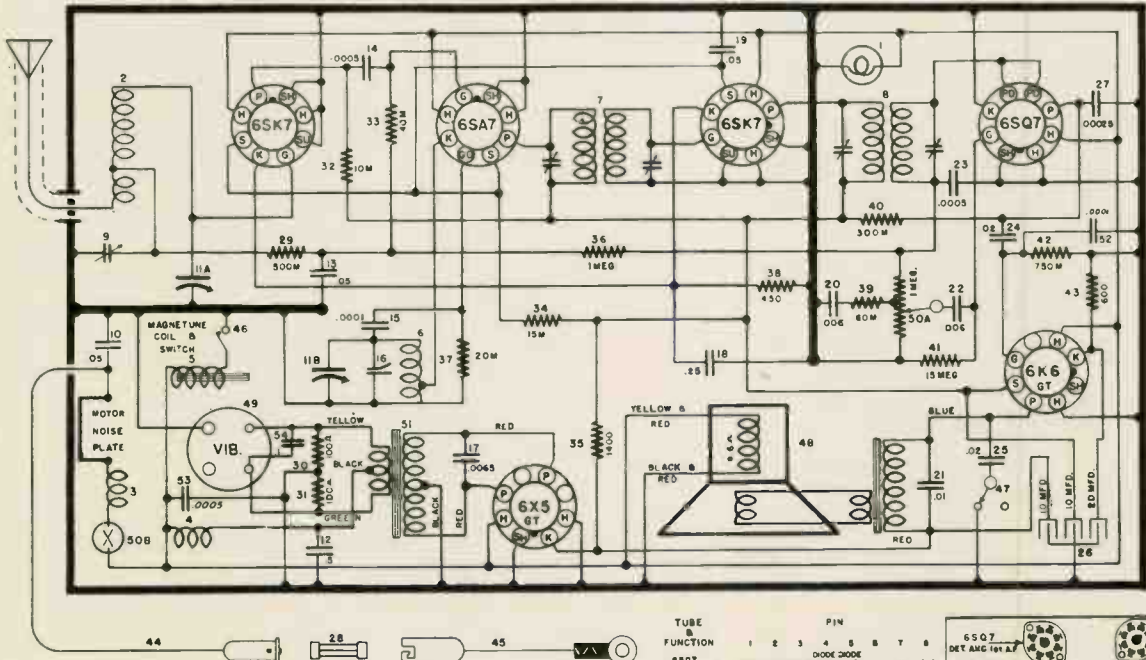
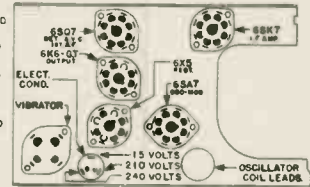
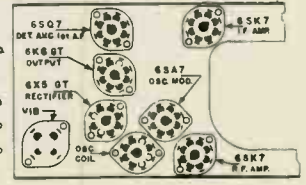


Fig. 1-B—Wiring Diagram and Socket Voltages

TUBE & FUNCTION	1	2	3	4	5	6	7	8
6SQ7 DET-AMP 1st AF	GRND	GRND	GRND	PLATE	PLATE	90	5B5	GRND
6K6-GT OUTPUT	J.B.	5B5	215	215	GRND	J.B.	GRND	15B
6SA7 OSC-MOD	A.G.	A.G.	A.G.	A.G.	5B5	H.C.	6B	280
6X5-GT RECTIFIER	OSC	OSC	OSC	OSC	OSC	OSC	OSC	OSC
6SK7 I.F. AMP	GRND	GRND	215	80	GRND	CATH	6B	GRND
6SK7 I.F. AMP	GRND	GRND	GRND	GRND	3.5	80	6B	215

VOLTAGES MEASURED WITH 1000 Ω PER VOLT VOLT METER FROM CHASSIS TO TUBE PROBE AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 H.C. - NO CORRECTION  
 J.B. - JUNCTION BLOCK



VOLTAGES MEASURED WITH 1000 Ω PER VOLT VOLT METER FROM CHASSIS TO TUBE PROBE AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 H.C. - NO CORRECTION  
 J.B. - JUNCTION BLOCK

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Co
6K7G	R-F Amplifier	6.0	225	90	4 0	4.0	—	—
6A8G	Osc.-Modulator	6.0	225	90	—	4.0	90	-18
6K7G	I-F Amplifier	6.0	225	90	3.2	3.2	—	—
6R7G	Diode Det. & 1st A-F Amplifier	6.0	170	—	—	7.0	—	—
6V6G	(2) Output	6.0	240	225	—	13.0	—	—
6W5G	Rectifier	6.0	—	—	—	250	—	—

Power output approximately 9 watts.  
 Battery drain approximately 10 amperes at 6.0 volts.

CONNECTING OUTPUT METER

Connect the output meter to the plate (P) terminals of the 6V6G output tubes. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

NOTE: The receiver chassis should be in its case and a speaker similar to one used with the receiver should be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

1. Tuning I-F Amplifier To 262 Kilocycles.

- (a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.
- (c) Turn the volume control full on.
- (d) Leave the Fidelity Control cable disconnected from the chassis as this automatically sets the Fidelity Control in the TREBLE position and the Bass Compensation control in the OFF position.
- (e) Set the signal generator to 262 kilocycles.
- (f) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).
- (g) Adjust both trimmers located on the 1st I-F transformer for maximum output.
- (h) Repeat operations (f) and (g) for more accurate adjustments.

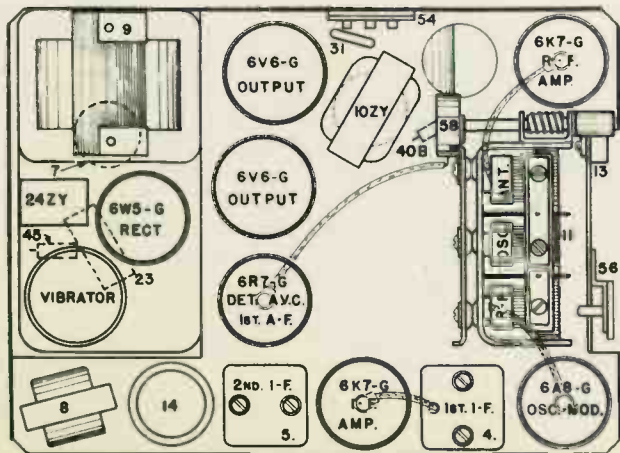


Fig. 2 Top View A-177

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.
- (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**
- (h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
  - (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
  - (c) Adjust the antenna compensating condenser, Illustration No. 13, Fig. 3, for maximum output.
  - (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
  - (e) Set the signal generator to 1400 kilocycles again.
  - (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
  - (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.
- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
  - (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

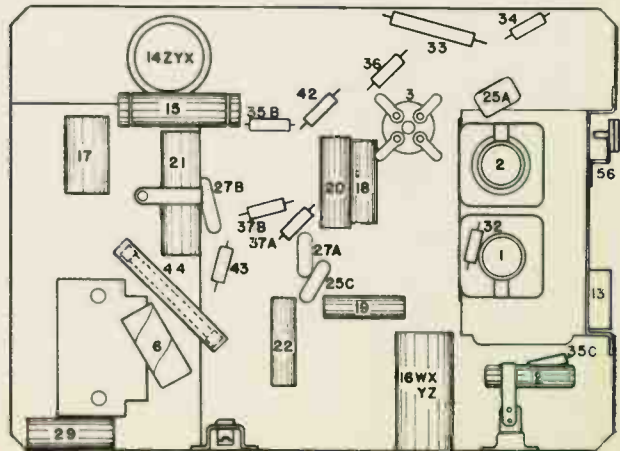
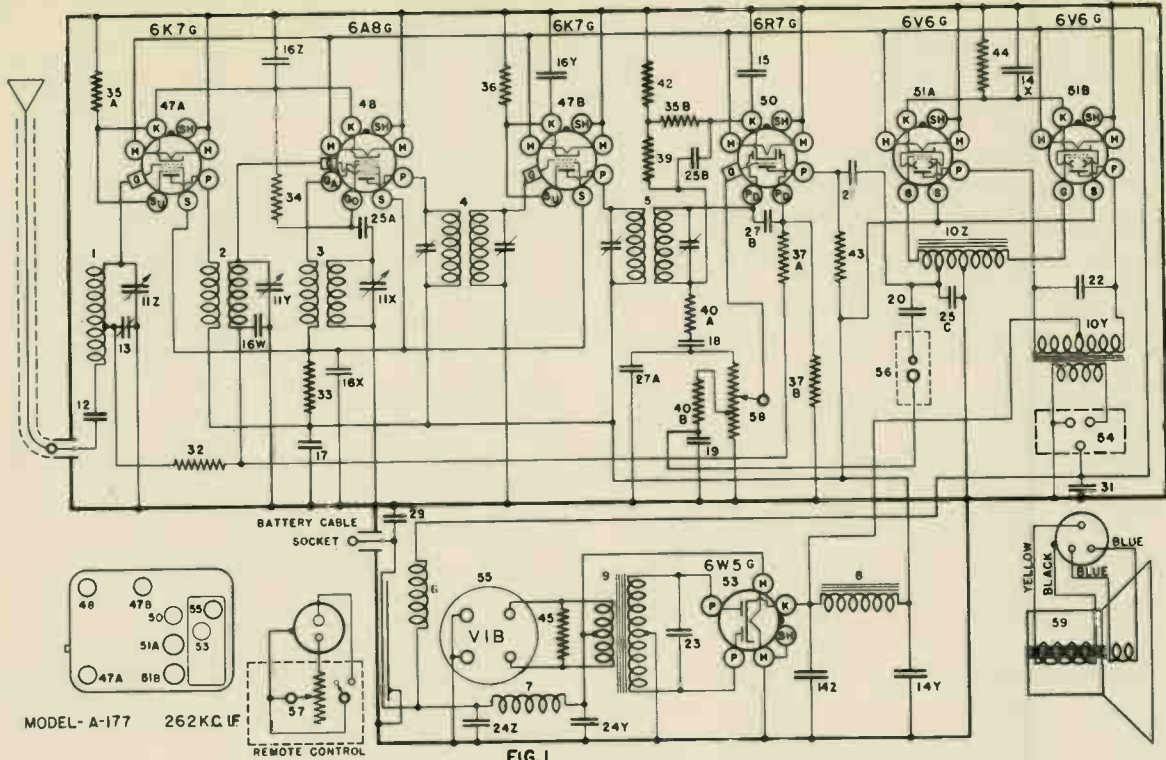


Fig. 3 Bottom View A-177

MODEL A-177



MODEL A-177 262 KC. IF

FIG. 1

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G134-32000	Ant. Coil (only)	46	-35600	Resistor 100,000 Ohm 1/4 W.
2	G93-32001	R-F Coil (only)	47AB	G151-36400	Socket Type 6K7
	W-38995	Coil Shield	48	G156-36400	Socket Type 6A8
	W-32912	Wood Spacer (Coil)	49	NONE	
3	G134-32002	Osc. Coil	50	G164-36400	Socket Type 6R7
4	G38-32005	1st I-F Assembly	51AB	G176-36400	Socket Type 6V6
5	G39-32005	2nd I-F Assembly	52	NONE	
6	G15-32977	Choke—Motor Noise	53	G177-36400	Socket Type 6W5
7	G20-28067	Choke—"A" Filter	54	W-38993	Socket 3 Prong Speaker
8	G75-24628	Choke—"B" Filter	55	G105-28807	Socket Vibrator
9	G14-32769	Power Transformer	56	W-52083	Socket 2 Prong—T. C. & B. Comp.
10	G1-30063	Input and Output Unit Complete	G6	-38000	Vibrator
10Z	G6-38557	Input Transformer Coil	57	See Remote	Control Head, etc.
10Y	G3-38884	Output Transformer Coil	58	-50056	Volume Control 2 Meg. Tap 1 Meg.
10Y	W-50062	Copper Shield Slug	59	424G8 "M"	Speaker—Header Assembly
11	G57-33002	3 Section Var. Tuning Cond.	43613 "M"	Speaker Unit only—Spec. 1-D-896	
	W-38899A	Var. Cond. Connection		-43463	Cone Assembly
12	W-50039	Condenser .003 Mf. 160 V.		-40305	Field Coil
13	W-50054A	Ant. Series Trimmer Cond.	W	-43606A	Cable and Plug
14Z	W-50076A	Condenser 8 Mf. 350 V.—Red		-38911	Case—Speaker
14Y	W-50076A	Condenser 8 Mf. 350 V.—Blue		-40781	Baffle Gasket
14X	W-50076A	Condenser 8 Mf. 350 V.—Yellow		-38912	Screen and Grille Assembly
15	W-38430	Condenser 4 Mf. 10 V.	W	-50014	Clamp—Elec. Cond.
16Z	W-50075	Condenser .05 Mf. 160 V.—Green	W	-50002	Stud—Sync. Mtg.
16Y	W-50075	Condenser .05 Mf. 160 V.—Green	W	-38873	Clip—Vib. Ground
16X	W-50075	Condenser .05 Mf. 160 V.—Green	W	-41010	Clamp—Condenser
16W	W-50075	Condenser .05 Mf. 160 V.—Green	W	-50083	Socket—Tone Control
17	W-32780B	Condenser .01 Mf. 400 V.—	B	-50052	Emblem
18	W-50064	Condenser .01 Mf. 160 V.	N	-2	Nut—Emblem Mtg.
19	W-50064	Condenser .03 Mf. 160 V.			
20	W-50065	Condenser .03 Mf. 160 V.	W	-38455B	Template and Spacer, Case Mtg.
21	W-50066	Condenser .15 Mf. 400 V.		-6213	Nut—Hex Mtg.
22	W-25435	Condenser .003 Mf. 400 V.	W	-32957	Washer—Shakeproof Mtg.
23	W-50068A	Condenser .006 Mf. 1000V.	W	-32956A	Stud—Case Mtg.
24Z	W-38990	Condenser .5 Mf. 160 V.		-32783	Lead—24" Ant. Connector
24Y	W-38990	Condenser .5 Mf. 160 V.	W	-38038 D	Suppressor Distributor
25	G1-34002	Condenser .0025 Mf. Molded	W	-29754C	Condenser—Gen. and Amm.
26	G1-34002	Condenser .0025 Mf. Molded	B	-50085	Control Head and Cables—Remote
27	G2-34002	Condenser .001 Mf. Molded	W	-50061	Tone Control
28	G1-34002	Condenser .0025 Mf. Molded		-50095	Flexible Cable (Vol. Cont.)
29	G1-50105	Condenser 1 Mf. 160 V.		-50096	Flexible Cable (Cond. Drive)
30	G2-34002	Condenser .001 Mf. Molded	W	-50092	Cable and Plug (Tone Cont.)
31	G3-34002	Condenser .006 Mf. Molded		-50098	Lead to Ammeter with Clip
32	-35601	Resistor 300,000 Ohm 1/4 W.		-50097	Lead to Ammeter, part of Fuse Con-
33	-37377	Resistor 20,000 Ohm 1 W.			tainer
34	-35928	Resistor 60,000 Ohm 1/2 W.	W	-50099	"A" Lead to Set
35	-38916	Resistor 350 Ohm 1/2 W.		-43567	Bulb, Dial Light
36	-38918	Resistor 600 Ohm 1/2 W.			
37	-35602	Resistor 1 Megohm 1/4 W.			
38	-35602	Resistor 1 Megohm 1/4 W.			
39	-35929	Resistor 150,000 Ohm 1/4 W.	W	-34840B	Stud—Mtg.
40	-35600	Resistor 100,000 Ohm 1/4 W.	W	-12388	Nut—Hex Mtg.
41	-38916	Resistor 350 Ohm 1/2 W.	MG4	-38869	Muffler
42	-36316	Resistor 2700 Ohm 1/4 W.	W	-38964	Gasket—Muffler
43	-36760	Resistor 20,000 Ohm 1/4 W.	W	-42253	Screw—Muffler Mtg.
44	W-22172A	Resistor 220 Ohm 1 1/2 W. Flex.	W	-50074	Spacer, Speaker—used only when
45	-38977	Resistor 220 Ohm 1/2 W.			impossible to use Muffler

# MODEL A-250

## CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6GT Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### 1. Aligning The I-F Amplifier (455 Kc.)

- (a) Connect the output of the signal generator through a .02 mf., or larger, condenser to the top cap of the 6A8GT oscillator-modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the chassis.
- (b) Set the signal generator to 455 kilocycles.
- (c) Open the tuning condenser all the way, turn the volume control on full.
- (d) Adjust both trimmers on the 2nd. I-F transformer for maximum output. (See figure 3).
- (e) Adjust both trimmers on the 1st I-F transformer for maximum output. (See figure 3).
- (f) Repeat (d) and (e) for more accurate adjustments. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING TO PREVENT A. V. C. ACTION.

### 2. Aligning R-F Amplifier

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.00065 mf.) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

- (a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.
- (b) Set the signal generator to 1400 kilocycles.

- (c) Check the pointer travel on the dial to see that it makes a complete trip, reset if necessary. Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.
- (g) Repeat operation (e) for more accurate adjustment.

### 3. Adjusting Antenna Compensating Condenser.

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, located to the right of antenna receptacle, for maximum output.
- (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
- (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

## SETTING PUSH BUTTONS

The push buttons are easily reset if necessary. Remove the push button by pulling straight out. Loosen the set screw two or three turns. With the manual control tune-in station to which key is to be set. With a small screw driver inserted in set screw push the key ALL THE WAY DOWN, then securely tighten set screw.

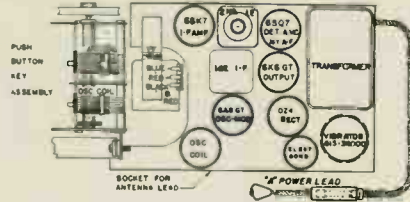


Fig. 2—Top View Model A-250

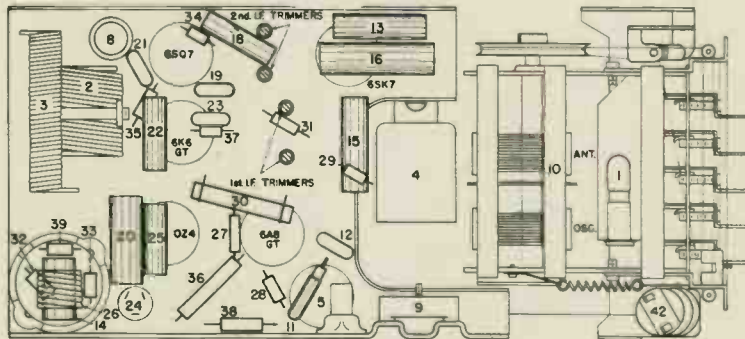


Fig. 3—Bottom View Model A-250

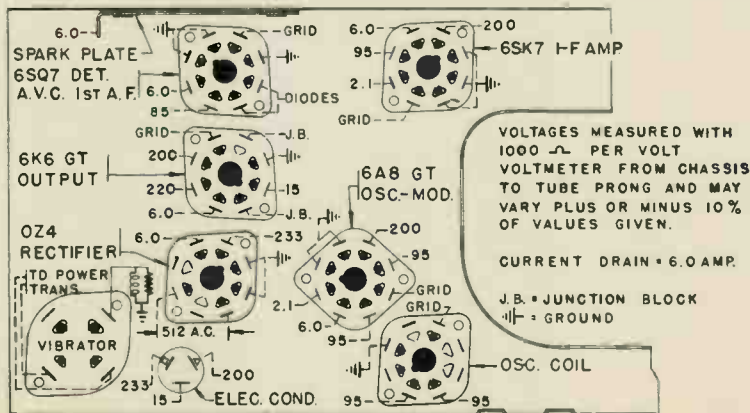
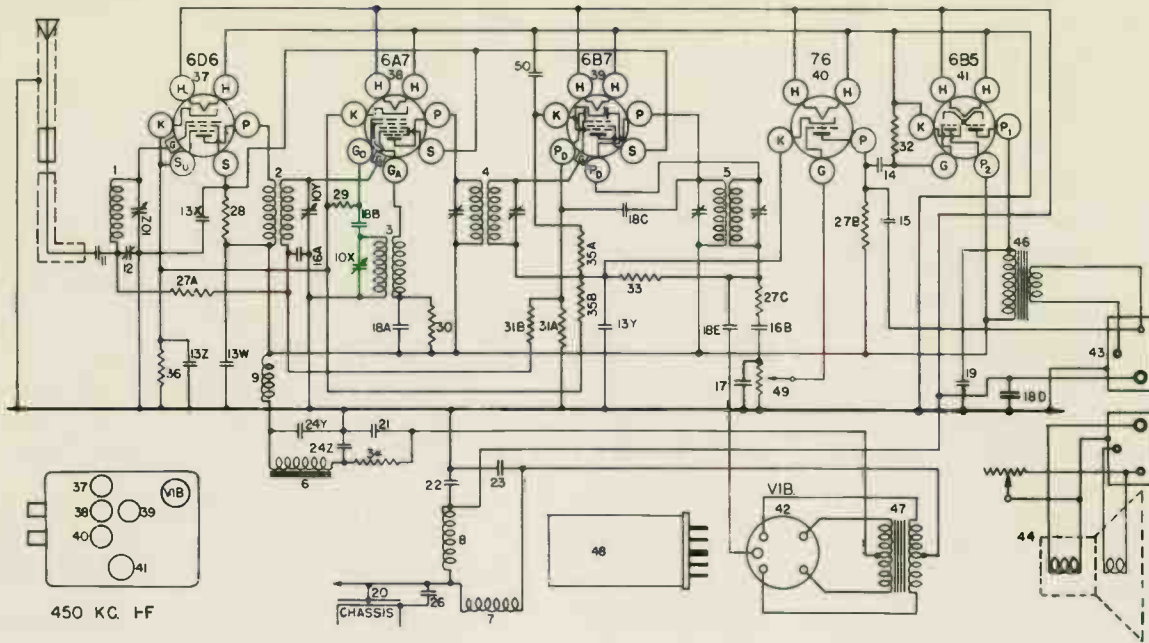


Fig. 5—Socket Voltage Layout



MODELS A-255, A-355



Item No.	Part No.	Description	Item No.	Part No.	Description
1	G83-32000	Coil, Ant. Trans.	22	W-37190	.02 mf. 160 v. Cond.
2	G22-32001	Coil, R.F. Trans.	23	W-38433	.5 mf. 160 v. Cond.
3	G27-32002	Coil, Osc. Trans.	24	W-38473-A	8.0 mf. 350 v. Conds.
4	G16-32005	Coil, 1st I.F. Trans.	50	W-24049	.1 mf. 200 v. Cond.
5	G15-32005	Coil, 2nd I.F. Trans.	26	W-29910-A	.25 mf. 200 v. Cond.
6	G31-24628	Coil, "B" Filter Choke	17	G2-34002	.0001 mf. Cond.
7	G9-28067	Coil, "A" Filter Choke	27	35600	100,000 ohm Type C Res.
8	G6-32977	Coil, Motor Noise Choke	28	36952	30,000 ohm Type A Res.
9	G5-32977	Coil, Motor Noise "B" Choke	29	35928	60,000 ohm Type C Res.
			30	36760	20,000 ohm Type C Res.
10Z	G44-33002	Cond. Var. Ant. Sec.	31	35602	1 meg. Ins. Res.
10Y		Cond. Var. R.F. Sec.	32	36322	500,000 ohm Type C Res.
10X		Cond. Var. Osc. Sec.	33	35601	300,000 ohm Type C Res.
11	W-38367	.02 mf. 200 v. Cond.	34	W-32961	100 ohm 3 w. Flex. Res.
12	W-38350	Ant. Trim. Cond.	35	W-22514	750 ohm 1/2 w. Flex. Res.
13Z, Y	W-38419	.1 mf. 200 v. Cond.	36	W-35467	220 ohm 1/2 w. Flex. Res.
13X, W	W-38419	.05 mf. 400 v. Cond.	42	W-32965-A	Socket "Vib" 5 Prong
14	W-38488	.05 mf. 400 v. Cond.	43	W-38365	Socket "Speaker" 3 Prong
15	W-38466	.03 mf. 400 v. Cond.	44	3240-2	5" Speaker
16	W-28621	.02 mf. 200 v. Cond.	46	G29-24628	Output Trans.
18	G1-34002	.00025 mf. Conds.	47	G8-32769	Power Trans.
19	W-30805	.01 mf. 400 v. Cond.	48	G7-38000	Vibrator Assy.
20	W-32904	20 mmf. Cond.	49	38425	Vol. Cont.
21	W-38431	.15 mf. 400 v. Cond.			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6D6	R-F Amplifier	6.0	240	—	80	0	5.5	—	—	—
6A7	Osc.-Mod.	6.0	240	—	80	0	5.5	—	165	0 to -30
6B7	I-F, Diode Det. & AVC	6.0	240	—	80	0	3.5	—	—	—
6D6	1st A-F Amplifier	6.0	50	—	35	1.5	3.5	3.5	—	—
42	Output	6.0	220	—	230	-7*	0	—	—	—
84	Rectifier	6.0	240	240	—	—	—	—	—	—

Power Output Approximately 3 Watts.

Battery Drain Approximately 7.0 Amperes at 6 volts.

\*True Bias Reading Approximately -15 Volts Measured Across Filter Choke.

1. Tuning I-F Amplifier To 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 10, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

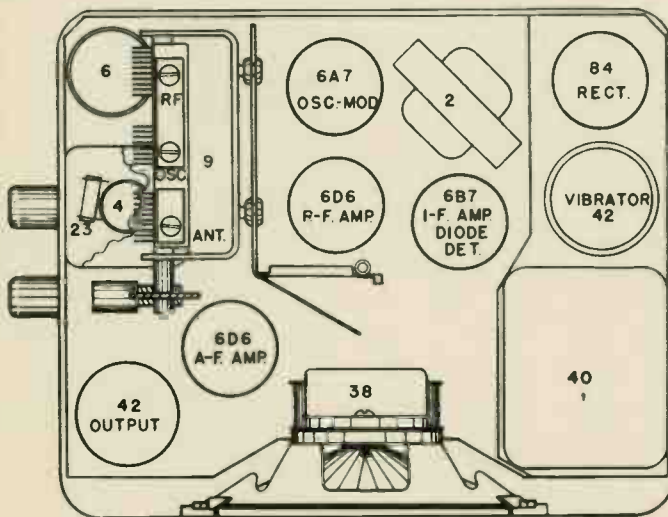


Fig. 2. Top View A-266

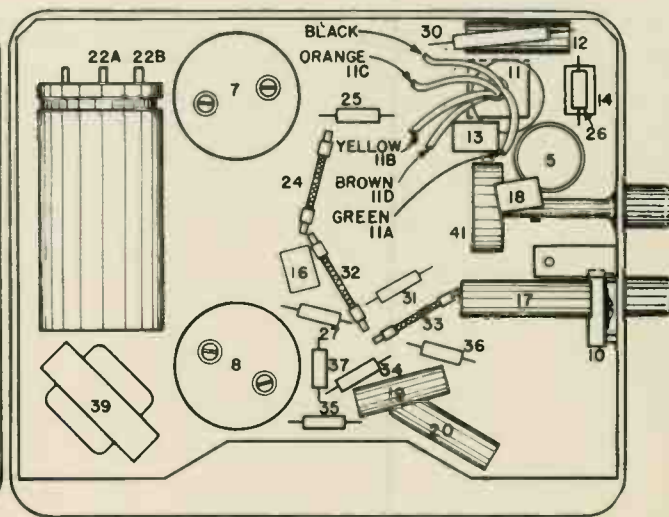
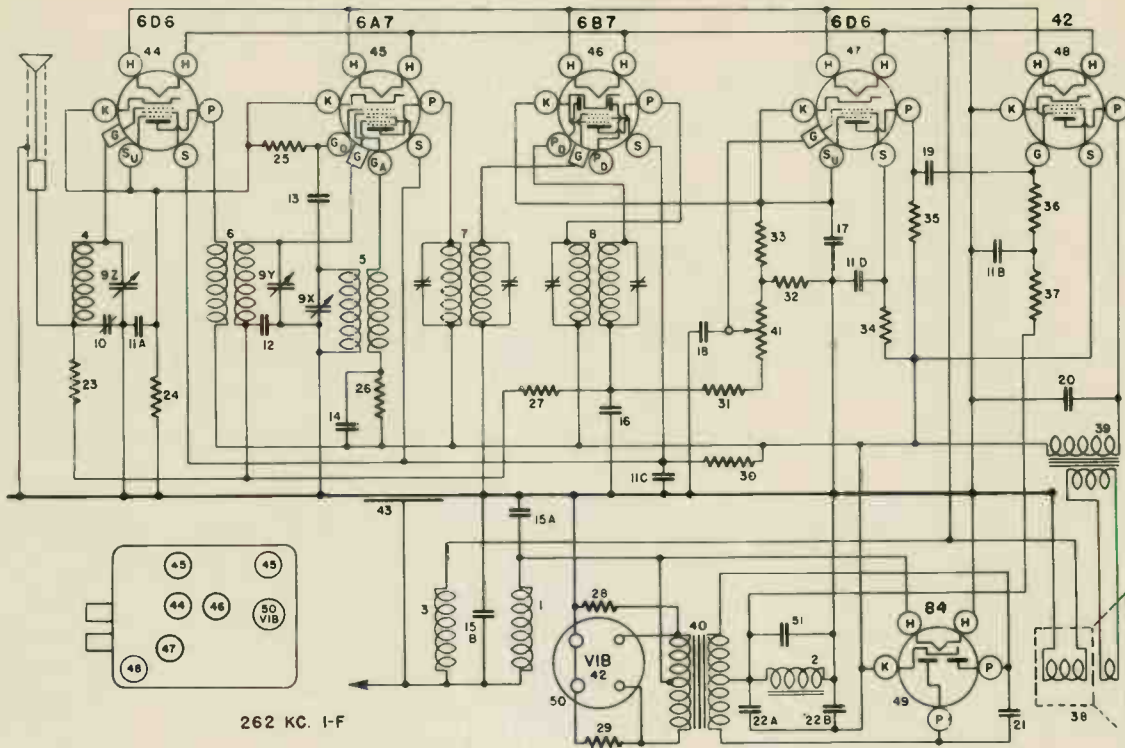


Fig. 3. Bottom View A-266

MODEL A-266



262 KC. I-F

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G16 -28067	"A" Filter Choke	39	G45 -24628	Transformer—Output
2	G46 -24628	"B" Filter Choke	40	-38737	Transformer—Power
3	G13 -32977	Motor Noise Choke	41	-38785	Volume Control (300,000 Ohm)
4	G83 -32000	Ant. Coil	42	G6 -38000	Vibrator
5	G27 -32002	Osc. Coil	43	W -38618	M. N. Cond. Plate Rivited to Chassis
6	G73 -32001	R-F Coil	44	G75 -28807	Socket Type—6D6
7	G28 -32005	1st I-F Coil Assembly	45	G47 -28807	Socket Type—6A7
8	G29 -32005	2nd I-F Coil Assembly	46	G48 -28807	Socket Type—6B7
9	G51 -33002	3 Section Var. Tuning Condenser	47	G75 -28807	Socket Type—6D6
10	W -38350	Ant. Compensating Condenser	48	G25 -28807	Socket Type—42
11A		.1 Mfd. 160 V.	49	G45 -28807	Socket Type—48
11B	W -37021	.1 Mfd. 160 V.	50	G1 -28807	Socket Type—VIB
11C		.05 Mfd. 160 V.	51	W -24049C	Condenser .1 Mfd. 200 V.
11D		.05 Mfd. 160 V.			
12	W -28621	Condenser .02 Mfd. 200 V.			Misc. Assembly Parts:
13	G1 -34002	Condenser .00025 Mfd. (Molded)	W -32360C		Tube Shield Base
14	G1 -34002	Condenser .00025 Mfd. (Molded)	W -31210		Tube Shield Rin
15A	W -38787	Condenser .5 Mfd. 160 V.	W -31212		Tube Shield—Short (Plain)
15B		.5 Mfd. 160 V.	W -31213		Tube Shield—Short (Cut out)
16	G3 -34002	Condenser .0005 Mfd. (Molded)	W -34174		Tube Shield—Long (Plain)
17	W -24029C	Condenser .1 Mfd. 200 V.	W -34175		Tube Shield—Long (Cut out)
18	G2 -34002	Condenser .0001 Mfd. (Molded)	W -38341A		Vib. Ground Spring Clip
19	W -28621	Condenser .02 Mfd. 200 V.	W -30802A		R-F Coil Shield
20	W -34647	Condenser .006 Mfd. 400 V.	W -38588		Ant. Coil Shield
21	W -32762	Condenser .005 Mfd. 1000 V.	W -32913		Wood Spacer (Ant. Coil)
22A	W -38786	Electrolytic .6 Mfd. 350 V.	G22 -32750		"A" Lead (In Chassis)
22B		.6 Mfd. 350 V.	W -31303A		Ant. Bushing & Ferrule Assembly
23	-35601	Resistor 300,000 Ohm 1/4W. Insulated	W -31302		Ant. Body
24	-22514	Resistor 750 Ohm 1/4W. Flexible	W -38615A		Vib. Grd. Clip
25	-35928	Resistor 60,000 Ohm 1/4W. Insulated	MG2 -38764		Bottom Cover
26	-36760	Resistor 20,000 Ohm 1/4W. Insulated	C -38606		Top Cover
27	-35602	Resistor 1 Megohm 1/4W. Insulated	W -32946		Cable Set Screw
28	W -27504	Resistor 100 Ohm 1/4W. Flexible	W -38412A		Oval Head Cover Nut
29	W -27504	Resistor 100 Ohm 1/4W. Flexible			
30	-38624	Resistor 55,000 Ohm 1W. Insulated			Mounting Parts
31	-36760	Resistor 20,000 Ohm 1/4W. Insulated	W -32956A		Mounting Stud
32	-30127	Resistor 450 Ohm 1/4W. Flexible	W -6213		Mounting Stud Nut
33	W -28589	Resistor 350 Ohm 1/4W. Flexible	W -32957		Shake Proof Washer
34	-38623	Resistor 750,000 Ohm 1/4W. Insulated	W -38455		Case Spacer
35	-35929	Resistor 150,000 Ohm 1/4W. Insulated	W -32783A		Ant. Lead Assembly
36	-36322	Resistor 500,000 Ohm 1/4W. Insulated	W -38038D		Distributor Suppressor
37	-35601	Resistor 300,000 Ohm 1/4W. Insulated	W -39754C		Generator Condenser
38	-339-BS-3	Speaker "M", Spec. 1-D-370			
	-41374	Speaker Cone Assembly (Above Speaker)			
	-41373	Speaker Field Coil (Above Speaker)			



# MODEL A-267

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6K7G	R-F Amplifier	6.0	235	85	0	—	—
6A8G	Oscillator-Modulator	6.0	235	85	0	0	85
6K7G	I-F Amplifier	6.0	235	85	0	—	—
6Q7G	Det. AVC & A-F Amplifier	6.0	145	—	-3.5	—	—
6K6G	Output	6.0	235	235	0	—	—
OZ4	Rectifier	—	—	—	250	—	—

Power output approximately 5 watts.  
 Battery drain approximately 6.3 amperes at 6 volts.  
 Speaker field current approximately 1.0 amperes.

### 1. Tuning I-F Amplifier to 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh, and turn the volume control full (ON).

(c) Set the signal generator to 262 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1530 kilocycles.

(c) With the condenser gang all the way open, adjust the "OSC" trimmer condenser so that the 1530 kilocycle signal is heard. It is not necessary that the receiver tune through this signal.

(d) Set the signal generator to 1400 kilocycles.

(e) Tune-in the 1400 kilocycle signal with the station selector (approximately 140 on the dial) for maximum reading on the output meter.

(f) Adjust the "R-F" trimmer condenser for maximum output.

(g) Adjust the "ANT" trimmer condenser for maximum output.

**DO NOT READJUST THE "OSC" TRIMMER CONDENSER.**

(h) Repeat operations (e), (f) and (g) for more accurate adjustments.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune-in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Item No. 11, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Re-adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

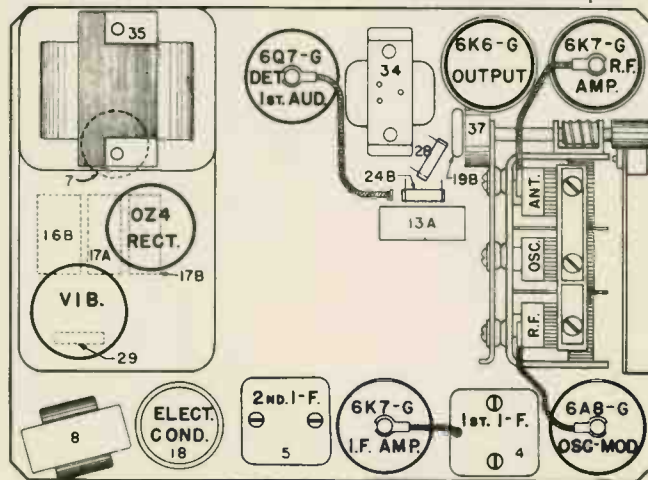


Fig. 2 Top View A-267

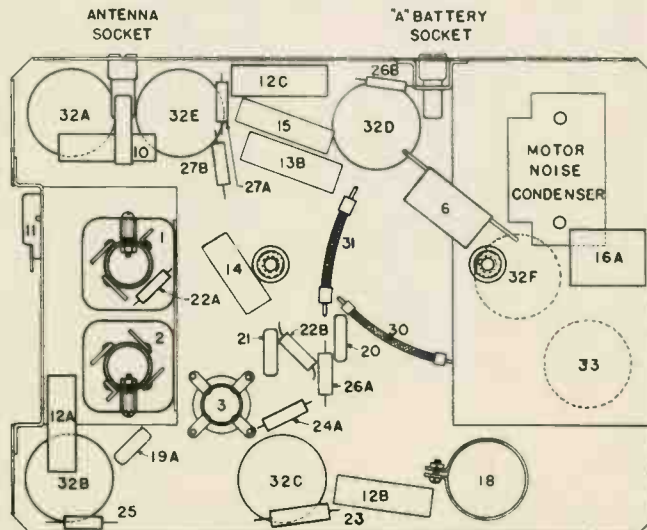
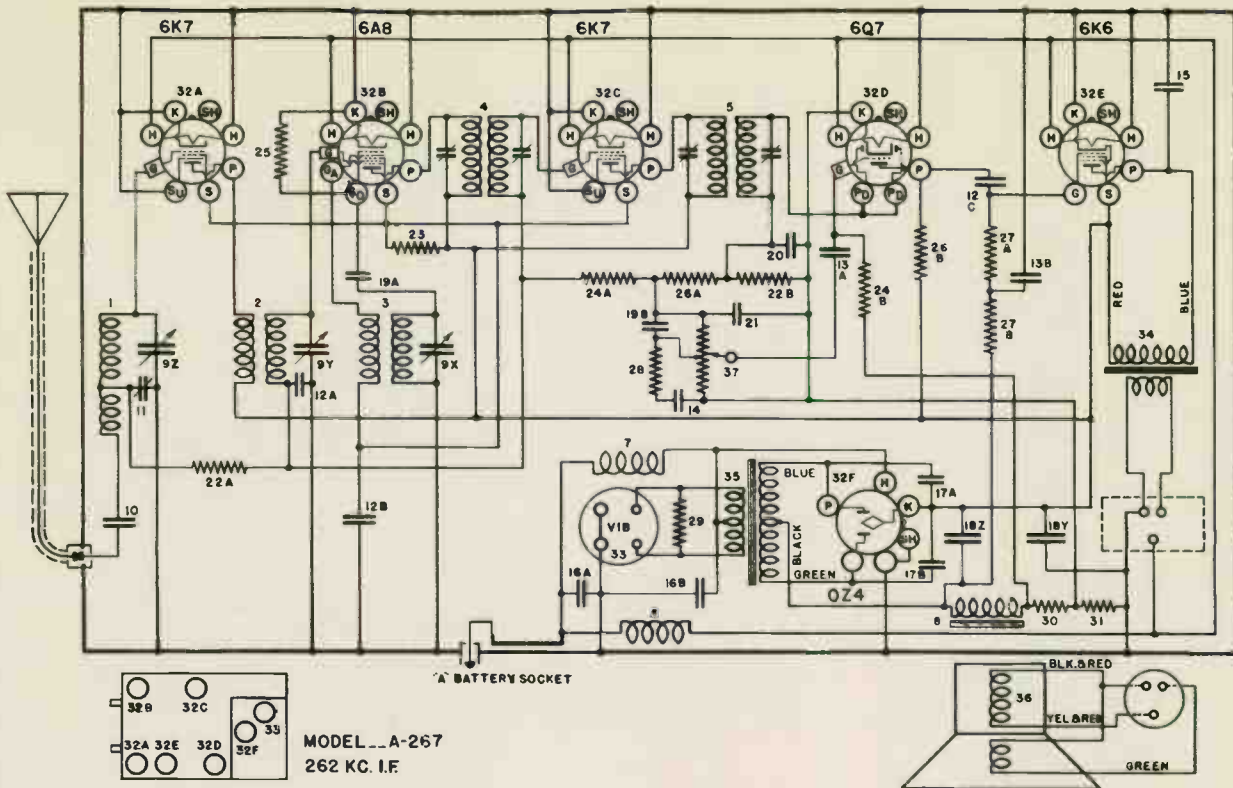


Fig. 3 Bottom View A-267

# MODEL A-267



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G134-32000	Ant. Coil	W	-50023	Tube Shield (6K6-G) (2)
2	G93-32001	R-F. Coil	W	-31210	Tube Shield Ring
	MG23-50000	Shield and Brkt. Assy.	W	-50174	Tube Shield Base
	W	-32912	G105-28807	Socket-Vibrator	
3	G143-32002	Wood-Coil Spacer	W	-50123	Vib. Ground Clip
4	G40-32005	1st I-F. Assy.	W	-24628	Output Transformer
5	G41-32005	2nd I-F. Assy.	W	-38991A	Speaker Socket, Part of G1-43619 Assy.
6	G17-32977	Motor Noise Choke	35	G17-32769	Power Transformer
7	G24-28067	"A" Filter Choke	36	456BP9"M"	Speaker, Spec. No. 1-D-1075
8	G29-24628	"B" Filter Choke		-44548	V. C. and Cone Assy.
9	G57-33002	3 Sect. Var. Tuning Condenser		-44549	Field Coil
10	W	-50039B		-43676	Cone Mtg. Ring
11	W	-50054A		-50056	Volume Control (2 Meg. Tap 1 Meg.)
12A	W	-32380	W	-38455A	Case Mtg. Spacer
12B	W	-32380		-6213	Mtr. Nut (2)
12C	W	-32380	W	-32957	Mtg. Washer (2)
13A	W	-24049C		-32783A	24" Ant. Lead
13B	W	-24049C	W	-38038D	Distributor Suppressor
14	W	-50084	W	-29754C	Generator Condenser
15	W	-50043	W	-32956A	Mtg. Studs
16A	W	-50161	B	-38985C	Remote Cont. Head and Cables
16B	W	-50161		-43849	Vol. Cont. Head and Cable Assy.
17A	W	-50185		-50103	Vol. Cont. Head and Switch
17B	W	-50185	W	-43567	Dial Light
18YZ	W	-50194		-50100	Light Socket and Lead
19A	G1-34002	Condenser, .00025 Mf. Mica		-50099	"A" Lead to Set
19B	G1-34002	Condenser, .00025 Mf. Mica		-50097	"A" Lead-Head to Fuse
20	G3-34002	Condenser, .0005 Mf. Mica		-50098	"A" Lead-Fuse to Ammeter
21	G2-34002	Condenser, .0001 Mf. Mica		-50095	Vol. Cont. Flex. Drive Cable
22A		Resistor, 300,000 Ohm 1/2 W. Ins.		-50101	Drive Control Head
22B		Resistor, 300,000 Ohm 1/2 W. Ins.		-50206	Celluloid Gear Assy.
23		Resistor, 20,000 Ohm 1 W. Ins.		-50096	Cond. Flex. Drive Cable
24A		Resistor, 1. Megohm 1/2 W. Ins.		-50357	Fuse, 15 Amp.
24B		Resistor, 1. Megohm 1/2 W. Ins.	G10	-38000	Vibrator
25		Resistor, 60,000 Ohm 1/2 W. Ins.	MG2	-50267	Top Cover Assy. (Spk., etc.)
26A		Resistor, 100,000 Ohm 1/2 W. Ins.	W	-50180A	Ground Strip (Short)
26B		Resistor, 100,000 Ohm 1/2 W. Ins.	W	-50181A	Ground Strip (Long)
27A		Resistor, 250,000 Ohm 1/2 W. Ins.	B	-50187	Speaker Escutcheon
27B		Resistor, 250,000 Ohm 1/2 W. Ins.	B	-50188	Speaker Screen
28		Resistor, 50,000 Ohm 1/2 W. Ins.	B	-50189A	Speaker Grille Cloth
29		Resistor, 220 Ohm 1/2 W. Ins.	W	-50069A	Speaker Cable Clamp
30	W	-23012A	W	-31393A	"A" Connector on Chassis
31	W	-25357	W	-31303A	Bushing and Ferrule Used in "A" and Ant. Connections
32	G178-36400	Socket-8 Prong	W	-31301	Spring-Used in Ant. Socket
	W	-50021			
	W	-50022			

# MODEL A-358

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.7	100	—
6U7-G	I-F Amplifier	6.0	220	100	—	3.7	—	—
6Q7-G	Diode Detector & A-F Amp.	6.0	65	—	—	—	—	—
6K6-G	Output	6.0	220	220	—	16	—	—
6X5-G	Rectifier	6.0	—	—	—	250	—	—

Power Output approximately 4 Watts. (Max.)  
 Battery Drain approximately 6.2 Amperes at 6 Volts.  
 It should be noted that some of the lugs on the sockets are used as junction blocks.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

### CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6U7G I. F. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.  
 (d) Adjust both 2nd I. F. trimmer condensers for maximum output. Fig. 3.

(e) Transfer generator lead to top of 6A8G Osc.-Mod. tube, leaving the tube's grid clip in place.

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (d) and (f) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

### 2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.00065 mf.) to 250 mmf. (.00025 mf.),

depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity or vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, located between the control knobs on the front of the chassis, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "Ant" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

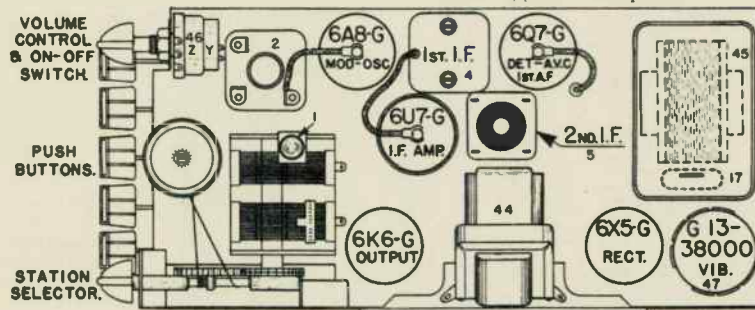


Fig. 2 Top View A-358

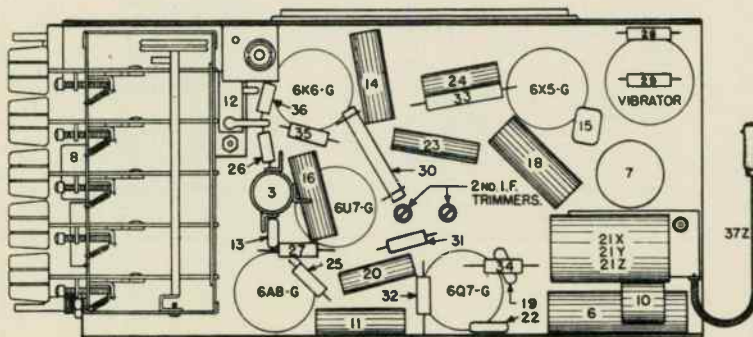
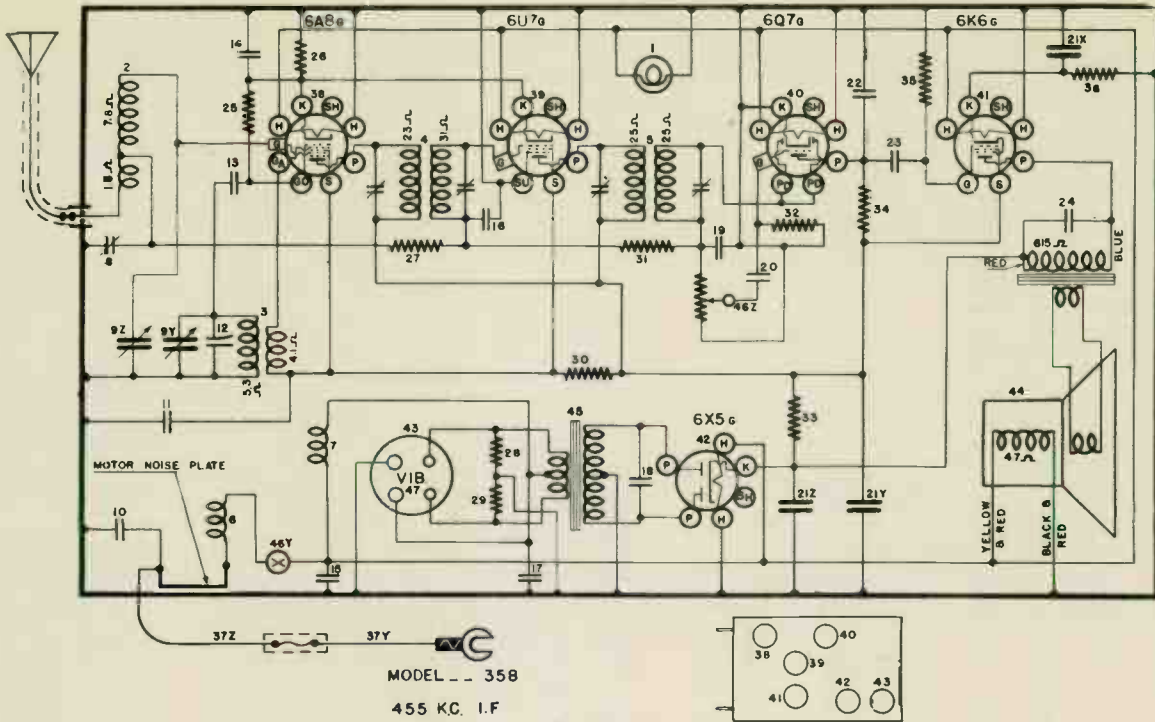


Fig. 3 Bottom View A-358

MODEL A-358



Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-43567	Dial Light Bulb 6-8 Volt	36	--38918	Resistor, 600 Ohm 1/2 W., Ins.
	MG11-50700	D. L. Socket & Brkt. Assy.	37Z	--37750	"A" Lead, Set To Fuse
2	G:75-32000	Antenna Coil	37Y	--32750	"A" Lead, Set To Ammeter
3	G176-32002	Oscillator Coil	W	--32757	Fuse, 12 Amp.
4	G197-32004	1st. I. F. Assembly, 455 Kc.	W	--32776	Fuse Insulator
5	G198-32004	2nd. I. F. Assembly, 455 Kc.	38		
6	G:9-32997	Motor Noise Choke	39		
7	G29-28067	"A" Filter Choke	40	G178--36400	8 Prong Socket
8	--38998B	Antenna Compensating Con-	41		
	--50049	Nut For Item 8 (1/4-40)	42		
9	G57-33001	2 Section Gang Condenser	43	G105--28807	Tube Shield Half (2 Req.)
	W-50711A	Dial (Celluloid)	44	278-BL-7-U"	Tube Shield Ring
	W-50716	Dial Holder		--45889	4 Prong Socket
	W-50711A	Dial Shaft (Pulley)		278-BL-7-B"	Speaker Mfg. Spec. No. 5B-122
	W-50325A	Shaft Retaining Washer		--45721	Output Transformer "U"
	W-50324D	Shaft, Manual Drive		B-50644	Speaker Mfg. Spec. No. 55-W1
	G7-41582	Drive Cord, 29 inches	45		Output Transformer "B"
	W-44989	Spring, Tension	46Z		Power Transformer
	W-50516C	Bracket (Manual Drive Shaft)		--50526	Volume Control
10	W-35936	Condenser, .05 Mf. 200 Volt	46Y		On-Off Switch
11	W-32380	Condenser, .05 Mf. 200 Volt	47	G10--38000	Vibrator, Interchangeable
12	G4-50369	Temperature Compensating		G13--38000	Vibrator
		Condenser		MG27-50700	Push Button Unit Assy.
13	G1-34002	Condenser, .00025 Mf. Molded		MG25-50550	Key Assy.
14	W-50105	Condenser, 1 Mf. 160 Volt.		W-50542C	Key Clip (Lock Clamp)
15	G3-34002	Condenser, .0005 Mf. Molded		W-50639	1" No. 6 x 32 Screw (Clamp)
16	W-32380	Condenser, .05 Mf. 200 Volt		W-50607B	Spring (Key Return)
17	W-50682	Condenser, 5 Mf. 120 Volt		W-50588B	Adjusting Clip (Heart Shaped)
18	W-50203	Condenser, .0065 Mf. 1000 Volt		--43882	1/4" No. 8 P. K. Screw (Clip
19	G3-34002	Condenser, .0005 Mf. Molded		W-50547	Mounting)
20	W-45810B	Condenser, .006 Mf. 160 Volt		MG24-50550	Key Plate (Rear Guide)
21Z	W-50673	Condenser, 5 Mf. 350 Volt		W-50561	Rocker Plate Assy.
21Y	W-50673	Condenser, 20 Mf. 25 Volt		--45553B	1/4" No. 6 x 40 Fil. Hd. Screw
	W-50684	Condenser Clamp		W-50551A	(Rocker Plate Bearing)
22	G1-34002	Condenser, .00025 Mf. Molded		W-50549	Push Button
23	W-37226	Condenser, .02 Mf. 160 Volt		W-50551A	Celluloid Cover
24	W-23191A	Condenser, .01 Mf. 400 Volt		W-50549	Call Letter Sheet
25	--35600	Resistor, 100,000 Ohm 1/4 W.,		D-50503D	Case (Rear Half) FS66
		Ins.		C-50703A	Case (Front Half) FS66
26	--38977	Resistor, 220 Ohm 1/2 W., Ins.		--50505	Knob (2 Req.)
27	--36322	Resistor, 500,000 Ohm 1/2 W.,			
		Ins.			
28	--38915	Resistor, 100 Ohm 1/2 W., Ins.			
29	--38915	Resistor, 100 Ohm 1/2 W., Ins.			
30	--23616	Resistor, 15,000 Ohm 1 W., Car.			
31	--35602	Resistor, 1 Megohm 1/4 W., Ins.			
32	--50671	Resistor, 15 Megohm 1/4 W.,			
		Ins.			
33	--45388	Resistor, 1,400 Ohm 1 1/2 W.,			
		Ins.			
34	--35601	Resistor, 300,000 Ohm 1/4 W.,			
		Ins.			
35	--38623	Resistor, 750,000 Ohm 1/4 W.,			
		Ins.			

# MODEL A-359

## Aligning The I. F. To 455 Kilocycles.

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid cap of the 6A8 oscillator-modulator. Care should be exercised to keep the signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I. F. trimmers for maximum output. Trimmers are accessible from bottom of the chassis between the 6SQ7 socket and oscillator coil.

(d) Adjust both 1st I. F. trimmers for maximum output. Trimmers accessible from bottom of the chassis.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

## Aligning The R. F.

If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

A. 220-550 meter band (1500-550 kilocycles).

(a) Set signal generator to 1395.5 kc. or 215 meters.

(b) Adjust tuning condenser to 215 meters on dial, about third line from right on top row of numbers. Turn band switch to medium waveband.

(c) Adjust M. W. oscillator trimmer (on small section of the gang, right end) for maximum output.

(d) Adjust M. W. antenna trimmer (on other section of gang) for maximum output.

(e) After alignment, check gang tracking at 300 and 500 meters. mis-tracking may be corrected by bending end plates on tuning condenser. If plates are bent to correct tracking, the previous alignment should be re-checked.

B. 1000-1800 meter band (300-166 kilocycles).

(a) Change band switch to long waveband and tune pointer to 1000 meter mark on dial.

(b) Set signal generator to 1000 meters (300 kilocycles).

(c) Adjust L. W. oscillator trimmer (next to antenna holder) for maximum output.

(d) Adjust L. W. antenna trimmer (next to oscillator trimmer) for maximum output.

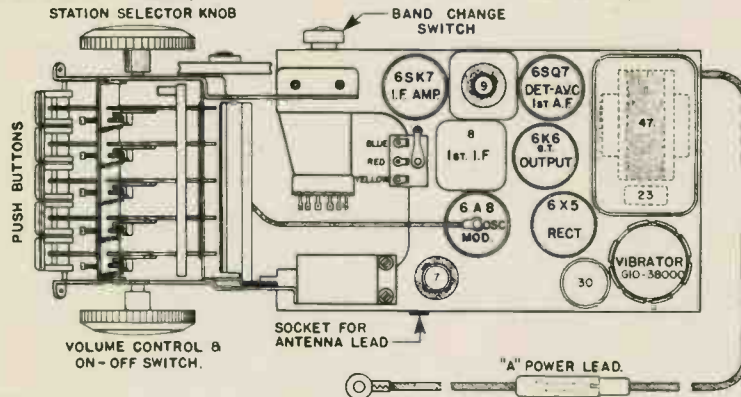


Fig. 3—Bottom View Model A-359

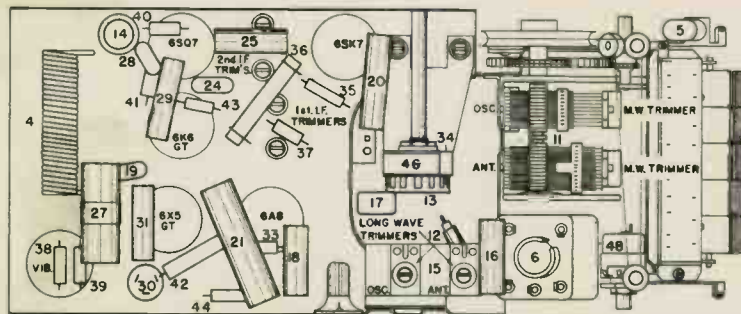


Fig. 2—Top View Model A-359

VALVE & FUNCTION	1	2	3	4	5	6	7	8
6A8 OSC.-MOD.	GR.	5.85	210	100	GR.	2.8	100	GR.
6SK7 I.F. AMP.	GR.	5.85	GR.	GR.	2.8	100	GR.	210
6SQ7 DET.-A.V.C. 1st A.F.	GR.	GR.	GR.	GR.	GR.	2.8	5.85	GR.
6K6-9T. OUTPUT.	GR.	5.85	220	210	GR.	J.B.	GR.	15
6X5 RECT.	GR.	GR.	250	OPEN	250	5.9	5.9	240

\* 50 VOLT SCALE, 1000 OHMS PER VOLT.  
 ● A.C. TO GROUND.  
 6.5 AMPERES AT 6 VOLTS, NORMAL OPERATING CURRENT.  
 7.0 AMPERES AT 6 VOLTS, SOLENOID OPERATING CURRENT.  
 VOLTAGES MEASURED WITH 1000~ PER VOLT VOLT-METER FROM TUBE PRONG TO CHASSIS AND MAY VARY PLUS OR MINUS 10% OF VALUES GIVEN.  
 GR.—GROUND. J.B.—JUNCTION BLOCK.  
 OPEN—NO CONNECTION.

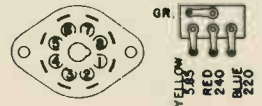
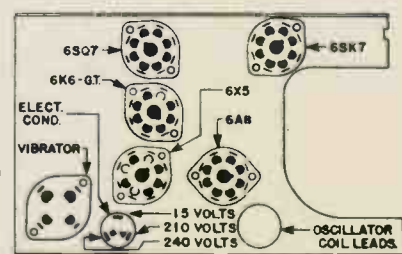
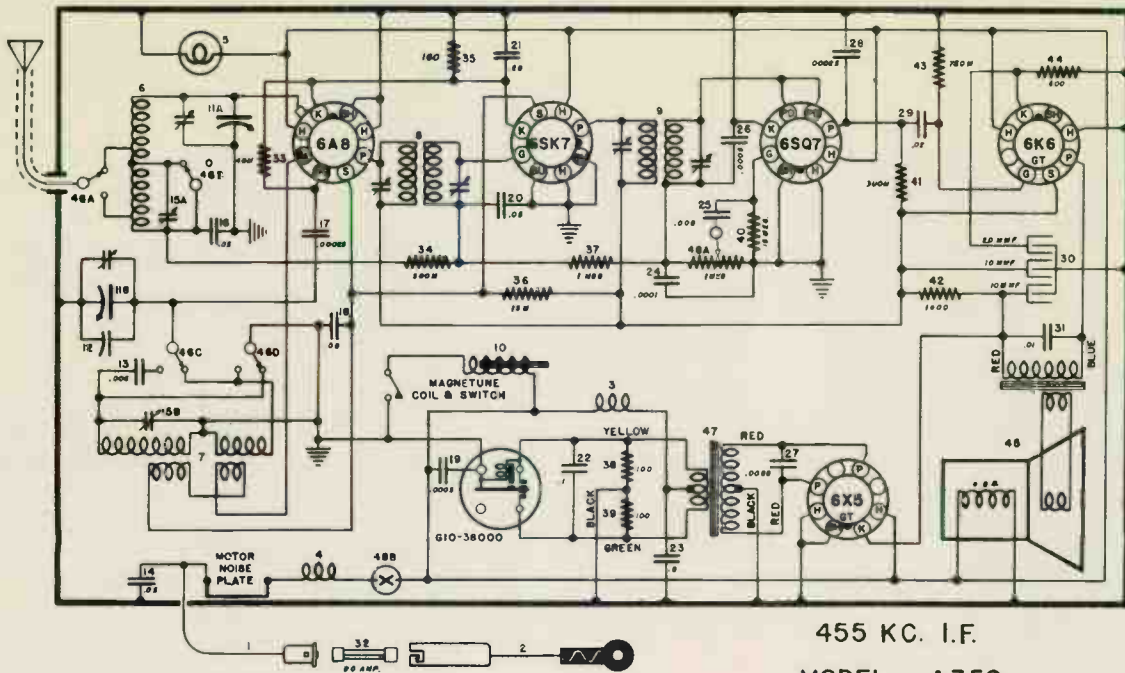


Fig. 4—Socket Voltage Chart

# MODEL A-359



455 KC. I.F.

MODEL - A359

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G34 -32750	"A" Power Lead Assy.—Set to Fuse	MG20 -51169		Rocker Bar and Gear Assy.
2	G37 -32750	"A" Power Lead Assy.—Fuse to Am-		-51120	No. 6—40 x 1/4" Screw—Rocker Bar
3	G33 -28067	meter			Bearing
4	G24 -32977	"A" Filter Choke		51307	Key Operating Bar
5	51245	Motor Noise Filter Choke		56590	Spring—Key Return
6	G195-32000	Dial Lamp—6-8 Volt		51126	Solenoid Armature
7	G195-32002	Dual Antenna Coil		51162	Key Contact Plate
8	G216-32004	Dual Oscillator Coil		50989	Spring—Contact Plate Return
9	G226-32004	1st I-F. Assy.		51188	Rubber Bumper—Key
10	MG24-51169	2nd I-F. Assy.		51184	Push Button
11	G72 -33001	Solenoid Coil		51144	Rod—Push Button Mounting
12	51140	Variable Tuning Condenser Gang.		55561	No. 6—40 x 1/4" Screw—Rocker Bearing
13	51244	Condenser, .006 Mf. 160 V.		MG19-51169	Dial Bracket Assy.
14	35936	Condenser, .05 Mf. 200 V.		51211	Dial Mask—Paper Background
15	MC34-51229	Condenser, Shunt Trimmers		51223	Glass Dial
16	32380	Condenser, .05 Mf. 200 V.		51134	R. H. Clip—Dial Glass Mtg.
17	G1 -34002	Condenser, .0025 Mf. Mica		51133	L. H. Clip—Dial Glass Mtg.
18	32380	Condenser, .05 Mf. 200 V.		51132	Pointer—Dial Hand
19	G3 -34002	Condenser, .005 Mf. Mica		50589	Felt—Dial Window
20	32380	Condenser, .05 Mf. 200 V.		G18 -43564	Pulley and Hub Assy.
21	32712	Condenser, .25 Mf. 160 V.		48373	Manual Shaft and Finion Gear Assy.
22	50105	Condenser, .1 Mf. 120 V.		G5 -41582	Drive Cord (18 1/2"—47 Cm.)
23	50682	Condenser, 5 Mf. 120 V.		51108	Socket—8 Prong—No Marking
24	G2 -34002	Condenser, .001 Mf. Mica		G105-28807	Socket—4 Prong—Vibrator
25	45810	Condenser, .006 Mf. 160 V.		50123	Ground Clip—Vibrator
26	34002	Condenser, .005 Mf. Mica		G10 -38000	Vibrator
27	51301	Condenser, .0065 Mf. 1,000 V.		51222	Case (FS-11 and FS-84)
28	G1 -34002	Condenser, .0025 Mf. Mica		51218	Front and Top Cover—Case (FS-11 and FS-84)
29	28621	Condenser, .02 Mf. 200 V.		51184	Bottom Cover—Case (FS-11 and FS-84)
30	51139	Condenser, 10-10-25 Mf. 350 V.-350 V.-25 V.		51192	Knob (2)
31	23191	Condenser, .01 Mf. 400 V.		38935	Cover Wedge
32	50469	Fuse—20 Amp.		51221	Knob—Band Change Switch
33	36761	Resistor, 40,000 Ohms 1/4 W.		38038	Distributor Suppressor
34	36322	Resistor, 500,000 Ohms 1/4 W.		29754	Generator Capacitor
35	50672	Resistor, 160 Ohms 1/4 W. W. W.		50167	Rear Mounting Strap
36	23616	Resistor, 15,000 Ohms 1/4 W.		51177	Bracket—Front Mtg. (2 Req.) (FS-11 and FS-84)
37	35602	Resistor, 1 Megohm 1/4 W.		25846	No. 10 x 1/4" P. K. Screw—Front Bracket Mtg.
38	38915	Resistor, 100 Ohms 1/4 W. W. W.		6213	Nut (1/2") Rear Strap Mtg.
39	38915	Resistor, 100 Ohms 1/4 W. W. W.		35065	1/4"—20 x 1 1/2" Bolt—Rear Strap Mtg.
40	50671	Resistor, 15 Megohms 1/4 W.		38205	1/4" Lockwasher—Rear Strap Mtg.
41	35601	Resistor, 300,000 Ohms 1/4 W.		25788	No. 8—1/4" P. K. Screw—Bracket to Case Mtg.
42	45388	Resistor, 1,400 Ohms 1/4 W.		32783	Ant. Connector Cable—Accessory
43	38623	Resistor, 750,000 Ohms 1/4 W.		51243	Station Call Sheet
44	38918	Resistor, 600 Ohms 1/4 W.		50980	Celluloid Cover—Call Tab
45	278-BL-5"U"	Speaker, Mfr. Spec. No. 5A-34		51196	Call Tab Holder
	—18679	Output Transformer		19429	Screws—Holder Mounting
	278-BL-5" B"	Speaker, Mfr. Spec. No. 55-WA-50		29754	Ammeter Capacitor
	—47612	Output Transformer		51322	Instruction Booklet
46	51220	Band Change Switch		MG3-51230	Instruction Envelope Assy.
	51219	Bracket—B. S. Mounting		G8 -35954	Junction Block
47	51155	Power Transformer		G179-34408	Shielded Switch Cable
	50680	Shield—Power Transformer Can		46447	Tube Shield
48	51198	Switch and Vol. Control—1 Meg.			
	MG23-51229	Push Button Unit Assy.			
	MG21-51169	Key Assembly			
	50542	Toggle Lock Clip			
	50639	No. 6—32 x 1" Screw—Station Setting			

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
6D6	R-F Amplifier	6.0	220	100	0	5.7	—	—
6A7	Osc.-Mod.	6.0	220	100	0	5.7	130	-5 to -10
6B7	I-F Amp. & Diode Detector	6.0	220	100	0	6.8	—	—
76	1st A-F Amp.	6.0	130	—	0	8.0	—	—
41	(2) Output	6.0	210	—	0	18.0	—	—

Power Output Approximately 3 Watts.  
 Battery Drain Approximately 6.2 Amperes at 6 Volts.

1. Tuning I-F Amplifier To 262 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(h) Repeat operations (e) and (f) for more accurate adjustments.

3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 14, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

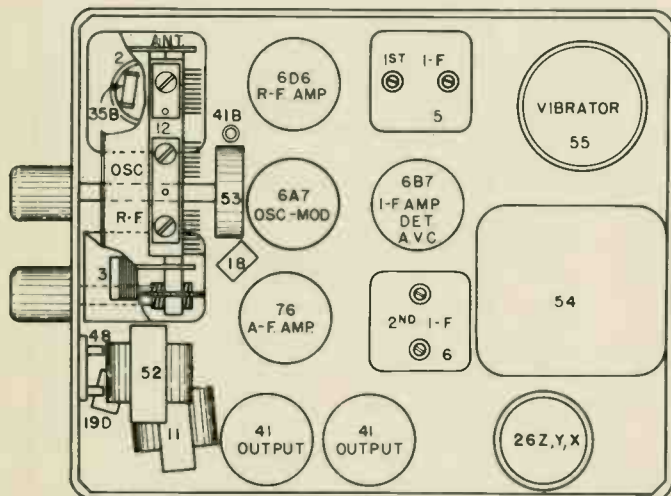


Fig. 2. Top View A-366

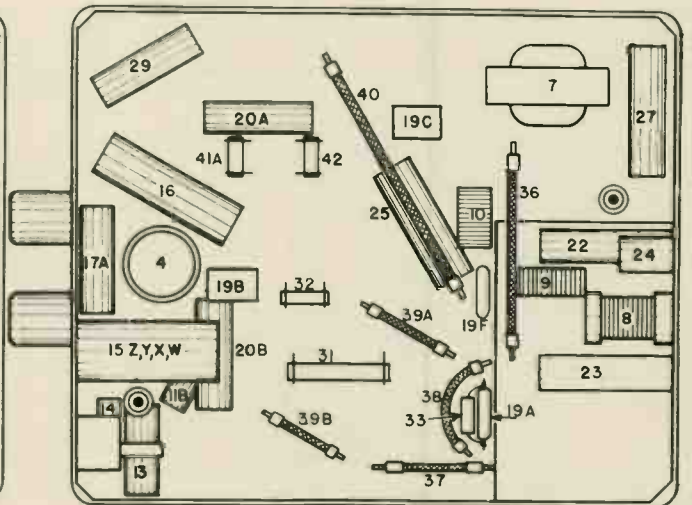
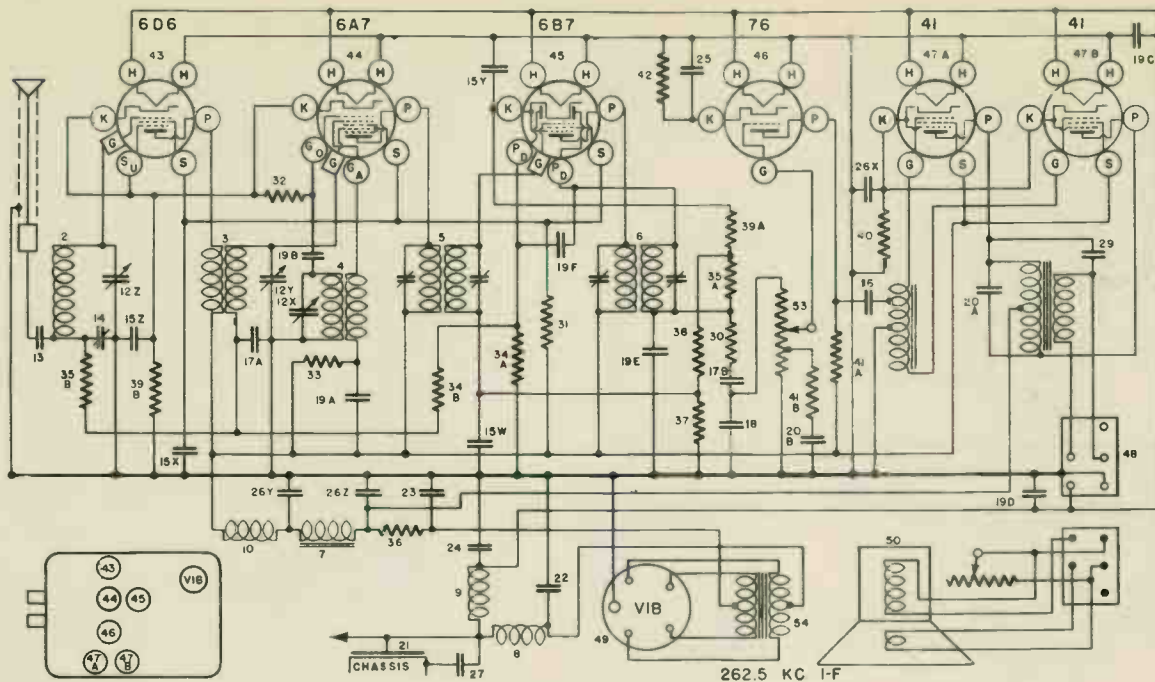


Fig. 3. Bottom View A-366

# MODEL A-366

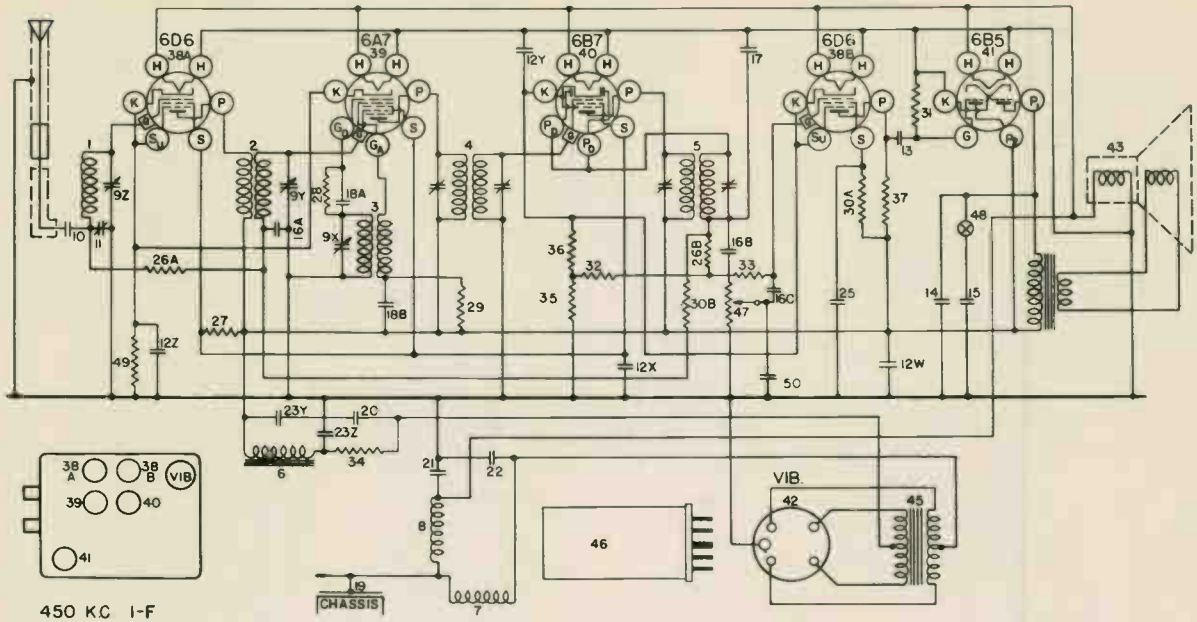


Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
2	G83 32000	Ant. Coil	50		Speakers (See Below)
3	W 38120	Ant. Coil Shield	51	NONE	
4	G20 32001	R-F Coil	52	G51 24C28	Output Transformer
5	G27 32002	Osc. Coil	53	38840	Volume Control (1 Meg.)
6	G16 32005	1st I-F Assembly	54	G8 32769	Power Transformer
7	G30 32005	2nd I-F Assembly	55	G7 38000	Vibrator
8	G31 24628	"B" Filter Choke	W	38413	Vibrator Ground C/tp
9	G15 28067	"A" Filter Choke	W	35181A	Distributor Suppressor
10	G6 32977	Motor Noise Choke	W	32956A	Suppressor Adapter
11	G50 24628	A-T Grid Choke	W	29754C	Generator Condenser
12	G44 33002	3 Section Var. Tuning Condenser	W	32783A	Antenna Lead
13	W 38367	Condenser .02 Mfd. 200 V.	C	38107	Case
14	W 38350	Condenser, Ant. Compensating	C	38408	Top Cover
15Z	W 38419A	Condenser .05 Mfd. 400 V.	MG2	38798	Bottom Cover
15X	W 38419A	Condenser .1 Mfd. 200 V.	W	32946	Cable Set Screw
15W	W 38419A	Condenser .1 Mfd. 200 V.	W	32947	Comp. Cond. H/ct Plug
16	W 22688	Condenser 1 Mfd. 400 V.	W	38412B	Oval Head Nut, Cover Mtrg.
17A	W 28621	Condenser .02 Mfd. 200 V.	W	32921	Cover Tie Bolt
17B	W 28621	Condenser .02 Mfd. 200 V.	W	32956	Mounting Stud
18	C2 34002	Condenser .001 Mfd. (Molded)	W	38155	Case Mtg. Spacer
19A			W	32957	Lock Washer
19F	G1 34002	Condenser .00025 Mfd. (Molded)	W	6213	Hex. Nut
20A	W 25175	Condenser .003 Mfd. 400 V.			<b>Speaker Parts</b>
20B	W 25435	Condenser .003 Mfd. 400 V.			Speaker Complete (under cowl)
21	W 32901	Condenser, Riveted Plate to Chassis			"M" Spec. 1-D-399
22	W 38433	Condenser .5 Mfd. 160 V.			40311 Knob (Tone Control)
23	W 38431	Condenser .15 Mfd. 400 V.			38824A Tone Control (300,000 Ohm)
24	W 37190	Condenser .02 Mfd. 160 V.			40148 Grille & Screen (424-G-6)
25	W 38430	Condenser 4. Mfd. 10 V. Electrolytic			40461 Baffle Gasket (424-G-6)
26Z	W 38427	Condenser 8. Mfd. 350 V. Electrolytic			40703 Speaker Unit only (424-G-6)
26Y	W 38427	Condenser 8. Mfd. 350 V. Electrolytic			40701 Speaker Cone Assembly (424-G-6)
26X	W 29910A	Condenser .25 Mfd. 200 V.			40305 Speaker Field Coil (424-G-6)
27	W 29910A	Condenser .25 Mfd. 200 V.			32974 Plug
28	NONE				32975 Plug Cover
29	W 38488	Condenser .05 Mfd. 400 V.			38847 Cable
30	W 35600	Resistor 100,000 Ohm 1/4 W. Insulated			424-G-4 Speaker Complete (under cowl)
31	W 36952	Resistor 30,000 Ohm 1/4 W. Insulated			"M" Spec. 1-D-398
32	W 35928	Resistor 60,000 Ohm 1/4 W. Insulated			40311 Knob (Switch)
33	W 35710	Resistor 20,000 Ohm 1/4 W. Insulated			40534 Switch
34A	W 35602	Resistor 1 Megohm 1/4 W. Insulated			40535 Caddock Resistor
34B	W 35602	Resistor 1 Megohm 1/4 W. Insulated			32985 Leader Socket
35A	W 35601	Resistor 300,000 Ohm 1/4 W. Insulated			40531 Choke
35B	W 35601	Resistor 300,000 Ohm 1/4 W. Insulated			W 37849 Cable
36	W 32961	Resistor 100 Ohm 3W. Flexible			40148 Grille & Screen (424-G-4)
37	W 21452	Resistor 1100 Ohm 1/2 W. Flexible			40461 Baffle Gasket (424-G-4)
38	W 28589	Resistor 350 Ohm 1/2 W. Flexible			40562 Speaker Unit only (424-G-4)
39A	W 30127	Resistor 450 Ohm 1/2 W. Flexible			40701 Speaker Cone Assembly (424-G-4)
39B	W 30127	Resistor 450 Ohm 1/2 W. Flexible			40305 Speaker Field Coil (424-G-4)
40	W 36049	Resistor 450 Ohm 3W. Flexible			32974 Plug
41A	W 36761	Resistor 40,000 Ohm 1/4 W. Insulated			32975 Plug Cover
41B	W 36761	Resistor 40,000 Ohm 1/4 W. Insulated			321-G-5 Speaker Assembly (Headline)
42	W 38428	Resistor 4,500 Ohm 1/4 W. Insulated			"M" Spec. 1-D-398
43	G75 38807	Socket Type 6D6	W	35252A	Tone Control Knob
44	G47 38807	Socket Type 6A7	W	38832	Tone Control
45	G48 38807	Socket Type 6B7	W	38839	Speaker Unit (321-G-5)
46	G80 38807	Socket Type 76	W	40102	Speaker Cone Assembly (424-G-5)
47A	G22 38807	Socket Type 41	W	40297	Speaker Field coil (324-G-5)
47B	G22 38807	Socket Type 41			321-G-4 Speaker Assembly (Header)
47C	G22 38807	Socket Type 41			"M" Spec. 1-D-397
48	W 32960A	Tube Shield Base	W	41431	Grille & Screen (321-G-6)
49	W 31212	Tube Shield Type 76 (Cut out)	W	40280	Baffle Gasket (321-G-6)
	W 31213	Tube Shield Type 76 (Plain)	W	40297	Speaker Clamp (321-G-6)
	W 34174	Tube Shield Type 6D6 (Cut out)	W	35252A	Tone Control Knob
	W 34175	Tube Shield Type 6D6 (Plain)	W	38834A	Tone Control
	W 51210	Tube Shield Ring	B	35280	Mtg. bracket (321-G-6)
	W 51210	Tube Shield Ring			38820 Speaker Unit (324-G-6)
	W 32895	Speaker Socket			40402 Speaker Cone Assembly (324-G-6)
	W 32965A	Vibrator Socket			40297 Speaker Field Coil (324-G-6)



MODELS A-455 A-555



450 KC 1-F

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G37-32000	Coil, Ant. Trans.	22	W-38433	.5 mf. 160 v. Cond.
2	G22-32001	Coil, R.F. Trans.	23Y,Z	W-38473-A	8 mf. 350 v. Cond.
3	G27-32002	Coil, Osc. Trans.	25	W-38488	.5 mf. 400 v. Cond.
4	G17-32005	Coil, 1st I.F. Trans.	50	G2-34002	.0001 mf. Cond.
5	G36-32005	Coil, 2nd I.F. Trans.	26	35600	100,000 ohm Type C Res.
6	G31-24628	Coil, "B" Filter Choke	27	36952	30,000 ohm Type A Res.
7	G9-28067	Coil, "A" Filter Choke	28	35928	60,000 ohm Type C Res.
8	G6-32977	Coil, Motor Noise Choke	29	36760	20,000 ohm Type C Res.
9Z	B-38923-F	Cond., Var. Ant. Sec.	30A,B	35602	1 meg. Type C Res.
9Y		Cond. Var. R.F. Sec.	31	36322	500,000 ohm Type C Res.
9X		Cond. Var. Osc. Sec.	32	35930	200,000 ohm Type C Res.
10	W-38493	.02 mf. 200 v. Cond.	33	35927	2 meg. Type C Res.
11	W-32926-A	Ant. Trim. Cond.	34	W-32961	100 ohm 3 w. Flex. Res.
12Z,Y	W-38914	.1 mf. 200 v. Cond.	35	30127	450 ohm 1/2 w. Flex. Res.
12X,W	W-38914	.05 mf. 400 v. Cond.	36	28589	350 ohm 1/2 w. Flex. Res.
13	W-38492	.05 mf. 400 v. Cond.	37	35929	150,000 ohm Type C Res.
14	W-23635	.006 mf. 400 v. Cond.	49	W-29585	600 ohm 1/2 w. Flex. Res.
15	W-23142	.02 mf. 400 v. Cond.	42	W-32965-A	Socket "Vib" 5 Prong
16	W-28621	.02 mf. 200 v. Conds.	43	325BJ	Speaker
17	G3-34002	.0005 mf. Cond.	45	G8-32769	Power Trans.
18	G1-34002	.00025 mf. Cond.	46	G7-38000	Vibrator Assy.
19	W-32904	20 mmf. Cond.	47	38425	Vol. Cont.
20	W-38431	.15 mf. 400 v. Cond.	48	W-35741	Tone Cont. Sw.
21	W-37190	.02 mf. 160 v. Cond.			

MODEL A-459

TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A8	OSC.-MOD.	GND.	GND.	205	102	-4.5	101	6	3
6SK7	I-F Amplifier	GND.	GND.	GND.	Grid	3	102	6	207
6SQ7	Det., A.V.C., 1st A-F	GND.	Grid	0	Diode	67	6	6	GND.
6X6GT	Output	GND.	GND.	230	213	Grid	210 J.B.	6	14
6X5GT	Rectifier	GND.	GND.	A.C.	--	A.C.	--	6	245

Maximum Power Output—approximately 3.6 watts.  
 Normal "A" Drain—6.5 amperes.  
 GND.—Ground. J.B.—Junction Block.

1. Aligning the I-F to 455 Kilocycles.

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid cap of the 6A8 oscillator-modulator (leaving the tube's grid connector in place). Care should be exercised to keep signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(d) Adjust both 1st I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

2. Aligning the R-F.

(a) The output lead from the signal generator should be connected through a .0001 mf. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.  
 (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

3. Setting the Push Buttons.

The push buttons are easily and accurately set from the front of the receiver.

To set push buttons, remove button by pulling straight out and the setting screw is easily accessible. Loosen the screws of the buttons to be set (two or three turns to the left).

By means of the manual tuning knob tune-in AS ACCURATELY AS POSSIBLE, the station for which the button is to be set. REMEMBER: the accuracy of the push buttons depends upon how accurate YOU tune-in the station when setting them.

With a small screw driver push the key all the way down. While holding the key down, securely tighten the setting screw. It is essential that you apply pressure while tightening the setting screw, in order to keep mechanism lined up with station tuned-in.

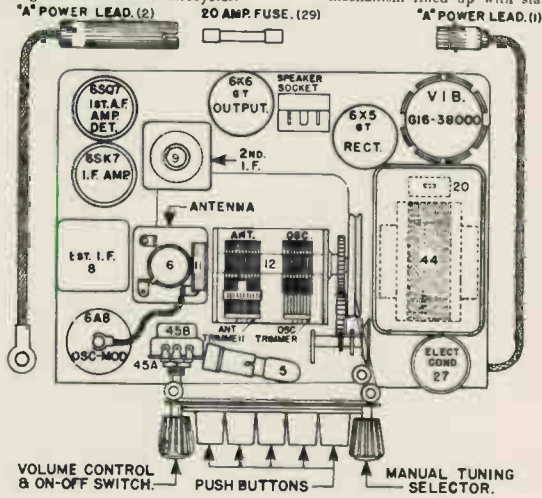


Fig. 2-A—Top View Model A-459

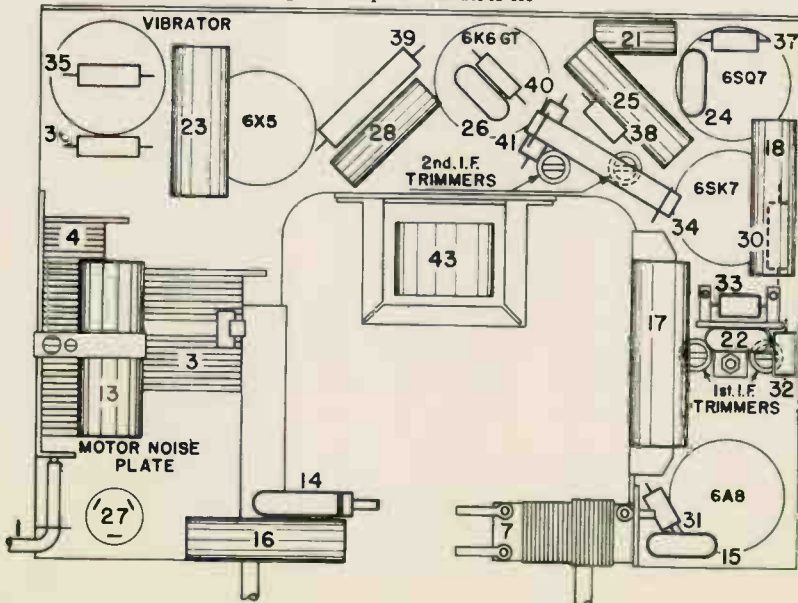
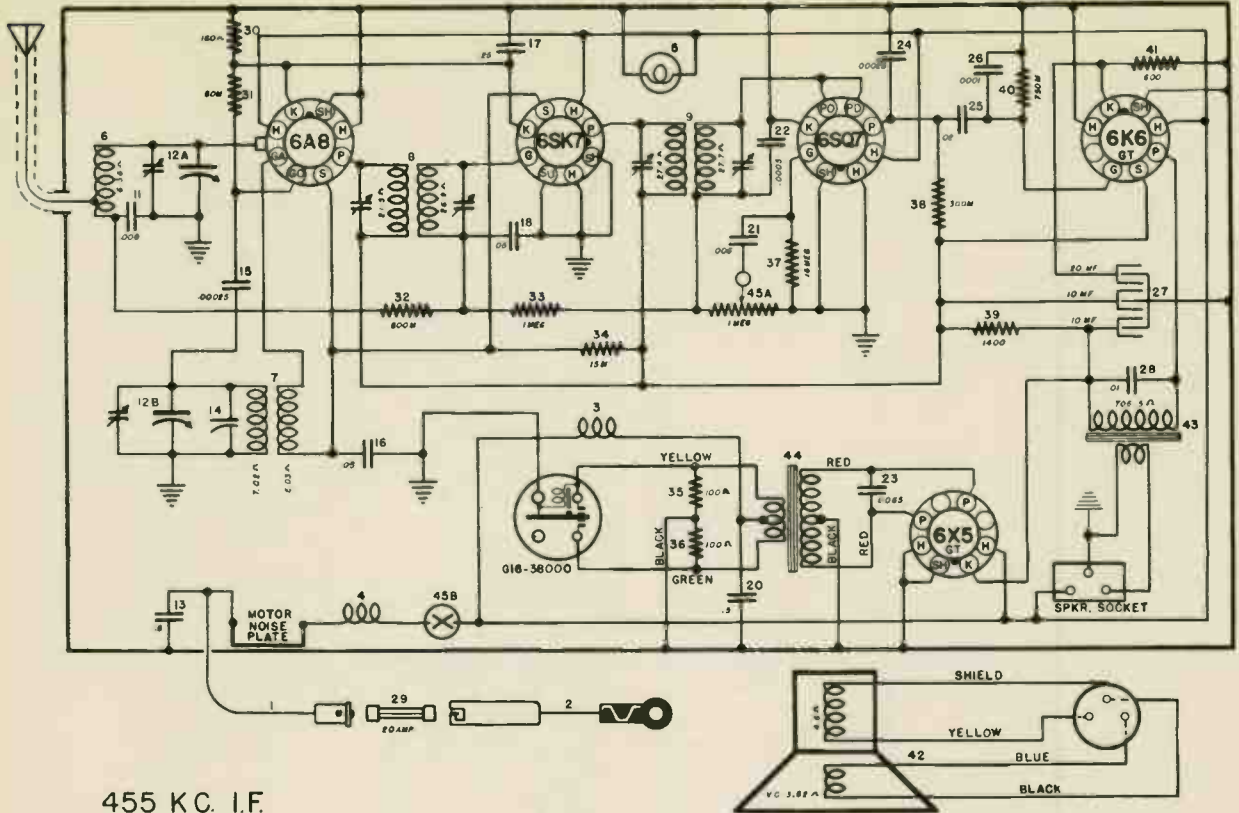


Fig. 3 A—Bottom View Model A-459

MODEL A-459



455 KC. I.F.

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G41-32750	"A" Lead Assy. Set to Fuse		50939	No. 6-32 x 1" Screw—Station Setting
2	G42-32750	"A" Lead Assy. Fuse to Ammeter		30580	Spring—P. B. Key Return
3	G35-28067	"A" Filter Choke	MG20	51169	Rocker Bar and Gear Assy.
4	G24-32977	Motor Noise Filter Choke		51120	No. 6-10 x 1/4" Screw—Rocker Bar Bearing
5	MG31-51339	Bracket and Socket Assy.—Dial Light		51517	Bronze Ground Spring (2" x 7/16")
6	G194-32300	Antenna Coil		51532	Push Button
7	G309-32002	Oscillator Coil	MG19	51339	Dial Bracket Assy.—Riveted to P. B. Unit
8	G231-32004	1st I-F. Assy.—455 Kc.		51311	Glass Dial
9	G231-32004	2nd I-F. Assy.—455 Kc.		51302	Dial Mask (Dial Background)
10	None			51880	R. H. Clip—Dial Mtc.
11	45810	Condenser, .005 Mf. 160 V.		51280	L. H. Clip—Dial Mtc.
12	G82-33001	Condenser—Var. Tuning Gang		51330	Pointer—Dial Hand
13	51524	Condenser, 5 Mf. 120 V.		G19	Pulley and Hub Assy.—On Gang
14	51140	Condenser—Temp. Comp. (Thermal)	G19	43584	Drive Cord (19 1/2")
15	G1-34002	Condenser, .00025 Mf. Mica	G33	41582	Manual Pinion Retainer
16	32380	Condenser, .05 Mf. 200 V.	MG30	51339	Manual Pinion Shaft and Pulley Assy.
17	34712	Condenser, .25 Mf. 160 V.		51295	Manual Pinion Retainer
18	32380	Condenser, .05 Mf. 200 V.	MG20	51339	Manual Shaft and Cone Assy.
19	None			30930	Friction Drive Cone
20	50882	Condenser, 5 Mf. 120 V.		50590	Spring—Drive Cord Tension
21	45810	Condenser, .005 Mf. 160 V.		51255	Radio Case (Sides only) (FS-11 and FS-79)
22	G3-34002	Condenser, .0005 Mf. Mica		51255	Ton Cover—Case Lid (FS-11 and FS-79)
23	G3-50293	Condenser, .0005 Mf. 1000 V.		51256	Bottom Cover—Case Bottom (FS-11 and FS-79)
24	G1-34002	Condenser, .00025 Mf. Mica		51334	Shipping Carton
25	28621	Condenser, .02 Mf. 200 V.		28754	Generator Condenser
26	G2-34002	Condenser, .0001 Mf. Mica		38003	Distributor Suppressor
27	51139	Condenser, 10-10-20 Mf. 350-350-25 V.		35182	Adapter—For Distributor Suppressor
28	23191	Condenser, .01 Mf. 400 V.		51518	Hood Grounding Clip
29	50499	Fuse—20 Amp.		51512	Instructions—For Hood Gnd. Clip
30	50572	Resistor, 100 Ohms 1/2 W.		94R	Side Cover Mtc. Antenna
31	33028	Resistor, 50,000 Ohms 1/2 W.		51505	Drilling Template—K94R Instal.
32	36322	Resistor, 500,000 Ohms 1/2 W.		51345	Drilling Template—Radio Mtc.
33	35302	Resistor, 1 Megohm 1/2 W.		80417	1/4"-20 x 1/2" Screw—Radio Mtc.
34	23916	Resistor, 15,000 Ohms 1/2 W.		38205	1/4" Lockwasher—Radio Mtc.
35	38019	Resistor, 100 Ohms 1/2 W.		44417	No. 6-32 x 7/8" Dec. Hd. Screw—Speaker Mtc.
36	38019	Resistor, 100 Ohms 1/2 W.		28800	Shakerproof Washer—Speaker Mtc.
37	50671	Resistor, 15 Megohms 1/2 W.		5	Flat Washer—Speaker Mtc.
38	35601	Resistor, 300,000 Ohms 1/2 W.		N	Nut (No. 6) Speaker Mtc.
39	45388	Resistor, 1,100 Ohms 1/2 W.		MG7	Blue Adapter Panel Kit
40	38023	Resistor, 750,000 Ohms 1/2 W.		MG8	Gray Adapter Panel Kit
41	38918	Resistor, 100 Ohms 1/2 W.		51346	Caselet—Dial Window
42	278 BT-3 "U"	Speaker, Mfg. Spec. No. 5K-20		51312	Instrument Panel Gasket (2)
	48681	Field Coil		C	No. 6-32 x 3/8" Screws—Adapter Panel Mtc. (FS-13)
	48680	V. C. and Cone Assy.		51272	Call Letter Holder
	43585	Cardboard Ring—Cone Mtc.		19128	No. 4—36 x 1/2" Screws—Holder Mtc.
	47133	Socket—Speaker		30979	Call Letter Sheets
	MG4-51340	Speaker, Screen, Etc., Assy.		30980	Celluloid Tab Cover
	51517	Dust Cloth—Speaker		51309	Knob
	51341	Screen—Speaker Opening		4523	No. 8—32 x 3/16" Set Screw—Knob
	51318	Speaker Cable		51336	Instruction Booklet
43	51325	Output Transformer	MG3	51340	Instruction Envelope Assy.
44	51331	Power Transformer	MG2	51340	Miscellaneous Mtc. Parts Pkg.
	51311	Shield—P. T. Can			
45	51313	Switch and Volume Control (1 Meg.)			
	51108	Socket—8 Prong—No Marking			
	G105-28807	Socket—4 Prong—Vibrator			
	50123	Ground Clip—Vibrator			
	39047	Tube Shield			
	G16-39040	Vibrator			
	51796	Speaker—Plug—No Shell			
MG23	51339	Push Button Unit—No Gang			
MG22	51169	Riveted P. B. Key Assy.			
	50542	Key Clip—Lock Clamp			

MODEL A-559 (ROAMIO)

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8GT	Oscillator-Modulator	6.0	100	75	—	2.4	75	—
6SK7	I-F Amplifier	6.0	100	—	—	9	—	—
6SQ7	Diode Detector & A-F Amp.	6.0	45	—	—	0	—	—
6Y6GT	Output	6.0	105	100	—	5.6	—	—
6X5	Rectifier	6.0	—	—	—	120	—	—

Power Output approximately 4 Watts.  
 Battery Drain approximately 6.6 Amperes at 6 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6Y6GT Output tube. Be sure the meter is protected from D. C. by connecting a condenser .1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 6A8GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmer condensers for maximum output. Fig. 3.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION AL-

WAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

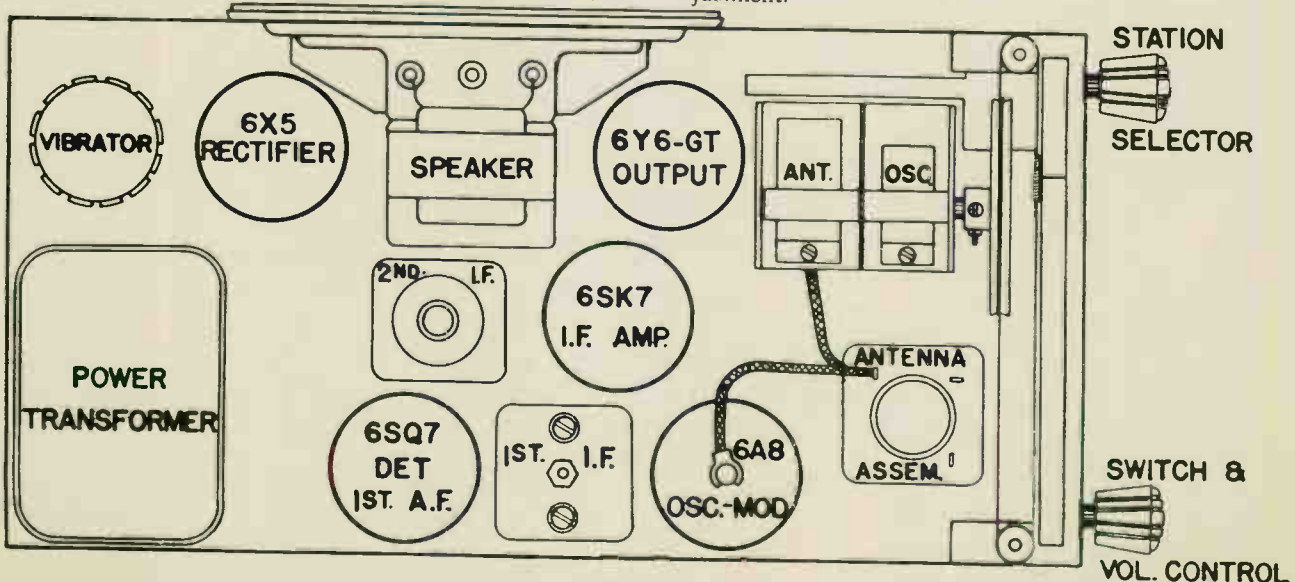
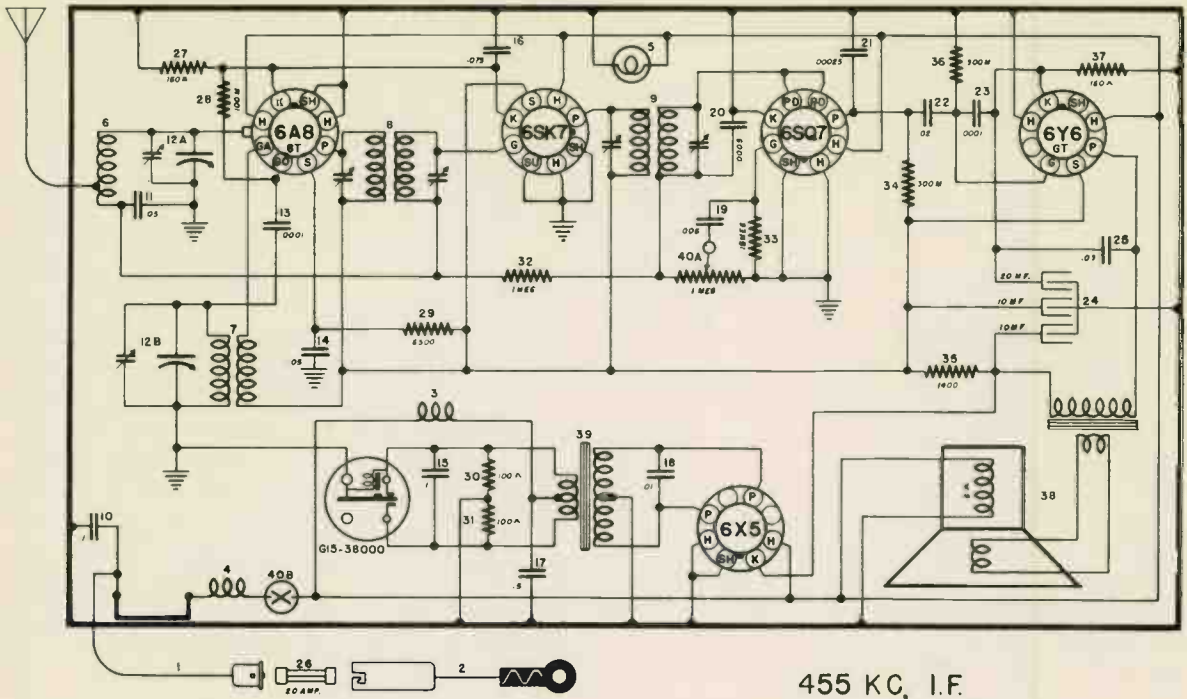


Fig. 2—Top View Model A-559

MODEL A-559



455 KC. I.F.  
MODEL - A559

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G34-32750	"A" Lead Assy.—Set to Fuse	26	-50169	Fuse—20 Amp.
2	G37-32750	"A" Lead Assy.—Fuse to Ammeter	27	-50672	Resistor, 160 Ohms 1/2 W. W. W.
3	G34-28067	"A" Filter Choke	28	-35600	Resistor, 100,000 Ohms 1/2 W.
4	G25-42977	Motor Noise Filter Choke	29	-35934	Resistor, 6,500 Ohms 1/2 W.
5	-43567	Dial Lamp—6-8 Volt	30	-38915	Resistor, 100 Ohms 1/2 W. W. W.
6	G194-32000	Antenna Coil	31	-38915	Resistor, 100 Ohms 1/2 W. W. W.
7	G200-32002	Oscillator Coil	32	-35602	Resistor, 1 Megohm 1/2 W.
8	G224-32004	1st I.F. Assy.—455 Kc.	33	-50671	Resistor, 15 Megohms 1/2 W.
9	G225-32004	2nd I.F. Assy.—455 Kc.	34	-35601	Resistor, 300,000 Ohms 1/2 W.
10	-50105	Condenser, .1 Mf. 160 V.	35	-45388	Resistor, 1,400 Ohms 1/2 W. W. W.
11	-45817	Condenser, .05 Mf. 160 V.	36	-35601	Resistor, 300,000 Ohms 1/2 W.
12	G81-33001	2 Section Var. Tuning Condenser	37	-50672	Resistor, 160 Ohms 1/2 W. W. W.
	-51269	Dial Glass	38	293-BL-7"U"	Speaker—Mfg. Spec. No. 5425
	-51268	Mask—Dial Background		-48173	Output Transformer
	MG11-51259	Bracket—Dial Mtg. Riveted to Chassis	39	-51267	Power Transformer
	-50560	R. H. Clip—Dial Glass Mtg.		-50680	Shield—P. T. Can.
	-50545	L. H. Clip—Dial Glass Mtg.	40	-50526	Switch and Vol. Control (1 Meg.)
	B-78	Screw—Dial Clip Mtg.		G15-38000	Vibrator
	-2045	Shakeproof Washer—Dial Clip Mtg.		-50123	Ground Clip—Vibrator
	-50589	Felt—For Dial Window		MG2-51259	Case Assy.
	G9-43364	Pulley and Hub Assy.		-50505	Knob
	-50518	Pointer—Dial Hand		-38935	Wedge—For Cover
	G13-41582	Drive Cord (30 Inch)		-51275	Shipping Carton
	-50512	Drive Shaft		-38038	Distributor Suppressor
	-50511	Bracket—Drive Shaft Mtg.		-29754	Generator Condenser
	-43549	"C" Washer—Shaft Retaining		-50167	Strap—Set Rear Mtg.
	-50607	Spring—Drive Cord Tension		-25846	No. 10 x 3/4" P. K. Screw—Set Mtg.
13	G2-34002	Condenser, .001 Mf. Mica		-6213	Hex Nut—1/2" x 20
14	-45817	Condenser, .05 Mf. 160 V.		-35065	1/4" x 20 x 1 1/2" Sq. Hd. Screw
15	-50105	Condenser, .1 Mf. 160 V.		-38205	1/4" Lockwasher
16	-51310	Condenser, .075 Mf. 160 V.		-32783	Antenna Connector Cable
17	-50682	Condenser, 5 Mf. 120 V.	MG83-50147	Model "A" Fords Mounting Kit	
18	-50185	Condenser, .01 Mf. 650 V.		-50395	Motor Noise Condenser (Fuse Connector Lead)
19	-45810	Condenser, .006 Mf. 160 V.	MG2-51260	Mounting Kit Assy.	
20	G3-34002	Condenser, .0005 Mf. Mica	G173-34403	Volume Control Cable	
21	G1-34002	Condenser, .0025 Mf. Mica		-51277	Instruction Book
22	-45780	Condenser, .02 Mf. 160 V.			
23	G2-34002	Condenser, .001 Mf. Mica			
24	-51278	Condenser, 10-10-20 Mf. Elect.			
25	-500F5	Condenser, .03 Mf. 160 V.			

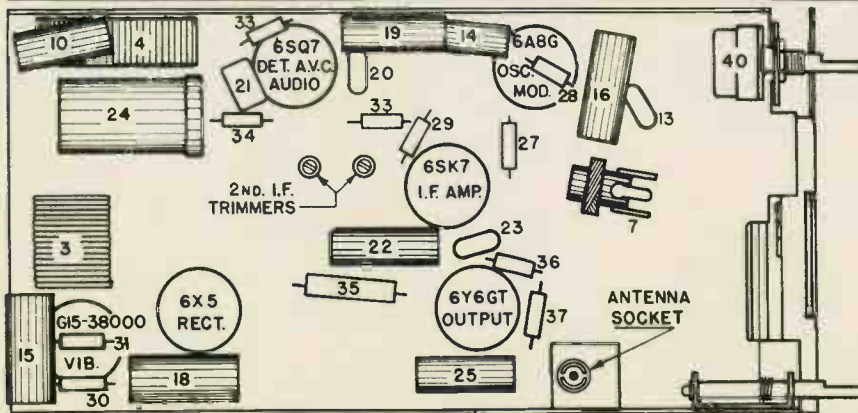


Fig. 3—Bottom View Model A-559

# MODEL F-157

## TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Co
6A8-G	Oscillator-Modulator	6.1	220	90	—	0	90	0
6U7-G	I-F Amplifier	6.1	220	90	0	0	—	—
6Q7-G	Diode Detector & A-F Amp.	6.1	110	—	—	0	—	—
6K6-G	Output	6.1	200	220	—	0	—	—
OZ4	Rectifier	0	—	—	—	220	—	—

Power Output approximately 5 Watts.  
Battery Drain approximately 2.6 Amperes at 12 Volts.

### ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

#### CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6K6G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series without one of the leads.

#### 1. Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A8G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on the 2nd I-F transformer for maximum output. Fig 2.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C. ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

#### 2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**

(g) Repeat operation (e) for more accurate adjustment.

#### 3. Adjusting Antenna Compensating Condenser.

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, Illustration No. 9, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(b) Adjust the antenna compensating condenser for maximum volume in the speaker.

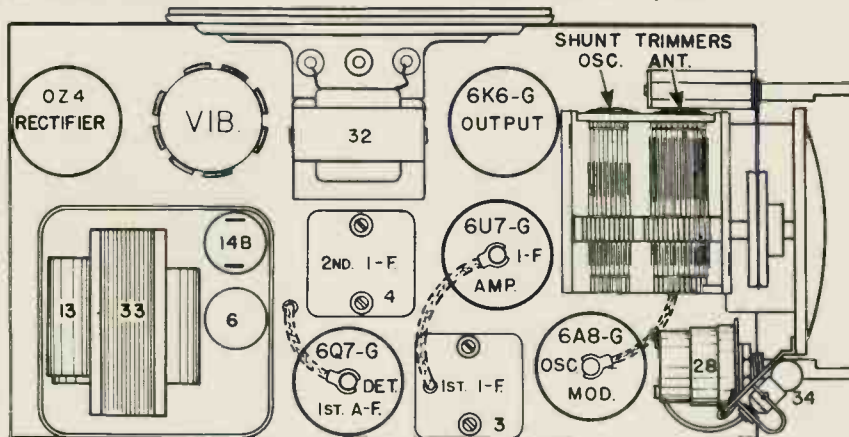


Fig. 2. Top View F-157

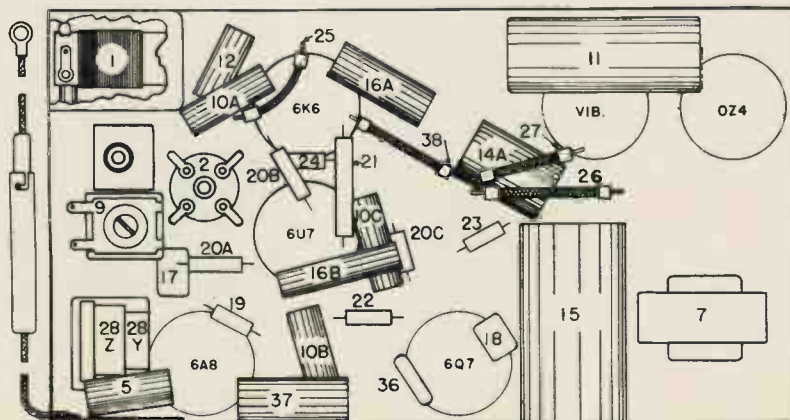
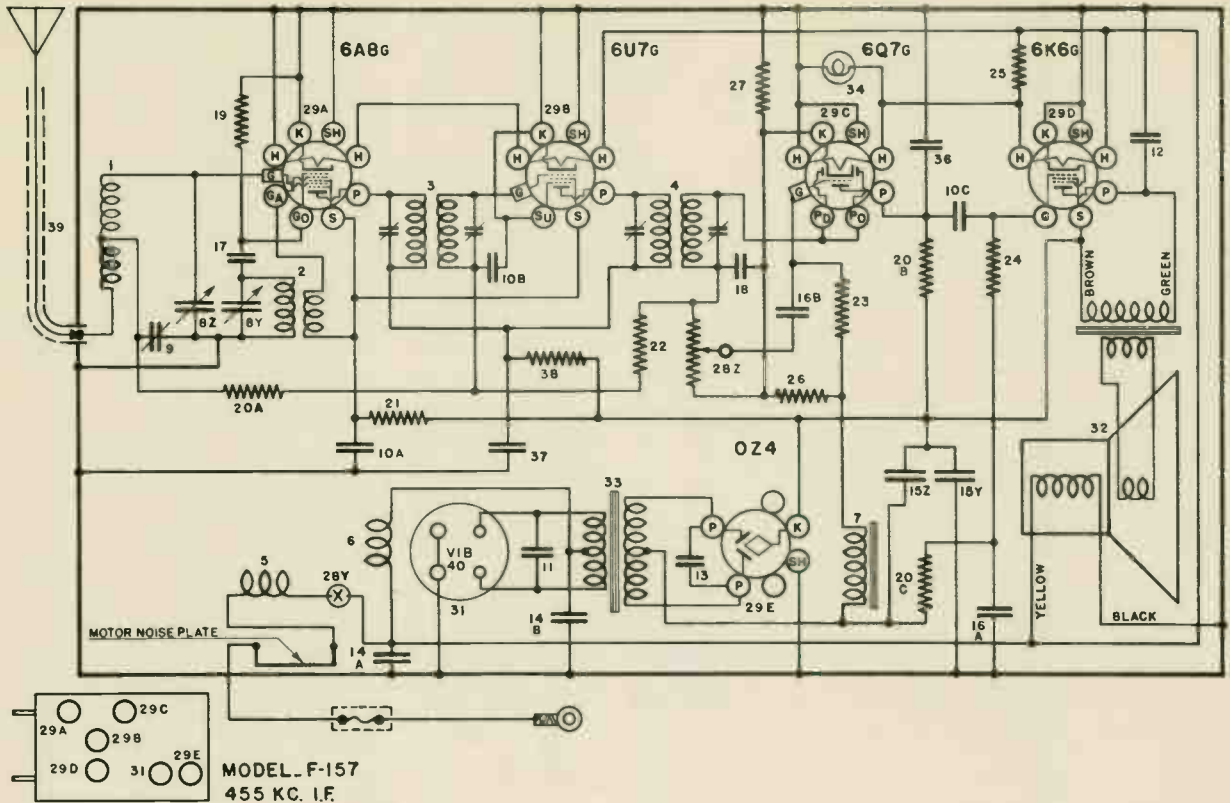


Fig. 3. Bottom View F-157

MODEL F-157



MODEL F-157  
455 KC. I.F.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G137-32000	Ant. Coil	32	W -31210	Tube Shield Ring (1)
2	G142-32002	Osc. Coil		276-BL-7"U"	Spoke—Mfg. Spec. No. 5-B-108
3	G148-32004	1st I-F. (455 Kc.)		-45377	V. C. and Cone Assy.
4	G148-32004	2nd I-F. (455 Kc.)		-440E3	Output Transformer
5	G20-32977	Motor Noise Choke Coil		-43585	(Field 30 Ohms) Not Replaceable)
6	G21-28067	Choke "A" Filter		-43577	Cardboard Ring Cone Mtg.
7	G16-29535	Choke "B" Filter	33	G20-32769	Power Transformer
8	G36-33001	Var. Tuning Condenser (2 Section)		W -50130	Power Transformer Can
9	-38998A	Ant. Compensating Condenser (200-600 Mmf.)	34	W -43567	Dial Light Bulb, 6-8 V.
10A	W -32380	Condenser, .05 Mf. 200 V. Tub.	36	G6-34002	Condenser, .00025 Mf. 200 V. Molded
10B	W -32380	Condenser, .05 Mf. 200 V. Tub.	37	W -32780B	Condenser, .05 Mf. 400 V. Tub.
10C	W -32380	Condenser, .05 Mf. 200 V. Tub.	38	W -22514	Resistor, 750 Ohm 1/4W. Flex.
11	W -30321A	Condenser, 1. Mf. 160 V. Tub.	40	G12-38000	Ant. Lead
12	W -23191A	Condenser, .01 Mf. 400 V. Tub.		W -50137A	Vibrator (12 Volt)
13	W -50203	Condenser, .0065 Mf. 1,000 V. Tub. (Oil)		W -50137A	Dial (Glass) Face
14A	W -50161	Condenser, .5 Mf. 120 V. Tub.		W -50133	Mask—Dial
14B	W -50161	Condenser, .5 Mf. 120 V. Tub.		W -50135A	Ring—Dial Glass Support
15Z	W -50160	Condenser, 4 Mf. 350 V. Elect.		W -50136A	Bracket—Dial Mtg.
15Y	W -50160	Condenser, 4 Mf. 350 V. Elect.		W -50173A	Pointer
16A	W -50105	Condenser, 1 Mf. 160 V. Tub.		W -40486	Screw—Pointer Mtg.
16B	W -50105	Condenser, 1 Mf. 160 V. Tub.		W -50175	Drive Shaft
17	G1-34002	Condenser, .00025 Mf. 200 V. Molded		W -43549	Ring—Shaft Retaining
18	G3-34002	Condenser, .0005 Mf. 200 V. Molded		W -41582	Drive Cord (11 Inches)
19	W -31407	Condenser Clamp (Item 15)		W -43561	Tension Spring—Drive Cord
20A	-35928	Resistor, 60,000 Ohm 1/4W. Ins.		G3-43564	Pulley and Hub Assy.
20B	-35601	Resistor, 300,000 Ohm 1/4W. Ins.		D -50118B	Case
20C	-35601	Resistor, 300,000 Ohm 1/4W. Ins.		C -50119	Case Front
21	-37377	Resistor, 20,000 Ohm 1W. Ins.		W -35678A	Grille Cloth
22	-35602	Resistor, 1. Megohm 1/4W. Ins.		W -50164	Knob (2)
23	-35927	Resistor, 2. Megohm 1/4W. Ins.		G25-32750	"A" Power Lead—Set to Fuse
24	-36322	Resistor, 500,000 Ohm 1/4W. Ins.		W -32750	"A" Power Lead—Fuse to Ammeter
25	W -27504	Resistor, 100 Ohm 1/4W. Flex.		W -32757	Fuse, 12 Amp
26	W -23012A	Resistor, 40 Ohm 1/4W. Flex.		W -32776	Fuse Insulator
27	W -24537	Resistor, 60 Ohm 1/4W. Flex.		W -38038D	Distributor Suppressor
28Z	-50042	Volume Control (1 Meg.)		W -29754C	Generator Condenser
28Y		On-Off Switch		W -50167	Mtg. Strap
29	G178-36400	Socket, 8 Prong		-6213	Nut—Strap Mtg.
30	G105-28807	Socket Vibrator		-35065	Screw—Strap Mtg.
31	W -50123A	Ground Clip (Vib.)		W -38205	Lock Washer—Strap Mtg.
	W -50176	Tube Shield Half (2)		-25846	P. K. Self Tapping Screw

## MODEL 4A1

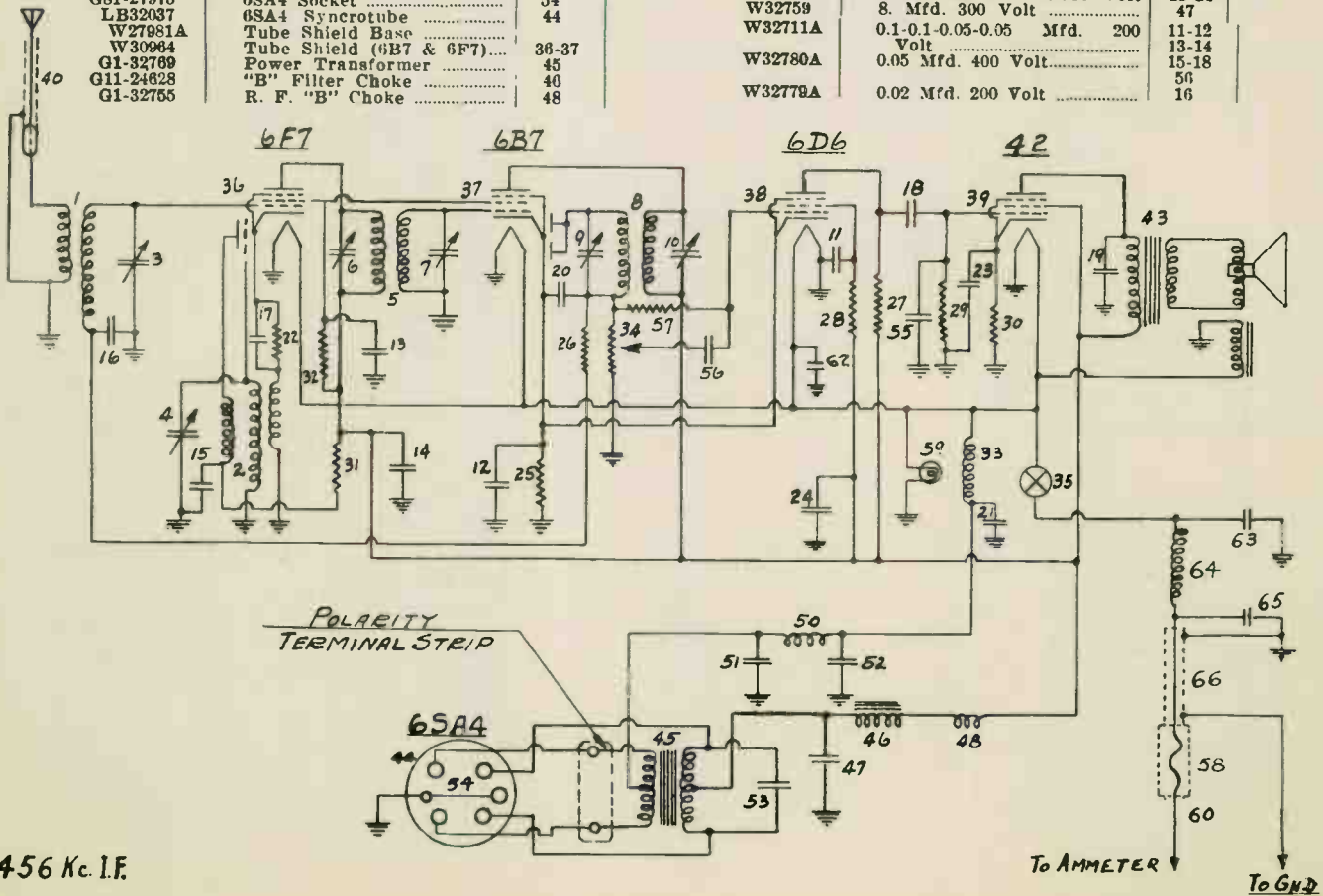
### Alignment Procedure . . .

Connect the high side of the output of the modulated oscillator, which has been adjusted to 456 Kc. to the control grid connection on the top of the 6F7 tube through an .02 mfd. series condenser. The low side of the oscillator is to be connected to the receiver chassis. Set the output of the oscillator to a convenient level and adjust the I. F. transformer condensers for maximum signal output. To make this adjustment it is necessary that a standard 5/16" (across flat) hexagon socket wrench be used for the upper condenser, and a small screw driver fitting inside of the nut hole for adjustment of the lower condenser. Always make this I. F. adjustment very carefully and

go over the adjustment several times to be sure that the peak has been reached. To align a receiver at broadcast radio frequency, it is necessary that an adjustable oscillator having frequencies of 1400 and 600 Kc. together with a suitable attenuator and dummy antenna be available. Set the oscillator at 1400 Kc. and connect the high side of the oscillator to the receiver antenna terminal through a .0002 mfd. (dummy antenna) condenser. Turn the tuning control of the receiver to 140 on the dial. Now adjust the oscillator shunt trimmer which is located on the front section of the gang condenser until the signal is heard best. Without changing the gang condenser setting, adjust the antenna trimmer located

on the rear section of the gang condenser. It is necessary that these adjustments be gone over several times until no further improvements can be made. Always work with the weakest possible signal from the modulated oscillator for best accuracy. Now rotate the dial until it reads 60 and set the modulated oscillator at approximately 600 Kc. The approximate sensitivity of the receiver may be checked here and it is possible that by slight bending of the gang condenser plates some improvement may be made. It is very essential, however, that this bending of plates be done with extreme care and by someone who is experienced in this operation.

G9-32000	Antenna Coil .....	1	G6-28067	R. F. "A" Choke .....	50
G8-32002	Osc. Coil .....		G4-28067	"A" Choke .....	33
W32728	Washer (Ant. Coil Shield Base) .....		B32783	Antenna Lead .....	40
W30802	Coil Shield (Ant.) .....		G1-25891	Antenna Wire .....	
W30028	Retaining Ring (Ant.) .....		G5-31701	"A" Cable Assem. .....	60
W25200	Coil Socket (Osc.) .....		G7-31701	"A" Lead Assem. & Choke Assem. .....	61
W25025A	Coil Shield (Osc.) .....		W32757	12 Amp. Fuse .....	58
W26891	Insulating Washer (Osc.) ..		W21452	1100 Ohms .....	22
W21541B	Retaining Ring (Osc.) .....		W28580	350 Ohms .....	25
L32898	Variable tuning Cond. Gang	3-4	21454	1 Megohm .....	26-57
G7-32004	1st I. F. Trans. Coil and Tuning Condensers .....	5-8-7	21875	100000 Ohms .....	27
G8-32004	2nd I. F. Trans. Coil and Tuning Condensers .....	8-9-10	23785	500000 Ohms .....	28-29
W32712B	Level Control and Power Switch .....	34-35	W25521	450 Ohms .....	30
W32739A	Level Control Bracket .....		32331	55000 Ohms (1/2 Watt) .....	31-32
G49-27975	6F7 Socket .....	36	W32781A	0.1 Mfd. 200 Volt .....	17-62
G48-27975	6B7 Socket .....	37	W32782A	0.01 Mfd. 400 Volt .....	19
G75-27975	6D6 Socket .....	38	W32741	0.0005 Mfd. (Mica) .....	20-21
G25-27975	42 Socket .....	39	W30366	0.5 Mfd. 160 Volt .....	55
G81-27975	6SA4 Socket .....	54	W32762	0.005 Mfd. 1000 Volt .....	51-52
LB32037	6SA4 Syncrotube .....	44	W30419A	8-8. Mfd. 25 Volt-250 Volt ..	53
W27981A	Tube Shield Base .....		W32759	8. Mfd. 300 Volt .....	23-24
W30964	Tube Shield (6B7 & 6F7) .....	38-37	W32711A	0.1-0.1-0.05-0.05 Mfd. 200 Volt .....	47
G1-32789	Power Transformer .....	45	W32780A	0.1-0.1-0.05-0.05 Mfd. 200 Volt .....	11-12
G11-24828	"B" Filter Choke .....	40	W32778A	0.05 Mfd. 400 Volt .....	13-14
G1-32755	R. F. "B" Choke .....	48		0.02 Mfd. 200 Volt .....	15-18
					56
					16



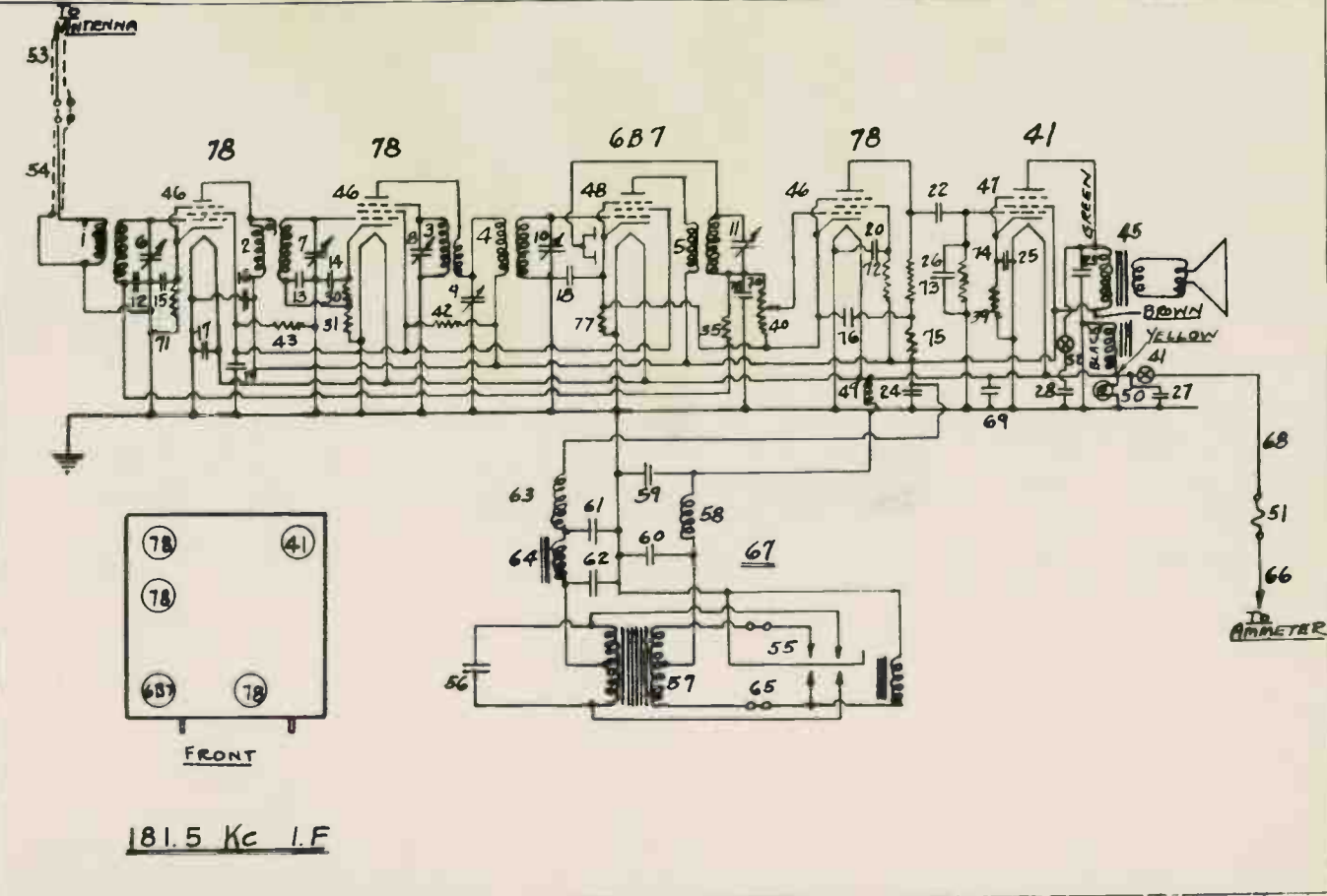
456 Kc. I.F.

To AMMETER

To GND



1	G2-24995	ANTENNA COIL
2	G7-24968	R.F. COIL
3	G2-24996	OSCILLATOR COIL
4	G1-25444	I.F. COIL
5	G3-25445	2ND I.F. COIL
6		ANT. TUNING COND.
7	L-29783	R.F. TUNING COND.
8		OSC. TUNING COND.
9	G2-25948	I.F. PRI. TUNING COND.
10	H-25000A	I.F. SEC. TUNING COND.
11	G2-25948	DOUBLE TRANS. TUN. COND.
12	W-27203	0.02 MFD. 200V
13	W-27203	0.02 MFD. 200V
14	W-27203	0.02 MFD. 200V
15	W-27203	0.02 MFD. 200V
16	H-25615	0.05 MFD. 400V
17	W-24049 A	0.1 MFD. 200V
18	W-25049 A	0.1 MFD. 200V
19	W-25438	0.1 MFD. 200V
20		
21		
22	W-29142	0.02 MFD. 400V
23	W-29191-A	0.01 MFD. 400V
24	W-30419-A	8 MFD. 250V
25		8 MFD. 25V
26	W-20389	.00005 (MICA)
27	W-20389	.00005 (MICA)
28	W-29191-A	0.1 MFD. 400V
29		
30	W-30127	450 Ω
31	W-27086	6400 Ω
32	W-25937	275 Ω
33	W-28357	75 Ω
34	21454	1-MEG
35	21454	1-MEG
36		
37		
38		
39	W-23907	750 Ω
40	W-30436	LEVEL CONTROL
41		S.P.S.T. SWITCH
42	W-26525B	15000 Ω
43		25000 Ω
44		
45		353-3 SPEAKER
46	G39-28807	78 SOCKET
47	G28-28807	41 SOCKET
48	G48-28807	6D7 SOCKET
49	G4-28067	"A" CHOKE
50	W-4099A	6V DIAL LIGHT
51	W-91103	10 AMP "A" FUSE
52	W-26156A	S.P.S.T. SWITCH
53	B-31296A	ANTENNA LEAD
54	W-31702	ANTENNA LEAD CONNECTION
55	L-29160	VIBRATOR ASSEM.
56	W-31632	0.01 MFD. 1000V
57	G1-31618	POWER TRANS.
58	G2-28067	"A" CHOKE
59	W-30366	0.5 MFD. 160V
60	W-30368	0.5 MFD. 160V
61	W-23142	0.02 MFD. 400V
62	W-31631-B	12 MFD. 300V



63	G1-24234	R.F. CHOKE ASSEM.	79
64	G10-24628	FILTER CHOKE ASSEM.	80
65	G4-26719	POWER TRANSFORMER	81
66	G1-31701	"A" CABLE ASSEM.	82
67	W-31629	413 SYNCHRODE	83
68	G2-31701	"A" CABLE ASSEM.	84
69	W-20389	.0005 MFD (MICA)	85
70			86
71	W-21452	1100 Ω	87
72	21454	1 MEG OHM	88
73	23403	150,000 Ω	89
74	23785	500,000 Ω	90
75	21287-A	60,000 Ω	91
76	W-29015	0.5 MFD 400 VOLTS	92
77	W-18589	350 Ω	93
78	W-32601	.0005 MFD. 200V.	94

WIRING DIAGRAM FOR CROSLEY MODEL 5A1

**CROSLEY**  
*Twice Tested*  
**SERVICE PARTS**

## MODEL 5A3—ROAMIO

### TUBE VOLTAGES—MODEL 5A3

Type	Where Used	E <sub>f</sub>	E <sub>p</sub>	E <sub>g</sub>	E <sub>c</sub>	E <sub>sg</sub>	E <sub>osc</sub>	E Sup-G
78	R. A. Amp	6.0	230	0-30	5.0	100	—	5.0
6F7	Osc.-Mod.	6.0	230	0-30	8.0	100	55	—
6B7	I. F. Amp. Diode Det. A. V. C.	6.0	230	0	3.0	100	—	—
78	Audio Amp.	6.0	60	0-30	3.0	25	—	3.0
42	Output	6.0	220	0	16.0	230	—	—

VOLTAGES MEASURED TO CHASSIS WITH A 500 VOLT 1000 OHMS PER VOLT VOLTMETER. 6 VOLT BATTERY USED.

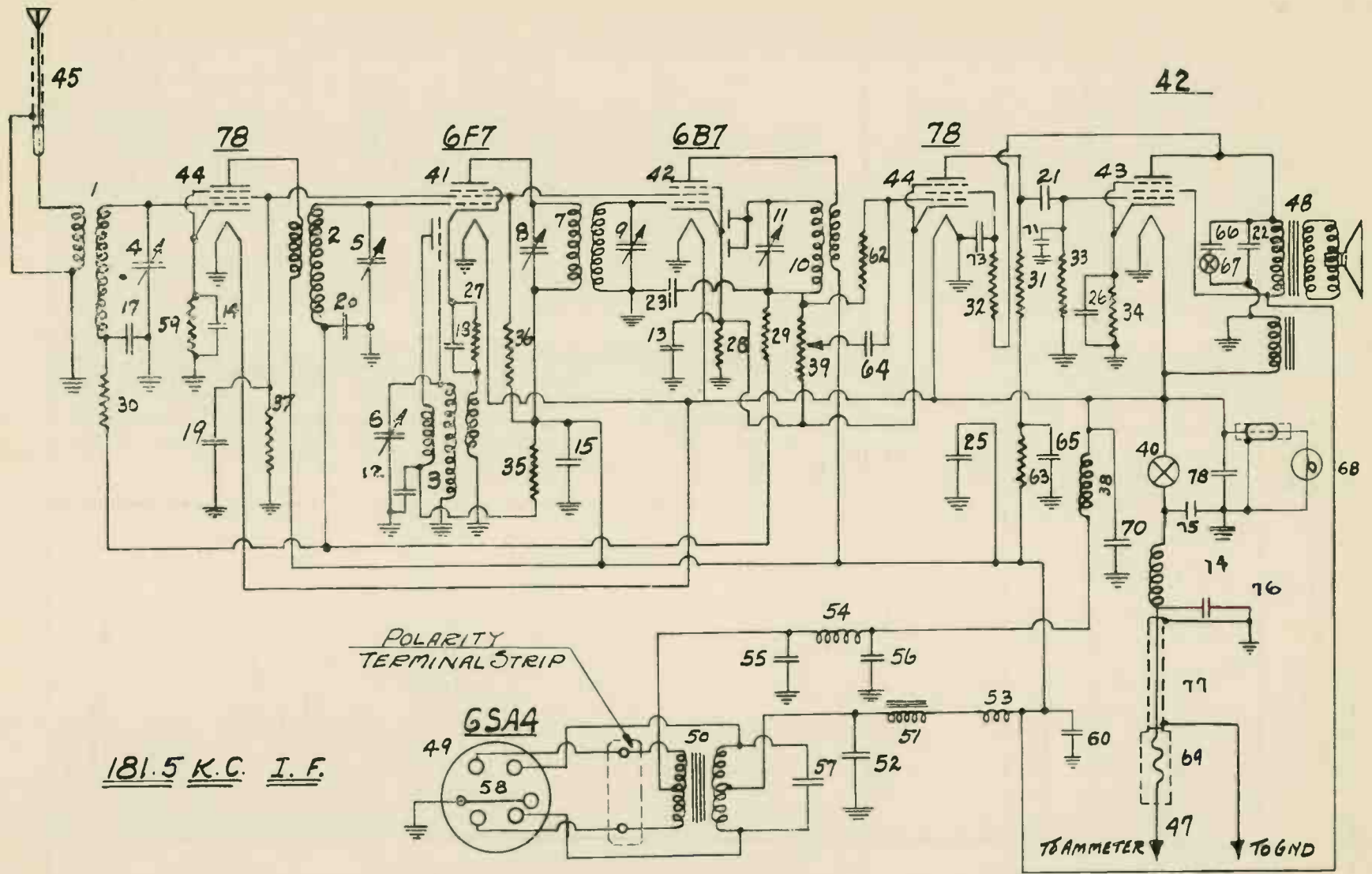
VOLTAGE LIMITS PLUS OR MINUS 10%.

### PARTS LIST—MODEL 5A3

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G19—32000	Antenna Coil	48	W —31102	Fuse Carrier
	W —30802A	Coil Shield	49	—33B	Speaker
	W —30026A	Retaining Shield	50	LB —32037	6 SA 4 Syncrotube
2	G11—32001	R. F. Coil	51	G1 —32769	Power Transformer
	W —30802A	Coil Shield	52	G11—24628	"B" Filter Choke
	W —30877	Insulating Washer	53	W —32759	8. Mfd. 300 Volt Condenser
	W —30026A	Retaining Ring	54	G1 —32755	R. F. "B" Choke
3	G14—32002	Osc. Coil	55	G6 —28067	R. F. "A" Choke
	W —25025B	Coil Shield	56	W —30366	0.5 Mfd. 160 Volt Condenser
	W —26891	Insulating Washer	57	W —30366	0.5 Mfd. 160 Volt Condenser
	W —21541C	Retaining Ring	58	W —32762	0.005 Mfd. 1,000 Volt Condenser
4			59	G81—27975	6 SA 4 Socket
5	G2 —33002	Tuning Cond. Gang	60	W —21452	1,100 Ohm Resistor
6			61	W —30741	0.00025 Mfd. (Mica) Condenser
7		1st. I. F. Trans.	62	W —21454	1 Megohm Resistor
8	G6 —32003	1st. I. F. Prim. Tuning Cond.	63	W —21237A	60,000 Ohm ¼ Watt Resistor
9		1st. I. F. Sec. Tuning Cond.	64	W —32780B	0.05 Mfd. 400 Volt Condenser
10		2nd. I. F. Trans.	65	W —32780B	0.05 7Mfd. 400 Volt Condenser
11	G7 —32003	2nd. I. F. Sec. Tuning Cond.	66	W —32782B	0.01 Mfd. 400 Volt Condenser
12		0.05 Mfd. 400 Volt	67	W —26156A	S. P. S. T. Switch (Tone Control)
13		0.1 Mfd. 200 Volt	68		Dial Light
14	W —32711A	0.1 Mfd. 200 Volt	69	W —32757	12 Amp. Fuse
15		0.05 Mfd. 400 Volt	70	W —32741A	0.0005 Mfd. (Mica) Condenser
16	Deleted		71	W —32741A	0.0005 Mfd. (Mica) Condenser
17	W —32779B	0.02 Mfd. 200 Volt Condenser	72	Deleted See 74	
18	W —32781B	0.1 Mfd. 200 Volt Condenser	73	W —24784	0.25 Mfd. 200 Volt Condenser
19	W —32780B	0.05 Mfd. 400 Volt Condenser	74		"A" Choke
20	W —32779B	0.02 Mfd. 200 Volt Condenser	75	G8 —31701	.00025 Mfd. Condenser
21	W —32780B	0.05 Mfd. 400 Volt Condenser	76		.00025 Mfd. Condenser
22	W —23635	0.006 Mfd. 400 Volt Condenser	77		"A" Lead
23	W —32741A	0.0005 Mfd. (Mica) Condenser	78	W —30741	.00025 Mfd. (Mica) Condenser
24	Deleted See 78			B —32783	Antenna Cable
25	W —32802	8. Mfd. 300 Volt Condenser		W —29754C	0.5 Mfd. Condenser (Eliminator)
26	W —21452	8. Mfd. 20 Volt Condenser		L —32810	Remote Control Assembly Complete
27	W —28589	1,100 Ohms Resistor		B —30372B	Housing
28	W —21454	350 Ohms Resistor		G2 —31538	Cover Assm.
29	—21875	1 Megohm ¼ Watt Resistor		W —30370	Dial Glass only
30	—23403	100,000 Ohms Resistor		B —32812	Dial
31	—21454	150,000 Ohms Resistor		W —30371A	Dial Hand
32	—23875	1 Megohm Resistor		G1 —30295	Gear Assm.
33	—23875	500,000 Ohm Resistor		G5 —23472	Knob (Tuning)
34	W —25521	450 Ohm Resistor		G1 —28036	Knob (Key)
35	—32331	55,000 Ohm ¼ Watt Resistor		G7 —25868	Drive Shaft 15" (V. C.)
36	W —26525B	15,000 Ohm Resistor		G21—25868	Drive Shaft 15" (Tuner)
37		25,000 Ohm Resistor		G8 —25868	Drive Shaft 30" (V. C.)
38	G4 —28067	R. F. "A" Choke		G20—25868	Drive Shaft 30" (Tuner)
39	W —30436A	Level Control		W —26315	★ x ★ Dog Pt. S. P. Set Screw (4 used)
40		Switch		W —28029B	Steering Column Bracket
41	G49—27975	6-F-7 Socket		G1 —28035	Strap Assm.
42	G48—27975	6-B-7 Socket		R —186	★ x ¼ R. H. Machine Screw (black) (1 used)
	W —27981A	Tube Shield Base		W —20802	No. 10 Shakeproof Washer (black) (4 used)
	W —30964	Tube Shield		R —181	No. 10 x ¼ R.H. Machine Screw (black) (3 used)
43	G25—27975	42 Socket		C —141	★ x 1½ Fr. Hd. Machine Screw (2 used)
44	G39—27975	78 Socket		W —31539	No. 2-56 x ¼ R.H. Machine Screw (1 used)
45	L —35108	Antenna Body and Sleeve Assem.		G17—26317	Dial Light Bracket Assm.
46	G1 —32750	Antenna Lead Assem.		G8 —32750	Dial Light Lead Assm.
47	Deleted See 77				
	G5 —31701	"A" Cable Assem.			

572

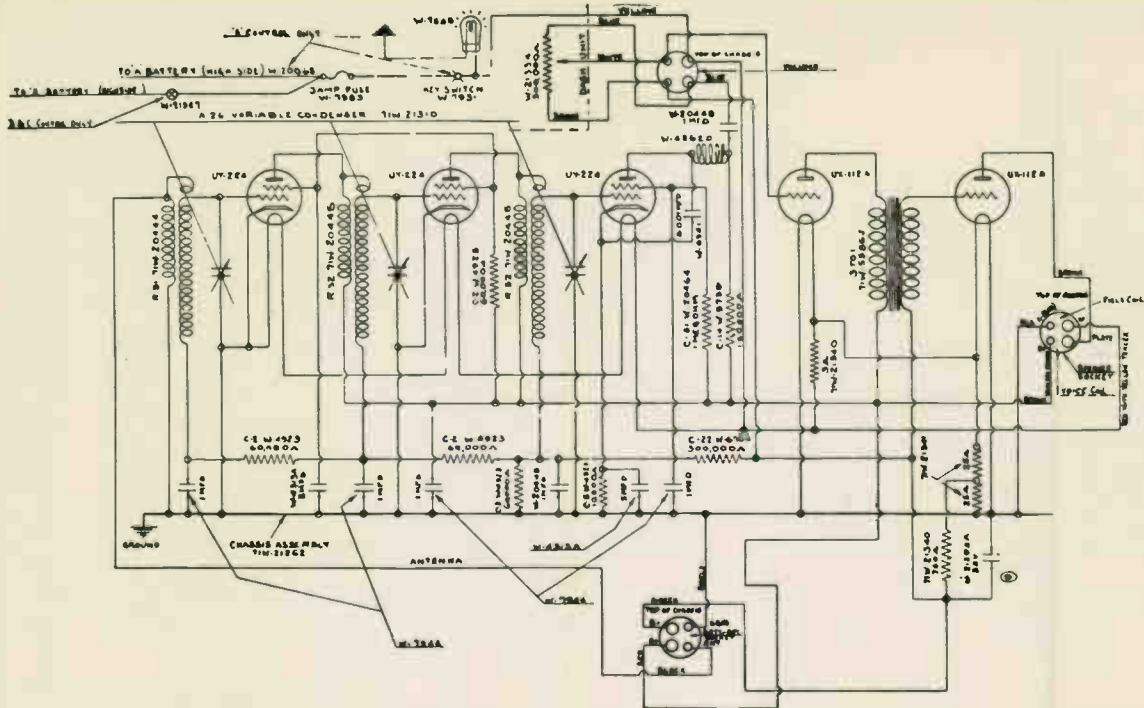


MODEL 5A3

CIRCUIT DIAGRAM—MODEL 5A3



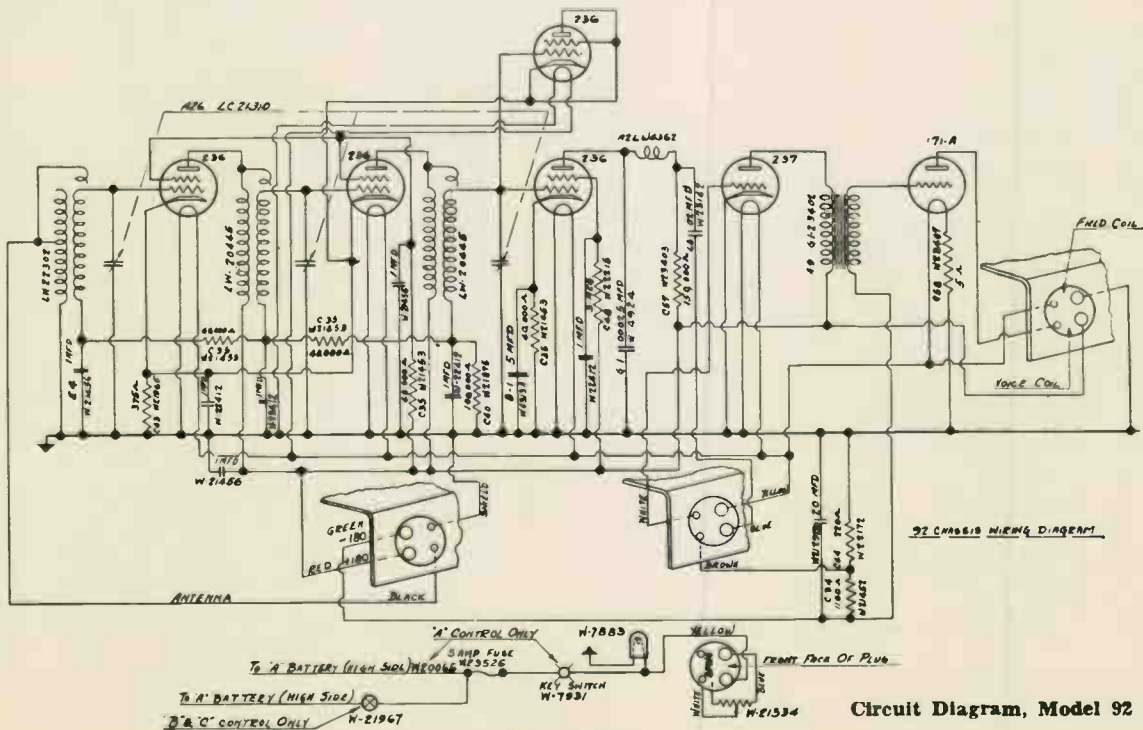
# MODEL 91



## Voltage Limits For Rated Battery Voltages

Filament Voltages	
R. F. and Detector Tubes .....	2.0
A. F. Tubes .....	4.7
Plate Voltages	
R. F. Tubes .....	160-180
Detector Tube .....	40-50
A. F. Tubes .....	160-180

Control Grid Voltages	
R. F. Tubes .....	1.0-2.0
Detector Tube .....	2.0-3.0
A. F. Tubes .....	9.0-11.0
Screen Grid Voltages	
R. F. Tubes .....	90-110
Detector Tube .....	5-10



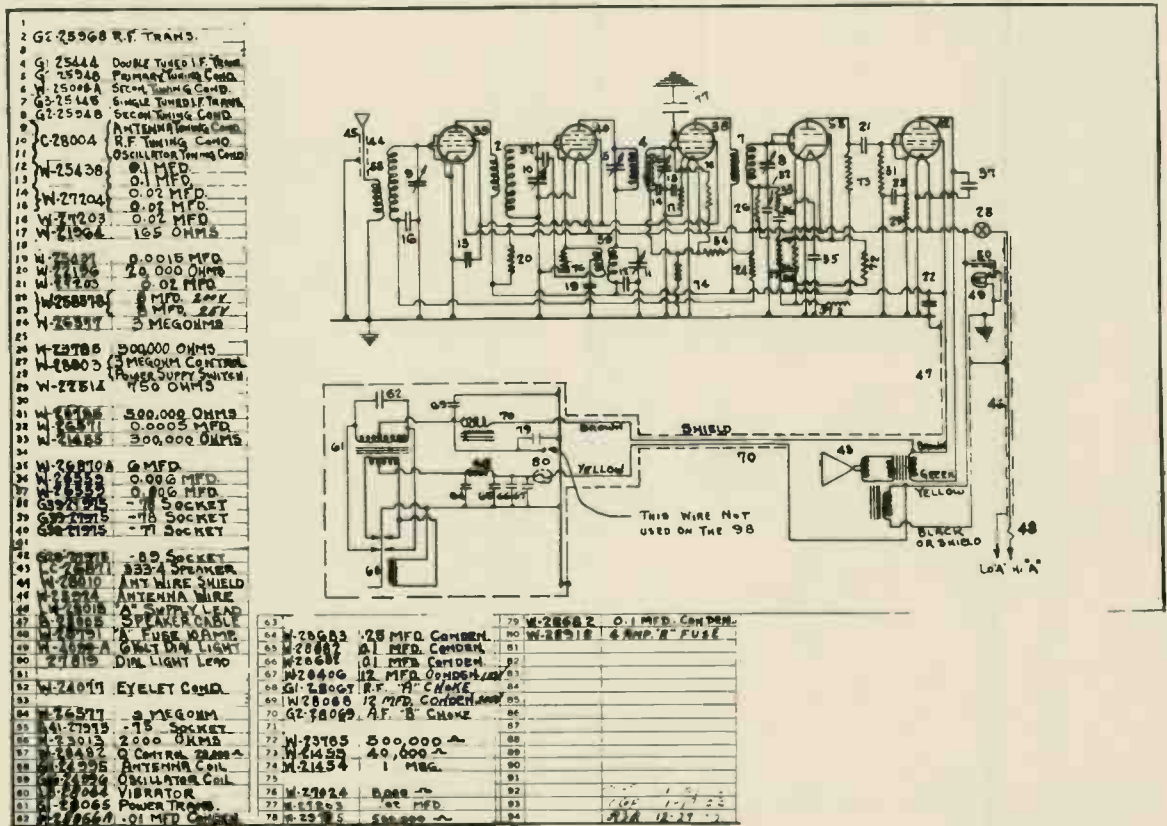
Circuit Diagram, Model 92



MODEL 98

Tube	Position	Plate	Voltages			Fil.
			Screen Grid	Cathode	Supp. Grid	
-78	R. F. Amplifier	180	85	0	0	6.0
-77	Oscillating detector	180	85	4.5	4.5	6.0
-78	I. F. Amplifier	180	85	2.0	0	6.0
-76	Diode—A. F. Amplifier	130		1.5		6.0
-89	Output (Class A Pentode)	180	180	17.0	17.0	6.0

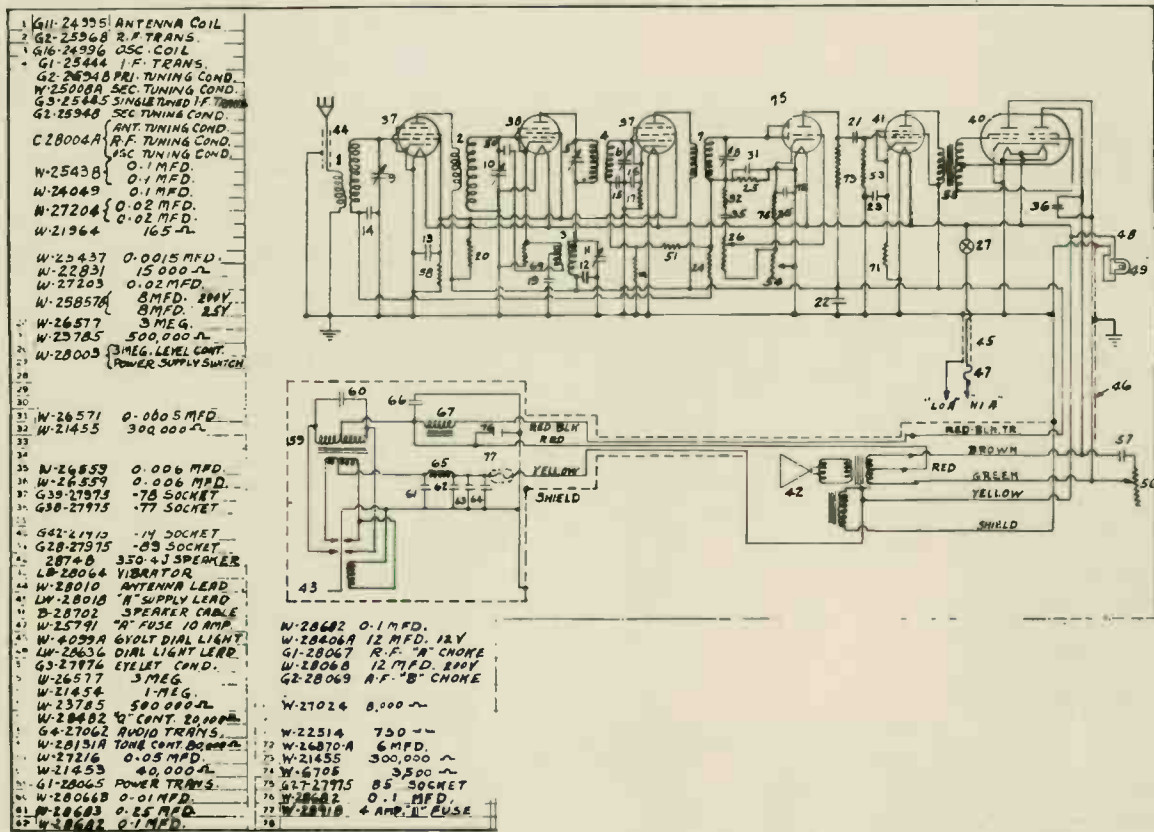
"A" battery drain—4.6 amp. at 6.3 volts.



# MODEL 99

Tube	Position	Plate	Voltages			Fil.
			Screen Grid	Cathode	Supp. Grid	
-78	R. F. Amplifier	170	80	0	0	6.0
-77	Oscillating detector	170	80	4.0	4.0	6.0
-78	I. F. Amplifier	170	80	1.5	1.5	6.0
-85	Diode—A. F. Amplifier	25		2.0		6.0
-89	A. F. Amplifier	170	170	17	17	6.0
-79	Output (Class B)	170		0		6.0

"A" battery drain—5.3 amp. at 6.3 volts.

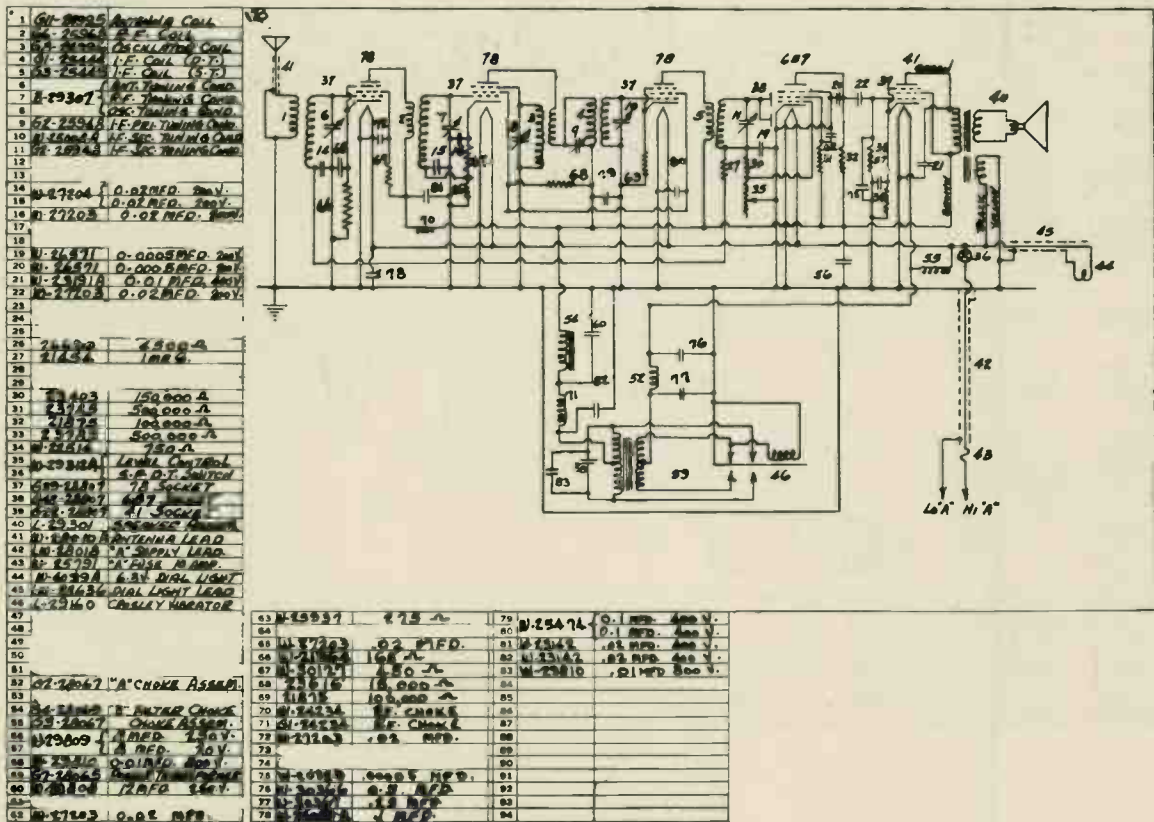




# MODEL 102

Tube	Position	Plate	Screen Grid	Cathode	Suppressor Grid	Filament
78	R. F. Amplifier	206	108	2.0	2.0	6.3
78	Oscillator Modulator	206	108	28.0	0	6.3
78	I. F. Amplifier	206	108	3.0	3.0	6.3
6B7	Detector and A. F. Amplifier	37	26	0		6.3
41	Output	198	206	16.0		6.3

Voltage limits should be plus or minus 15% of values given.



# MODEL 103

## Specifications

Model 103 is a five tube superheterodyne designed for operation from a six volt automobile storage battery. The "B" voltage is furnished by a Crosley Synchronode. The intermediate frequency used is 181.5 kc.

## Tubes and Voltage Limits

The following are the tubes and voltages measured with the receiver in operating condition but with no signal to the antenna, and with a battery voltage of 6.3 volts. All voltages are measured from tube contact to chassis with a 300 volt D. C. voltmeter (1000 ohms per volt).

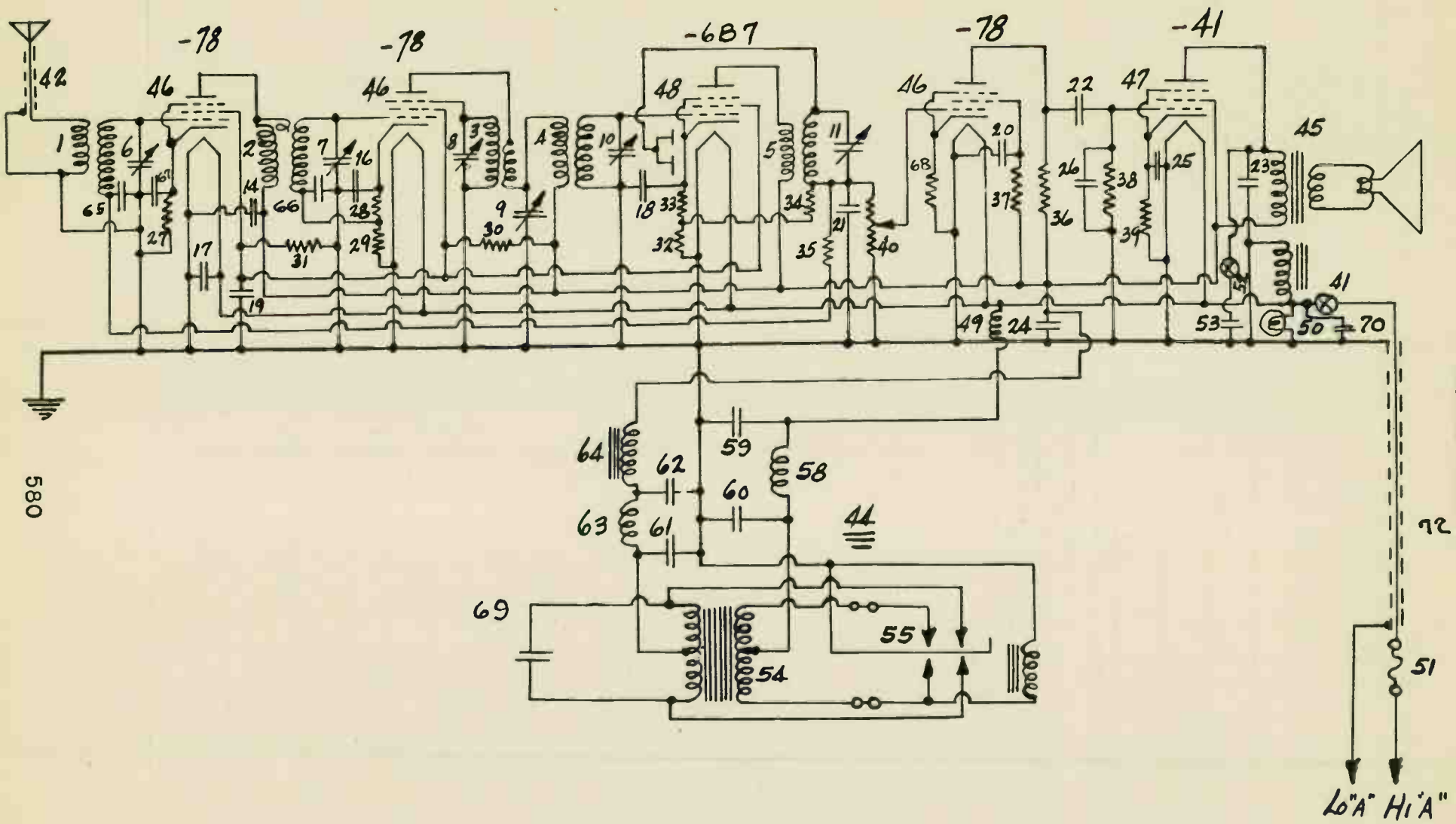
Tube	Position	Plate	Screen Grid	Cathode	Supp. Grid	Filament
78	R. F. Amplifier	210	100	2	2	6.3
78	Oscillator Modulator	210	100	28	0	6.3
6B7	I. F. Amplifier and Diode Detector	210	100	2.5		6.3
78	Audio Amplifier	50	20	2.0	2	6.3
41	Output	195	210	16.0		6.3

Voltage limits are plus or minus 15% of values given.

## PARTS LIST—MODEL 103

**INSTRUCTIONS FOR ORDERING**—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts, and are subject to change without notice.

Qty.	Part No.	Description	Item	Qty	Part No.	Description	Item
<b>RECEIVER CHASSIS</b>							
1	G48-28807	Seven Prong Socket 6B7...	48	1	W-30307	<b>MODEL 409 SYNCHRONODE</b>	
1	G22-28807	Six Prong Socket 41.....	47	1	W-30308	Condenser .25 Mfd.....	60
3	G30-28807	Six Prong Socket 78.....	46	1	W-23142	Condenser .5 Mfd.....	59
1	W-27981	Tube Shield Base.....		1	W-30984	Condenser .02 Mfd. (400 v.)	61
1	W-27328	Tube Shield.....		4	W-29314	Condenser .02 Mfd. (800 v.)	69
1	G21-24995	Antenna Coil.....	1			Rubber Sleeve (to Mount Sync.)	
1	G25-24996	Oscillator Coil.....	3	1	W-20264	Terminal Board.....	
1	G7-25068	Radio Frequency Coil.....	2			<b>MODEL 353-3C SPEAKER</b>	45
1	G1-25444	I. F. Transformer (1st).....	4	1	G2-29529	Cone Assembly.....	
1	G3-25445	I. F. Transformer (2nd).....	5	1	W-29777	Field Coil.....	
4	W-25200	Coil Socket.....		1	G4-24828	Transformer Assembly.....	
3	W-25024	Coil Shield (Large).....				<b>MISCELLANEOUS</b>	
1	W-25025	Coil Shield (Small).....		1	L-30452	Receiver Case.....	
1	G1-29551	Coil Shield Assembly.....		1	C-30450	Cover.....	
1	W-29263	Coil Bracket.....		1	C-30461	Bottom.....	
5	W-24360	Insulating Washer.....		1	L-28034	Remote Control.....	
1	W-21541B	Coil Retaining Ring.....		1	W-28102A	Clamp Spring.....	
1	L-29783	Variable Condenser Gang..	6, 7, 8	8	W-20070	Suppressor (Spark Plug)..	
1	G1-29302	Coupling Assembly.....		1	W-20071	Suppressor (Dist. Head)..	
1	W-30436	Volume Control & Switch..	40, 41	3	W-29754	Elim. Condenser.....	
2	G2-25948	I. F. Trimmer Condenser..	9, 11	1	W-25784	Tennaflex.....	
1	W-25008	I. F. Condenser Blade.....	10	1	W-29323	Mounting Bolt.....	
1	W-25584	Mica.....		1	W-29324	Mounting Washer.....	
1	R-80	Screw.....		1	7961	Mntg. Shakeproof Washer	
1	W-20060B	Adjusting Nut.....		1	W-29325	Mounting Nut.....	
1	W-24865	Washer.....		2	W-30739	No. 8x½ P. K. Screw	
1	W-25450B	Insulating Washer.....				(Top & Bottom).....	
1	W-25007B	Insulating Washer.....		4	W-30739	No. 8x½ P. K. Screw	
1	W-25446	Bakelite Washer.....				(Chassis to case).....	
1	O-4	Flat Washer.....		30	W-31050	No. 8x¼ P. K. Screw	
1	M-20	Rivet.....				(Case).....	
1	G4-28007	"A" Choke.....	49	4	W-31070	6-32x½ Screw (Speaker)...	
2	21454	Resistor 1 megohm.....	34, 35	4	W-24074	Elastic Stop Nut (Speaker)	
1	23785	Resistor 500,000 ohm.....	37	4	O-6	Flat Washer (Speaker)....	
1	21875	Resistor 100,000 ohm.....	36	3	W-20800	Shakeproof Washer (Spr.)	
2	22514	Resistor 750 ohm.....	39, 68	1	W-4562	Solder Lug (Speaker)....	
1	W-30127	Resistor 450 ohm.....	28	1	G1-25891	Antenna Wire.....	
1	W-21237	Resistor 60,000 ohm.....	31	1	W-28010	Antenna Wire Shield.....	42
1	W-25357	Resistor 75 ohm.....	33	1	W-31100	"A" Cable & Fuse Assem.	72
1	W-21455	Resistor 300,000 ohm.....	38	1	W-31102	Fuse Carrier only.....	
1	31094	Resistor 4,500 ohm.....	71	1	W-20106	Fuse Carrier Cap.....	
2	W-21964	Resistor 165 ohm.....	27, 32	1	W-20110	Spring.....	
1	23616	Resistor 15,000 ohm.....	30	2	W-20107	Washer.....	
1	W-26571	Condenser .005 Mfd.....	21	1	W-31103	10 Ampere Fuse.....	
1	W-23142	Condenser .02 Mfd.....	22	66"	W-31101	Wire.....	
1	W-30419	Condenser 8-8 Mfd.....	24, 25	1	W-31076	Lug.....	
1	W-23635	Condenser .06 Mfd.....	23	1	W-26156A	Switch.....	52
2	W-20389	Condenser .00005 Mfd.....	26, 70	1	W-23191	Condenser .01 Mfd.....	53
1	W-23615	Condenser .05 Mfd.....	14	1	W-29298	Grill Cloth.....	
1	W-25438	Condenser 1-.1 Mfd.....	19, 20	1	B-29309	Mounting Plate.....	
2	W-24049A	Condenser .1 Mfd.....	17, 18			<b>REMOTE CONTROL</b>	
4	W-27203	Condenser .02 Mfd.....	16, 65	1	G8-25868	Drive Shaft Assem. (V. C.)	
			66, 67	1	G9-25868	Drive Shaft Assem. (Dial)	
<b>MODEL 409 SYNCHRONODE</b>							
1	L-30424	Cover.....	44	1	G1-28035	Strap Assembly.....	
1	C-30455	Chassis.....		1	W-28029B	Column Bracket.....	
1	L-29160	Vibrator Assembly.....	55	1	G4-26317	Bracket Assem.....	
1	G2-28067	"A" Choke Assembly.....	58	1	W-29316A	Gear Dial.....	
1	G7-28065	Power Transformer.....	54	1	W-4907	Spring Washer.....	
1	G1-24234	R. F. Choke Assembly.....	63	1	G5-23472	Knob.....	
1	G7-28069	Filter Choke.....	64	1	G1-28036	Key Knob.....	
1	W-29808	Condenser 12 Mfd.....	62	1	B-26307D	Housing.....	
				1	W-28025C	Cover.....	

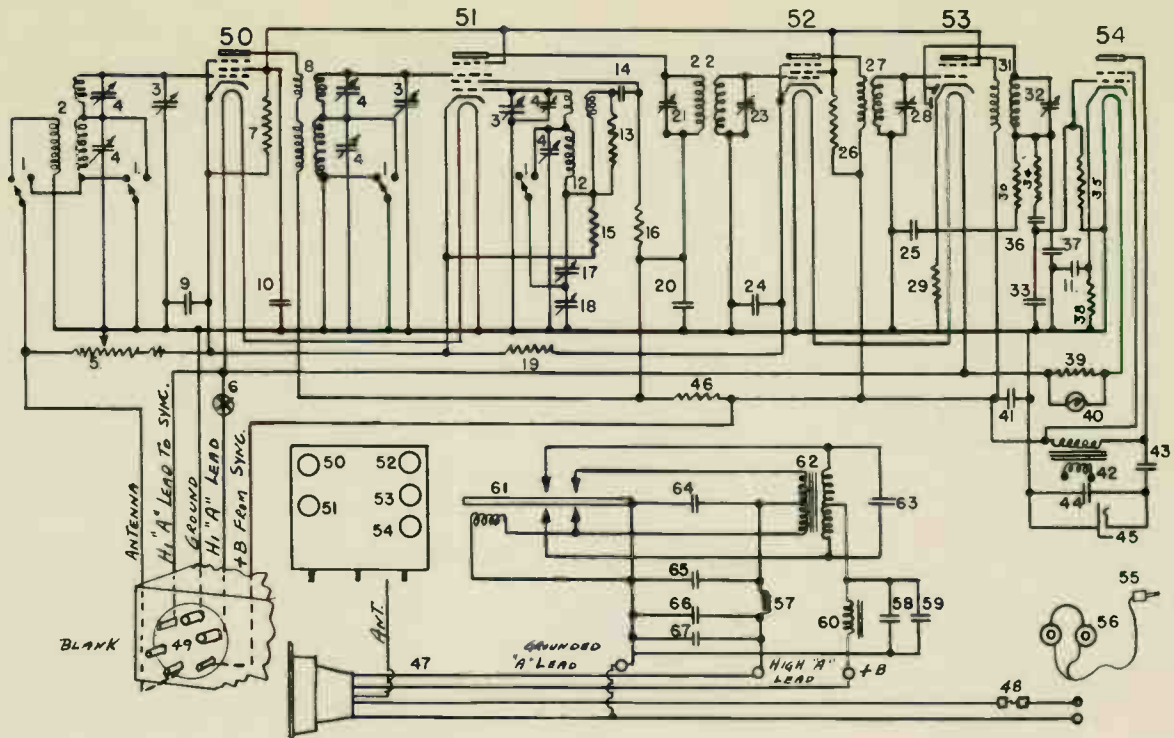


MODEL 103

MODEL 103 WIRING DIAGRAM

Lo "A" Hi "A"

MODEL 992



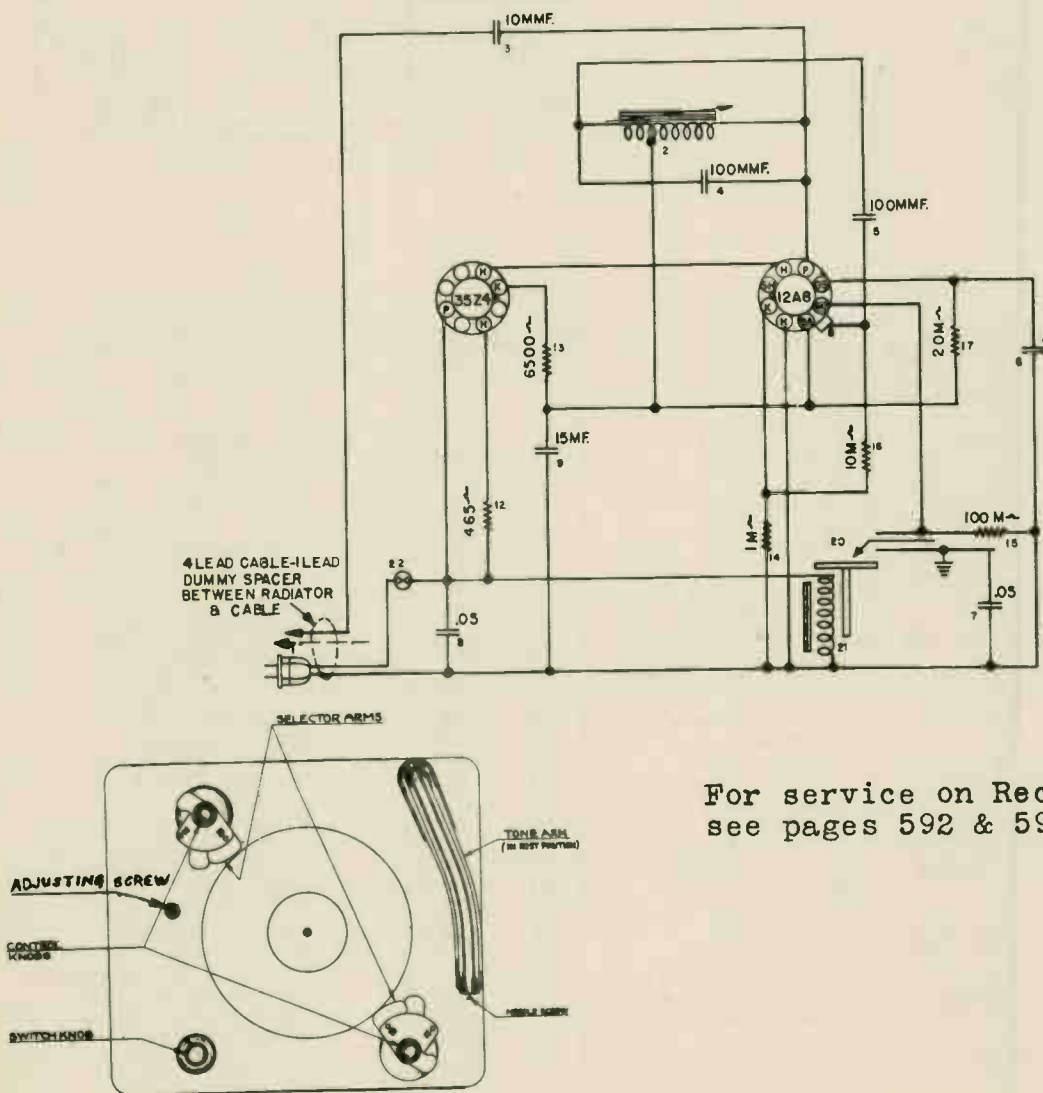
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W-31753-A	Band Sw.	36	27203	.02 mf. 200 v. Cond.
2	G17-32000	Ant. Coil Assy.	37	W-26571	.0005 mf. 200 v. Cond.
3-4	G8-33002	Gang Cond., RF Trim.	38	W-22180	1650 ohm 2 w. Flex. Res.
5-6	W-32155	Vol. Cont. & Sw.	39	W-29480	28 ohm Shunt Res.
7	22196	20,000 ohm 1/2 w. Res.	40	W-4099-A	Dial Light Bulb
8	G10-32001	RF Coil Assy.	41	W-28068	12 mf. 200 v. Cond.
9	W-24049	.1 mf. 200 v. Cond.	42	G7-28168	Output Choke
10-11	W-25857	8-8 mf. 200-25v. Cond.	43	W-22688	.1 mf. 400 v. Cond.
12	G13-32002	Osc. Coil Assy.	44	W-27652	.003 mf. 200 v. Cond.
13	28588	2700 ohm 1/2 w. Res.	45	W-31754	Phone Jack
14	W-27203	.02 mf. 200 v. Cond.	46	W-21452	1100 ohm 3/4 w. Flex. Res.
15	21875	100,000 ohm 1/2 w. Res.	47	G3-28912	Power Cable Assy.
16	21453	40,000 ohm 1/2 w. Res.	48	W-25791	10 amp. Fuse
17-18	G1-25884	Osc. Series Padder	49	W-30399-A	Cable & Plug
19	25937	Osc. Series Padder BC	50	G39-27975	Socket 78 Type
20	W-24049	.1 mf. 200 v. Cond.	51	G47-27975	Socket 6A7 Type
21	G2-25948	IF Trim. Cond.	52	G39-27975	Socket 78 Type
22	G3-25444	IF Trim. Cond.	53	G48-27975	Socket 6B7 Type
23	W-25008-A	IF Trim. Cond.	54	G15-27975	Socket 38 Type
24-25	W-27204	.02 mf. 200 v. Cond.	55	32240	Phone Plug
26	4921-C	10,000 ohm 1 w. Res.	56	27084-A	Phones
27	G3-25445	2nd IF Coil	57	G2-28067	RF "A" Choke
28	W-25008-A	IF Trim. Cond.	58	W-24784	.25 mf. 200 v. Cond.
29	W-22514	750 ohm 3/4 W. Flex. Res.	59	W-30803	8 mf. 200 v. Cond.
30	23785	500,000 ohm 1/2 w. Res.	60	G9-28069	"B" Filter Choke
31	G3-25445	3rd IF Coil	61	L-31767	12 v. Vibrator
32	G2-25948	IF Trim. Cond.	62	G9-28065	Power Trans.
33	W-30741	.00025 mf. Cond.	63	W-31768	.02 mf. 1000 v. Cond.
34	23403	150,000 ohm 1/2 w. Res.	64	W-30366	.5 mf. 160 v. Cond.
35	21454	1 meg. 1/2 w. Res.	65	W-30379	.2 mf. 16 v. Cond.
			66	W-30366	.5 mf. 160 v. Cond.

## PARTS LIST FOR MODEL CR26

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B-131602	Cable and Plug (4 lead)	25	49742	#6-32x 1/8 Rd. Cr. Rec. Hd. Mch. Scr. FS-18
2	LW-131609	Osc. Coil	26		
3	G8-34002	Condenser 10 Mmfd. Mica	27	W-131603	#8x 3/8 Rd. Cr. Rec. Hd. P. K. Scr. FS-18
4	G2-34002	Condenser 100 Mmfd. Mica	28	131610	Tube Socket
5	G2-34002	Condenser 100 Mmfd. Mica	29	W-49674	.120x 3/8 Eyelet
6	W-50105	Condenser .1 Mfd. 200 V.	30		
7	W-32380	Condenser .05 Mfd. 200 V.	31	W-49982	Coil Form Mtg. Clip
8	W-32380	Condenser .05 Mfd. 200 V.	32	W-49859	Iron Core
9	W-131607	Condenser 2x15 Mfd. 150 V. (Paper Elect.)	33		
10	W-34736	3/8 Dia. Hole Plug	34	21253	Coil Mtg. Brkt.
11	B-131604	Chassis	35		
12	W-131606	Resistor 465 ohm 10W. Wire Wd.	36		
13	35934	Resistor 6,500 Ohm 1/2 W. Ins.	37	W-45056	Rubber Grommet
14	50046	Resistor 1,000 Ohm 1/2 W. Ins.	38	N-5062	#6-32 Hex Nut
15	35600	Resistor 100,000 Ohm 1/2 W. Ins.	39		
16	36317	Resistor 10,000 Ohm 1/2 W. Ins.	40		
17	36760	Resistor 20,000 Ohm 1/2 W. Ins.	41	D-131617A	CD Cabinet
18			42		
19			43		
20	D-131529	Auto. Record Changer Unit	44	W-131605	Cable Lock Plate
21		Motor with D-131529	45		
22		Switch with D-131529	46	131792	CD Carton
23			47		
24			48	W-47217	Grommet
			49		

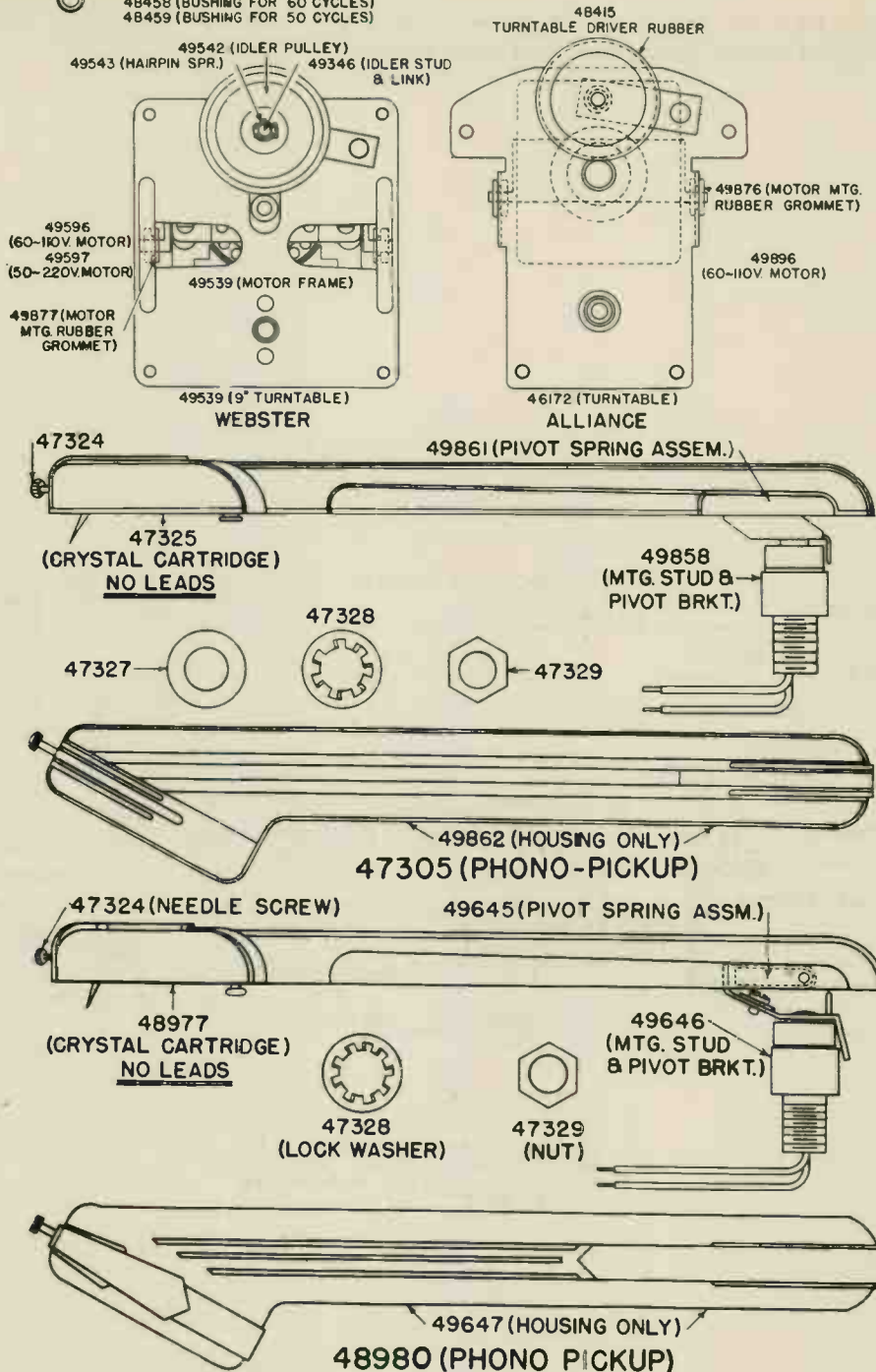
### WIRING DIAGRAM — MODEL CR26



For service on Record Changer,  
see pages 592 & 593.

# MANUAL UNITS AS USED ON MODEL 629

**NOTE:**  
 48458 (BUSHING FOR 60 CYCLES)  
 48459 (BUSHING FOR 50 CYCLES)

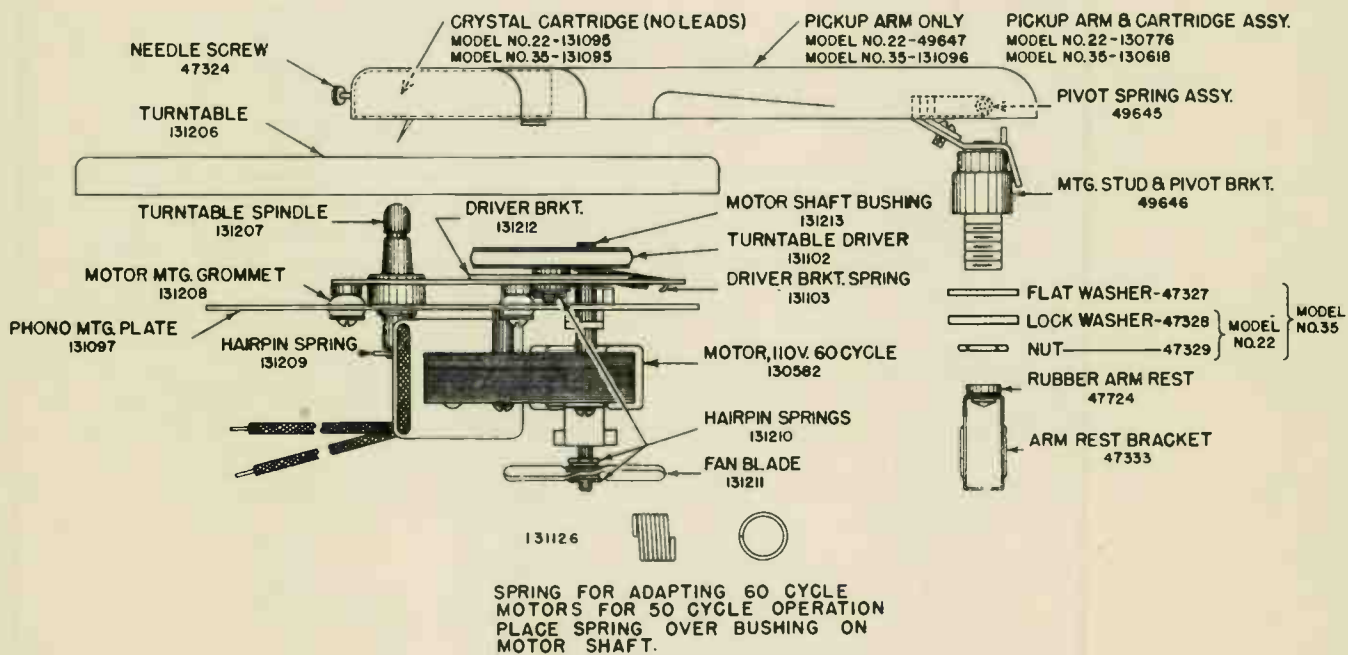


RECORD PLAYER PARTS	
—47787	Phono Motor, 110 V. 60 Cy. (Alliance)
—46172	Turntable—For 47787 Motor only
—48415	Turntable Rubber Drive Pulley (47787 Motor only)
—48455	Phono Motor—110 V. 50-60 Cycle (Webster) Assy.
—49596	Phono Motor—110 V. 50-60 Cycle only (Webster)
—49597	Phono Motor—220 V. 50-60 Cycle only (Webster)
—49539	Turntable—For 49596 and 49597 only
—49542	Turntable Rubber Drive Pulley (Webster)
—49346	Stud and Link—Drive Pulley Mtg.
—49543	Hair Pin Spr.—Drive Pulley Retainer
—48458	Motor Shaft Pulley (60 Cy. Operation)
—48459	Motor Shaft Pulley (50 Cy. Operation)
—47735	Phono Mounting Plate
—46085	Rubber Grommet—Mtg. Plate
—46461	Headed Bushing—Mtg. Plate
—37953	Flat Washer—Motor Mtg.
—48364	Screw—Phono Plate Mtg.
—48980	Pickup (Tone Arm)
—47328	Shakeproof Washer—Pickup Mtg.
—47329	Nut— $\frac{1}{8}$ "—32—Pickup Mtg.
—48977	Crystal Cartridge only
—47322	Needle Screw
—49647	Tone Arm—Casting only
—49646	Mtg. Stud and Pivot Bracket only
—49645	Pivot Spring Assy. only
—47306	Pickup Tone Arm
—47327	Flat Washer—Pickup Mtg.
—47328	Shakeproof Washer—Pickup Mtg.
—47329	Nut— $\frac{1}{8}$ "—32—Pickup Mtg.
—47325	Crystal Cartridge only
—47324	Needle Screw
—47326	Arm and Pivot—Assy. only
—47333	Pickup Rest Bracket
—47788	Rest Bracket Spacer Block
—7862	Screw (No. 8— $\frac{1}{4}$ " ) Bracket Mtg.
—47724	Rubber Rest (Tone Arm)
—47335	Rubber Locking Ring (Tone Arm Rest)
—47791	Needle Cups
—47790	Cup Cover
—46364	Chrome Tip Needle
9FM	Cabinet
—4772	Shipping Carton (9FP Cab.)
—47773	Cabinet Back
—46464	Thumb Screw—Back Mtg.
—49415	Lid (Finished Cabinet)
—49606	Handle—For Cabinet Lid
—130043	Hinge—For Cabinet Lid
—130042	Support Bracket—Cabinet Lid

# PHONO MOTORS & TONE ARMS

## As Used on Models 22AS and 35AK

The miscellaneous parts for the Phono motors and tone arms as used in models 22 and 35 combination receivers are illustrated below along with their part numbers.



# CROSLEY RADIO SERVICE BULLETIN

## MODEL 488 RECORD PLAYER

November 1939

The record player consists of a small self-starting motor, turntable, pickup, phono-radio switch, and separate volume control.

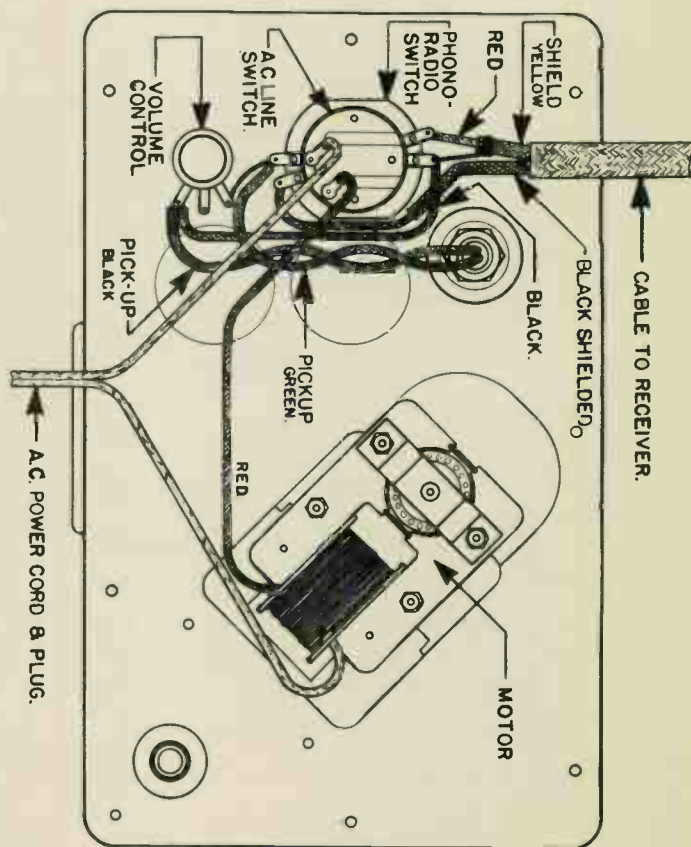
The motor is mounted with two brackets which permits it to swing up and down, this swing permits the weight of the motor to be applied to the friction drive pulley. There are two drive pulleys available, one for 60 cycle and a slightly larger one for 50 cycle operation. The drive pulley must ride flush against the inside surface of the turntable rim.

The following illustrations show the top and bottom views of the unit, along with a few of the various detector circuits with points indicated for attaching pickup leads.

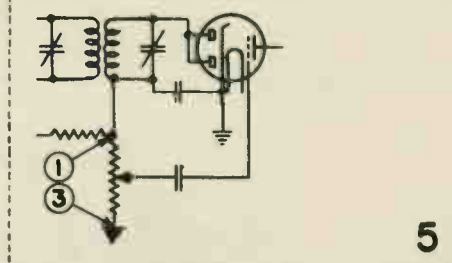
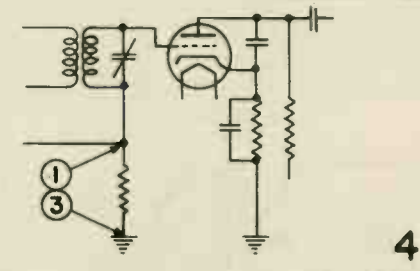
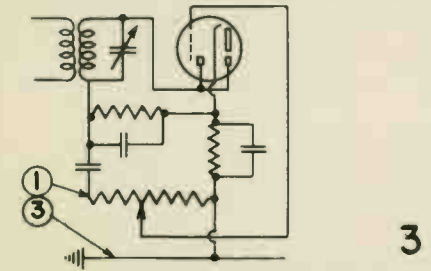
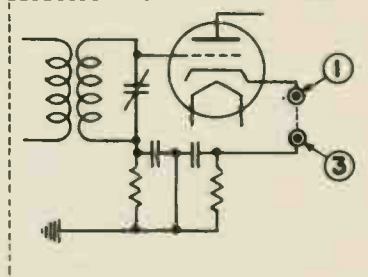
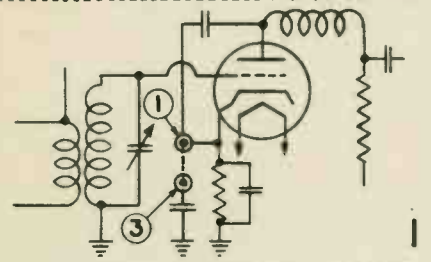
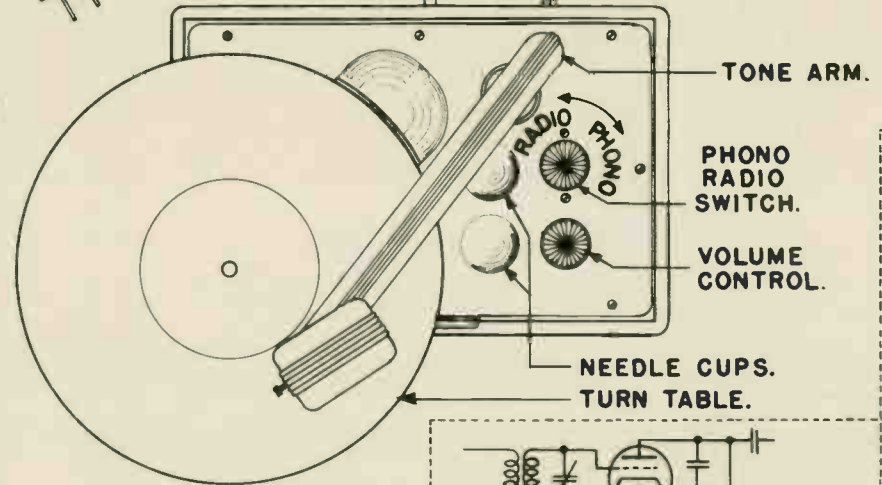
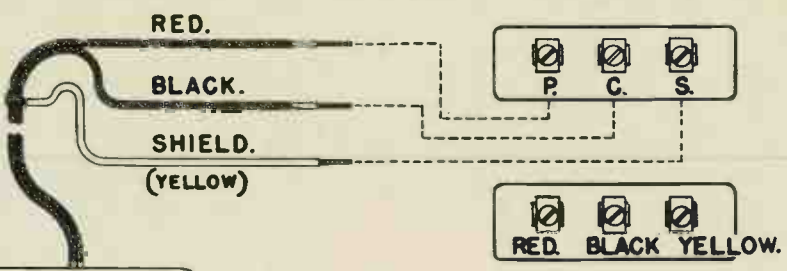
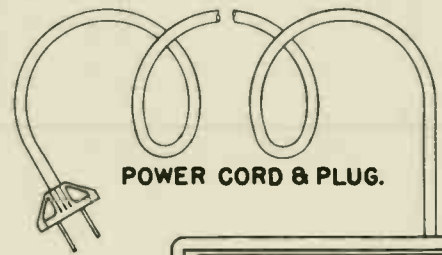
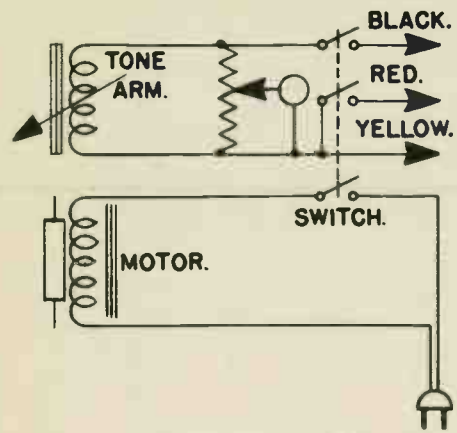
If the magnetic pickup is replaced with a crystal pickup detector circuit #2 cannot be used and pickup will have to be attached as in detector circuit #1.

### PARTS LIST

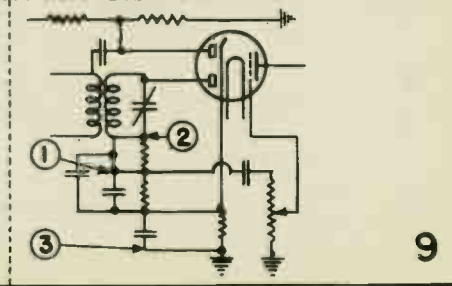
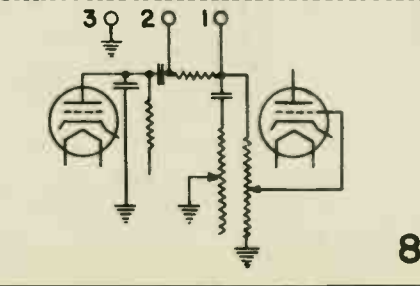
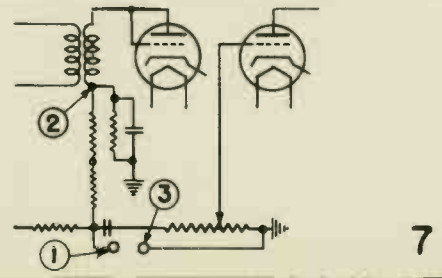
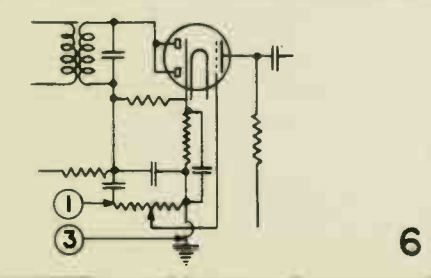
C-46262A	SEC Phono Cabinet
B-46355A	SEC Phono Cabinet Bottom
46343	Carton
W-46169B	Motor
W-46174A	Motor Mtg. Bracket
W-46991	Rubber Drive Pulley (50 Cy. Operation)
W-46200	Rubber Drive Pulley (60 " " " )
MG46-46153	Drive Pulley Kit (50 Cycle Operation)
MG45-46153	Drive Pulley Kit (60 " " " )
W-46172	10" Turn Table
B-45784	Power Cable & Plug.
MG40-46342	Motor Board Assembly
C-46173B	Phono Mounting Plate
S-132	#6x $\frac{1}{2}$ " Rd. Hd. Wood Screws (7 Req.)
W-46299	Cup Washer
6837	#6-32x $\frac{3}{8}$ " Washer Hd. Screw (3 Req.)
46160	Volume Control
46148A	Phono-Radio Switch
W-35201	$\frac{3}{8}$ " Palmnut (V.C. & P.-R. Switch)
35252A	Knob (2 Req.)
W-46353	Switch Bracket
B-78	#4-36x $\frac{1}{4}$ " Binding Hd. Mach. Screw (2 Req.)
46162	Pickup & Tone Arm (Magnetic)
46161	$\frac{1}{2}$ "x27 Hex. Nut
46821	Needle Screw
46947	Arm & Pivot
46946	Unit - Pickup Motor
W-46364	Chrome Tipped Needle
47305	Pickup & Tone Arm (Crystal)
	Black Lead Gnd.
47324	Needle Screw
47325	Crystal Cartridge
46365	Instructions







**CODE OF CONNECTIONS**  
 ① → BLACK WIRE.  
 ② → RED WIRE.  
 ③ → SHIELD.



## GENERAL INSTRUMENT

This mechanism consists of a rim driven turntable (not shown) running on a fixed bearing (1), which supports the record spindle (2). The spindle is equipped with a rotatable cap (3) to provide for holding records in automatic operation, when in one position, and removing records or playing manually, when in the other position.

The outer edge of the record is held by record supports (4) and (5), adjustable for 10- and 12 inch, and is steadied by a rubber tipped, spring loaded finger (6)

Control of operation is by a single control button (7) having four positions "Off" "Man" "Aut" and "Rej"

Automatic operation starts when rubber tired drive wheel (8) is moved into contact with turntable rim by tone arm movement or control button.

All change functions are controlled by main cam (9) which is driven by drive wheel (8) thru a friction (10) and gear (11) train.

The main cam assembly consists of main cam (9) and automatic trip cam (12). The latter disengages the drive wheel (8) at the end of the change cycle.

The upper side of the main cam (9) controls tone arm swing by engagement with pin in sweep lever (13) attached to tone arm by means of clamp (14) around tone arm pivot sleeve (15). Tone arm lift is controlled by vertical section of main cam (9) operating tone arm thru lift pin (16) inside of sleeve. A boss projecting from the upper side of the main cam (9) displaces the stop lever (17) at the end of the change cycle to permit the tone arm to proceed across the record.

The lower side of the main cam (9) moves the feed lever (18) by means of a roller (19). This movement charges the feed spring (20) and at the proper time permits discharge of the spring causing the feed lever (18) to thrust the feed finger (21), (in top view), forward to feed the record. Connection between feed lever (18) and feed finger (21) is thru feed intermediate lever (22) pivoted in record support post (23) (In top view.)

The stop lever (17), normally held out of engagement by the boss on the main cam (9), swings into position at the start of the change cycle. Its selection of stop points for 10- or 12 inch records is controlled by dog (24) on the record selector shaft running up front of record support post (23) and actuated by swinging record support (4).

The drive wheel (8) is mounted on the carrier lever assembly (25) which is pivoted about the intermediate drive (11). This assembly consists of the carrier lever with its bearings and the trip lever (26). The trip lever (26) carries a pin (27) engaging the automatic trip cam (12); a pawl (28) to engage the serrated edge of sweep lever (13); a positive trip screw (29) to interfere with sweep lever (13). Engagement of pin (27) with automatic trip cam (12) pulls drive wheel (8) out of engagement with turn table at end of change cycle. Reversal of the tone arm movement rotates pawl (28) to release trip lever (26). Thrust of sweep lever (13), when tone arm approaches spindle (2), against positive trip screw (29) releases trip lever (26)

The control lever (31) operated by the control button (7), a- turns switch on and off b- prevents carrier lever assembly (25) from swinging when in manual

position c- permits carrier lever assembly (25) movement to engage drive wheel (8) with turntable, when in automatic position d- displaces trip lever (26) causing drive wheel (8) engagement with turntable, when pushed to Reject. Function (a) is accomplished by pin which engages dog of toggle switch. Functions (b) and (c) are controlled by shape of rear edge of control lever (31) and a fixed stud (32) in the carrier lever. Function (d) is accomplished by stud (33) in control lever (31) striking edge of trip lever (26) and unlatching pin (27) in same from automatic trip cam (12).

Bearings are separated and center distances maintained by aligning bracket (34) which also carries bearing for record feed lever (18).

### ADJUSTMENTS

#### Positive Trip

The tripping point is adjusted by turning positive trip screw (29) counterclockwise to trip earlier in playing cycle and clockwise to delay tripping.

#### Tone Arm

The drop point is adjusted by loosening the screw in clamp (14) slightly to permit repositioning of tone arm in relation to sweep lever (13). Care must be exercised to see that tightening the screw does not cause bind in tone arm swing.

The rise and drop of tone arm is adjusted by bending short arm of lift pin (16) slightly. Long arm must not be distorted or it will bind in pivot sleeve (15).

#### Record Feed

The feed finger (21) should strike only the bottom record of the stack. Record supports (4) and (5) should be adjusted up or down to obtain this result. Adjustments must be checked for both 10- and 12 inch records as one of the buttons is used in both cases.

Fixed record support (5) can be adjusted for engagement with record by removing hold down finger assembly (6) and loosening two screws under feed finger (21)

#### Friction drive

The rubber wheel (10) engaging with the intermediate drive assembly (11) should be compressed just enough to prevent slipping or skidding at any portion of the change cycle. Compression is controlled by the nut and locknut, below the rubber wheel.

#### General

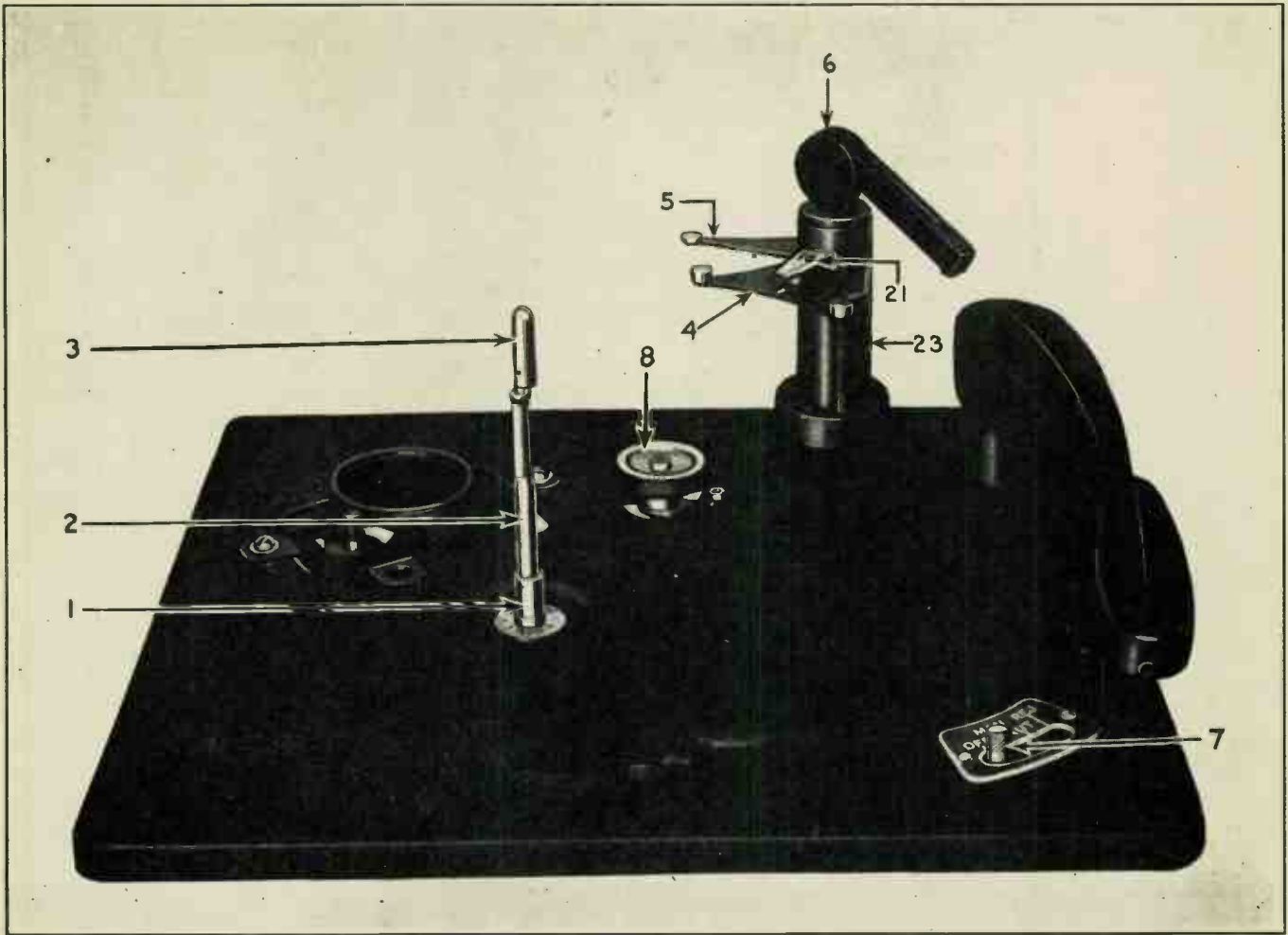
Mechanism should be checked for damaged or missing parts. Carrier lever assembly (25) must be perfectly free on its shaft and trip lever (26) must be perfectly free on the carrier lever. All moving parts should be lubricated with oil.

Rubber drive wheels under the turntable and the rim of the turntable must be free of grease or dirt.

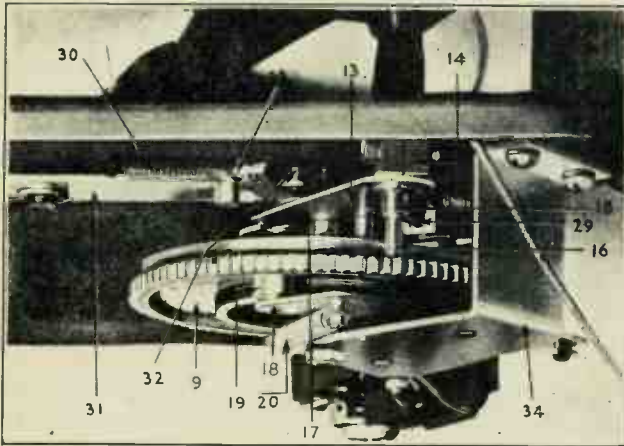
Turntable thrust bearing can be lubricated with heavy oil or light grease and radial bearing with light oil.

Pickup lead from tone arm must have slack to permit free movement of arm.

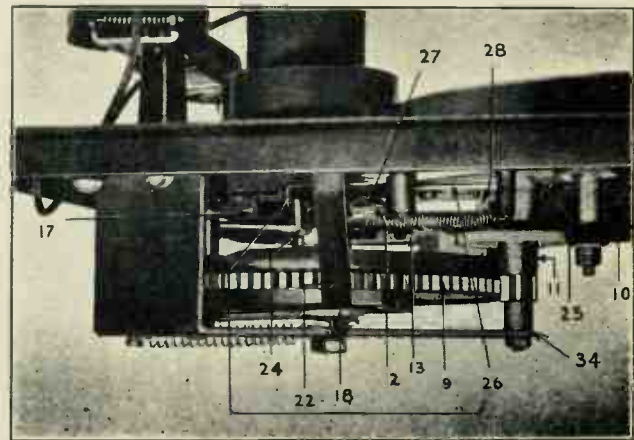
GENERAL INSTRUMENT



TOP VIEW - TURNTABLE REMOVED



VIEW LOOKING AT RIGHT SIDE



VIEW LOOKING AT BACK

# GENERAL INSTRUMENT

Part Number	Description
133653	Turntable Bearing Assy.
133666	Swinging Record Support
133665	Stationary Record Support
133654	Hold Down Finger
134396	Changer Mechanism Drive Wheel Shaft Assy.
133657	Main Cam Assy.
133677	Change Mechanism Drive Wheel Assy.
133655	Intermediate Drive Gear Assy.
133661	Sweep Lever Assy.
134508	Tone Arm Hinge Assy.
133668	Lift Pin
134509	Stop Lever
134510	Record Feed Lever
134511	Record Feed Lever
133669	Record Feed Spring
133659	Record Feed Lever Assy.
134512	Feeder Support Assy.
134513	Record Selector Stop-Point Dog
133663	Drive Wheel Carrier Lever Assy.
134514	Trip Lever Positive Trip Screw
133671	Carrier Lever Spring or Tone Arm Pull-in Spring
133662	Control Lever Assy.
134515	Carrier Lever Stud
134516	Control Lever Stud
133670	Stop Lever Spring
134517	Trip Lever Spring
133679	Motor Rim Drive Wheel Assy.
134518	Motor Rim Drive Wheel Spring
133656	Turntable Thrust Bearing
134519	Switch & Bracket Assy.
133667	Turntable
133284-1	Motor (60 cy)
132968-1	Motor (25 cy)
134520	Tone Arm Assy.
132738	Pickup Cartridge
134521	"C" Balance Spring
134522	Shielded Pickup Cable
134165	Service Manual
132525	G.I. Changer Only
132523-2	G.I. Changer & Needle Assy.
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
L-132530	G.I. Changer With Wrap Around for 82CQ
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
1	G-133180-3 Wrap Around
L-133744	G.I. Changer With Wrap Around for O2CP, 72CP
	Made Up Of
1	132525 Changer
1	132659-1 Needle
1	132527-2 Counter Weight
1	G-133180-6 Wrap Around
L-132528	Same as L-133744

**CUTTING ARM ADJUSTMENTS.**

"Recorder with Automatic Record Changer." "Seeburg Type" used on Models 28AZ, 34BH, 31BF, and 48BF.

The height of the cutting arm can be varied by means of the slotted screw head which is on top of the arm and near the back, approximately flush with the top surface of the arm. In order to make this adjustment, it is necessary to insert a cutting needle and, with the motor turned OFF and a record blank on the turntable, place the recording arm in the cutting position. Now turn cutting arm height adjusting screw UNTIL THE NEEDLE SCREW IS CENTERED IN THE SLOT THROUGH WHICH IT PROTRUDES (AT FRONT END OF RECORDER ARM).

Any change in the cutting arm height adjustment will change the vertical angle of the cutting needle therefore it is absolutely essential that the depth of cut be rechecked.

"Recorder as used in Model 33BG." (General Industries Type).

The height adjustment of the cutting arm on this recorder is accomplished by raising the cutting arm and loosening the locknut of the cutting arm Height Adjusting Screw, see fig. 4. Place needle in cutting arm and place a record blank on turn table. Carefully lower cutting arm on record, with the motor turned OFF.

Set the Arm Height Adjusting Screw so that there is

exactly  $\frac{1}{4}$ " space between the surface of the record and the bottom edge of the cutting arm (Front) see fig. 4.

**NOTE:** A change in cutting arm height adjustment may affect the depth of cut or vice-versa.

**C.—ADJUSTING DEPTH OF CUT.**

The correct depth of cut is important to insure maximum record life and good reproduction quality.

The depth of cut which is determined by the cutting grooves.

The adjustment of the depth of cut is accomplished by rotating the chrome knob on the cutting arm of the recorder with automatic record changer, see fig. 3. This knob has the letters "L, M, and H" engraved on it indicating Light, Medium and Heavy pressures. In general, the machine is properly adjusted and set at the factory so that it will cut the average record correctly when this knob is in the "M" position.

On the recorder as employed in Model 33BG the needle pressure on the blank disc should be such THAT THE WIDTH OF THE GROOVE IS APPROXIMATELY THE WIDTH OF THE SPACE (Land) BETWEEN THE GROOVES. With no sound applied the ratio of 60 percent groove and 40 percent land is the ideal cutting depth for most conditions. The importance of the depth of cut CANNOT BE OVER EMPHASIZED, since too light a cut or too heavy a cut will tend to give distortion and generally poor results.

The adjustment of the depth of cut is accomplished by rotating the chrome knob on the cutting arm of the recorder with automatic record changer, see fig. 3. This knob has the letters "L, M, and H" engraved on it indicating Light, Medium and Heavy pressures. In general, the machine is properly adjusted and set at the factory so that it will cut the average record correctly when this knob is in the "M" position.

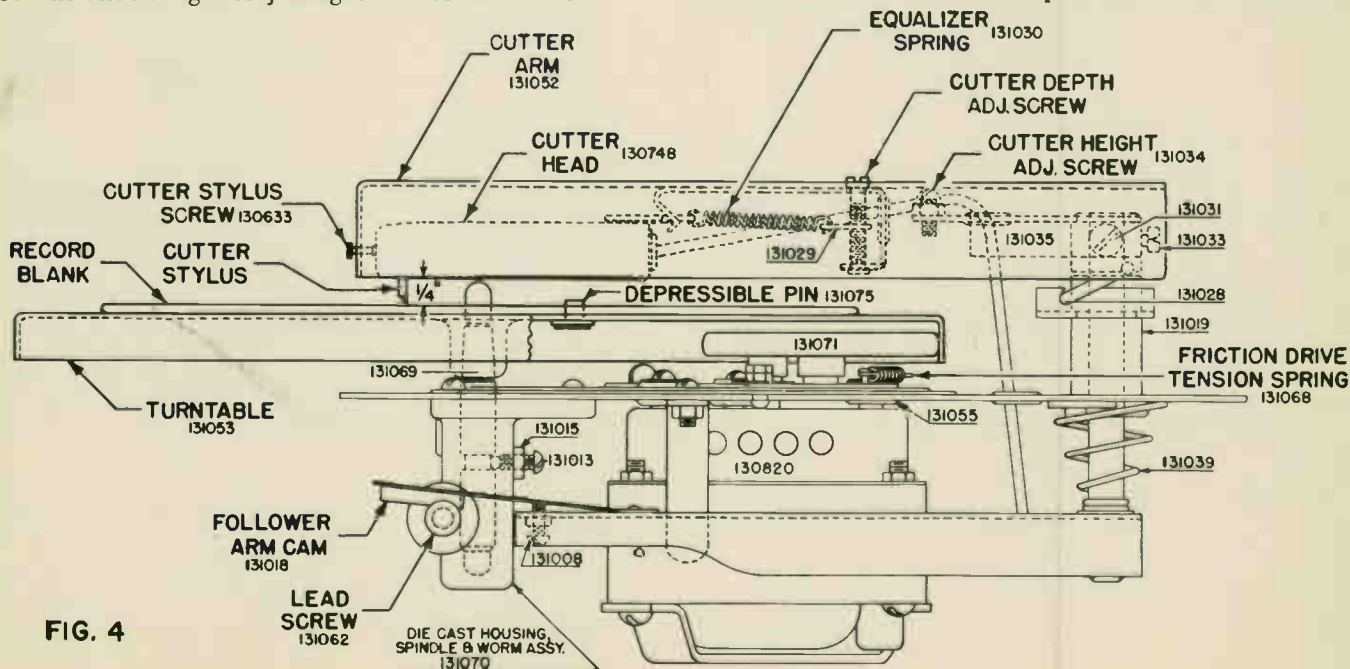


FIG. 4

## SEEBURG & GENERAL INDUSTRIES RECORDER UNITS

On the recorder as employed in Model 33BG the depth of cut is adjusted by rotating the screw approximately in the middle of the cutting arm and flush with the top, see fig. 4. To increase the depth of cut this screw should be turned to the right (clockwise). Conversely to decrease the depth of the cut the screw should be turned to the left (counter-clockwise). This adjustment is rather critical and should be moved only in quarter or half turns at a time.

When the cutting head is in proper adjustment, and the cutter arm is raised to the point (approximately 45°) where it can be freely moved over the record, the cutting head needle screw should **JUST REST** on the bottom of the slot in the nose of the arm,—that is, the equalizer spring tension should be such that the cutter head **ALMOST FLOATS FREELY**.

**ALWAYS TRY A TEST CUT WITH A NEW CUTTING NEEDLE** before making any adjustments, since often times when casual observation indicates faulty adjustment, the whole trouble may be due to a cutting needle that has been dulled either through accident or natural wear.

**NOTE:** Changing the arm height usually necessitates a change in cutting depth adjustment and changing the depth of cut may call for a slight variation in the arm height adjustment to prevent cutting needle chatter or reduce surface noise.

### E.—CUTTING LEVEL.

The cutting level as required for instantaneous recordings as made on the two type recorders as used in Crosley equipment will vary with the type cutting needle used and its condition and the type record blank used. Provided the cutting arm height is correct and the depth of cut is correct the following cutting levels should give good results.

For those models having the cathode ray type indicator, the volume level should be adjusted until the shadow on the indicator tube forms a narrow vertical line approximately 1/32" wide for loud or peak sig-

nals. During recording this shadow will vary in width in accordance with the loud and soft passages of the program.

For the models equipped with a Neon Tube as a Cutting Level Indicator the volume level should be raised to a point where the neon tube elements give an even pinkish glow during loud or peak signals. The correct cutting level can only be found by experimentation as the level is dependent upon the type and condition of cutting needle and blank disc used.

### F.—RECORDS (BLANK & CUT)

The record blanks for instantaneous home recordings differ from commercial records in many respects. Commercial records are usually made of shellac compound pressings formed under hydraulic pressure, resulting in recordings which are extremely resistant to wear but which are quite brittle and easily broken. Record blanks for instantaneous recordings are quite soft in comparison with commercial records but their durability is about as good as that of the cheaper grade phonograph record provided they are given the proper care.

**NEVER USE REPRODUCING NEEDLE ON INSTANTANEOUS RECORD THAT HAS BEEN USED TO PLAY COMMERCIAL PHONOGRAPH RECORD.**

The Crosley home recording disc is of the non-flammable or slow burning type. Always exercise care in the storage of home recordings. Keeping them clean, free from dust and dirt will add many hours to the life of the record.

**NEVER ATTEMPT TO PLAYBACK AN INSTANTANEOUS RECORDING ON A MECHANICAL PHONOGRAPH.**

**NOTE:** Excessive rumble which may sometimes be encountered during the playback of home recordings usually can be eliminated entirely (on Models 33BG, 28AZ, and 34BH) by just turning the microphone fader or level control in a clockwise direction until the switch clicks.

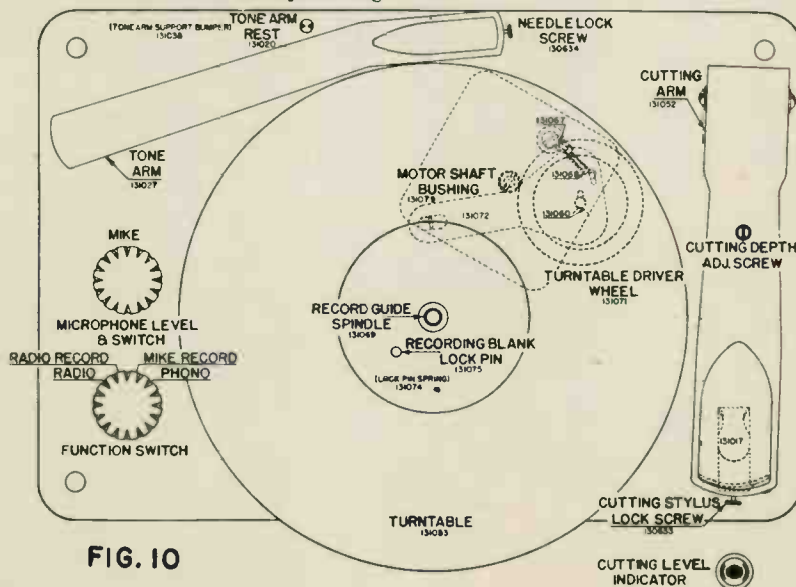


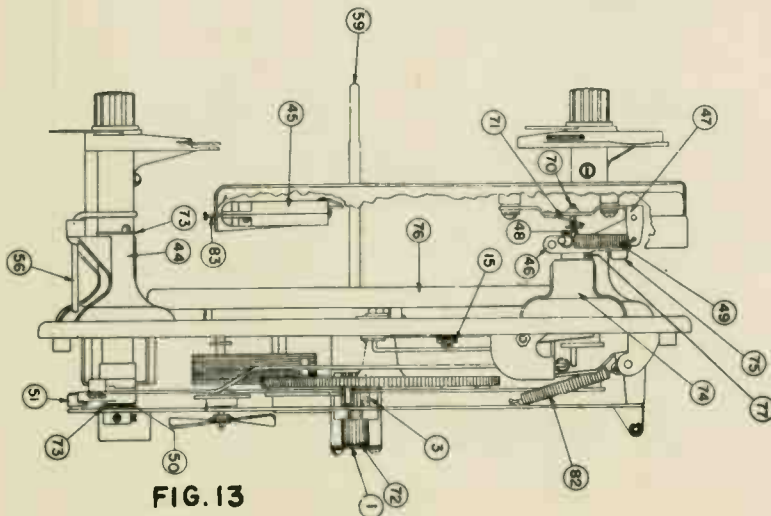
FIG. 10

# RECORDER AS USED IN MODEL 33 BG

## PARTS LIST (Refers to Fig. 4 and Fig. 10)

Part No.	Description	Part No.	Description
131000	Retractable Pin Spring Washers	131048	Pickup Cartridge Hinge Damper Felt
131001	Motor Mounting Screw	131049	Tone Arm Post Complete
131002	Shakeproof Motor Housing and Bracket Lock Washer	130748	Cutter Head with Leads
131003	Hex Nut for Pivot Post	131051	Cutter Head Bumper Cork (Magnetic)
131004	Mounting Bracket Assy. Washer	131052	Cutter Arm Complete (Magnetic)
131005	Lead Clip Mtg. Screw Lock Washer	131053	10" Weighted Turntable (1/8" one piece T. T.)
131006	Motor Mounting Screw	131054	Mounting Bracket Assy. Screw Nut
131007	Retractable Pin Spring Screw (For 2 piece T. T.)	131055	Motor Plate Rubber Grommet
131008	Adjusting Screw (Follower Arm)	131056	Tone Arm Support Lock Washer
131009	Aux. Shaft Housing Mounting Screw	131057	Mounting Plate Grommet Sleeve
131010	Retractable Pin Spring Screw (For 1/8" one piece T. T.)	131058	Turntable Drive Disc Thrust Washer
131011	Aux. Shaft Housing and Motor Mounting Screw Washer	131059	Rotor Shaft Pulley Set Screw (1/2" Shaft)
131012	Cutter Arm Mtg. Screw Washer	131060	Turntable Drive Disc Clip
131013	Turntable Shaft Locking Screw	131061	Aux. Shaft Housing Assy.
131014	Pivot Saddle Plate Adjusting Screw Nut and Cutter Arm Holding Bracket Screw	131062	Lead Screw and Pinion Assy.
131015	Turntable Shaft Locking Screw Nut	131063	Lead Screw End Thrust Screw
131016	Adjusting Screw Nut (Follower Arm)	131064	Lead Screw End Thrust Screw Nut
131017	Cutter Arm Holding Bracket	131065	Motor Mounting Plate
131018	Follower Arm Complete	131066	Rotor Shaft Pulley (For 1/2" Shaft)
131019	Pivot Post Bushing	131067	Turntable Drive Disc Tension Spring Holder
131020	Tone Arm Support	131068	Turntable Drive Disc Tension Spring
131021	Base Plate Complete (Less Switch, Etc.)	131069	Turntable Shaft
131022	Pickup Cartridge Mounting Screw	131070	Aux. Shaft Housing Complete
131023	Pickup Cord Clip	131071	Turntable Drive Disc Complete
131024	Pickup Cartridge (ONLY)	131072	Turntable Drive Disc Mtg. Bracket Assy.
MG5-130570	Recorder Base Assy. Complete (110 V.—60 Cy.)	131073	Motor Mtg. Plate Complete
MG8-130570	Recorder Base Assy. Complete (110 V.—50 Cy.)	131074	Retractable Pin Spring (For 1/8" one piece T. T.)
131026	Tone Arm Assy.	131075	Retractable Pin (For 1/8" one piece T. T.)
131027	Tone Arm Complete	131076	Rotor Shaft Pulley (For 3/16" Shaft and two piece T. T.)
131028	Lift Lever	131077	Rotor Shaft Pulley Set Screw (5/16" Shaft)
131029	Tension Adjusting Screw Lug	131078	Rotor Shaft Pulley Support Ring
131030	Cutter Head Tension Spring	131079	Rotor Shaft Pulley (For 1/8" one piece T. T.)
131031	Cutter Arm Mtg. Screw	131080	Retractable Pin Spring (For two piece T. T.)
131033	Saddle Bushing Set Screw	131081	Retractable Pin (For two piece T. T.)
131034	Pivot Saddle Plate Adjusting Screw	131082	10" Weighted Turntable (two piece T. T.)
131035	Pivot Saddle Plate Assy.	130820	Motor—110 Volt, 60 Cycle
131036	Cutter Arm Holding Bracket Screw	130634	Needle Screw—Tone Arm
131037	Pivot Post Straddle Plate	130633	Needle Screw—Cutting Arm
131038	Tone Arm Support Bumper	131126	Spring—50 Cycle—Motor Bushing
131039	Pivot Post Return Spring	130628	Spring—Base Mounting (8 Req.)
131040	Lead Clip Screw	38085	Wing Nut—Base Mounting (4 Req.)
131041	Lead Clip	130625	Screw—Base Mounting (4 Req.)
131042	Tone Arm Post Washer	130626	Stirrup—Shipping Clamp (4 Req.)
131043	Tone Arm Washer	130901	Cutting Nddle (1)
131044	Tone Arm Post Nut	131785	Motor Bushing—Change 50 to 60 Cycles
131045	Pivot Post Bushing Lock Washer	47339	Play Back Needles (Pkg. 10)
131046	Follower Arm Shaft Washer		
131047	Follower Arm Stop		

### SEEBURG (1940)



**FIG. 13**

Seeberg 1940  
Parts List on the  
Following Page.

# SEEBURG (1940)

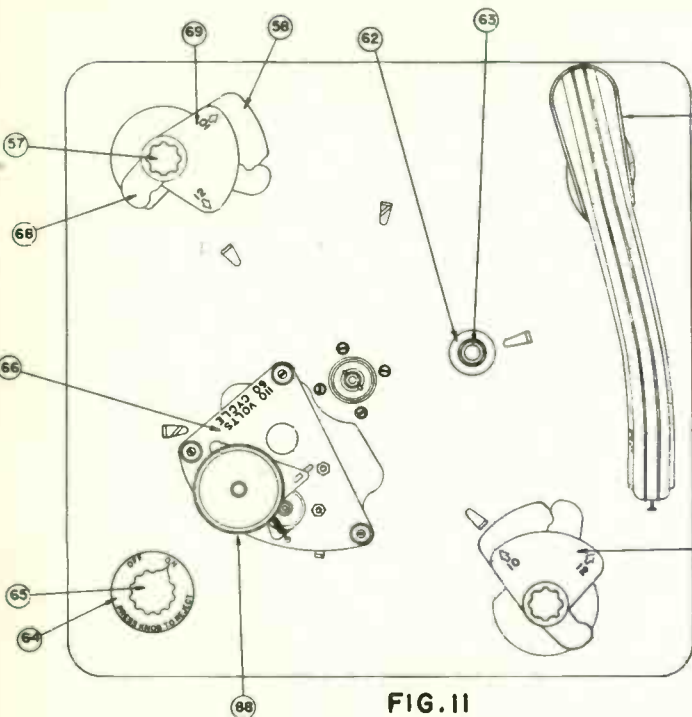


FIG. 11

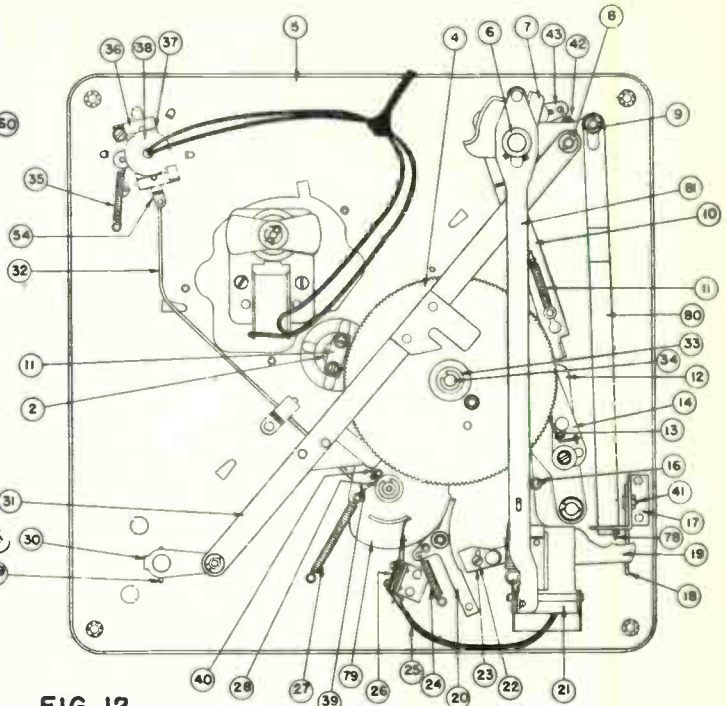


FIG. 12

Item No.	Part No.	Description	No. Used	Item No.	Part No.	Description	No. Used
1	130659	Spindle Thrust Plate	1	47	130709	Tone Arm Mounting Bracket	1
2	130660	Spindle Bearing Housing Assy.	1	48	130710	Tone Arm Lifter Pin	1
3	130661	Drive Pinion	1	49	130711	Counter Balance Spring	1
4	130662	Drive Gear Assy.	1	50	130712	Spring Washer	1
5	130663	Panel, Post and Stud Assy. (Model 30)	1	51	130713	Roller	2
	131524	Panel, Post and Stud Assy. (Model 29)	1	52	130714	Switch Return Spring	1
6	130664	Selector Shaft Collar	1	53	130715	Flat Washer	2
7	130665	Selector Shaft Crank Assy. Post No. 2	1	54	130716	Switch Reject Slide	1
8	130666	Flat Washer	3	55	130717	Switch Collar and Reject Pin Assy.	1
9	130667	"C" Washer	3	56	130718	12" Set Rod	1
10	130668	12" Set Link	1	57	130727	Control Knob	2
11	130669	12" Reset Link Spring	1	58	130728	Selector Blade (10")	2
12	130670	Tone Arm Locator and Bushing Assy.	1	59	130729	Turntable Spindle	1
13	130671	Tone Arm Booster Spring	1	60	130730	Tone Arm	1
14	130672	Tone Arm Locator Shoe (12")	1	61	130731	Selector Arm No. 1	1
15	130673	Tone Arm Locator Shoe (10")	1	62	130732	Special Washer	1
16	130674	Tone Arm Locator Spring	1	63	130733	Drive Gear Stud Lock Nut	1
17	130675	Tone Arm Latch and Guide Bracket	1	64	130734	Switch Escutcheon	1
18	130676	Tone Arm Latch Lever	1	65	130735	Switch Control Knob	1
19	130677	Tone Arm Lever Assy.	1	66	130736	Motor	1
20	130678	Trip Lever Assy.	1	67	130737	Record Support Post No. 2	1
21	130679	Tone Arm Lift Plate Assy.	1	68	130738	Selector Blade (12")	2
22	130680	Thumb Nut	1	69	130739	Selector Arm No. 2	1
23	130681	Tone Arm Trip Shoe	1	70	130719	Tone Arm Adjusting Screw	1
24	130682	Trip Lever Spring	1	71	130720	Adjusting Screw Lock Spring	1
25	130683	Pickup Shielded Wire	1	72	130721	Thrust Wafer	1
26	130684	Muting Switch	1	73	130722	Thrust Washer	5
27	130685	Clutch Spring	1	74	130723	Ball Race Assy.	1
28	130686	Flat Washer	1	75	130724	Rubber Bumper	1
29	130687	Taper Pin	3	76	130725	Turntable	1
30	130688	Selector Shaft Drive Crank Assy. Post No. 2	1	77	130697	Tone Arm Shaft	1
31	130689	Drive Link Assy.	1	78	130698	Reset Arm Stop Washer	1
32	130690	Trip Rod	1	79	130703	Engagement Clutch Cam Assy.	1
33	130691	Flat Washer	1	80	130704	Tone Arm Reset Link	1
34	130692	Drive Gear Stud	1	81	130705	Tone Arm Lifter Link Assy.	1
35	130693	Switch Spring	1	82	130726	Tone Arm Lifter Reset Spring	1
36	130694	Switch Mounting Bracket	1	83	131083	3/16" Needle Screw	1
37	130695	Switch Retainer Bracket	1	84	131236	Upper Mounting Spring (Base)	4
38	130696	Switch	1	85	131237	Lower Mounting Spring (Base)	4
39	130699	Clutch Reset Pawl Spring	1	86	131238	"U" Nut for Mounting Bolts	4
40	130700	Clutch Reset Pawl	1	87	130981	1/4-20 R. H. D. Machine Screw	4
41	130701	Latch Lever Shoulder Screw	1	88	131102	Idler Wheel	1
42				89	131032	Spring—50 Cycle Motor Bushing	1
43	130702	12" Set Arm Assy.	1				
44	130706	Record Support Post No. 1	1				
45	131024	Tone Arm Cartridge	1				
46	130708	Tone Arm Swivel Bracket	1				



**1.—PICKUP DOES NOT INDEX PROPERLY ON TEN OR TWELVE INCH RECORDS**

(A) *Adjustment for correct indexing of 10-inch records:*

1. Swing tone arm outward until tone arm lever assembly, (Item 19, Fig. 12) latches with tone arm latch lever, (Item 18, Fig. 12) which is held to the tone arm shaft, (Item 77, Fig. 13) by two setscrews.

2. Make sure these setscrews are tight and that there is a slight play between the tone arm lever assembly and the panel. (Item 5, Fig. 12). This will give proper clearance at ball race assembly, (Item 74, Fig. 13).

The tone arm lever assembly, (Item 19, Fig. 12), is held against tone arm latch lever, (Item 18, Fig. 12) by the tension of tone arm locator lever spring, (Item 16, Fig. 12).

3. Next loosen the clamping screw in the Swivel Bracket Assembly, (Item 46, Fig. 13).

4. Now move tone arm, (Item 60, Fig. 11) until its outside edge is  $\frac{1}{8}$ " from the outside edge of the panel (Item 5, Fig. 12) and re-tighten screw securely.

**2.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE AT END OF RECORD**

(A) *Worn or Damaged Stop Groove:* If the stop groove in the record is worn out or damaged, discard such a record.

(B) *Cut-off Adjustment May Be Incorrect:* The Record Changer should go into its changing cycle when the needle enters the stop groove and has traveled to within a distance of  $1\frac{1}{4}$ " from the center of the turntable shaft.

If the Record Changer does not go into its changing cycle when the needle has reached the above-mentioned distance, the Tone Arm Trip Lever Shoe, (Item 23, Fig. 12), should be moved toward the outside edge of the panel. To do this, it is necessary to loosen the thumb nut, (Item 22, Fig. 12), and then retighten after adjustment has been made.

If the Record Changer goes into its changing cycle before the needle has reached a distance of  $1\frac{1}{4}$ " from the center of the turntable, the Tone Arm Trip Lever Shoe should be moved inward toward the center of the Record Changer.

**3.—RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE WHEN SWITCH KNOB IS TURNED ON**

When the switch is turned to "ON" the Record Changer should start its changing cycle. If it does not, the following points should be checked.

1. Make sure motor is running.

2. Check Trip Rod, (Item 32, Fig. 12), to make sure it releases Trip Lever Assembly, (Item 20, Fig. 12), from Engagement Clutch Cam Assembly, (Item 79, Fig. 12), when Switch Knob is being turned on. If Trip Lever Assembly is not released, Trip rod should be shortened by bending until Trip Lever clears Engagement Clutch Cam Assembly, when Switch Knob is turned.

3. Make sure that Clutch Reset Pawl, (Item 40, Fig. 12) clears Drive Link Assembly, (Item 31, Fig. 12).

**4.—RECORD CHANGER CONTINUES TO REPEAT ITS CHANGING CYCLE WITHOUT PLAYING RECORDS**

(A) Trip Lever Assembly, (Item 20, Fig. 2) does not latch in Engagement Clutch Cam Assembly (Item 79, Fig. 12), which may be due to causes listed below:

1. Trip Rod (Item 32, Fig. 12), may be bent so that it is too short, holding Trip Lever Assembly from contacting Engagement Clutch Cam Assembly.

2. Springs (Item 24 or 35, Fig. 12) may be disconnected.

**5.—NO SOUND WHEN NEEDLE IS ON MOVING RECORD**

**Recorder with Automatic Record Changer.**

(Models 28AZ, 34BH, 31BF, and 48BF)

**1.—FUNCTION OF MANUAL CONTROL BUTTON AND RELATIVE PARTS**

When Manual Control Button (Item 84, Fig. 6) is moved to the Manual Play-Back recording position, it moves the Manual Control Slide (Item 102, Fig. 7) which in turn moves Clutch Lock Slide (Item 103, Fig. 7) into a position which prevents Engagement Clutch Cam Assembly (Item 79, Fig. 8) from rotating. When Engagement Clutch Cam Assembly is in the above mentioned position and is not free to rotate, the Changer will not go into its changing cycle.

1. Muting switch (Item 26, Fig. 12), may be out of adjustment. The contacts of this switch should be open whenever its long blade is not resting on the shoe of the Engagement Clutch Cam Assembly (Item 79, Fig. 12). If the contacts remain closed after the long blade has left the shoe, they should be adjusted by bending until there is a separation of approximately  $1/32$ ".

Switch should be checked to make sure contacts are closed when long blade is resting on the shoe of the Engagement Clutch Cam Assembly.

2. The lugs on the Muting switch may have been bent together.

3. Pickup cartridge in Tone Arm may have been damaged or may be defective.

**6.—TONE ARM ADJUSTMENTS FOR 12" RECORDS**

1. Turn both Control Knobs until the arrows marked "12" are pointing toward the center of the turntable.

2. Place a twelve inch record on the turntable.

3. Start Record Changer and note where needle contacts record. Correct contacting is about  $\frac{1}{8}$ " from the outside edge of record.

4. Set Rod (Item 56, Fig. 13), is operated by Selector Arm (Item 61, Fig. 11). The 12" Set Link (Item 10, Fig. 11), operates as a stop when Record Changer is set for 12" records. When Tone Arm Locator Assembly (Item 12, Fig. 11) contacts 12" Set Link the Tone Arm should be in the correct position to play a 12" record.

If at this point, the position of Tone Arm is incorrect, loosen the screw which holds the Tone Arm Locator Shoe 12" (Item 14, Fig. 11) and move in either direction as required and tighten screw.

**7.—TONE ARM ADJUSTMENTS FOR 10" RECORDS**

1. Turn both knobs until the arrows marked "10" are pointing toward the center of the turntable.

2. Place a 10" record on the turntable and start Record Changer.

3.—Note where needle contacts record. Correct contacting is about  $\frac{1}{8}$ " from the outside edge of record. If contacting of needle is not correct as mentioned, loosen the screw which holds Tone Arm Locator Shoe 10" (Item 15, Fig. 13) and slide shoe in or out as required, then tighten screw.

**8.—TONE ARM HEIGHT ADJUSTMENTS**

Set the Record Changer for ten-inch records, turn Switch to "ON" and allow Record Changer to go thru a changing cycle with no record on the turntable. The clearance between Turntable and the bottom surface of the Tone Arm should be approximately  $\frac{1}{8}$ ". Usually this clearance can be obtained by adjusting the Tone Arm Adjustment Screw (Item 70, Fig. 13). It is well to check the following points before making any adjustment.

Check clearance between Roller (Item 51, Fig. 13), and Selector Crank Shaft Assembly (Item 7, Fig. 12). There should be approximately  $1/32$ " clearance at this point. If the clearance is greater, it would be due to the pressure on the Spring Washer (Item 50, Fig. 13) being too great. This will prevent the Tone Arm Lifter Reset Spring (Item 82, Fig. 13) from returning the Tone Arm Lifter Link Assembly (Item 81, Fig. 12) sufficiently. To relieve the pressure on the Spring Washer, lower the Selector Shaft Collar (Item 6, Fig. 11) slightly.

**9.—TONE ARM LOWERS ON RECORD TOO SUDDENLY**

If the Tone Arm lowers too suddenly, the Spring Washer (Item 50, Fig. 3) which is located between the Tone Arm Lifter Link Assembly (Item 81, Fig. 2) and Selector Crank Shaft Assembly Post (Item 7, Fig. 2) is not under sufficient pressure. The setscrews in the Selector Shaft Collar (Item 6, Fig. 2) should be loosened and the Selector Shaft Collar pressed upward slightly and set screws tightened.

Also when the Manual Control Button is in the above mentioned position, the Manual Control Slide has moved the Locator Lock Slide (Item 106, Fig. 7) into a position where it engages the Tone Arm Locator & Bushing Assembly (Item 12, Fig. 7) and prevents same from bearing against Tone Arm Lever Assembly (Item 19, Fig. 7) allowing the Tone Arm to swing freely without hindrance and without setting Changer into its changing cycle. When the Manual Control button is in the automatic position the Changer will function normally as an automatic record changer.

**2.—POSSIBLE MECHANICAL CAUSES OF POOR RECORDINGS**

(A) Threads from record cuttings getting down onto Rubber Idler wheel (Item 83, Fig. 6) and between drive wheel and motor pulley. This will cause very bad speed variation of the turntable and, of course, will result in very inferior recording. Cuttings may also wrap around motor shaft and cause motor to slow down or stop.

To remove the record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable while the turntable spindle is gently tapped downward on its top end, and the record cuttings then removed. The Rubber Idler Drive Wheel should be taken off—this can be accomplished by un-snapping the small snap cotter ring and slipping Rubber Idler Drive Wheel off its shaft, after which all record cuttings can be removed.

*NOTE: It is very important that no grease or oil be gotten on the surface of the Rubber Idler Drive Wheel.*

(B) *Tight pivot bearings:* Check cartridge pivot screw (Item 108, Fig. 6) for binding. Also recording arm pivot screw (Item 107, Fig. 6) and Traverse arm pivot screws (Item 101, Fig. 8). These bearings should all be free, but have no looseness or play.

If the pivot screw, (Item 108, Fig. 6) of the Cutter Cartridge is tight, the Cutter Cartridge cannot follow a slight up and down variation of the record or turntable. A record cut in this manner will, when played back, have a high scratch level, rough cutting and a tendency for the needle to jump from one groove to another.

(C) *Damaged Rubber Idler Drive Wheel* (Item 83, Fig. 6) *Rubber Idler Drive Wheel may have become damaged by:*

1. Allowing oil or grease to come in contact with same.
2. By allowing turntable to drop and cut into the outside surface of the Rubber Idler Drive Wheel.
3. Stopping the turntable by hand while the motor is running will cause a flat spot on the surface of the Rubber Idler Drive Wheel.

*NOTE: If the Rubber Idler Drive Wheel has been damaged in any of the above mentioned ways, it should be replaced with a new one.*

(D) *Vibration Reaching the Recorder While A Blank is Being Cut:*

It is very important the floor or the surface upon which the Recorder rests remain quiet as any vibration such as people walking across the floor or shaking of the instrument in which the recorder is mounted will seriously affect the quality of the finished recording.

(E) *Recorder Not Level:* It is very important that the Recorder is standing Level. This can be checked by placing a small level on the turntable and checking same in two positions at right angles to each other and then leveling instrument in which Recorder is mounted.

(F) *Bent or Damaged Turntable Spindle:* If the Turntable Spindle (Item 59 Fig. 6) has been bent in shipment, or by someone exerting a heavy pressure on one side, it should be replaced with a new one. A bent Turntable Spindle will cause the surface of the Turntable to move up and down while it is turning and, of course, will seriously effect the quality of both recording and play-back.

*NOTE: When removing the Turntable an even upward lifting force should be applied at opposite edges of the Turntable while Turntable Spindle is gently tapped downward on its top end.*

(G) *Record Cutting Causing A Bind Between Turntable Spindle (Item 59, Fig. 6) and Its Bearing:*

It is very important that all record cuttings are removed from Turntable Spindle and its bearing.

(H) *Tension On Rubber Idler Drive Wheel (Item 83, Fig. 6) Too Great:*

If the tension on the Rubber Idler Drive Wheel is too great, this will result in a "wow" or a rumble in the recording. To decrease the tension on Rubber Idler Drive Wheel, loosen the screw holding the lug which is located beneath the Rubber Idler Drive Wheel and turn it slightly in a clockwise direction. This will reduce the spring tension on the Rubber Idler Drive Wheel. When the spring tension is correct, the spring will be approximately at right angles to the lug.

(I) *Tension On Rubber Idler Drive Wheel (Item 83, Fig. 6) Too Weak:*

This will cause very bad speed variation. Turntable will slow down and then speed up as audio current of varying intensity reaches the cutter cartridge.

**RECORDER AS USED IN MODEL 33BG**

(a) *Possible Mechanical causes of Poor Recordings.*

Thread from record cuttings getting down on to Turntable Drive Wheel (Fig. 4, Section I). This will cause very bad speed variation of turntable. Cuttings may also wrap around motor shaft and cause motor to slow down or stop. To remove record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable. The rubber drive wheel should be taken off—Remove hairpin retainer and fibre washer and left wheel off, remove all cuttings and replace wheel.

*NOTE: It is very important that NO GREASE or OIL be gotten on the surface of the rubber on drive wheel.*

*Turntable Drive Wheel may become damaged by—*

1. By permitting turntable to drop and cut into the outside surface of the rubber drive wheel.
2. Stopping the turntable by hand while the motor is still running is liable to cause a flat spot on the surface of rubber drive wheel.
3. Permitting oil or grease to come in contact with the rubber surface of drive wheel.

*NOTE: If the rubber drive wheel has been damaged in any of the above ways, replace with a new one.*

(b) *Mechanical Vibration Transmitted to Recorder while a record is being cut.*

It is VERY IMPORTANT THAT THE BASE UPON WHICH RECORDER RESTS REMAINS QUIET, as any vibration such as people walking across the floor or shaking of instrument will seriously affect the quality of the finished recording.

(c) *Recorder Not Level.*

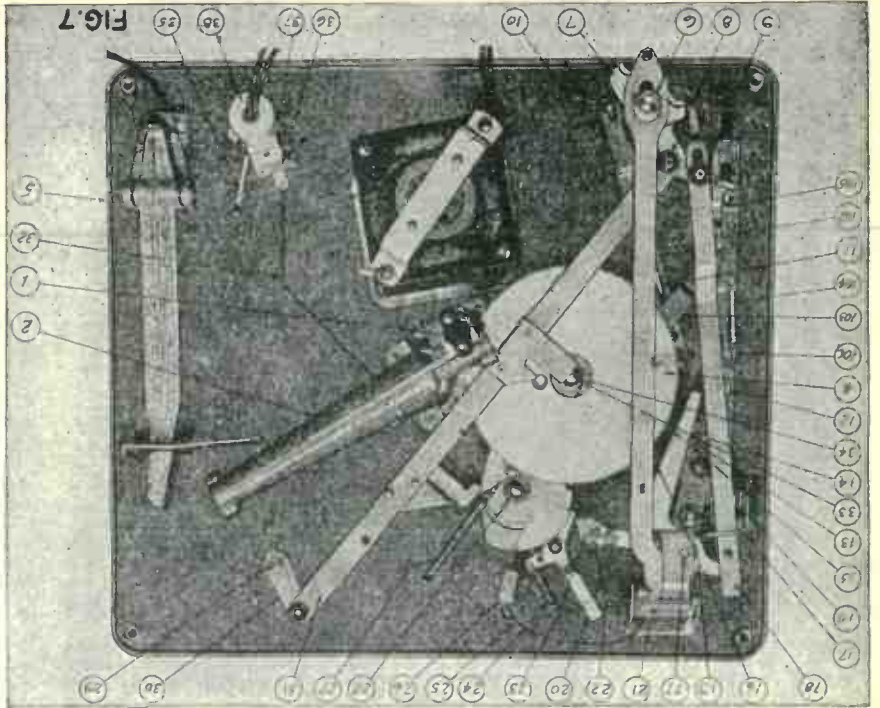
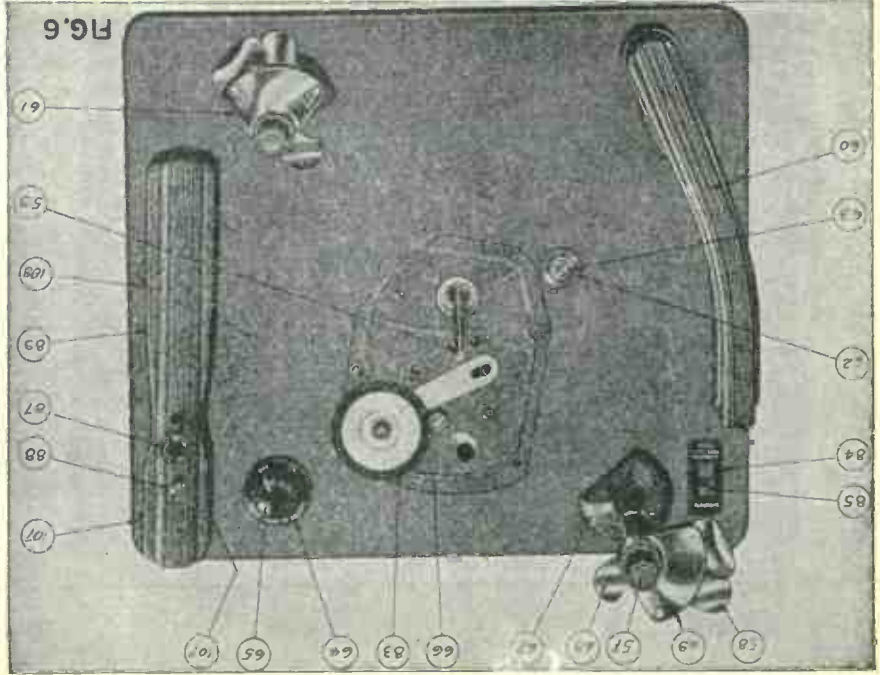
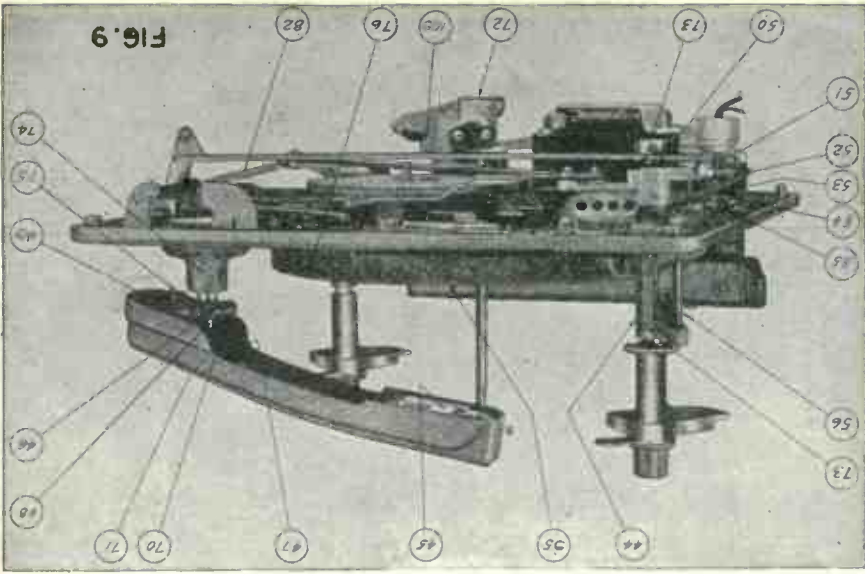
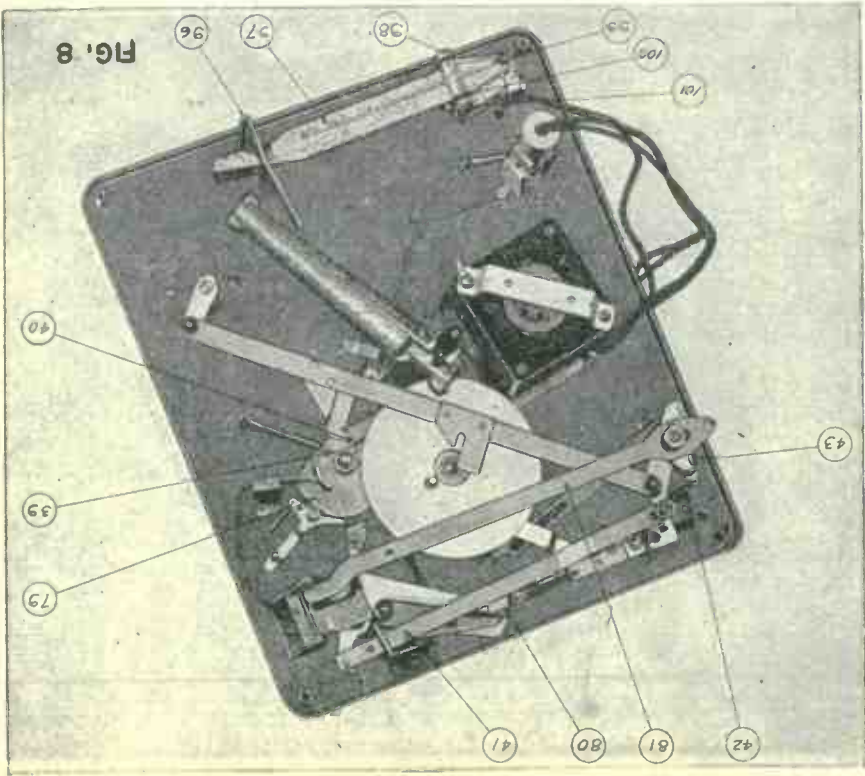
It is very important that recorder is standing level. This can be checked by placing a smooth marble on uncut record.

(d) *Tension On Turntable Drive Wheel.*

If the tension on the rubber drive wheel is too great the usual result is a rumble in the recording. To decrease the tension on the drive wheel, loosen screw holding the tension spring lug, located beneath the drive wheel and turn lug a few degrees in a clockwise direction.

If the tension on the rubber drive wheel is too weak, a very marked change in the turntable speed will be noted during cutting operation. To increase tension move the tension spring lug a few degrees in a counter-clockwise direction.

SEEBURG WITH RECORDER (1941)



## SEEBURG WITH RECORDER (1940)

(Parts List for Fig. No. 6)

Item No.	Part No.	Description	No. Used	Item No.	Part No.	Description	No. Used
57	130727	Control Knob	2	107	130967	Bearing Center Screw	1
58	130728	Selector Blade (10")	2	108	130968	Cartridge Pivot Screw	1
59	130957	Turntable Spindle	1			(Parts List for Fig. No. 5)	
60	130958	Tone Arm	1	89	130854	Cutter Cartridge	1
61	130731	Selector Arm No. 1	1	90	130970	Pressure Control Blade	1
62	130732	Special Washer	1	91	130855	Pressure Control Cam	1
63	130733	Drive Gear Stud Lock Nut	1	92	130960	Bearing Center Screw	2
64	130734	Switch Escutcheon	1	93	130969	Bearing Center Screw Lock Nut	2
65	130959	Switch Control Knob	1	94	130819	Tone Arm Adjusting Screw	1
66	130870	Motor Assembly	1		131236	Spring-Upper-Base Mounting	4
67	130737	Record Support Post No. 2	1		131237	Spring-Lower-Base Mounting	4
68	130738	Selector Blade (12")	2		131238	"U" Nut—For Mounting Bolts	4
69	130739	Selector Arm No. 2	1		130381	1/4-20 R. H. M. Screws	4
83	130961	Rubber Idler Drive Wheel	1				
84	130962	Manual Control Escutcheon	1				
85	130963	Manual Control Button	1				
86	130964	Recorder Arm	1				
87	130965	Pressure Control Knob	1				
88	130966	Recorder Arm Adjustment Screw	1				

(Parts for Fig. No. 7)

1	130659	Spindle Thrust Plate	1	27	130585	Clutch Spring	1
2	130937	Spindle and Feed Screw Housing	1	28	130686	Flat Washer	1
4	130662	Drive Gear Assembly	1	29	130587	Taper Pin	3
5	130938	Panel, Post and Stud Assembly	1	30	130688	Selector Shaft Drive Crank Assy. Post No. 2	1
6	130664	Selector Shaft Collar	1	31	130589	Drive Link Assy.	1
7	130665	Selector Shaft Crank Assy. Post No. 1	1	32	130690	Trip Rod	1
8	130666	Flat Washer	3	33	130691	Flat Washer	1
9	130667	"C" Washer	3	34	130692	Drive Gear Stud	1
10	130668	12" Set Link	1	35	130593	Switch Spring	1
11	130669	12" Reset Link Spring	1	36	130694	Switch Mounting Bracket	1
12	130670	Tone Arm Locator and Bushing Assy.	1	37	130695	Switch Retainer Bracket	1
13	130671	Tone Arm Booster Spring	1	38	130596	Switch	1
14	130672	Tone Arm Locator Shoe (12")	1	77	130939	Tone Arm Shaft	1
15	130673	Tone Arm Locator Shoe (10")	1	78	130698	Reset Arm Stop Washer	1
16	130674	Tone Arm Locator Spring	1	102	130940	Manual Control Slide	1
17	130675	Tone Arm Latch and Guide Bracket	1	103	130941	Clutch Lock Slide	1
18	130676	Tone Arm Latch Lever	1	104	130942	Locator Lock Slide Spring	1
19	130677	Tone Arm Lever Assy.	1	105	130943	Slide Latch	1
20	130678	Trip Lever Assy.	1	106	130944	Locator Lock Slide	1
21	130679	Tone Arm Lift Plate Assy.	1				
22	130680	Thumb Nut	1				
23	130681	Tone Arm Trip Shoe	1				
24	130682	Trip Lever Spring	1				
25	130683	Shielded Pickup Wire	1				
26	130684	Muting Switch	1				

(Parts List for Fig. No. 8)

39	130699	Clutch Reset Pawl Spring	1	97	130947	Traverse Bushing and Blade Assembly	1
40	130700	Clutch Reset Pawl	1	98	130948	Traverse Lever Bracket	1
41	130701	Latch Lever Shoulder Screw	1	99	130949	Lock Nut	2
43	130702	12" Set Arm Assembly	1	100	130950	Recorder Arm Shaft Sleeve.	1
79	130703	Engagement Clutch Cam Assy.	1	101	130951	Bearing Center Screw	4
80	130704	Tone Arm Reset Link	1				
81	130705	Tone Arm Lifter Link Assy.	1				
42	130945	Set Arm Return Spring	1				
96	130946	Traverse Arm Support Bracket	1				

(Parts List for Fig. No. 9)

44	130706	Record Support Post No. 2	1	70	130719	Tone Arm Adjusting Screw	1
45	131024	Tone Arm Cartridge	1	71	130720	Adjusting Screw Lock Spring	1
46	130708	Tone Arm Swivel Bracket	1	72	130721	Thrust Wafer	1
47	130709	Tone Arm Mounting Bracket	1	73	130722	Thrust Washer	5
48	130952	Tone Arm Lifter Pin	1	74	130723	Ball Race Assy.	1
49	130953	Counter Balance Spring	1	75	130724	Rubber Bumper	1
50	130712	Spring Washer	1	76	130954	Turntable	1
51	130713	Roller	2	82	130726	Tone Arm Lifter Reset Spring	1
52	130714	Switch Return Spring	1	95	130955	Retractable Drive Pin	1
53	130715	Flat Washer	2	109	130956	Feed Screw and Gear Assy.	1
54	130716	Switch Reject Slide	1				
55	130717	Switch Collar and Reject Pin Assy.	1				
56	130718	12" Set Rod	1				

## TONE ARM INDEXING

1. With the switch knob in the "off" position, move the tone arm to the "rest" position so that its outer edge is approximately lined up with the extreme outside edge of the record changer panel.
2. Loosen the hex-head cap screw on the under side of the record changer panel (see Fig. II, Item 28) slightly.
3. Line up the outer edge of the tone arm with the outer edge of the record changer panel by eye. This is a preliminary adjustment to obtain approximately correct indexing.
4. Place a 12" record on the turntable, put the machine into automatic operation by pulling the switch knob to the "Reject" position and releasing it and note the point at which the needle FIRST strikes the margin of the 12" record. (The word "first" is used to indicate the fact that after the needle has touched the record, the booster spring will attempt to move the needle in toward the center. Proper setting of the tone arm indexing position is concerned only with the point at which the needle first makes contact with the record; for this reason it may be advisable to slow down the movement of the tone arm by partially holding the turntable so that the action may be more readily observed during adjustment.)
5. If the needle did not strike the record approximately an eighth of an inch in from the outside edge, move the tone arm in the desired direction a slight amount by slipping the tone arm lever (see Fig. II, Item 25) which has been previously loosened at the hex-head cap screw (see Fig. II, Item 28).
6. After obtaining a correct indexing of the tone arm on the 12" diameter records, check the indexing on a 10" diameter record and tighten the hex-head cap screw firmly.

NOTE: , Incorrect action of the booster spring or Tone Arm Retard Lever may produce the effect of improper tone arm indexing.

## A. NEEDLE PRESSURE

The needle pressure is controlled by means of the counter-balance spring (see Fig. VI) at the rear of the arm. The spring tension has been set to provide the needle pressure necessary for correct operation of the pickup. Should it be necessary to make adjustment of this counter balance spring, it is generally advisable to contact your factory service department for the correct needle pressure; be sure to include the part number stamped on the under side of the crystal cartridge and the model number of the set. Care should be taken that the counter-balance spring does not rub against the inside of the tone arm skirt or any associated parts in such a way that it impedes or binds the free vertical movement of the tone arm. (CAUTION: It is a popular fallacy that it is possible to prolong needle and record life by reducing the needle pressure on a given pickup below those pressures recommended by the manufacturer. Any such attempt will probably increase record and needle wear as well as seriously impair the tone quality of the instrument. The correct needle pressure is a function of the crystal and tone arm design and cannot be satisfactorily changed for a given set of component parts.)

## B. TONE ARM HEIGHT ADJUSTMENTS

The Tone Arm Height Adjustment Screw (Fig. VI) controls only the height of the tone arm when it is in the playing position with no record on the turntable. The correct setting of this adjustment screw is that which, under the above condition, allows the tone arm to descend until the needle point is very slightly below the level of the turntable surface.

The Tone Arm Adjustment Screw should not be used to adjust the height to which the tone arm rises during a change cycle; this height is controlled solely by the length of the Tone Arm Lift Pin (Fig. VI).

## C. TONE ARM HINGE ADJUSTMENTS

Should the tone arm hinge show evidence of binding or impeding the free vertical movement of the tone arm, it may be necessary to replace this part (Fig. III, Item 58) (as pointed out above, binding may also be due to rubbing of the counter-balance spring).

## A. MINIMUM CIRCLE DIAMETER TRIP

After the tone arm has played in far enough so that the distance of the needle from the center spindle is approximately 1-7/8",

the record changer will trip regardless of whether or not there is a cutoff or eccentric groove on the record. This type of trip is known as "a minimum diameter circle trip." The diameter of this minimum circle is set at the factory to be approximately 3-3/4". Variations in adjustment or readjustment of this operation can be obtained by moving the position of the trip shoe (see Fig. II, Item 29) slightly. The trip shoe is locked in position by means of a screw when the adjustment has been satisfactorily completed. This screw must be adjusted thru a hole cut in the main drive gear, when the machine is not in a change cycle. (See point e, Fig. I.)

#### B. ECCENTRIC GROOVE TRIP

In order to make the trip action of the changer mechanism operate under various conditions, a second tripping device has been included which operates due to any outward movement of the tone arm after it has played to within approximately 2-1/2" of the center spindle. This trip is actuated by a small dog and ratchet combination (see Fig. II, Item 44) and is adjusted at the factory.

#### A. BOOSTER SPRING SETTING

The function of the booster spring (Fig. II, Item 30) is to move the needle from the margin of the record into the first groove automatically. Most present day records have what is known as a "lead-in groove" which automatically carries the needle from the margin of the record into the record grooves. In the case of the older type records, and particularly those of the mechanically recorded type which have no lead-in grooves, the booster spring supplies just enough pressure to move the needle across the margin to the record grooves. This booster spring is built into the tone arm locator lever (see Fig. II, Item 31) and consists of a single piece of light spring wire (see Fig. II, Item 30). The side pressure exerted by this spring should be just sufficient so that the needle will move across the margin of a record which contains no lead-in groove. After any adjustment of this booster spring, check its operation on both 10" and 12" records to make sure that it functions properly. Do not increase the operating pressure of the booster spring to such a point that it tends to make the needle slide across the first few record grooves. Access to the booster spring can be obtained when the tone arm is in the "Rest" position, with the switch knob turned off, by moving the tone arm locator lever assembly out toward the edge of the changer sub-panel with the finger. Adjustment of the spring tension

should be made with a pair of light pliers or with the fingers. The tension, measured at the point of contact between the booster spring (Fig. II, Item 30) and the tone arm lever (Fig. II, Item 25) is set at the factory to values between seven and fifteen grams depending upon the type of needle and cartridge used (cartridges requiring extremely light needle pressure also require a light booster spring tension.) CAUTION: The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm; otherwise the action of the booster spring may be overcome or overemphasized. This lead must be checked before attempting any booster spring adjustments.

#### B. TONE ARM RETARD LEVER ADJUSTMENTS

The function of the Tone Arm Retard Lever (Fig. II, Item 49) is to provide a smooth motion of the tone arm as it moves from the outer edge of the panel in towards the edge of the record to be played, during an automatic change cycle.

An additional function of the tone arm retard lever is to prevent action of the booster spring (Fig. II, Item 30) until the needle has lowered onto the outer edge of the record to be played. Insufficient tension of the Tone Arm Retard Lever Spring (Fig. II, Item 47) will permit action of the booster spring before the needle comes to rest on the record, giving the effect of incorrect tone arm indexing. Excessive pressure of the tone arm retard lever spring will cause rough, jerky action of the tone arm as it moves from the outer edge of the changer panel.

#### "SELECTOR ARM" ADJUSTMENTS

Under all ordinary conditions it should not be necessary to make any adjustment of the selector blades themselves. Should such an adjustment become necessary it can best be accomplished by using a standard make of record of the proper diameter and of average thickness for gauging the selector blades (Fig. III, Items 54 and 55). The setting of these blades can be accomplished by means of a pair of long nosed pliers and is correct when the blades lift slightly upon engaging a record of average thickness.

The position of the selector arm (Fig. III, Item 54) controls the tone arm indexing for 10" or 12" records through its engagement with the 12" set rod at point "k" (Fig. III). Motion of the 12" set rod is transmitted

through the changer base panel to the 12" reset lever (Fig. II, Item 37). Sufficient tension is provided through the spring (Fig. II, Item 38) to maintain a hooking action between two levers (Fig. II, Item 31 and 37) at point "p". This is to prevent the tone arm locator lever and also the tone arm from sweeping toward the center should the 12" setting of the selector arm be changed while the tone arm is playing on the outside of a 12" record.

A. "FEEDBACK" OR "HOWL" OR "MICROPHONISM"

1. Inspect the under side of the panel to make sure that the changer does not come into contact with any part of the cabinet at any point other than at the four corners where it rests on the mounting springs. Also check to be sure that the studs (Fig. I, Item 14) do not rub against the side of the holes of the cabinet panel.
2. A tendency toward microphonism may be due to any one or all of the four mounting springs being drawn down too tightly; loosening these mounting springs will reduce any tendency toward feedback.

It should be remembered that there is no disadvantage in any phonograph equipment which tends to become microphonic at volume control settings above those in the usable range. That is, if the set does not feed-back up to the volume control settings at which distortion appears when playing an average record, it will operate satisfactorily.

B. "RUMBLE"

1. Remove the turntable and inspect the rubber rimmed motor idler pulley (Fig. IV, Item 66) for flat or worn spots which would tend to jar the turntable.
2. With the turntable removed, rotate the turntable spindle to be sure that it turns smoothly.

"WOW" OR "SPEED VARIATION"

1. Remove the turntable and rotate the turntable spindle (Fig. II, Item 40) with the fingers to determine whether it tends to bind. High friction at this point may be sufficient to cause the motor to slow down instantaneously. Apply ONLY a drop or two of light oil to the two spindle bearings. If the turntable shaft is bent to such an extent that replacement is necessary, it is recommended that the entire

Spindle and Pinion Gear Assembly (Fig. II, Item 39, Also Fig. V) be replaced instead of replacing only the spindle assembly. This Spindle and Pinion Gear Assembly (see Fig. V) is fitted with precision machines at the factory, thus insuring proper clearances and smooth operation.

D. REPEATED TRIPPING

1. Turn off the changer during a change cycle so that the clutch engagement lever (Fig. II, Item 41) may be moved up and down with the finger. This clutch engagement lever should lock into the up position due to its engagement with the trip lever (Fig. II, Item 44) at the point "m". If this engagement is not positive, inspect the bearing point of the trip lever (Fig. II, Item 44) for evidences of dirt or binding. A more positive engagement may be obtained by strengthening the spring (Fig. II, Item 50). CAUTION: This spring tension must be JUST SUFFICIENT to lock the clutch engagement lever in the up position. Excessive tension of the spring will result in failure to trip.
2. Repeated tripping may also be due to the fact that the switch knob does not return to the "Automatic" position when released. This condition can result from binding of the roller lever (Fig. I, Item 6) on its bearing, insufficient tension in spring (Fig. I, Item 9), or excessive friction or binding in the motion of the control lever (Fig. II, Item 36).

E. FAILURE TO TRIP

1. Turn off the changer during a change cycle so that the clutch engagement lever (Fig. II, Item 41) may be actuated with the finger while the trip lever is being held away, so that the engagement lever does not lock in the "up" position. The clutch engagement lever must not stick in the up position due to binding at any point. CAUTION: It is not advisable to use any lubricant at the bearing point of the clutch engagement lever (Fig. II, Item 51); this bearing is intended to be a loose fit, run dry, and operate due to gravity.

2. Excessive pressure on spring (Fig. II, Item 50) would tend to make the needle jump out of the cut-off groove of the record (see paragraph D-1 above) and prevent tripping.
  3. The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm. The Shielded Lead should be so positioned that it loosely rests near the tone arm post immediately below the point at which it leaves the tone arm bracket. Under no circumstances should the Shielded Wire be fastened in place, pulled taut, or restrict free tone arm movement. This is particularly important in machines which use extremely light pressure pickup cartridges.
- F. INSUFFICIENT POWER TO COMPLETE A CHANGE CYCLE
1. Inspect the bearing of the main drive gear (Fig. I, Item 1) for excessive friction or binding.
  2. Inspect the selector arm bearings for excessive friction or binding.
- G. JAMMING OF THE MECHANISM
1. Should the changer jam at any time during a change cycle for some reason other than jamming of the selector arms with the records being changed, remove the records and attempt to free the machine by rotating the turntable in a reverse direction through a quarter turn. If the jam is apparently cleared by such action, the machine should be checked by operating it automatically several time, but with no records.
  2. If the jam does not clear by rotating the turntable in a reverse direction, inspect the underside of the changer panel for damaged or missing parts.
  3. Inspect the meshing of the drive gear (Fig. I, Item 1) with the pinion gear (Fig. I, Item 11). If the two gears do not mesh (that is, if they are not so timed as to fit together properly) it is probably due to the fact that the clutch engagement lever (Fig. II, Item 41) has been damaged or bent. This clutch engagement lever is intended to so contact one of the lower projections on the pinion gear (Fig. I, Item 11) that the teeth of this pinion gear (Fig. I, Item 11) and the teeth of the main drive gear (Fig. I, Item 1) be timed to fit together properly whenever the mechanism starts a change cycle. If the clutch engagement lever (Fig. II, Item 41) is bent, it may be straightened until, by trial, the two gears mesh properly when the changer is tripped. It is advisable that the changer mechanism be operated by hand so that this timing or meshing between the two gears can be more closely observed during any adjustments or inspections.



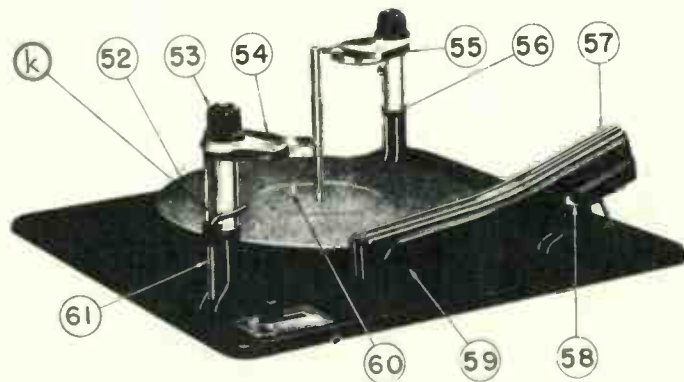
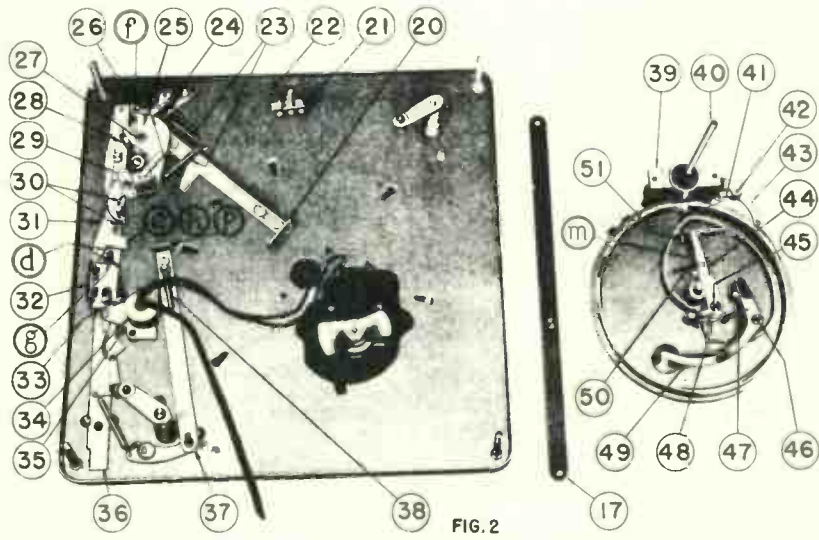
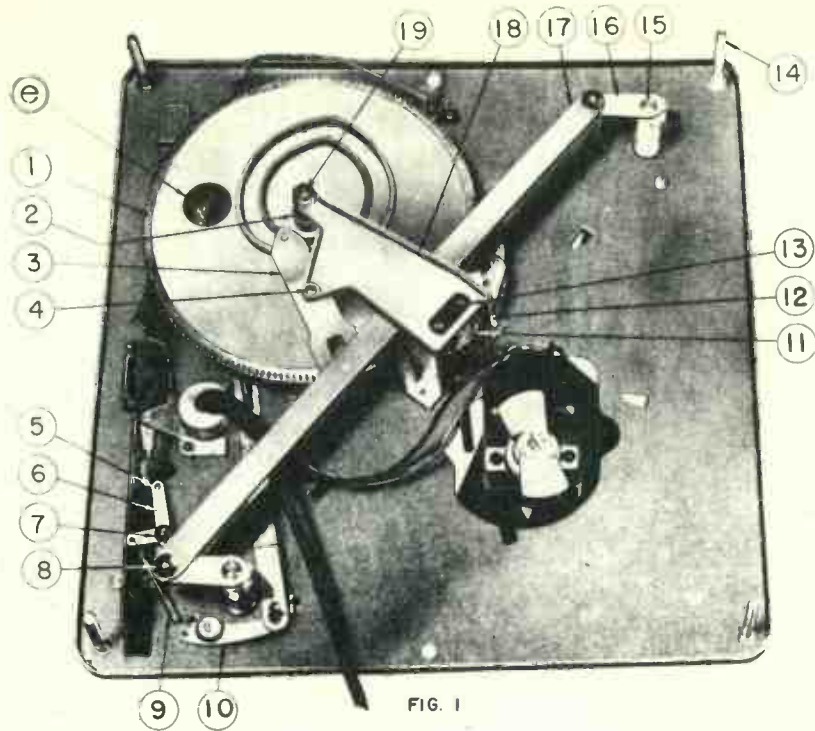


FIG. 3

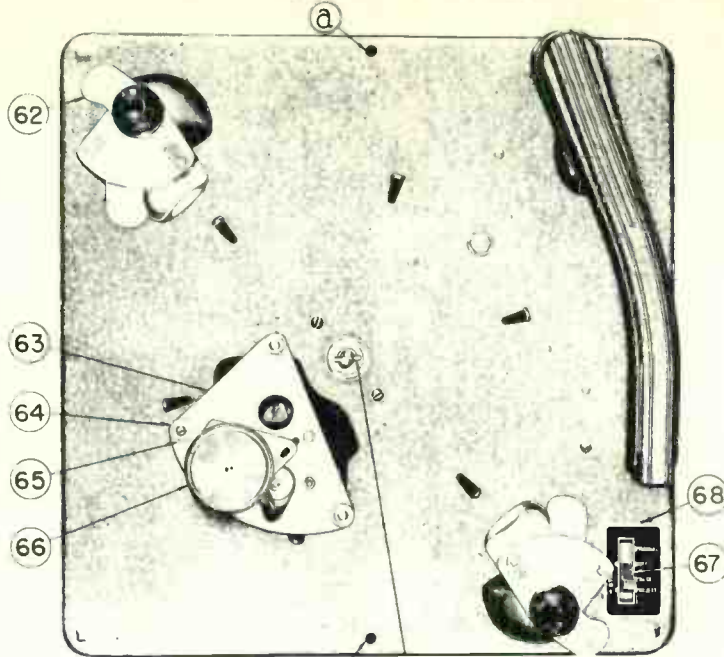
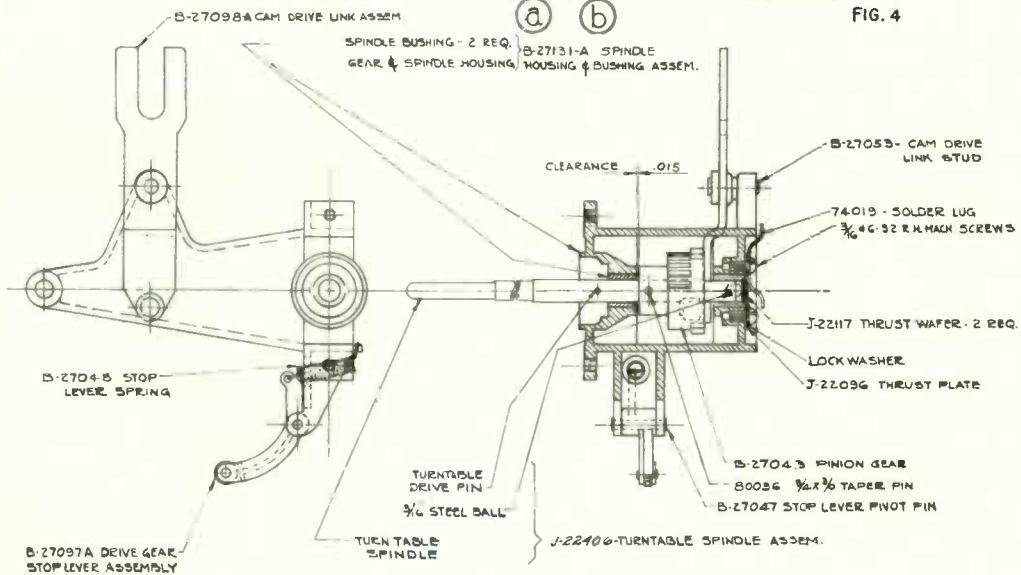
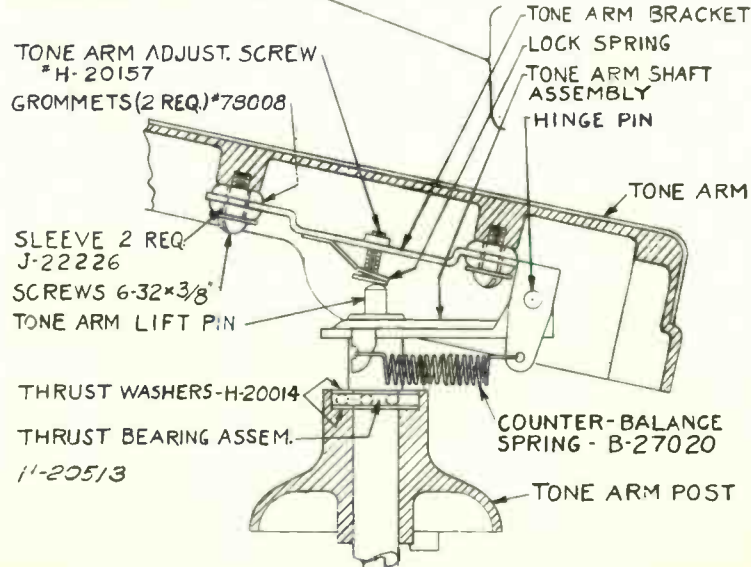


FIG. 4



TONE ARM BRACKET ASSEMBLY #B-27136



## SEEBURG RECORD CHANGER PARTS LIST 1941-42

Item No.	Part No.	Description
1	133856	Drive Gear Assy.
2	133857	Fiber Thrust Washer
3	133858	Cam Drive Link Assy.
4	133859	Cam Drive Link Stud
5	133860	Roller
6	133861	Roller Lever Assy.
7	133862	1/8" Snap Washer
8	133863	3/16" Snap Washer
9	133864	Roller Lever & 12" Set Arm Spring
10	133865	12" Reset Arm Assy.
11	133866	Pinion Gear
12	133867	Stop Lever Spring
13	130659	Thrust Plate
14	133868	Panel Mounting Stud
15	133869	Selector Shaft Assy.
16	133870	Drive Crank Assy.
17	133871	Drive Link Assy.
18	133872	Spindle Housing & Bushing Assy.
19	133873	Drive Gear Shaft
20	133874	Manual & Reject Lever
21	133875	Terminal Strip
22	130683	Shielded Wire
23	130674	Tone Arm Locator & Latch Spring
24	133876	Tone Arm Latch Lever
25	133877	Tone Arm Lever Assy.
26	133878	Connecting Link
27	133879	Tone Arm Lift Pin
28	133880	Cap Screw 1/4"-20
29	133881	Trip Shoe
30	130671	Booster Spring
31	133882	Tone Arm Locator Assy.
32	133883	Upper Slide Spring
33	133884	Lower Slide Spring
34	133885	A.C. Switch
35	133886	Switch Plate Assy.
36	133887	Control Lever Assy.
37	133888	12" Reset Lever
38	130669	12" Reset Lever Spring
39	133889	Spindle & Pinion Gear Assy.
40	133890	Turntable Spindle Assy.
41	133891	Clutch Engagement Lever
42	133892	Stop Lever Pivot Pin
43	133893	Drive Gear Stop Lever Assy.
44	133894	Trip Lever Assy.
45	133895	Trip Lever Shoulder Screw
46	133896	Retard Lever Shoulder Screw
47	133897	Retard Lever Spring
48	133898	Trip Dog Spring
49	133899	Tone Arm Retard Lever
50	133900	Trip Lever Spring
51	133901	Clutch Engagement Lever Pin
52	133902	Turntable
53	133903	Control Knob
54	133904	Selector Arm & Blade Assy. #1
55	133905	Selector Arm & Blade Assy. #2
56	130722	Thrust Washer
57	133906	Tone Arm
58	133907	Tone Arm Mounting Assy.
59	132738	Crystal Cartridge
60	133909	Retractable Pin
61	130718	12" Set Rod
62	130738	12" Selector Blade
63	133910	Motor Assy.
64	133911	Motor Mounting Bushings
65	133912	Motor Grommet
66	133913	Motor Idler Pulley
67	133914	Switch Control Knob
68	133915	Control Escutcheon
	133916	Steel Ball
	133917	Solder Lug
	133918	Taper Pin
	133919	Turntable Drive Pin
	130659	Thrust Plate
	130721	Thrust Wafer
	130729	Turntable Spindle
	133866	Pinion Gear
	133892	Stop Lever Pivot Pin
	133867	Spring
	133859	Cam Drive Link Stud
	133893	Drive Gear Stop Lever Assy.
	133858	Cam Drive Link Assy.
	133872	Spindle Housing & Bushing Assy.
	133922	Grommet
	130722	Thrust Washer
	130719	Tone Arm Adjusting Screw
	130723	Thrust Bearing Assy.
	133923	Sleeve
	133920	Counter Balance Spring
	133921	Tone Arm Bracket Assy.
	134021	Upper Mounting Spring
	131237	Lower Mounting Spring
	131238	Special Clamp Nut
	134123 - 132968	25 Cycle 110 volt Motor

## OPERATION

Index letters are alphabetically arranged to facilitate rapid locating of parts. Prefix letters are in illustration as follows: A in photo of top of record changer, B & C in photo of the bottom.

The capacity of the instrument is ten 12" or twelve 10" records.

To load, turn the storage shaft AF so that the bent portion points towards the front of the instrument. Then slip a selected stack of records onto the shaft, turn the shaft to point to the rear, and allow the pack of records to rest on the notch in the shaft and also on the ejector.

To start the instrument, turn on the switch AP, which will rotate the turntable. Then press down on the tone arm, AL momentarily and release at once. This depresses the reject button AD on top of the tone arm rest post, and starts the cycle, which will automatically repeat until the entire stack of records has been played.

To change records anytime while the record is playing, merely press down on the reject button AD on top of the tone arm rest post.

To play records one by one, remove storage shaft by lifting straight up. On models having a manual position indicated, turn the button on top of the tone arm rest post to the right. This locks the cycling mechanism during manual operation. Do not turn the button on models not having this feature clearly marked. To return to automatic operation, merely turn the button to the left (counter clockwise) approximately one-quarter turn.

## DESCRIPTION OF CYCLE

To start the cycle on models with a switch on the base plate or on the radio control panel, turn on the switch and press down on the tone arm. This depresses the reject button AD on top of the rest post, which in turn through trip link CE engages the follower CA, starting the cycle.

When follower CA engages in worm BC, follower arm CB is pivoted at CG lifting crank CR which raises tone arm AL. Crank CR is fastened to the lift pin. As this rises and strikes the incline at the angular upper end of the index plate CP, it causes a rotation of the crank CR which in turn contacts the crank pin CT fastened to the tone arm shaft and swings the tone arm AL inward until the crank CR strikes index plate CP. Then as the follower CA returns to its starting position, the crank CR drops, setting the tone arm AL on the record.

The set down position for 10" or 12" records is automatically controlled when the ejector is positioned so that the edge of the 10" or 12" records rest on the support bracket. The record ejector AC can be set in the 10" or 12" position by merely slightly lifting it and pulling or pushing it in or out until the 10" or 12" numbers show at the edge of the opening in the housing.

## ADJUSTMENTS

To adjust the set down position of the tone arm, trip the reject button AD, turn the turntable AH by hand until the crank CR strikes the index plate CP, loosen the clamp screw slightly, move the tone arm AL over until it is directly above the first groove in a record of the size indicated on the ejector slide AC. Then retighten the clamp screw, and carry the mechanism through the remainder of the cycle.

To adjust the center trip loosen the nut on the trip adjustment screw CK, move the tone arm in toward the center to a point  $1\frac{1}{8}$  inches from center, adjust CK until it barely touches the trip cam CH, and tighten the nut to lock the screw in position.

Should the trip cam CH come loose from the trip link CE, the fish hook end of CE should be held away from the worm BC against the edge of the hole in the follower CA, and with the trip cam CH just touching the end of the reject pin CM tighten the trip cam set screw.

The ejector arm adjusting screw at BA controls the amount of stroke of the ejector AC, and should be screwed up far enough to just release the bottom record of a stack of ten 12" records in cycle. Then tighten the locknut at BA. The trigger adjustment BL controls the location of the ejector AC and should be screwed up until the ejector AC is approximately  $\frac{1}{16}$ " from the edge of a record. Then tighten the lock nut.

## REPLACING MOTOR

Remove idler wheel AG and the three motor mounting nuts AM. Be sure to save metal bushing spacers, which slip inside of rubber grommets. These prevent rubber from being squeezed out of shape which would prevent proper cushioning of motor. Place motor of proper rating in same position as present motor and replace spacers, washers and screws as before.

## NEEDLE PRESSURE

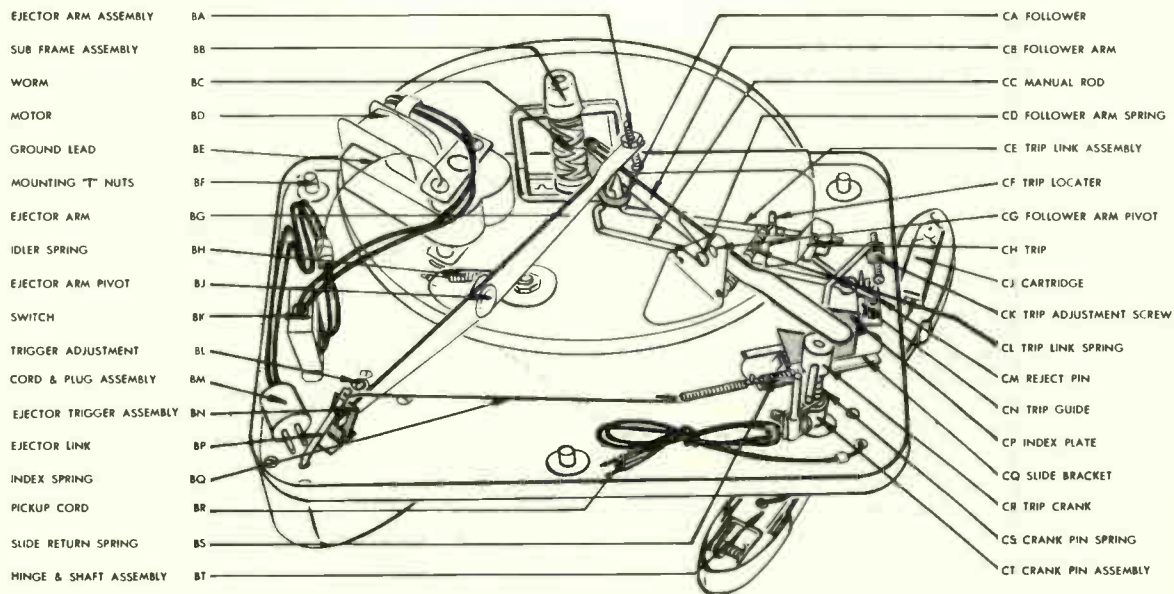
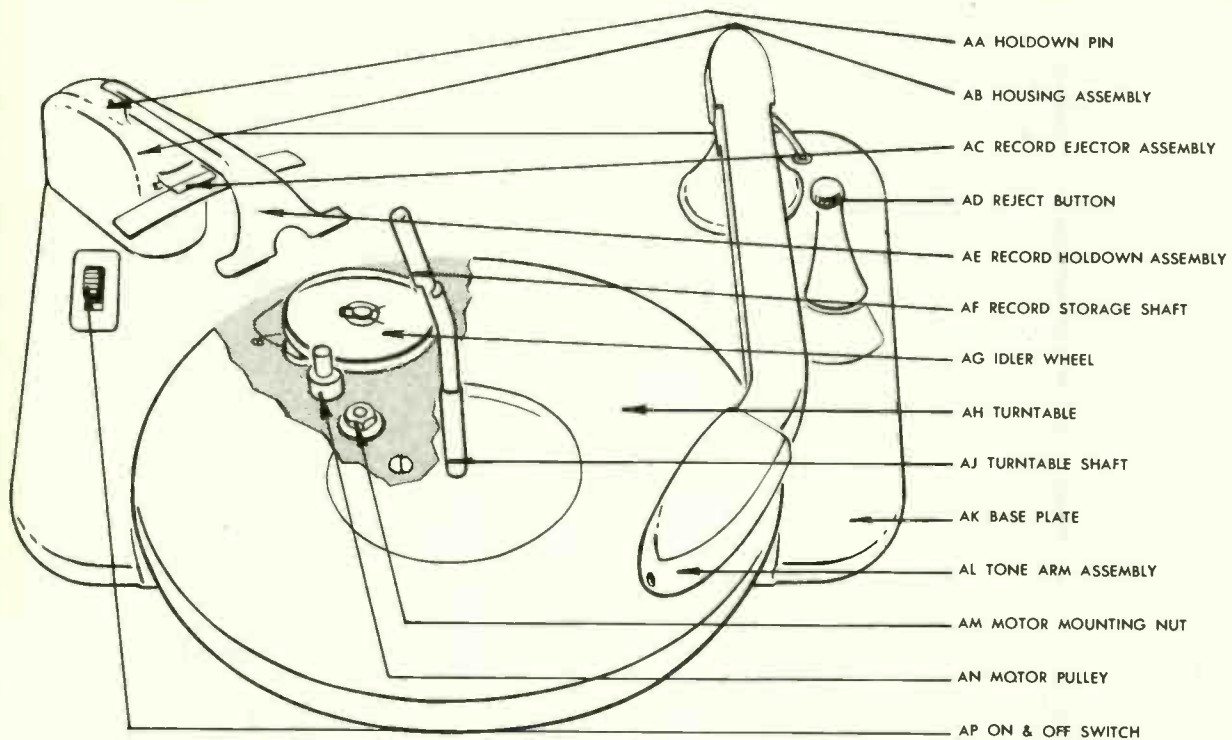
To increase the weight on the needle, should it jump grooves or slide across the grooves too easily, lift the tone arm, and relieve the spring tension by releasing the small sprocket wheel a quarter turn at a time.

Conversely, should the records and needle wear too fast, increase the spring tension with the sprocket to decrease the needle pressure.  $1\frac{1}{4}$  ounces to  $1\frac{3}{4}$  ounces pressure will operate satisfactorily.

## LUBRICATION

No lubrication should be necessary. However, in case of squeaks or stiffness of operation a drop of any good light machine oil on each of the bearings on the spindle worm and at other pivot points should be applied. Also, a light application of grease to the worm itself might help.

# NEW PRODUCTS



## NEW PRODUCTS

1. KEEPS REPEATING ON TOP OF WORM -- Bend trip latch back slightly so trip spring does not exert so great a pressure on worm follower. It may be necessary to first loosen set screw on trip can. If this does not correct trouble, check follower arm to make sure it is straight and bend slightly, if necessary.
2. KEEPS REPEATING ON BOTTOM OF WORM -- Bend follower arm to straighten.
3. NOISE WHILE CYCLING -- This trouble is caused by the follower arm being bent out of position. Straighten arm.
4. FLUTTERING FOLLOWER WHILE PLAYING -- Check to see if follower arm is all the way up to top of worm; if not, bend arm slightly in toward worm to stop binding.
5. LIFT PIN SLIDES OFF FOLLOWER ARM -- Bend follower arm to center it over lift pin.
6. FOLLOWER ARM BINDS -- Bend follower arm away from fulcrum at both sides of rivet.
7. DOES NOT CYCLE WITH REJECT BUTTON -- Check to see if trip latch is releasing follower. If trip latch releases cam follower but it will not center threads of worm, bend follower arm.
8. DOES NOT CYCLE ON CENTER TRIP -- Check adjustment of trip. If follower is being released, bend arm as above. If follower is not being released, readjust trip.
9. FOLLOWER JAMS -- Bend follower arm to straighten.
10. TURNTABLE RUBS -- Loosen set screw on worm with Allen wrench and raise spindle about 1/16".
11. MOTOR SLOWS DOWN DURING CYCLING -- Bend paddle end of follower arm down slightly or set ejector screw back a little.
12. IMPROPER SET DOWN ON RECORD -- Loosen tone-arm crank screw and turn tone-arm slightly in proper direction if arm is 1/8" or more off.
13. CENTER TRIP TOO FAST OR SLOW -- Readjust trip screw.
14. RECORD DROPS ON TONE ARM -- Bend back end of follower arm up slightly. Make sure ejector screw is adjusted properly.
15. WILL NOT DROP RECORDS -- Set ejector arm screw slightly higher. Always check on full stack of 10-12" records. Adjust Screw So Bottom Record Will Just Fall.
16. IMPROPER ADJUSTMENT OF LEDGE -- Adjust position of ledge so it is about 1/16" back of records by means of screw located under ejector housing.
17. SHORT -- Remove switch cover and bend lugs so they do not touch cover.
18. CRANK ARM BENT -- Be sure crank arm is straight or set-down will be off on high stack of records.

### PARTS LIST

Part No.	Description	Part No.	Description
133819	Fibre Washers	133838	No. 8 Lock Wash. External
133821	Clip Rivet	133839	Screw 10-32
134442	A.C. Cord Plug	133840	Nut 10-32
134441	A.C. Cord Plug Cover	133841	Type Z Screw
133822	Motor Cord Clamp	134345	Reject Button
W-134375	Pickup Crank Spring	134443	Service Manual
W-134456	Counterbalance Sleeve	W134387	Hold Down Pin
W-134457	Pressure Adj. Wheel	W-133524-1	1/4"-20 x 1 5/8" Stud
W-29614-2	Wing Nut	133846	Trigger Assy.
W-134376	Slide Spring	133847	Ejector Slide Assy.
W-134458	Housing Spring	W-134469	Index Slide Assy.
W-134459	Trip Screw 8-40	133848	Sub Frame Assy.
W-134460	Nut 8-40	W-134470	Turntable Shaft Assy.
W-133525-1	Mounting Washer	133849	Storage Shaft Support Shaft
W-134461	Motor Assy.	133851	Reject Post Assy.
W-134377	Pickup Cord	W-134471	Hinge & Shaft Assy.
133824	Pickup Wire Clip	W-134472	Clamp Assy.
W-134378	Switch	133852	Clamp & Pin Assy.
W-134379	Turntable	W-134473	Indexing Assy.
W-134380	Wheel	W-134474	Hinge Assy.
W-134381	Idler Spring	133855	Housing Assy.
133825	Screw 8 x 1/2 Type Z	W-134475	Trigger & Spring Assy.
W-134382	Nut	134439	Reject Shaft
W-134462	Needle Set Screw	W-134393	Trip Link Assy.
133845	Motor, Pulley, & Screw	134425	Crank
W-134463	Cartridge Screw	W-134389	Trip Guide
133844	60 Cy. Pulley & Set Screw	W-134477	Lead Weight
W-134383	50 Cy. Pulley & Set Screw	133427	Counterbalance Spring
133843	Type NI-5 Cartridge	W-134476	Crank Assy.
W-134464	Slide Bracket	W-134390	Trip
133826	Follower Arm	133426	Lift Pin
W-134465	Shaft Clamp	W-134478	Crank & Pin Assy.
133827	Ejector Arm	W-134394	Hold Down Assy.
W-134466	Pickup Hinge	W-134479	Ejector Arm
W-134467	Index Slide	W-134391	Screw & Nut
W-134384	Worm	W-134392	Index Spring
133828	Pickup Post	W-134480	Follower Arm Assy.
133829	Follower	134032	Changer with Needle Has 12-3/4
133830	Follower Arm Spring		Inch Shielded Connecting Leads
133831	Crank Spring	134420	Changer with Needle Has 21-1/2
134440	Reject Spring		Inch Shielded Connecting Leads
W-134468	Bearing	133542-1	Same as 134032
W-133523-1	Mounting Spring	133542-3	Same as 134420
W-134385	Ejector Link	134538	Follower Guide Spring
133835	Rivet	134539	Fulcrum
133837	Screw #6 Type Z		

Please note that there are three types of follower arms, and they are not interchangeable.

1. W-133827-- R667 Follower Arm, which is the original and does not have a bushing at the fulcrum.
2. W-134480-- R898 Follower Arm, which is second type having a die cast bushing at fulcrum.
3. W-134535-- R899 Follower Arm, which is straight throughout its length and the fulcrum point is somewhat shorter than the other two.

## CAPEHART (USED ON MODEL 639 M)

This record changer is mounted on a heavy metal base which is rubber mounted to the cabinet. The turntable is rim driven and in turn drives the automatic changing mechanism. Each changer is thoroughly tested before it leaves the factory and should not need any further adjustments. It is possible that due to wide variations in types of records used, minor adjustments in settings may have to be made. Under the following headings are listed effects, possible cause and method of correcting.

A word of caution when checking for quality.

1. Make sure that all the packing has been removed, around motor, turntable, etc.

2. See that the changer unit does not touch the cabinet, it must float on the four rubber mountings. The four screws which mount base to cabinet should be removed (AFTER RECEIVER IS IN POSITION).

3. ALWAYS USE A GOOD NEEDLE AND SEE THAT IT IS SEATED AND THAT THE NEEDLE SCREW IS TIGHT.

### 1. Motor Will Not Start.

1. Plug not in receptacle, house fuse blown, defective outlet.

2. Defective switch (Phono-Radio), open motor winding or leads.

3. Motor stopped in an overload position, i. e., record drop cam and cam roller at point where roller is just about to LOWER shelf. Turn the turntable (clockwise) two or three revolutions by hand.

NOTE: The turntable screws down on the record spindle. To remove, turn in clockwise direction by hand until the curve on the spindle is toward the loading rack, then lock small drive pinion in that position. Spindle must NOT turn. Unscrew turntable (counter clockwise).

4. Friction drive pulley stuck, friction drive pulley not touching turntable rim or bushing on motor shaft not touching friction drive pulley. Oil on friction drive pulley.

5. Center pinion shaft stuck or tight. Free and oil.

When replacing be very careful so as not to bend or spring the friction drive pulley which will have to be pushed under the edge while screwing the turntable in position.

### 2. Tone Arm Does Not Drop In Correct Position.

1. 10 inch or 12 inch lever not in correct position for record being played. Check setting of lever.

2. Tone arm drop not set correctly to meet record variations. Records may vary as much as 1/2-inch in diameter. Adjust for average conditions.

To adjust tone arm drop, place gauge on turntable, large hole (A) over spindle, place needle in tone arm and then place tone arm so the needle sets in small hole marked "NEEDLE SET FOR 10". Throw 10" record lever in correct position. The tone arm adjusting lever, see Fig. 7, must have its stud in contact with the tone arm travel lever, this lever must be in contact with die cast cam and gear. Loosen screw in adjusting lever and adjust lever, then tighten. Check operation and repeat until tone arm drops in correct position.

To adjust for 12-inch records, throw lever to left for 12-inch records. With gauge in place on turntable place tone arm in position marked "NEEDLE SET FOR 12". Loosen lock nut on tone arm travel lever and adjust screw to stop. Tighten lock nut and check. Repeat until needle drops in correct position.

For the above adjustments use a small cotter pin instead of a needle. This prevents any scratching or marring of records or turntable surface.

### 3. Trips Before Record Is Finished.

This condition invariably is caused by the clutch being too tight. This clutch is the friction type and when the pickup moves at an increased speed toward the center of the record, sufficient torque is developed to cause the tripping arm to act. To remedy it is necessary to have a No. 6 Bristol wrench to loosen the

special set screw in the collar nearest the base of changer, see Fig. 1. Loosen set screw and turn collar a fraction of an inch to the left (counter clockwise) tighten set screw. Check and repeat until record plays to end.

### 4. Does Not Trip After Record Is Finished.

1. Center groove on record does not have sufficient pitch to develop enough torque to actuate clutch. This may result from improperly cut trip groove in record or loose clutch setting.

2. It may be possible that the trip arm may have jumped to the wrong side of the rocker bar trip arm see Fig. 7. It should be on the same side as reject arm.

3. To check the trip action adjustment, place the gauge (hole marked B) on the lower spindle and set needle or cotter pin in hole marked TONE ARM TRIP (17/8" centers). When in this position the cam on the center pinion shaft should be pointing toward tone arm. With cam as stated, the starting lever should be touching cam when cam and starting lever are in this position. The tone arm tripping lever should be in contact with the starting lever. Likewise the rocker bar (Fig. 3) (bar which engages pin in pinion gear shaft causing large cam gear to engage pinion gear) must be in contact (beneath) the end of the starting lever (Fig. 3) The end of starting lever may be bent sufficiently to make contact. The end of starting lever must not be bent any more than that which is necessary to center the other end of the rocker bar between the cam and the pin on the small pinion gear (Fig. 3) (running position).

After the above has been checked and adjusted the trip arm (while unit is running) should come in contact with the starting lever when the needle is about 3 1/2 inches from the center line of the spindle. This may be adjusted by loosening the Bristol set screw in tripping lever stop collar (Fig. 1) and turning collar a fraction of an inch to the left. Check operation after tightening set screw.

4. The clutch may be too loose, thereby not developing sufficient torque. To adjust loosen Bristol set screw in clutch collar, rotate collar (Fig. 1) to the right a fraction of an inch. Tighten set screw. Check operation.

### 5. Records Do Not Drop.

1. Record hole tight or record warped.

2. Shelf height not correct. To adjust see Fig. 4, for correct height; adjust for 10" records first.

3. Spindles may not be in correct relation. See Fig. 4, for correct alignment. Top spindle adjustable.

4. Record drop cam roller out of adjustment. Set correct shelf height (10" shelf) by loosening lock nut and turning screw; tighten locknut.

### 6. Drops More Than One Record.

1. Warped record.

2. Spindle alignment and etc. Same procedure as listed under 5.

### 7. Tone Arm Drags On Record.

1. Too many records on the turntable.

2. Records may be thicker than average or warped.

3. Needle too long or not properly seated.

4. Tone arm lift adjusting screw loose or out of adjustment.

To check the tone arm for correct lift, rotate turntable (clockwise) by hand and push reject button in order to actuate trip. Turn slowly until tone arm reaches maximum height and starts to travel toward tone arm rest, then stop when the arm is approximately one inch from edge of turntable. Check the height of the tone arm from the surface of the turntable as indicated in Figure 5. From the lower edge of the tone arm to the top of the turntable the distance should be between 1 7/16" and 1 17/32". To adjust the tone arm lift screw (Fig. 2-A) loosen locknut and adjust screw until arm is within above tolerance, then tighten locknut.

# CAPEHART

FIGURE 1

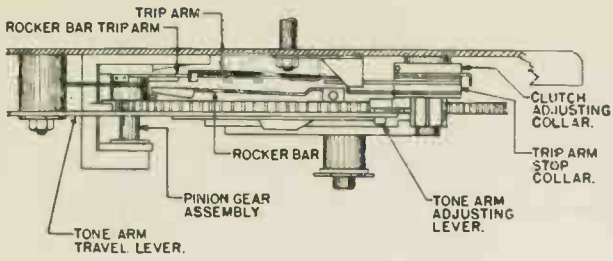


FIGURE 4

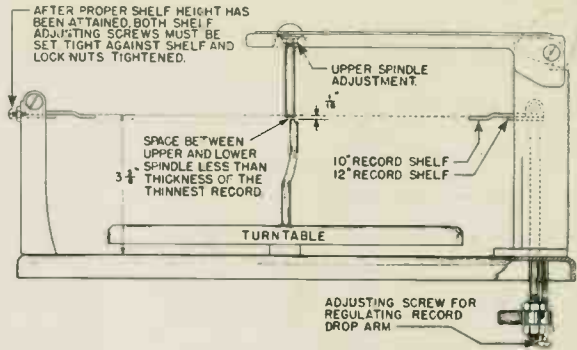


FIGURE 2-A

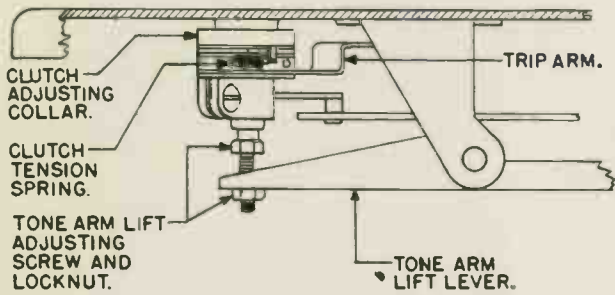


FIGURE 5

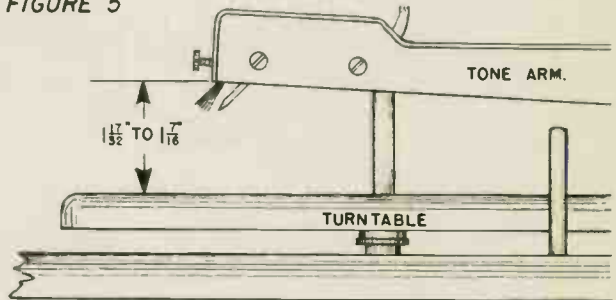


FIGURE 3

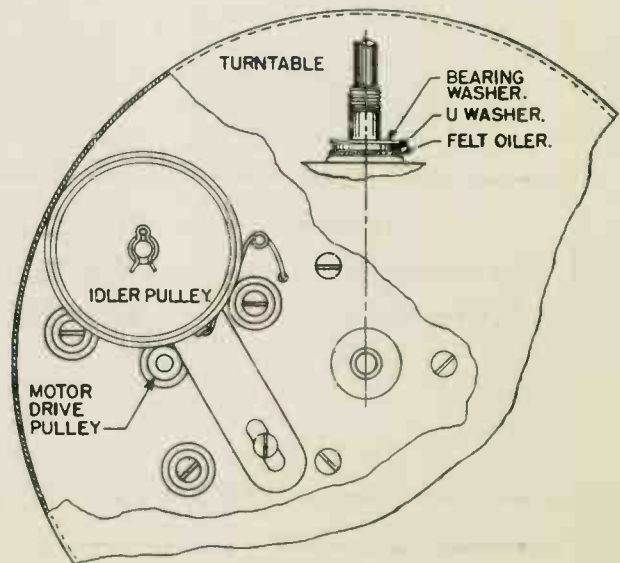
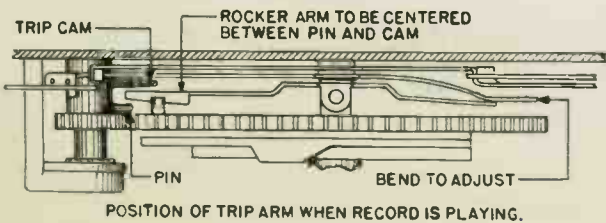


FIGURE 6



CAPEHART

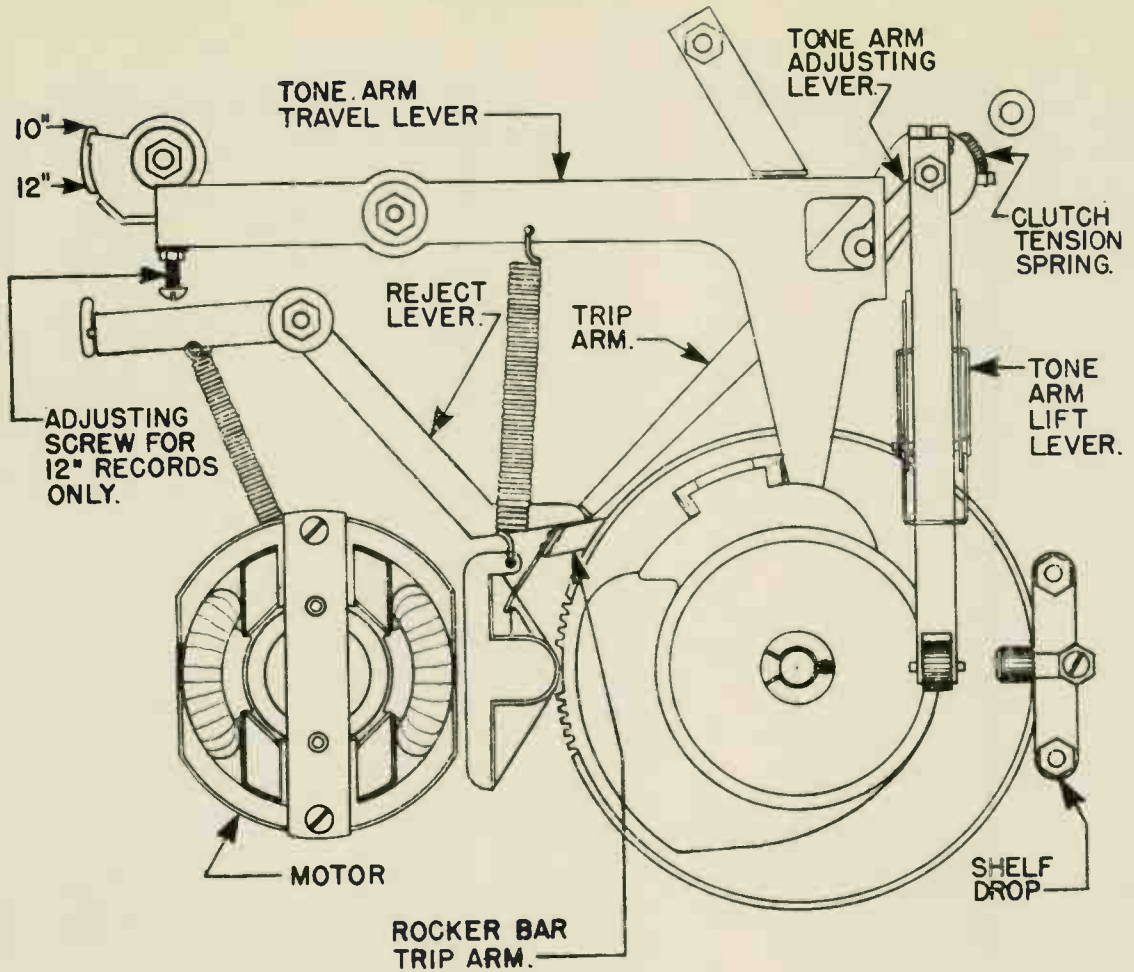
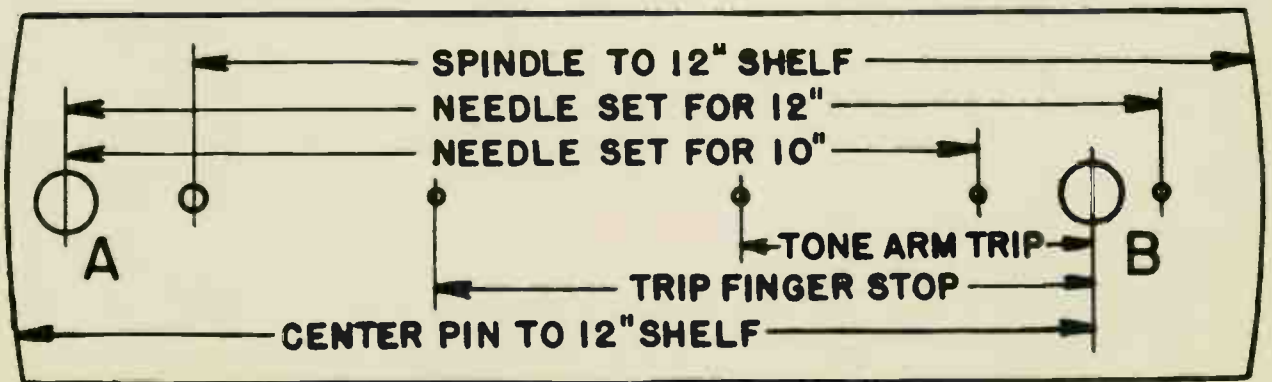


FIGURE 7



ADJUSTING GAUGE TEMPLATE  
610

CAPEHARD RECORD CHANGER AS USED WITH MODEL 639M

Part No.	Description
49744	Rocker Bar
49745	Trip Arm
49746	Pinion Gear Assy.
49747	Tone Arm Adjusting Lever
49748	Clutch Adjusting Collar (Upper)
49749	Trip Arm Stop Collar
49750	Tone Arm Lift Lever
49751	Shelf Drop Spring
49752	Travel Lever Spring
49753	Reject Lever
49754	Reject Lever Spring
49755	Upper Spindle Adj. Nut.
49756	Clutch Flat Spring
49757	Clutch Drive Cork
49758	Reject Knob
49759	10"-12" Record Knob
130041	Tone Arm Lift Rod
130975	Rocker Bar Trip Arm
131567	Tone Arm Pivot Grommet
48548	Idler Pulley
49103	Rubber Band for Idler Pulley
48537	Motor Drive Pulley (60 cy)
48536	Motor Drive Pulley (50 cy)
48544	Turntable
48543	Tone Arm Assy.
49573	Upper Spindle
132059	Lower Spindle
49629	Clutch Spring
48542	Crystal Unit
48549	Record Brush
48550	Needle Screw
48545	Motor (60 cy)
48546	Motor (50 cy)
49530	Wrench for #6 Bristol
48453-A	Record Changer (110 v. 60 cy)
48531	Record Changer (220 v. 50 cy)

## RADIO PRODUCTS SERVICE NOTES

### IF CHANGING CYCLE FAILS TO STOP

With the center post (3) out remove the large nut (2) in the center of the turntable (1) and lift off the turntable. Loosen the two screws (23) this will free the large cast gear (35). Push these screws to the point where the small gear (21B) is free in the blank part of the teeth in the large gear (35), but as far as possible from the starting teeth of the large gear when it is in the locked or stopped position. Tighten the screws (23) in the slots firmly and re-assemble the turntable and nut. Check and see if the starting lever (30) on the underside of the large gear (35) is cocked by trigger bracket (35F) when the large gear makes a complete revolution. If not, check springs (35A) and (35B). Spring (35A) pushes lever (30) to the engaging position when released by trigger bracket (35F) held against lever (30) by spring (35B).

### PICKUP ARM ADJUSTMENTS

#### VERTICAL MOVEMENT

To adjust the height of the pickup arm (9) turn the knurled screw (91) on the underside of the pickup arm (9) directly above the pickup arm lift shaft (60). Turn the screw (91) counter-clockwise to raise the pickup arm, and clockwise to lower the pickup arm.

#### HORIZONTAL MOVEMENT

If the pickup arm (9) does not come down on the record so the needle first touches the record about  $\frac{1}{8}$  inch from the edge, an adjustment is required. The inside part of the large gear (35) has two tracks, the inner one for ten inch records and the outer one for twelve inch records. It is only necessary to set the pickup (9) for one size, either the ten, or twelve inch. Turn the large gear (35) around until the roller pin in the mover arm (54) is just about to leave one of the tracks. If the pin of the mover arm (54) is in the inside track a ten inch record must be on the turntable and if in the outside track a twelve inch record is required. Now loosen the two screws (57 and 59) that secure the pickup arm shaft (9D) to the mover arm (54) and turn pickup arm (9) to correct point. Tighten screw through the slot first (59) and then the set screw (57).

The pickup arm shaft (9D) has a small spring (58) fastened to it underneath the changer to push the needle over into the first groove on records without a starting groove. The force the spring (58) exerts is adjusted by moving the hook in the end of the spring (58) to another hole in the hook plate (62). Facing the underside of the changer with the plate (62) in the upper left hand corner, moving the hook in the spring (58) to a hole to the left will increase the tension, to the right will decrease the tension. If the needle jumps several grooves when pushed over the spring tension is too light, while if the arm does not move all the way over to the first groove more spring tension is required.

#### TRIP ADJUSTMENTS

The position trip adjustment is a screw (55) located near the end of the mover arm (54) underneath the changer. To trip earlier turn the screw (55) clockwise, to trip later turn the screw counter-clockwise. Lock adjustment with nut (56).

### RECORD HOLDER POST ADJUSTMENTS

With the changer properly loaded the bottom record on the stack should rest for about  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch on each side of the top (4B) of the record holder post (4), if not adjust as follows: With the center post (3) out remove the large nut (2) in the center of the turntable (1) and lift off the turntable. Loosen the two screws (18) in the slots in line with the record holder post and the center. Push the screw heads (18) the required amount toward, or away from the record holder post (4) and tighten the two screws (18).

The top of the record holder post (4) is fastened by the shaft on (4A) inside the post to the size cam (4D) underneath, which has two rectangular holes into which snaps a spring arm (44). The pressure this arm

(44) exerts on the above size cam (40) may be adjusted by the screw (45) which presses against the arm (44). The arm (44) should press firmly against the size cam (40) so it will snap tightly into either of the two holes. When the spring arm (44) is in the rectangular hole farthest from the outside of the size cam (40) the top of the record holder post (4) should be in the ten inch position. If the screw (45) is too tight it will be hard to turn the top of the record holder post (4). The size cam (40) is fastened to the shaft of (4A) inside the record holder post (4) by two hex head set screws (41).

If both sides of the record pusher (4F) on the top of the record holder post (4) do not push against the lower record at the same time, loosen the two hex head screws (41) and turn the top of the record holder post (4) slightly to the proper position. Tighten the screws (41).

### SETTING FOR 10 OR 12 INCH RECORDS

The edge of the size cam (40) pushes against a knurled screw (71) on size change lever (73). This sets a switch (33) on the cam part of main gear (35), for the pickup (9) to drop for either a ten inch or twelve inch record by causing pin in the arm fastened to the mover arm (54) to travel through one of two tracks in the inside of the large cast gear (35). After adjustment is made tighten the lock nut (72) on the knurled screw (71).

### RECORDS FAIL TO DROP

If a record fails to drop during a changing cycle, but the record pusher (4F) on top of the record holder post (4) is operating and the adjustments under "Record Holder Post" are correct, proceed as follows: Set the large gear (35) in the locked position and the top of the record holder post (4) in either the ten inch or twelve inch position. Loosen the single hex head screw (70) which secures a "U" bracket (69) to the inside shaft (4E) of the record holder post (4) underneath the changer. Turn the shaft (4E) slightly until the sides of the record pusher (4F) are about  $\frac{1}{4}$  of an inch back of the edge from where the records drop. The hex head screw (70) should now be firmly tightened.

While the large gear (35) makes one complete revolution, during a changing cycle, the pusher arm (4F) should extend past the edge from where the records drop, and return.

### NOTE I

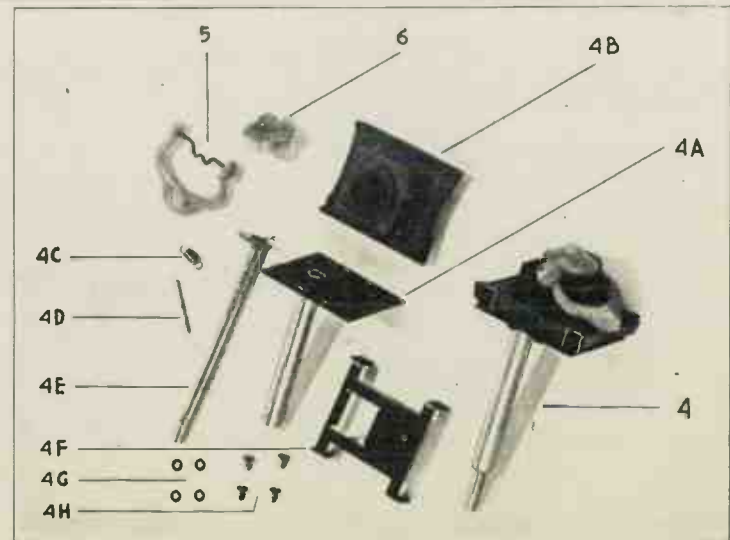
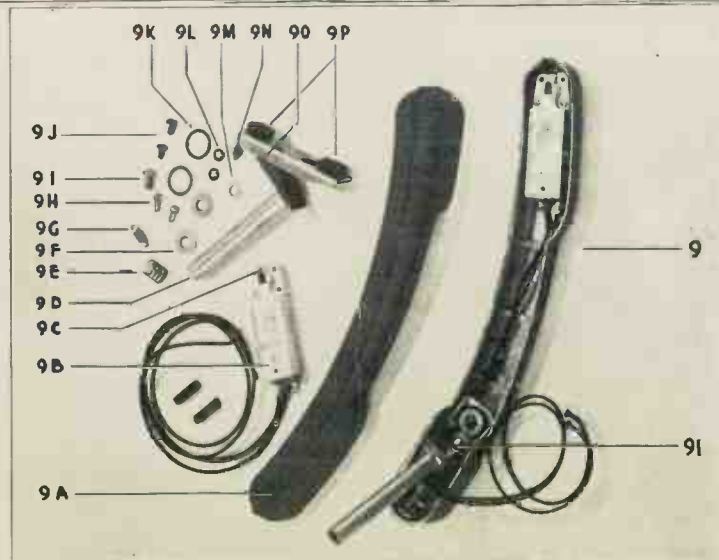
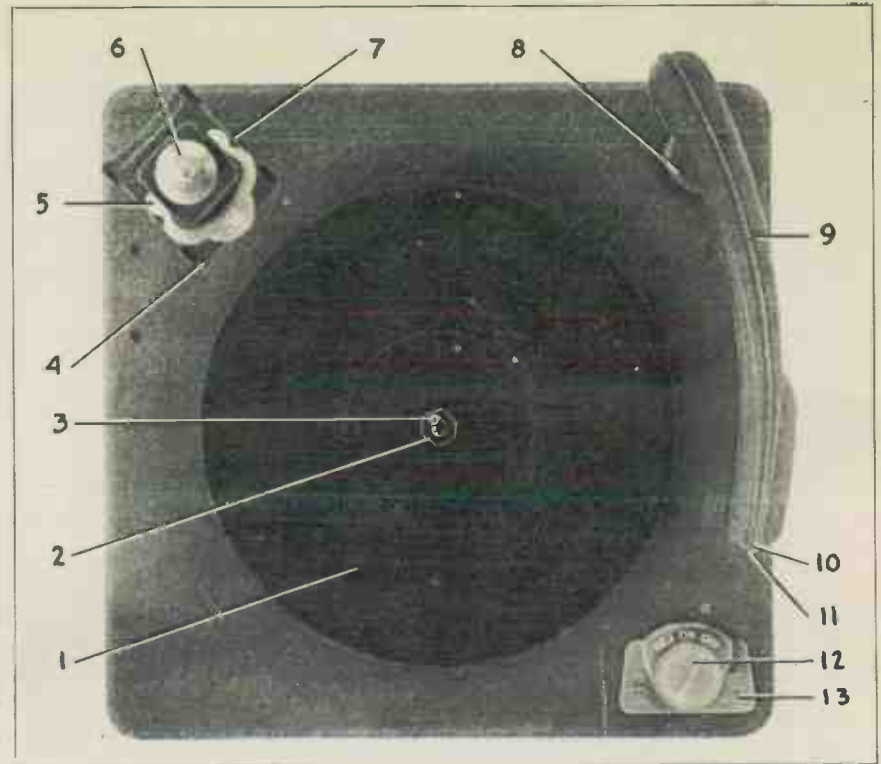
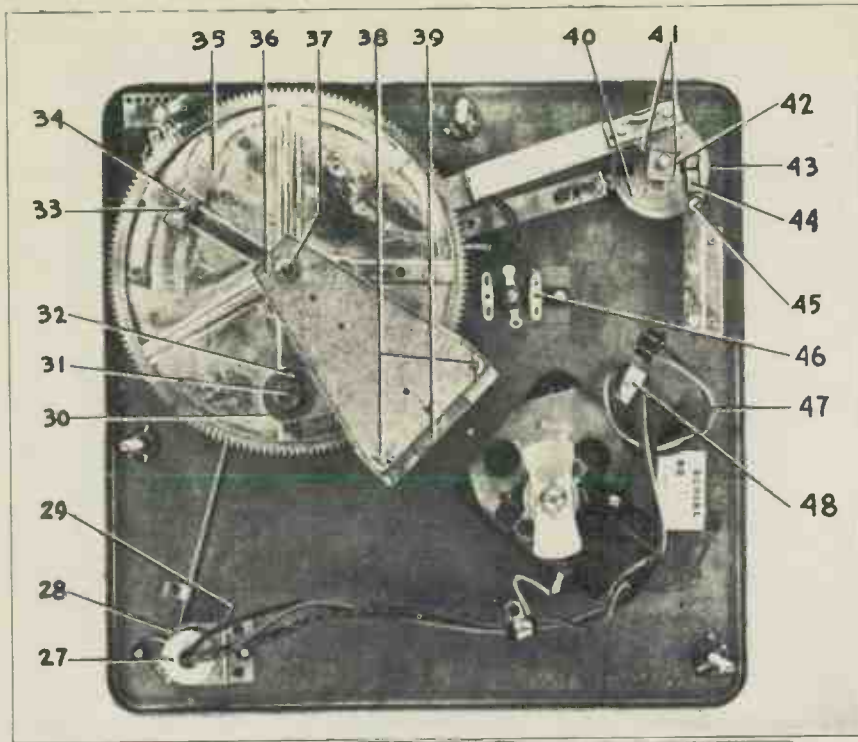
#### 50 CYCLE OPERATION

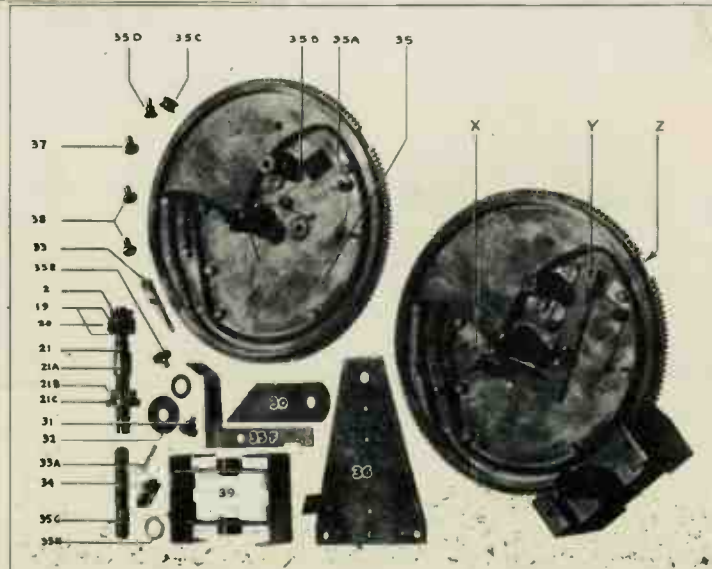
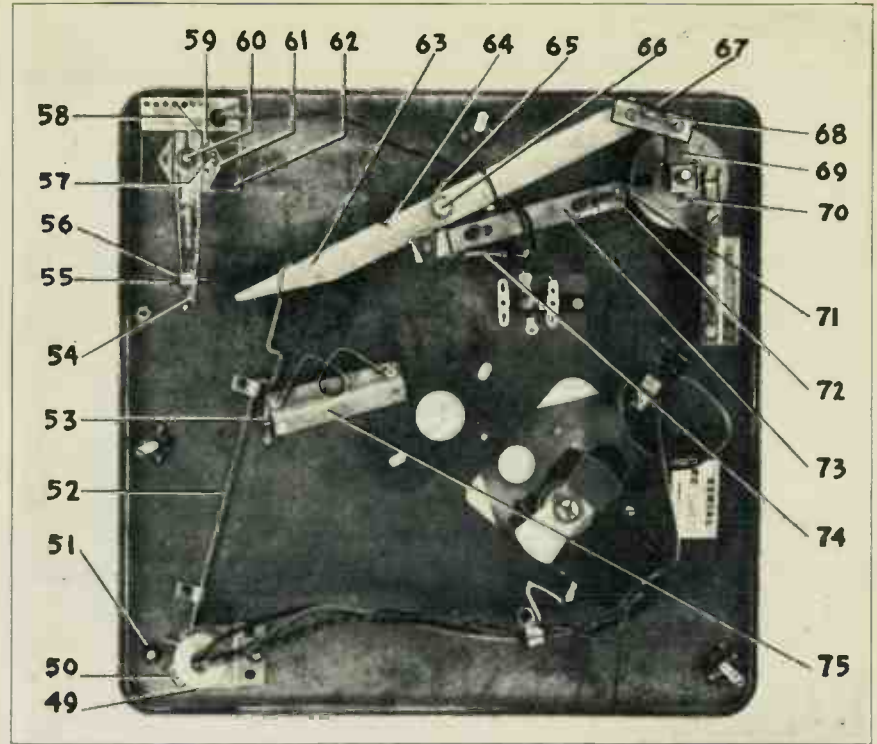
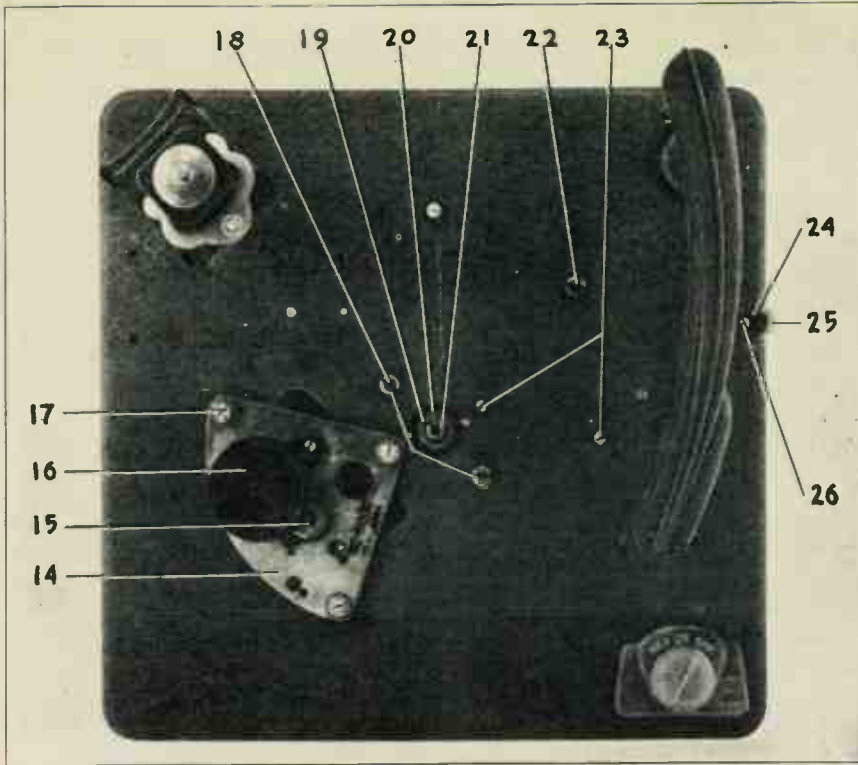
If operation is desired on 50 cycle current, a small spring (15), see parts list, must be added to the motor shaft in the following manner:

With the center post (3) out, remove the large nut (2) in the center of the turntable (1) and lift off the hand. Hold conversion spring (15) in the right hand turntable. Hold motor rotor with fingers of the left with the extension upwards. Hook lower end of spring (15) over edge of rotor shaft drive pulley and with a downward twisting effort in a direction to unwind or enlarge the inside diameter of the conversion spring (15) force down over entire pulley length. The extension which is provided for ease of assembly only, should then be sprung away from the pulley sufficiently to allow it to be snapped off with a pair of diagonals, at the spring surface so no protrusion will remain to impair operation of the drive pulley. The motor shaft pulley thus enlarged will provide proper turntable speed with the motor operating on 50 cycle current.

### RUMBLE OR CHATTER

Make certain the pickup arm mounting grommets are not compressed. Needle pressure should be 1 to  $1\frac{1}{2}$  oz. Adjust by changing spring tension of pickup counter balance spring.





RADIO PRODUCTS RECORD CHANGER, RC50, 51, 52, 53

Item No.	Part No.	Description	Item No.	Part No.	Description
1	132728	Turntable	31	134007	Stud
2	132729	Turntable Nut	32	134008	Washer
3	132438-1	Off-Set Post	33	134004	Switch & Stud
	134083	Spring Only	34	134005	Spring
4A	133953	Mtg. Shelf Plate & Sleeve	35	134001	Gear & Cam
4B	133952	Changer Shelf	35A	132773	Spring
4C	132745	Clamp Spring	35B	132774	Spring
4D	132746	Pin	35C	134009	Roller
4E	133954	Cam & Shaft	35D	134010	Stud
4F	133955	Record Remover	35E	134012	Stud
4G	133956	Lockwasher	35F	134011	Bracket
4H	133957	Screw 4/36 x 1/4"	35G	134002	Post
5	132744	Clamp (Plastic)	35H	134003	Washer
6	132743	Cap (Plastic)	36	133993	Bracket
7	133958	Support Post	37	133995	Mtg. Screw
8	133947	Pickup Arm Post	38	133994	Mtg. Screw
9A	133651	Casting	39	132770	Bearing
9B	132738	Cartridge (Phillips Hd.)	40	133978	Size Cam Assy.
	133938	Cartridge (Knurled Hd.)	41	133979	Set Screw
9C	132739	Phillips Hd. Screw	42	133980	Spacer
	133939	Knurled Hd. Screw	43	133959	Mtg. Nut
9D	133946	Bracket & Sleeve	44	133981	Spring & Brkt. Assy.
9E	132760	Adjusting Spring	45	133982-83	Screw Locknut
9F	133943	Washer	46	133984	Panel
9G	132526-1	Spring	47	133989	Cable (RC50 & RC51)
9H	132740	Mtg. Screw		133990	Cable (RC52 & RC53)
9I	132734	Adj. Screw	49	132769	Spring Washer
9J	133940	Screw	50	133992	Lever
9K	133949	Bakelite Washer	51	132737	Clamp
9L	133942	Lockwasher	52	133986	Lever
9M	133944	Adj. Washer	53	133987	Spring
9N	133945	Mtg. Bracket	54	133960	Mover Assy.
9O	132762	Pivot Pin	55	133962	Headless Screw
9P	133941	Grommet	56	133963	Nut
11	133937	Needle	57	133964	Set Screw
12	132735	Knob	58	133965	Lead-in Spring
13	132736	Bscutcheon	59	133961	Screw
14	132732	Motor (60 Cy)	60	133950-51	Pin & Washer
15	131032	Bushing (50 Cy)	61	133948	Nut
16	132733	Idler Wheel	62	133966	Hook Plate
	132771	Cork Washer	63	133967	"Z" Bracket Assy.
20	132772	Bearing	64	132763	"Z" Bracket Spring
21	133996	Pinion Shaft	65	133968	"Z" Bracket Stud
21A	133999	Ferrule	66	133969	Screw
21B	133997	Gear		133970	Nut
21C	133998	Set Screw		133971	Lockwasher
24	132741	Arm Rest		133972	Washer
25	132742	Cap	67	133764	Lever Link
26	133934	Screw	68	132764	Spring
	133935	Nut	69	133976	"U" Bracket Assy.
	133936	Washer	70	133977	"U" Bracket Set Screw
27	132767	A.C. Switch	71	133974	Adj. Screw
28	133991	Sw. Mtg. Brkt.	72	133975	Locknut
29	132768	Spring	73	133973	Lever Assy.
30	134006	Bracket Assy.	74	132765	Spring
			75	133988	Spring & Brkt.

## MOST USED FORMULAS

### RESISTANCE

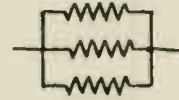
IN SERIES

$$R_t = R_1 + R_2 + R_3 \text{ etc.}$$



IN PARALLEL

$$R_t = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \text{ etc.}}$$



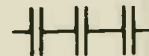
TWO RESISTORS  
IN PARALLEL

$$\frac{R_1 R_2}{R_1 + R_2}$$

### CAPACITANCE

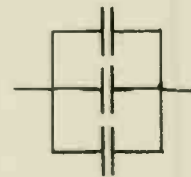
IN PARALLEL

$$C_t = C_1 + C_2 + C_3 \text{ etc.}$$



IN SERIES

$$C_t = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} \text{ etc.}}$$



TWO CAPACITORS  
IN SERIES

$$C_t = \frac{C_1 C_2}{C_1 + C_2}$$

### FREQUENCY FROM WAVELENGTH

$$f = \frac{3 \times 10^5}{\lambda} \text{ (Kilocycles)}$$

Where  $\lambda$  = Wavelength in meters

$$f = \frac{3 \times 10^6}{\lambda} \text{ (Megacycles)}$$

### WAVELENGTH FROM FREQUENCY

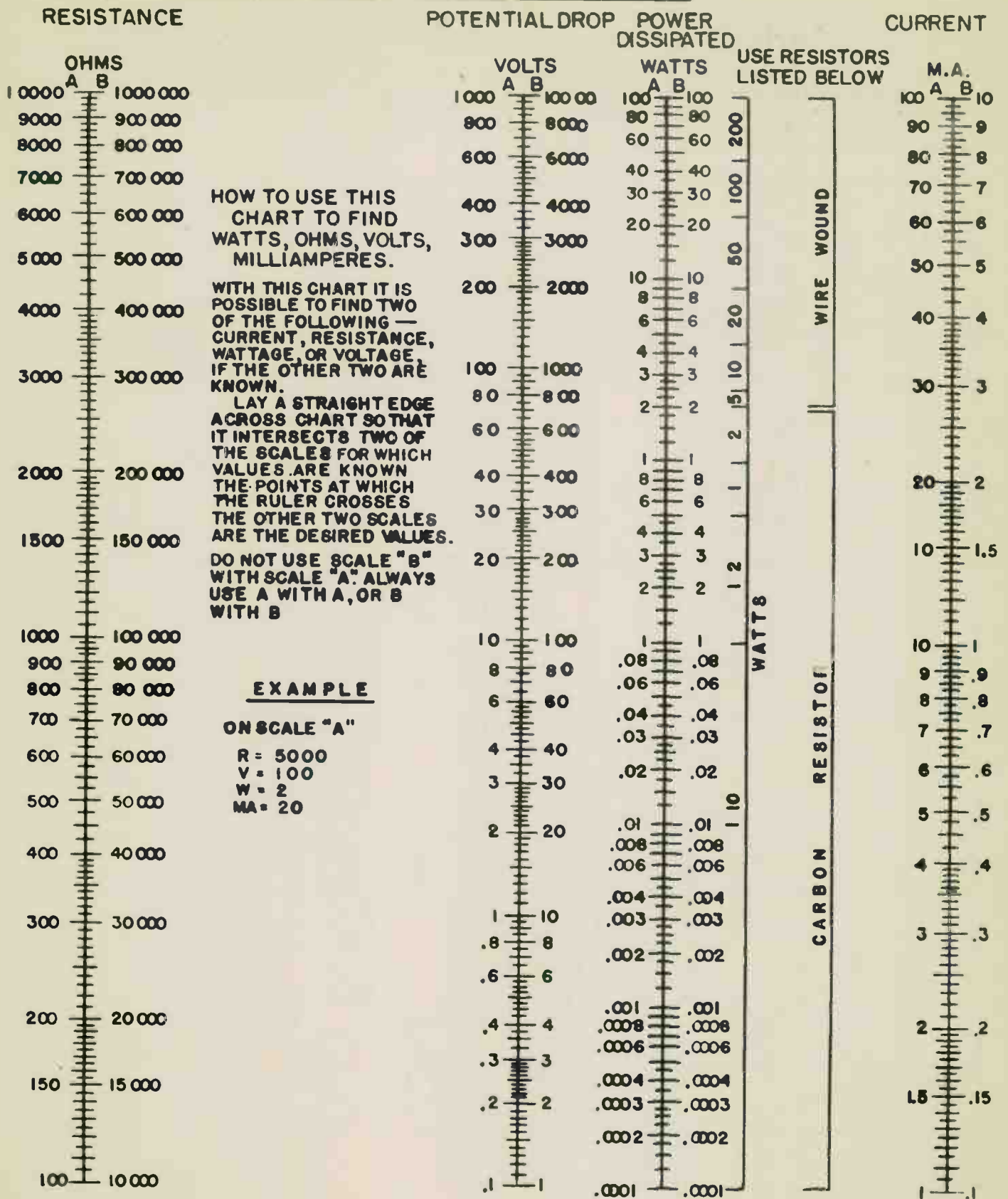
$$\lambda = \frac{3 \times 10^5}{f} \text{ (Meters)}$$

Where  $f$  = Frequency in Kilocycles.

$$\lambda = \frac{3 \times 10^6}{f} \text{ (Centimeters)}$$

Where  $f$  = Frequency in Megacycles.

# HOW TO TELL WHAT RESISTOR TO USE

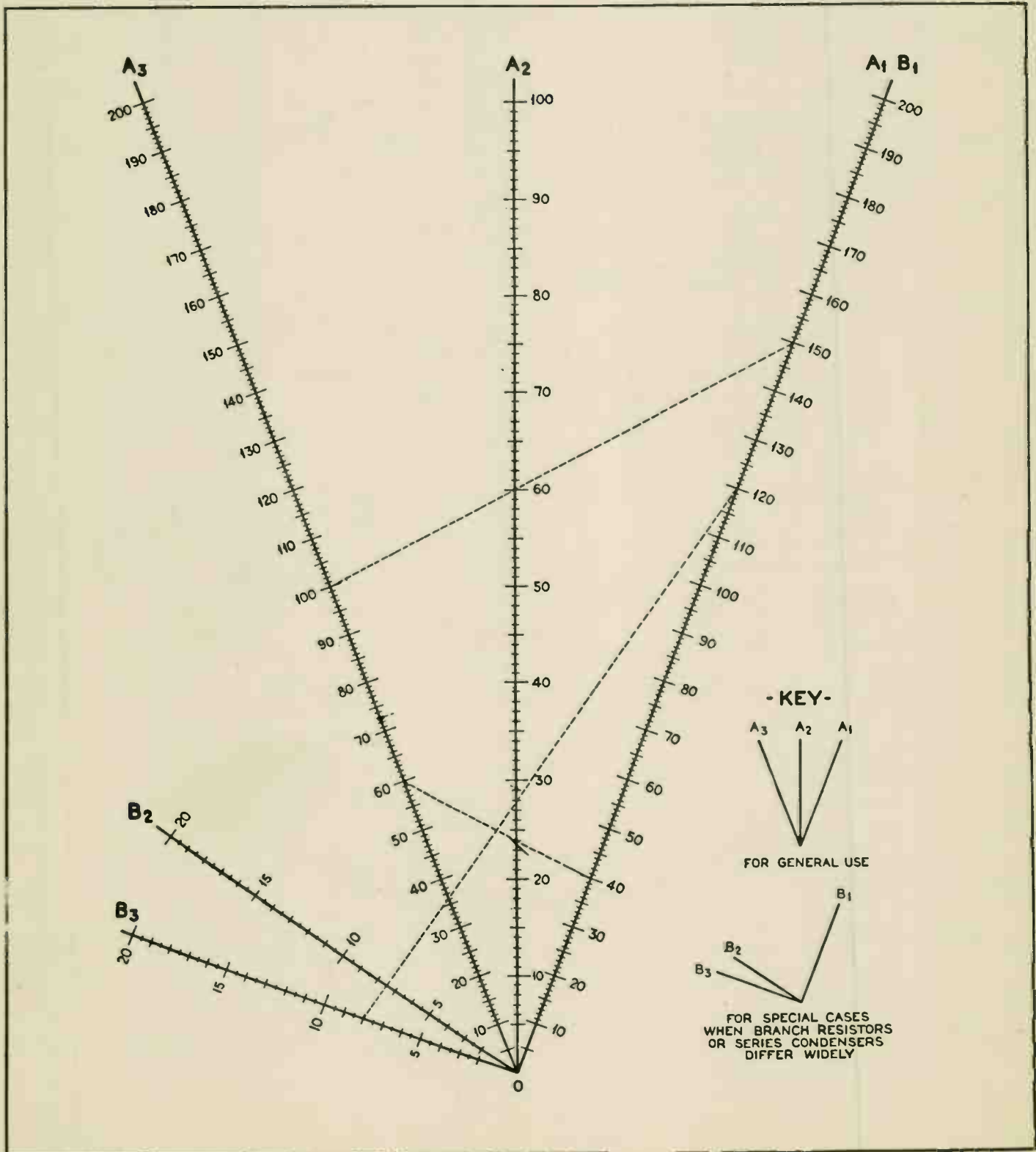




# Series Condenser—Parallel Resistors Chart

This chart enables you to find the equivalent resistance of two resistors in parallel and also the capacity of two condensers in series. Draw a straight line through the divisions on scale  $A_1$  and  $A_2$  representing the resistance in the two branches, and you will find the resultant resistance on scale  $A_3$ . To find the resistance of one branch

when the other branch and the total resistance are known, draw lines through the corresponding points on  $A_1$  and  $A_2$  and find the answer on  $A_3$ . When the resistance of the two branches is widely different, use the chart consisting of scales  $B_1$ ,  $B_2$  and  $B_3$ .  $B_1$  and  $B_2$  are for the unequal branches and the result is on  $B_3$ .



# THE MAGIC CIRCLE

A QUICK AND ACCURATE REFERENCE TABLE FOR RADIO MATHEMATICAL FORMULAS.

### EXAMPLES

$$\frac{E^2}{R} = W$$

$$I^2 R = W$$

$$EI = W$$

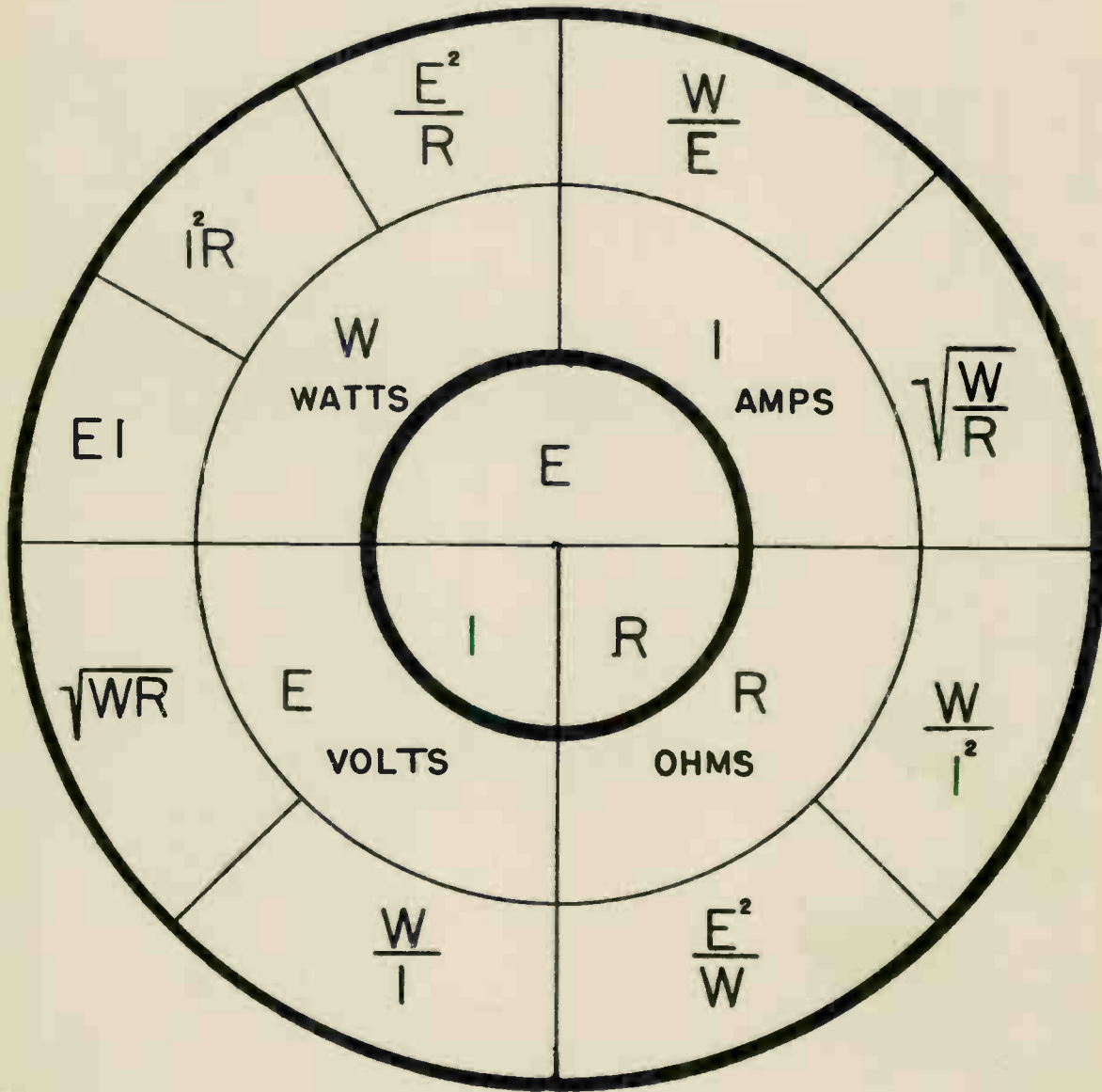
$$\frac{E}{I} = R$$

$$\frac{E}{R} = I$$

$$IR = E$$

$$\frac{W}{E} = I$$

$$\sqrt{\frac{W}{R}} = I$$



$$\sqrt{WR} = E$$

$$\frac{W}{I^2} = R$$

$$\frac{W}{I} = E$$

$$\frac{E^2}{W} = R$$

1911

