



INDEX NO. 24 JANUARY • 1951 COVERING PHOTOFACT FOLDER SETS 1 THRU 120

# CONTENTS

Shop Talk (Servicing Selenium Rectifie	rs)
Milton S. Kiver	-4
Television Tuning Units W. William Hensler	5
Dollar and Sense Servicing John Markus	9
As I See It Walter R. Jones	21
PHOTOFACT CUMULATIVE INDEX No. 24 Covering PHOTOFACT	20
Folder Sets Nos. 1-120 Inclusive	29
introducing the "Thing".	34

10¢

# HOW TO REPLACE THE GREAT MAJORITY **OF CONTROLS IN PHOTOFACT FOLDERS** WITH ONLY 59 BASIC Q CONTROLS



Adaptable Knob Master Fixed Shaft

Here's an end to your problem of stocking many small controls, or shopping and waiting for exact duplicates. With IRC's versatile Q Control line and Interchangeable Fixed Shafts, you can service virtually every type of control requirement-in a minimum of time. Ease of installation-even in crowded chassis; one-minute replacement of shafts for specials; shaft and bushing lengths to meet current radio and TV needs-all mean faster, easier servicing with fewer dollars invested.



Knob Master Fixed Shaft— Fits 90% of All TV and Radio Knobs

If all the knobs on TV, AM and FM sets were the same, there'd be no shaft problem. But since almost every one is different, the only way to simplify control replacement is to use a shaft adaptable to virtually all knobs. Because we took the trouble to find out what service technicians really need, IRC has been able to make such a shaft. The IRC Knob Master Fixed Shaft fits almost all the knobs found on TV and radio sets. This is the universal shaft supplied in every standard Q replacement control.

# **Adapts Quickly and Easily** to Meet Conditions

A clever combination of the old A and E shafts, the IRC Knob Master is flatted, slotted and knurled-so constructed that it fits almost any knob without alteration except cutting to length. You can use it with knurled push-on knobs, spring-type knobs or set-screw knobs. You can spread the ends to fit oversize, web-type or worn

knobs. Or you can alter it quickly and easily to fit insulated TV bushings and many more special knobs.

# New 1/4" Long Bushing Meets **Small and Large Set Requirements**

You'll need no shaft inserts. The 3" length (from mounting face to control) takes care of the longer shaft lengths required in many television sets. The new 1/4" long bushing lets you use Type Q Controls in smaller sets that won't take the old 36" long bushing. Yet, at the same time, the O Control meets large-set requirements.



# New Resilient Retainer Ring-Interchange Shafts in One Minute

This revolutionary new feature makes it easy to remove Knob Master Shaft and replace with any of 13 Interchangeable Fixed Shafts, in less than one minute. This means you can meet almost any special shaft requirement at a moment's notice -without expanding stock. Remove cover by bending up the 4 retaining tabs, then it's the simplest kind of job to remove the resilient retainer ring with safety pin or any pointed tool and withdraw Knob Master Shaft from assembly. Insert new fixed shaft into element side of control base. Assemble bushing and groundplate on shaft in base recess. Slip new resilient retainer ring over end of shaft and push into place. Replace cover, or add switch, and interchange is completed. It's the easiest way of getting the widest coverage of replacements with only 59 controls. (Incidentally, the new resilient retainer ring assures unusually smooth rotation. Your customers will feel the difference at once.)



Ganged Controls Are Easy, Too . . . New IRC Multisections provide an easy answer to your ganged-control requirements. For standard duals, simply add Multisections to Type Q Controls just as you would switches. (19 values afford 13,000,000 variations of dual, triple and quadruple controls-accommodate switches, too.)

Using IRC's original Concentrikit, you can assemble practically any concentric dual control-in just a few minutes. Service technicians who use Concentrikit, call it the most convenient solution to special TV control requirements, and auto set replacements.



# **New Type 76 Switches**

In addition to the Type 76-1 Single Pole, IRC now provides a double pole unit-Type 76-2. This gives you substantial coverage of all your switch needs. The Q Control has been so designed that switch throw takes place after contactor reaches terminal adjacent to switch toggle. This makes electrical rotation ofcontrol the same with or without switch.

# **Distinctive Appearance**

Attractive metal-part finishes and blue bakelite base make O Controls as attractive as they are efficient. Service technicians generally indicate that they prefer these better looking controls.

# **Handy Reference Material**

Your request on a penny post card will bring to you the helpful new IRC Cross-Reference Guide (form SO21), and up-todate IRC Control Catalog

104

DC1B. Ask your IRC Distributor for these versatile O Controls-the fullcoverage line of 59.



ere is your first issue of the PF (Photofact) INDEX and Technical Digest.

We know that you will find this publication useful in your work. We know this because the PHOTOFACT Cumulative Index section alone (previously published by itself) has long been one of the most valuable and widely used reference guides in the Industry.

During the past year, for instance, over 450,000 copies of the Cumulative Index were distributed. These have been used daily by thousands of service technicians, electronic engineers, students, and others. Eventually, and quite naturally, this wide use of and constant reference to the Cumulative Index suggested its expansion into a medium of even greater value, carrying additional material of extra benefit to the Industry.

The new PF INDEX and Technical Digest is the result. It has one primary purpose: To provide the service technician with useful, informative data that will help make his work easier, quicker, more profitable.

The PF INDEX proposes to bring you helpful, informative data in these five ways:

- 1. We plan to include in each issue of the PF INDEX, a complete cumulative index to all PHOTOFACT Folder Sets published to date. This will make it possible to locate, instantly, the world's finest up-to-the-minute service data on all post-war Radio and TV receivers, as well as allied equipment.
- 2. We propose to feature in the PF INDEX, instructive articles originating from research, study and experience in our own PHOTO-FACT laboratories. These articles will be not only educational, but of practical help as well.
- 3. We intend to reprint or review meritorious articles from other publications doing a good job for the service technician. We have received whole-hearted cooperation from several of these publications, and have their permission to reprint or review articles from their pages.
- 4. We have engaged a number of the foremost writers in the electronics field to prepare guest columns and feature articles for The PF INDEX.
- 5. We have requested our advertisers to prepare informative, useful reference material. We hope that the advertisers will take this suggestion to heart and prepare really helpful ads that will help PF INDEX readers.

These are the helpful, useful things we hope to bring you regularly in The PF INDEX. We are able to undertake this publication only because thousands of Service Technicians have become loyal and steady subscribers to PHOTOFACT Folder Sets and Volumes. It is our policy to return this loyalty in the form of additional service to our friends.

Haven Hama



# AND TECHNICAL DIGEST

VOL. 1 · NO. 1 JANUARY, 1951

HOWARD W. SAMS, Publisher JAMES R. RONK, Editor

Editorial Staff: Merle E. Chaney • Robert B. Dunham W. William Hensler • Ann W. Jones • Glenna M. McRoan Art Directors: Anthony M. Andreone • Thomas Culver

Production: Archie E. Cutshall

Printed by: The PHOTOFACT Press; Joseph C. Collins, Manager PHOTOFACT and PF INDEX Trademarks, Reg. U. S. Pat. Office Circulation: First Printing, 75,000 Copies

# CONTENTS

Shop Talk (Servicing Selenium Rectifiers)			
Milton S. Kiver	•	•	4
Television Tuning Units			
W. William Hensler			5
Dollar and Sense Servicing			
John Markus			9
As I See It			
Walter R. Jones	•		21
PHOTOFACT CUMULATIVE INDEX			
No. 24 Covering PHOTOFACT Folder Sets			
Nos. 1-120 Inclusive			29
Introducing the "Thing"			54



COPYRIGHT 1951 • Howard W. Sams & Co., Inc. 2201 East 46th Street • Indianapalis 5, Indiana

The PF (PHOTOFACT) INDEX is published every other month by Howard W. Sams & Co., at 2201 E. 46th Street, Indianapolis 5, Indiana, and is available from 1,015 PHOTO-FACT Distributors in the United States and Canada.

**INFORMATION PLEASE:** This is your publication. You can make it the way you want it by filling out and mailing the questionnaire inserted in this issue.

This will only take a moment of your time-DO IT NOW.

**ABOUT THE COVER:** The photograph is of Mr. W. L. Boller, Archie's Radio & Television Service, 815 15th Street, Logansport, Indiana. Mr. Boller writes, "we appreciate Sams Photofact Service. In our work . . . we find them, without a doubt, the best and most complete of any diagrams on the market today."

Photofact subscribers are invited to submit photographs of their shop for possible use on the PF INDEX front cover. Address all communications to the PHOTOFACT INDEX.

In this, the first issue of the PF INDEX AND TECHNICAL DIGEST, we have established a format of the greatest assistance and interest to the service technician. In doing so, we have been subject to the limitation of available space, and it has been necessary to restrict editorial contributions accordingly.

We are relatively new in this particular field; to avoid overemphasis or precedent in any direction, we are making haste slowly in establishing the approach to our final objectives. **MILTON S. KIVER** 

President, Television Communications Institute



In the beginning it is customary for the writer to state his aims - what he hopes to accomplish. In this instance, statement of the aim is quite simple. It resides in but two words - "KNOW-HOW." If a man can do a job, and know fully why he is doing it, he has all the attributes of the ideal serviceman. He has "KNOW-HOW." It is as simple and yet as difficult as that. "KNOW-HOW" requires the fusion of the mind and the hand, the book and the set, the written word and the tool. You know and I know a great many men who are either KNOW men or HOW men. The KNOW men are theory men, the HOW men are practical men. But how many of these can you honestly say fall into the "KNOW-HOW" category? Not many, I'll bet.

The objective, then, is clear. Practical service hints and procedures together with explanations of circuit operation; answers to questions submitted by you, the reader; finally, reviews of articles of interest to the service technician. The latter is somewhat new among technical publications. It has usually been customary for each publication to plod its own way seemingly oblivious of all the rest. It was Mr. Sams' suggestion that since we are here to serve the techcician, we should bring him helpful news of interest, irrespective of where it first appeared. That is the purpose of our reviews. We hope you will share our enthusiasm.

REVIEW: The article chosen for review in this issue contains an excellent discussion of the proper handling and servicing of selenium rectifiers. It is a condensation of an article written by Irwin Wolf of the Radio Receptor Company, Inc.

# SERVICING SELENIUM RECTIFIERS

# SERVICE Magazine (November, 1949) Copyright 1949 by Bryant Davis Publishing Co., Inc. 52 Vanderbilt Ave., New York 17, N. Y. Subscription Price \$2.00 per Year in U. S. A. and Canada

The economic and operating advantages of selenium rectifiers have caused them to be used in considerable numbers in radio and TV sets. A selenium rectifier will perform the same function as a vacuum tube rectifier, yet, it does not require any filament power, is small in size and can be installed under the chassis, is rugged and comparatively cool in operation, and possesses a long useful life.

Of importance to the radio and television serviceman is the proper care of selenium rectifiers when they are in operation, and the proper testing procedure when these units are suspected of being faulty.

To operate a selenium rectifier correctly, it should not be subjected to so much current flow that it becomes overheated, nor should it be placed at a point within the chassis where it is likely to overheat due to the high surrounding temperature. Finally, the reverse voltage rating of the unit should not be exceeded.

TEST PROCEDURES AND CIRCUITS. When a selenium rectifier has been subjected to excessive voltage, current, or temperature conditions, it may become partially or completely damaged. Final evidence of such condition is given by an electrical test; however, there are several physical indications which may be helpful in recognizing possible trouble in the rectifier or in the external circuit:

Sparking: If a much higher than rated inverse voltage is applied across a selenium stack, a crackling, popping sound may be heard, accompanied by small blue-white sparks on the alloy surface. Ordinarily, if the surge lasts only a few seconds, the rectifier will continue normal operation thereafter.

<u>Blowout Patches:</u> Many of the sparks leave small, round blowout spots which appear black against the silvery alloy. These blowouts are self healing, and will not short the rectifier; however, if blowouts are observed all around the contact washer at the center of the plate, it is best to replace the rectifier.

Melted and Discolored Alloy: If excessive current is drawn through a selenium rectifier, the temperature of the rectifier may rise beyond the melting point of the alloy cathode, causing it to soften and run, with possible surface discoloration. This condition indicates that the unit is unfit for further use.

Many servicemen test selenium rectifiers by measuring their forward and reverse resistances. To them it will come as a distinct surprise that these readings are almost meaningless. The resistance reading will depend on the ohmmeter voltage and scale, since the resistance of a stack in either direction depends on the particular value of voltage across it. Ohmmeters should be used ONLY to check stack continuity and NEVER to determine the relative quality of a selenium unit.

There are several circuits and procedures concerning a selenium rectifier which will indicate its general quality for operation in receivers.

<u>Continuity</u>: To test a stack for an open connection, readings of resistance in both the forward and reverse directions should be taken with a high range

• • Please turn to page 21 • •

# Television Tuning Units

# by W. William Hensler

Research material contributed by: Wayne R. Ayers • Eugene L. Bowden • Merle E. Chaney • Garland Mowry • William D. Renner

# A description of Circuits, Characteristics, Servicing Methods, and Alignment Procedures for commercially employed television tuners.

The prime function of the TV tuner is to accept the transmitted sound and picture signals and convert them to the correct intermediate frequencies. These signals are then amplified by the appropriate circuit of the TV receiver and applied to the control and reproducing mediums of the system. The tuner should have the following characteristics in order to produce pictures of good quality, with a minimum of interference.

- 1. Reasonable gain.
- 2. Good signal-to-noise ratio.
- 3. Good image rejection.
- 4. Stability.
- 5. Adequate band width.

Although tuners of various manufacturers differ in design and methods of tuning or channel selection, they all incorporate basic input, RF amplifier, mixer and oscillator circuits. The operation and tuning of these circuits of any specific tuner will be discussed under the section covering that tuner. However, a brief discussion at this time may serve to point out the need for, and purpose of such circuits.

# INPUT CIRCUITS

The function of the television input circuit is to couple the signal from the antenna to the first stage of the tuner. This coupling should be accomplished in such a manner as to insure maximum transfer of energy from the transmission line. The input circuit should present a constant impedance equal to the characteristic impedance of the transmission line at all of the television channel frequencies. Failure to maintain matching will cause energy to be reflected back into the line, creating standing waves, and if the mismatch is severe enough, ghosts may be seen in the picture, caused by a delayed signal traveling back down the transmission line. This type of "ghost" can be detected by rotating the antenna and noting if the delayed signal is delayed by the same amount at all antenna settings.

A transformer or choke is most commonly used in the input circuit. Its connection depends upon



whether the balanced or unbalanced type of transmission line is used. The most popular balanced line type is the 300 ohm twin lead, while the 72 ohm coaxial type represents the most widely used unbalanced line.

A signal is carried in the balanced line exactly as its name implies, i. e., it is of equal amplitude in each lead in the line. The distributed capacity from each line to ground or chassis should be equal. The coaxial line is unbalanced since the signal is carried by the center conductor while the other conductor makes up the shield. The unbalanced line can be used in areas where the noise level is high since the shield minimizes pickup of the noise. The cable may be placed near grounded objects 'such as pipes and metal framework without bad effects. The attenuation in the coaxial line, however, is greater than that of the balanced line. As a result the balanced line is usually employed in areas having low noise level and where there is a minimum of metal objects.

Figure 1-1 shows some of the basic input circuits used. (A) employs a small center tapped choke having a powdered iron core. The center tap is grounded, balancing the circuit. The signal is capacitively coupled to the grids of a push-pull amplifier. The grid loads in this circuit are usually 150 ohms and the center point is returned to ground directly or through an AGC circuit to control the gain of the RF stage. Since this circuit is balanced throughout, no special transformer is required. In (B), however, the balanced 300 ohm input is coupled to a single grid by using a transformer. Two resistors of equal value are connected in series across the primary with their junction grounded to balance the input. One side of the secondary is grounded and the other side is coupled to the grid. The grid return may be grounded or returned to an AGC circuit. (C) is a similar circuit except that the signal is coupled to the cathode of the tube which has its grid grounded. Bias for the tube is developed by the current flow through the resistor in the cathode circuit. Since this resistor is bypassed, all of the signal will be present across the choke coil (which may be tuned) in the cathode circuit. The circuit shown in (D) is a combination of (B) and (C) in that the signal is coupled to both the grid and cathode. As in circuit (C), bias is developed by the current through the resistor in the cathode circuit. The grid return resistor may be grounded or connected to an AGC circuit.

# **TELEVISION TUNING UNITS**

Circuit (E) is designed to operate with a 72 ohm unbalanced line. The signal is impressed across the choke coil and is then capacitively coupled to the cathode of the RF tube which has a grounded grid. Varying the value of the cathode resistor varies the input impedance of the circuit.

Circuit (F) is basically the same as that of (B) except that two primaries are used. One is used on the high channels and the other on the low channels. Switching is usually provided in the tuner to automatically connect the proper primary as the various channels are selected.

In the design of some of the input transformers an electrostatic shield is placed between the primary and secondary to prevent capacitive coupling of noise pulses. Noise pulses that might be picked up in a balanced transmission line will have the same polarity on each line and will cancel out inductively in the input coil of the tuner. There is a possibility of coupling this noise pulse capacitively to the secondary due to the close spacing of the windings. The electrostatic shield placed between the two windings lessens this possibility. Physically the shield may be placed between the primary and secondary, perpendicular to the axis of the windings, or it may be a foil interwound between the primary and secondary. The shield is of non-magnetic material so that it will not affect the magnetic coupling.

# **RF AMPLIFIERS**

In radio applications, the main purpose of an RF amplifier is to increase the sensitivity and selectivity of the receiver. Although the signal-to-noise ratio is usually considered, it is less important than it is in the case of TV receivers. Any noise, either that picked up by the antenna or that which is generated in the circuits of the TV receiver, shows up in the picture. Since any noise generated in the RF stage will be amplified by the succeeding stages, it is desirable to select a tube that generates a minimum of noise within itself.

Both triodes and pentodes are used as RF amplifiers. Although pentodes are inherently "noisier" than triodes, the additional gain which can be obtained in the pentode offsets, to a great extent, this disadvantage, and they are used more frequently. Another advantage of the pentode is the reduced grid-to-plate capacity. This is helpful in reducing oscillator radiation caused by the oscillator signal being coupled back through the RF stage to the antenna.

Figure 1-2 shows several types of RF amplifiers used in TV tuners: (A) is a conventional circuit having a tuned input and output. These two circuits are usually stagger-tuned to give sufficient band pass. Also, resistors are shunted across the coils to further increase the band width. Note that the input circuit is series-tuned, using the input capacity of the tube as a portion of the tuned circuit. This is possible because of the high frequencies at which the circuit operates.

Several methods of injecting the signal to this stage were pointed out in the previous section on



Fig. 1-1. Television Tuner Input Circuits.



Fig. 1-2. Television Tuner RF Amplifier Circuits.

input circuits. It may be grid-driven, cathode-driven, or a combination of both, as shown in (B). The plate circuit may be series or shunt-fed. In the case of circuit (B), the tube is shunt-fed. The use of this circuit removes plate current flow from the tuned circuit, which is especially desirable when the tuned circuit has sliding contacts for channel selection.

A dual triode tube is used in (C) as a push-pull RF amplifier having both input and output circuits balanced. Neutralizing capacitors, usually 1.5 mmf., are connected from the plate of one section to the grid of the other to neutralize the circuit. The value of the 1.5 mmf. capacitors is approximately equal to the 1.6 mmf. plate-to-grid capacity of the 6J6, which is usually employed in this application. Since the amplitude of the signal on both plates is equal and of opposite polarity on all channels, an excellent source of neutralizing voltage is provided.

The resistor (R4), in series with  $B_+$  and the RF plate coil, isolates the coil from RF ground to allow for any unbalance which might exist in the circuit.

The circuit in (D) employs a dual triode tube with both sections connected in parallel. The signal is coupled to the cathode and the grids of the tube are grounded. This circuit is known as a grounded grid amplifier. The presence of the grounded grid between the plate and cathode lessens the chance for oscillator radiation back through the RF stage and to the antenna. This type circuit does not require neutralization because of the degeneration in the cathode circuit and the grounded grid acting as a shield between the plate and cathode.

The coupling circuit in the plate of the RF tube is a "common impedance" type coupling; C6 is a portion of the tuned circuits of both the RF plate and mixer grid. As a result, the signal developed across C6 by the RF tube is coupled to the mixer grid since it is common to both circuits. The setting of C6 governs the band pass of the RF mixer coupling circuit.

Circuit (E) is also a grounded grid amplifier. In this case, a pentode tube is used but the screen and suppressor grids are connected to the plate to obtain the low noise characteristics of a triode. Note the switch in the cathode circuit. The switch is open on the low-channel positions and closed on the highchannel positions. With the switch closed, the two coils are connected in parallel, which lowers the inductance. This provides better matching on the high and low channels than if a single coil only were used.

Another circuit, known as a cascade amplifier, is shown in (F). This circuit incorporates two triode sections connected in series. The first is a conventional, grid-driven stage, with the second having the grid grounded to RF by C2. With this arrangement, the low noise characteristics of the triode are utilized along with the advantages of the grounded grid amplifier. The tube employed in this circuit - a type 6BQ7 - is a specially designed miniature noval base tube to be used in this application in TV tuners. The tube is so constructed that it has extremely low

# **TELEVISION TUNING UNITS**

grid-to-plate capacity. Although the two sections are identical, the leads are brought out the base of the tube in an order that is especially adaptable to this circuit. Since the two tubes are in series, approximately twice the B+ supply voltage is required over the usual application. This is not a particular disadvantage, however, since the required amount of voltage is usually available in the TV receiver.

For the most part, only one stage of RF amplification has been considered in this discussion. Some tuners employ two stages in cascade, and these will be treated later in the specific descriptions of individual tuner models.

Most tuners have an AGC voltage applied to the grid of the RF amplifier to prevent overloading of the stage. Improper bias may cause cross modulation, and, in cases of severe overload, may clip a portion of the signal. Since the sync pulses are at maximum amplitude, they are the first to be clipped. In the event of signal clipping in the RF stage, the receiver may be very erratic in synchronization.

Some receivers that are especially designed to operate in fringe areas may have the grid return of the RF amplifier connected to ground. When these receivers are located in a strong signal area, poor operation may result. In this case, the RF grid return should be moved to the AGC line or the variable bias line provided by the contrast circuit.

It is interesting to note that AGC voltage may be applied to a grounded grid amplifier as well as to the conventional amplifier. This is done by applying the AGC voltage to the grid and bypassing the grid to ground: thus, a means of varying the gain of the tube is provided.

Several methods of coupling the signal from the RF stage to the mixer are employed. The most popular of these are the following:

- 1. Inductive coupling.
- 2. Capacitive coupling.
- 3. Common impedance coupling, both inductive and capacitive.
- 4. Link coupling.

Either the plate circuit of the RF stage or the grid circuit of the mixer may be tuned, and in many cases, both are tuned.

# MIXER CIRCUITS

Two types of tubes, triodes and pentodes, are currently employed as mixers in TV tuners. The use of the triode tube as a mixer seems to be increasing, probably because of its lower noise characteristics and the fact that a dual triode tube can serve as both mixer and oscillator.

Figure 1-3 shows a few representative types of mixer circuits. Each schematic shows both signal and oscillator inputs.



Fig. 1-3. Television Tuner Mixer Circuits.

# **JOHN MARKUS**

Editor-in-Chief, McGraw-Hill Radio Servicing Library

# **Dollars and Sense Servicing**

PROLOGUE. For every dollar there must be some sense, to get the dollar and to spend it wisely. On this dual theme, then, is this page launched - to pass on to you a variety of ideas for making more money in radio and television servicing, interspersed with suggestions for spending those dollars wisely so they will beget more dollars, bring true satisfaction in their earning, and make your career in servicing happier. There'll be the latest news of your industry, an anecdote now and then, and just a bit of technicana to round out the page.

ANTENNAS AND ACTS OF GOD. Patting themselves on the back today are the great majority of television service groups in the East and Midwest, for having thought to include an "act-of-God" clause in their contracts. Antennas came down by the thousands in the over 100 mile per hour gale, and these firms were able to charge for the costly repairs needed. Many set owners collected in turn from their insurance companies under comprehensive home storm damage clauses. But out in the cold, bankrupt, is one service organization in Newark as a result of the storm. For a two-dollar extra charge they guaranteed the antenna installation too. Over a thousand of their antennas went down, and so did they.

ARE TUBES SCARCE? "Yes," says the chap who thought he knew a bargain when he saw one. Last year and the year before, he had a lot of fun and saved a few pennies too, playing one supplier against the other. By shopping around, he got rock-bottom prices. But now his many and varied suppliers have either gone black-market or broke, and the regular tube distributors can't recognize his face even with a magnifying glass. You should hear this guy bellyache about tube shortages!

"No - just a little tight," says the steady, serious fellow in the shop around the corner. "My regular distributor is giving me all I need, even for TV sets. Sure, there's allocation of tubes, but it's based on what I bought from him last year. Found that I actually saved money by paying a bit more and getting all my supplies from this one place. I could handle an extra repair job or two in the time some spend shopping around for bargains or ordering questionable surplus parts by mail." Incidentally, have you your copy of the new Sylvania Tube Substitution Manual?

KILLING THOSE MORNING BLUES. There's a tonic effect in starting out each morning smoothshaven, wearing a clean shirt and tie, pressed trousers and brightly shined shoes. It gives you a lift, somehow, and does something for your personality. Better yet, good grooming establishes your professional position in the minds of your customers, thus making them more receptive to paying promptly and cheerfully for "Professional Services Rendered." THE CHANGING TIMES. A couple of years ago, life was easy for those who write about television. Most of the sets used what was called a conventional sound system, with only a few makes going to the new-fangled intercarrier sound. But look what we have today - nearly three-fourths of the models use intercarrier sound. The conventional sound system of yesterday has become unconventional. What'll we call it now?

WHERE, OH WHERE? Finding a place for a television set in the living room can be one of the most challenging problems of furniture arrangement a housewife ever ran into. Here are some factors you can bring up when asked to make suggestions. Keep the set away from windows, because bright outside light coming right past the set is annoving. Try to find a location where grownups can watch comfortably without having to move furniture each time, while still providing conversational groupings of chairs and sofa for guests. Avoid having a maintraveled route go across the front of the set, because sure as sin the kiddies are gonna squat there to watch Hopalong and Howdy Doody. Keep your technical problems of transmission line runs to yourself. and make the best of the lady's final decision if you wanna maintain good public relations.

MISMATCHES. To a technical man who keeps his antenna and transmission line impedance data right alongside the Photofact Folders on the front shelf, it's simply fantastic to think of sticking a 300ohm conical on the sky end of a 72-ohm coax line. Yet he's gotta do it, cause there aren't any good broad-band 72-ohm arrays. So he does it. So it works. Then, after long sessions with highbrow books on antenna theory, he learns that sky-end mismatch just gives mebbe a DB or two of attenuation at the most - hardly enough to be noticed except in the fringiest of fringe areas. Also, mismatch up there doesn't make any line-reflection ghosts. - - -Incidentally, though most of the guys have been using 300-ohm twinlead with a matching transformer at the set to get down to 72 ohms for DuMont sets, we'll be seeing more coax going in even at 8 cents a foot and maybe more, because good twinlead is plenty, plenty scarce. Don't get stuck with a lot of high-priced line, though, cause the shortage can clear up overnight now that TV set production is slackening.

THE DOCTOR SAYS HM-M-M. Have you ever noticed a good doctor's professional attitude? His conversation consists mostly of short questions, concise directions, and an occasional "Hm-m-m." You never hear him thinking out loud as he tries to figure what's wrong with you. You don't hear him gossiping about his other patients or criticizing other doctors. You don't hear him complaining, "I get all the tough ones to fix, after the other doctors have butchered them up." You respect him all the more for this, and never stop to think that \$3 for fifteen minutes of Hm-m-m's is a pretty good hourly rate.

9



B-2 Nylon 1-J QT3-M QT3-J QT3-M QT3-J-PN

QT3-M QT3-J M1-2J

U-J U-78-J

CQ.J LQD.J

LP-33 LP-78 QT-33 LT-3D

Hodel No.			LO FUN	SIANDARD	KEUUKU3	
	Element Type	List Price	Minimum Needle Pressure	Output Voltage 1000 c. p. s. .5 Meg. Load	Frequency Range C. p. s.	Needle Type
v11-2J	Magnetic	\$7.50	34 OZ.	0.1	50 to 12,000	Fixed (J)
-26A	Crystal	4.46	2% 02.	1.4	50 to 4,500	Optional
40A	Crystal	4.46	11/4 02	0.5	50 to 4,500	Optional
-718	Crystal	6.66	1 02.	1.0	50 to 8,000	Optional
-72A	Crystal	6.66	11/4 OZ.	3.5	50 to 4,000	Optional
-82A	Crystal	5.56	2% 02	3.5	50 to 5,000	Optional
92A	Crystal	6.00	1 02	2.20	50 to 7,000	Optional
-78	PN Crystal	11.15 (	Special P.	N. Crystal Cartri	idge for Seeburg	Record Changers)
T1-M	Crystal	7.00	34 OZ.	1.0	50 to 10,000	"T" (M)
T2-M	Crystal	7.00	3/4 OZ.	1.0	50 to 10,000	"T" (M)
_T3-M	Crystal	7.00	74 OZ.	1.0	50 10,000	····· (M)
Nylon 1-J	Crystal	7.75	1% oz.	1.0	50 to 10,000	Nylon (J)
at2.J	Crystal	8.90	1 oz.	0.85	50 to 10,000	"Q" (J)
2T2-M	Crystal	8.90	1 02.	0.85	50 to 10,000	"ອີ້" ໄມ້
2T3-M	Crystal	8.40	1 02.	0.85	50 to 10,000	"Q" (M)
CAC-78-J	Crystal	7.50	20 gr.	t.35	30 to 11,000	"Q" (J)
2C-J	Ceramic	8.90	1 02	0.5	50 to 10,000	Fixed (J)
GC-78-J	Ceramic	7.40	12 gr.	0.7	50 to 10,000	G-78 (J)
AC-78-J	Crystal	8.90	6 gr.	1.6	60 to 10,000	A-3 (J)
U-78-J	Crystal	8.90	5 gr.	0.5	30 to 10,000	U-78 (J)
M-22	Crystal	5.65	2% 02.	2,9	50 to 6,500	Optional
B-2	Crystal	5.55	2% 02.	2.5	50 to 4,000	Optional
8.4	Crystal	5.56	2% oz.	2.5	50 to 4,000	Optional
601-A	Crystal	4.45	2%, oz.	1,4	80 20 4,800	Optional
PT	Crystal	5.00	1 02.	1.4	50 to 10,000	Not included
MD	Crystal	9.90 (	Special for	early Markel R	ecord Unangers	) *D* (N)
M (5) 2 -	Crystal	10.90	125 Decial	for Market Reco	ord Changer)	0-3 (3)
M U-3J		_	(			
NOTE: Car	tridge types	B, QT an	d LT also	available with F	N Crystal upor	n request.
NOTE: Car	CARTRIDG	B, QT and ES FOR	LONG-PI	AVAILABLE with F	-SPEED REC	n request.
NOTE: Car	CARTRIDG	B, QT and ES FOR 8.90	LONG-PI	AVAILABLE with F	-SPEED REC 30 to 10,000	ORDS
NOTE: Car	CARTRIDG Crystal Ceramic	B, QT and ES FOR 8.90 7.40	LONG-PI	AVAILABLE WITH F AYING, SLOW 0.5 0.65	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000	DRDS U (J) G (J)
NOTE: Car U-J GC-J CAC-J	CARTRIDG Crystal Ceramic Crystal	B, QT and ES FOR 8.90 7.40 7.50	LONG-PI 5 gr. 6 gr. 5 gr.	AVAILABLE with F AVING, SLOW 0.5 0.65 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 30 to 11,000	n request. ORDS U (J) G (J) Q-33 (J)
MD-J NOTE: Car GC-J CAC-J AC-J	tridge types CARTRIDG Crystal Ceramic Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 5 gr. 5 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 30 to 11,000 50 to 10,000	DRDS U (J) G (J) A-1 (J)
MD-3J NOTE: Car GC-J CAC-J AC-J MI-2-J-33	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.60	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 8 gr. 6 gr. 6 gr.	available with F AYING, SLOW 0.6 0.65 1.0 1.0 .028	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 11,000 50 to 10,000 50 to 12,000	1 request. ORDS U (J) G (J) Q-33 (J) A-1 (J) Fixed (J)
MD-3J NOTE: Car GC-J GC-J AC-J MI-2-J-33 MD-1J	tridge types CARTRIDG Crystal Crystal Crystal Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.50 10.90	LT also LONG-PI 5 gr. 6 gr. 5 gr. 5 gr. 6 gr. (Special	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 .028 for Markel Rec	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 30 to 11,000 50 to 10,000 80 to 12,000 ord Changer)	A request. ORDS U (J) Q-33 (J) A-1 (J) Fixed (J) C-1 (J)
M D-3J NOTE: Car GC-J CAC-J AC-J MI-2-J-33 MD-1J LT-6M	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.60 10.90 7.00	d LT also LONG-PI 5 gr. 6 gr. 6 gr. (Special 6 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 1.0 028 for Markel Recc 1.9	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 11,000 50 to 12,000 50 to 12,000 ord Changer) 50 to 7,000	A request. ORDS U (J) Q-33 (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M)
MD-3J NOTE: Car ac.J ac.J Ac.J MD-1J LT-4M L-92-33	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal Crystal Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.60 10.90 7.00 6.00	d LT also LONG-PI 5 gr. 6 gr. 6 gr. 6 gr. (Special 6 gr. 10 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 1.0 607 Markel Rec 1.9 3.6	N Crystal upon -SPEED REC 30 to 10,000 30 to 10,000 30 to 11,000 50 to 10,000 50 to 12,000 prof Changer) 50 to 7,000 50 to 10,000	a request.           U (J)           G (J)           A (J)           Fixed (J)           C-1 (J)           D-33 (M)           Not Included
MD-3J NOTE: Car GC-J CAC-J AC-J MD-1J LT-6M L-92-33	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal Crystal Crystal Crystal With Do	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.50 10.90 7.00 6.00 wble Nee	LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 6 gr. 10 gr. 10 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 0.028 for Markel Recc 1.9 3.6 andord and Si	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 12,000 ord Changer) 50 to 10,000 50 to 10,000 ow-Speed Rec	a request.           ORDS           U         (J)           Q         (J)           A.1         (J)           Fixed         (J)           C-1         (J)           D-33         (M)           Not Included         ords
MD-3J NOTE: Car GC-J CAC-J AC-J MI-2-J-33 MD-1J LT-4M L-92-33	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal	B, QT and ES FOR 8.90 7.40 7.50 8.90 7.50 10.90 7.60 10.90 7.00 6.00 wble Nee 9.50	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 10 gr. 10 gr. 6 gr. 6 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 0.028 for Markel Rec. 1.9 3.6 andard and Slo 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 12,000 ord Changer) 50 to 7,000 50 to 10,000 ow-Speed Rec 50 to 6,000	A request. ORDS U (J) A (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J)
MD-3J NOTE: Car GC.J GC.J AC.J MI-2-J-33 MD-1J LT-4M L-92-33 ACD-J ACD-J	tridge types CARTRIDG Crystal Ceramic Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal	B, QT an B, QT an B, 90 7.40 7.50 8.90 7.50 8.90 7.60 6.00 0.90 7.00 6.00 0.950 9.50	d LT also LONG-PI 5 gr. 6 gr. 6 gr. (Special 6 gr. 10 gr. 6 gr. (Replac	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 0.028 for Markel Recc 1.9 3.6 andard and Slovent Cartridg ACD-2 Assem	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 12,000 ord Changer) 50 to 7,000 50 to 10,000 ow-Speed Rec 50 to 6,000 • Only for bly)	A request. ORDS U (J) G (J) G (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J)
MD-3J NOTE: Car aC-J CAC-J AC-J MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-2J	tridge types CARTRIDG Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal	B, QT an- ES FOR 8.90 7.40 7.50 8.90 7.50 7.50 7.50 6.00 9.50 9.50 9.50 10.00	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 6 gr. 10 gr. die for Si 6 gr. (Replac (Asse Turne	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 1.0 .028 for Markel Rec 1.9 3.6 andard and Sl coment Cartridg ACD-2 Assem mbbly of ACD	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 11,000 50 to 12,000 ord Changer) 50 to 7,000 50 to 10,000 ow-Speed Rec 50 to 6,000 e Only for bly Cartridge, & Knob)	A request. U (J) Q-33 (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J)
MD-3J NOTE: Car GC-J GC-J AC-J MI-2-J-33 MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-J ACD-2J LT-4D	tridge types CARTRIDG Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal	B. QT an: ES FOR 8.90 7.40 7.50 8.90 7.50 10.90 7.60 10.90 7.60 10.90 7.50 10.90 9.50 10.00 8.50	d LT also LONG-PI 5 gr. 6 gr. 6 gr. (Special 6 gr. (Special 6 gr. 10 gr. die for Si 6 gr. (Asse Turns 8 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 0.028 for Markel Recc 1.9 3.6 andard and Slover Mechanism MCD-2 Assem mobly of ACD 2.9	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 12,000 50 to 10,000 50 to 10,000 ow-Speed Rec 50 to 6,000 e Only for bly) Cartridge, & Knob) 50 to 7,000	A request. ORDS U (J) G (J) G (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included Ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J)
MD-3J NOTE: Car GC-J CAC-J AC-J MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-J ACD-2J LT-4D LQD-J LQD-J LQD-J	tridge types CARTRIDG Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal Crystal	B. QT an: ES FOR 8.90 7.40 7.50 8.90 7.60 10.90 7.60 6.00 9.50 9.50 10.00 8.50 9.50 9.50	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 6 gr. (Replac (Asse Turne 8 gr. 8 gr. 8 gr.	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 .028 for Markel Rec. 1.9 3.6 andard and Sl comment Cartridg ACD-2 Assem mbly of ACD ver Mechanism 2.0 1.0 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 cord Changer) 50 to 10,000 50 to 6,000 e Only for bly) Cartridge, & Knob) 50 to 7,000 50 to 7,000	A request. ORDS U (J) G (J) G (J) Fixed (J) C-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included Ords A-1 (J); A-3 (J) A-1 (J); A-
MD-3J NOTE: Car aC-J CAC-J AC-J MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-J LQD-1J LQD-1J With	tridge types CARTRIDG Crystal	B, QT an: ES FOR 8.90 7.40 7.50 8.90 7.50 10.90 7.00 6.00 9.50 9.50 10.00 8.50 9.50 10.00 8.50 9.50 10.00 8.50 9.50 10.00	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 6 gr. (Special 6 gr. (Ropiac (Asse Turne 8 gr. 8 gr. 8 gr. 8 gr. 10 gr. 1	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 .028 for Markel Rec 1.0 3.6 andard and Sl coment Cartridg ACD-2 Assem May of ACD 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 7,000 50 to 6,000 our-Speed Rec 50 to 6,000 our-Speed Rec 50 to 6,000 our-Speed Rec 50 to 7,000 50 t	A request. <b>ORDS</b> U (J) G (J) G (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) (J); A-3 (J) A-1 (J); A-3 (J) C-1 (J); A-3 (J) A-1 (J); A-3 (J) C-1 (J); A-3 (J) A-1 (J); A-3 (J) C-1 (J
M D-3J NOTE: Car aC-J CAC-J AC-J MI-2-J-33 MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-J ACD-J LT-4D LQD-J LQD-J LQD-J With ACC-AQ-J	tridge types CARTRIDG Crystal	B. QT an: ES FOR 8.90 7.40 7.50 8.90 7.50 10.90 10.90	d LT also LONG-PI 5 gr. 6 gr. 5 gr. 6 gr. (Special 6 gr. (Special 6 gr. (Replac (Assa Turno 8 gr. 8 gr. 8 gr. 9 gr. 10 gr. 1	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 .028 for Markel Recc 1.9 3.6 andard and Slover Mechanism 2.0 1.0 1.0 le for Standard 1.0	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 cond Changer) 50 to 7,000 50 to 6,000 e Only for bly) Cartridge, & Knob) 50 to 7,000 50 to 7,000 50 to 7,000 50 to 7,000 50 to 10,000 1 and Slow-Sp 50 to 10,000	A request. ORDS U (J) A (J) A (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) ed Records A-AQ (J)
MD-3J NOTE: Car ac.J CAC.J AC.J MD-1J LT-4M L-92-33 ACD.J ACD.J ACD.J ACD.J ACD.J LT.4D LQD.J LQD.J LQD.J U With AC.AG.J CA.C.J With	tridge types CARTRIDG Crystal	B, QT an: ES FOR 8.90 7.40 7.50 8.90 7.60 10.90 7.50 8.90 8.90 10.90 7.60 10.90 7.60 10.90 7.60 10.90 8.950 9.50 10.9	d LT also LONG-PI 5 gr. 6 gr. 6 gr. 6 gr. (Special 6 gr. (Special 6 gr. (Replac (Asse Turne 8 gr. 8	Available with F AYING, SLOW 0.5 0.65 1.0 1.0 1.0 0.028 for Markel Recc 1.9 3.6 andard and Sl acD-2 Assem MCD-2 Assem MCD-2 Assem MCD-2 Assem 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	N Crystal upon A-SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 12,000 50 to 7,000 50 to 10,000 50 to 10,000	A request. ORDS U (J) G (J) G (J) A-1 (J) Fixed (J) C-1 (J) D-33 (M) Not included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) (U); D-38(M) (U); D-38(J) (U);
MD-3J NOTE: Car GC-J CCAC.J AC-J MD-1J LT-4M L-92-33 ACD-J ACD-J ACD-J ACD-J LT-4D LQD-J LQD-J With AC-AG.J CQ-AG.J GC-AG.J	tridge types CARTRIDG Crystal	B, QT an: ES FOR 8.90 7.40 7.50 10.90 7.50 10.90 7.00 8.00 9.5	d LT also LONG-PI 5 gr. 6 gr. 6 gr. (Special 6 gr. (Special 6 gr. (Repair (Asse Turns 8 gr. 8 gr.	available with F AYING, SLOW 0.5 0.65 1.0 1.0 .028 for Markel Recc 1.9 3.6 andard and Sk coment Cartridg ACD-2 Assem mbly of ACD twer Mechanism 2.0 1.0 1.0 1.0 0.7	N Crystal upon -SPEED REC 30 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 50 to 10,000 ow-Speed Rec 50 to 6,000 ow-Speed Rec 50 to 6,000 50 to 7,000 50 to 7,000 50 to 7,000 50 to 7,000 50 to 7,000 50 to 7,000 50 to 10,000 50 to 10,000 50 to 10,000	A request. ORDS U (J) G (J) G-33 (J) C-1 (J) Fixed (J) C-1 (J) D-33 (M) Not Included ords A-1 (J); A-3 (J) A-1 (J); A-3 (J) A-1 (J); A-3 (J) ('D''(M); D-33(M) ''Q''(J); Q-38 (J) ''Q''(J); Q-38 (J) ''Q''(J); Q-38 (J) C-30 (J) C-

CONNEAUT, OHIO IN CANADA CANADIAN ASTATIC LTD, TORONTO, ONTARIO Astatic Crystal Devices Manufactured Under Brush Development Co. Patents

TION

MICROF PHONOGRAPH CARTRIDGES

ASTATIC

THE

. . .

"AC" Series

"U" Series

	1.107	-		
TYPE	Sapphire (J)	Osmlum (M)	Tip Radius	USED IN ASTATIC CARTRIDGE TYPES
AL1	\$1.50	\$1,00	.001//	AC, ACD Series
A-3	1.50	1.00	.003//	AC-78:ACD Series
A-AG	1.50	1.00	AG	AC-AG Series
C-1	1.50	1.00	.601//	MD-1
C-3	1.50	1.00	.008//	MD-3
D	None	1.00	.003//	LT-3D; LT-4D; LT-4D1; M
D-33	None	1.00	.001//	LT-30; LT-4; LT-40; LT-41
D-AG	None	1.00	AG	LT-4-AG
т	None	1.00	.003//	LT Series
T-33	None	1.00	.001//	LT-33
G	1.50	1.08	.001‴	GC Series
G-78	1.50	1.00	.003/1	QC-78 Series
G-AG	1,50	1.00	AG	GC-AG Series
Q	1,50	1.00	.003**	QT; LQD and CAC-78 Series
Q-33	1.50	1.06	.001//	QT-33; CQ; CAC & LQD Ser
Q-AQ	1.50	1.00	A G	CQ-AQ Series
U	1.50	1,00	.001//	U-J: U-M
U-78	1.50	1.00	.008//	U-78-J: U-78-M
Nylon	1.50	1.00	103/1	Nyton 1J; Nyton 1M

10

LP-6

## Continued from page 8 • •

Circuit (A) shows a mixer circuit employing a triode, with both the RF and oscillator signals coupled capacitively to the grid. Capacitors C1 and C2 are usually very small in value - - sometimes less than 1 mmf. This circuit is conventional in design and uses a minimum of components. R1 is the grid-return and C2 is the grid-leak capacitor. C3 couples the oscillator signal to the mixer grid.

Circuit (B) has both the RF and oscillator signals inductively coupled to the mixer. L1 is in the plate circuit of the RF tube, and the signal developed across the coil is coupled to L2. L3 is the oscillator coil which is placed near L2 to provide inductive coupling. This type circuit is used most frequently in turret tuners, since L1, L2, and L3 can be mounted on the coil strip to obtain the correct amount of coupling. C1, R1, and R2 make up the grid-leak network. The trimmer C2 tunes the mixer grid circuit. Point +A is usually brought out to some form of terminal on top of the tuner to facilitate scope connection during alignment. R2 is actually the correct value for the grid return, while R1 is placed in the circuit to isolate the scope from the mixer grid. R1 will vary in value from a few thousand ohms to perhaps 100K ohms. Normally, R1 is 1/10, or less, of the value of R2.

A combination of these two circuits is shown in circuit (C). The RF signal is inductively coupled, while the oscillator signal is capacitively coupled.

In each of the previously described mixers, a triode tube has been used. Actually, a pentode could also have been used without any change in the grid circuit. Such a circuit is shown in (D). The pentode mixer provides more gain than the triode and offers less loading on the signal due to its higher input resistance.

The pentode mixer of the circuit (E) has an unbypassed resistor in the cathode, usually having a value around 50 ohms. The resulting small amount of degeneration in the cathode circuit increases the input resistance of the stage and is helpful in holding up the gain on the high channels.

Germanium or similar crystals may also be used as mixers and are especially suited to the highfrequency applications. It is a possibility that crystals may be used as mixers in TV tuners for UHF receivers. Although no gain is provided by a crystal mixer, additional IF amplification may be used to overcome this deficiency.

# LOCAL OSCILLATOR CIRCUITS

The local oscillator in a TV receiver has the same purpose as in the superheterodyne radio receiver. It must produce an RF signal of the proper frequency, which, when beat against the desired signal, will produce the correct intermediate frequency. In the design of the TV oscillator, several additional problems are encountered over those in radio oscillator design. The frequencies at which the TV oscillator must operate are much higher - so high that inter-electrode capacities of the oscillator tube must be taken into account, as well as the distributed wiring capacity in the circuit. Even characteristics of resistors in tuned circuits, operating at TV channel frequencies, must be considered. The problem of frequency drift also must be overcome for satisfactory operation.

Each type of oscillator has frequency limits over which it can be efficiently operated. If these limits are exceeded, one or more of the requirements for satisfactory operation may not be fulfilled. The oscillator may drift, have low power output, or may completely stop oscillating. Obviously, a type of oscillator must be selected that will not have these deficiencies.

Basically, all RF oscillators are the same. To sustain oscillation, signals of the proper phase and amplitude are fed back to an electron tube which furnishes the power to compensate for losses in the tank circuit. Figure 1-4 shows circuits of a few basic oscillators. All these types are not necessarily used in TV receivers, but a discussion of their operation is in order to show their similarity.

The tube is connected in the circuit so that the grid and plate are at opposite ends of the tank circuit, with the cathode at some point between. The point at which the cathode is connected determines the amount of signal being fed back to the tube. Circuit (A) is a tickler-type oscillator, one of the first oscillators to be used in radio application. L1 and C1 make up the tank circuit and the values of these components determine the frequency of oscillation. L2 is the tickler, or feedback, coil, which is placed near L1 to obtain coupling between the coils.

To review the operation of this oscillator, let us assume that the filament of the tube is hot and B+ has just been applied. At this instant, the bias on the tube is zero so the tube will conduct heavily, the current being limited largely by the impedance of L2. As current starts flowing in L2, a signal of the proper polarity is induced into L1, which drives the grid in a positive direction and further increases current flow in the tube. Also, the grid will draw current charging C2, negative on the grid side. This action continues until the tube reaches saturation. When there is no longer a change in current flow in L2, the field collapses and induces a voltage in L1, which drives the grid in a negative direction, cutting off plate current. The tank circuit then continues through a cycle of oscillation and at some point will bring the grid above the cutoff point and the cycle will be repeated. The time constant of C2 and R1 is such that only a small amount of the charge can leak off in one cycle at the lowest operating frequency. The charge on C2 starts to leak off producing a negative voltage across R1, which aids in keeping the tube cut off. When enough of the charge on C2 has leaked off, along with the oscillation action in the tank circuit taking the grid in a positive direction. the grid will rise above the cut-off point of the tube and the cycle will be repeated. It should be noted that the purpose of the tube is to replace the losses in the circuit, either from loss within the tank circuit itself or because of the power taken from the circuit. If the tank circuit, L1 and C1, were shock excited, it would continue to oscillate for several cycles in a damped train of oscillations. It is the

# Watch RER For TV 9m'51 KEEP POSTED ON TV COMPONENT PARTS WITH MERIT CURRENT LITERATURE, FREE!

See your Jobber!

The new 1951 MERIT CATALOG #5111 shows complete up-to-date specifications on the entire Merit line of TV, Radio, Amateur and Industrial Transformers. The Merit TV line is as complete as current and advance information will permit.

You'll need the DEC. 1950 MERIT TV REPL GUIDE & CATALOG for saving time in selecting the correct replacements for all popular television receivers. This handy, easy-to-use popular guide lists model and part numbers of 70 manufacturers, covering 800 models and chassis. First two pages list all TV Transformers and Specs.

**DEALER PRICE SHEET-FORM No. 2**, dated JULY 31, 1950 shows the part No., Net price and List price of over 280 parts.

AUTO VIBRATOR TRANSFORMER SHEET-FORM No. 3, dated JULY 31, 1950, shows model No., Net, List prices and Specs. of VIBRATOR TRANSFORMERS for FORD-GM-MOTOROLA and MOPAR car radios. Also simple easy-to-read replacement guide covering 30 manufacturers.

MERIT OUTPUT TRANSFORMER CHART-FORM No. 4, single sheet shows proper Merit output transformer for use with all popular output tubes. Both MERIT specific and universal types are shown. Mounting style is included for further convenience.

MERIT TV COMPONENTS-FORM No. 5, dated JULY 1950 —illustrated descriptive sheet on MERIT "FLYBACKS" "DEFLEC-TION YOKES," "FOCUS COILS" and WIDTH LINEARITY COIL WITH AGC.

MERIT comparative part number sheet for TV & RADIO FORM No. 10—shows numerical listing of MERIT part Nos. to competitive Nos. on TV—on Radio, competitive Nos. to MERIT, for easy conversion.

REFER TO MERIT'S LISTING IN SAMS PHOTOFACTS

See Your Jobber or Write Direct to







Fig. 1-4. Oscillator Circuits.

purpose of the tube to furnish the power to replace the losses and sustain oscillations. The tickler-type oscillator is usually employed in the medium frequency range.

Circuit (B) shows a Hartley oscillator. The operation of this circuit is similar to that of (A). In this circuit, however, a tapped coil is used in the tank circuit. The grid and plate are coupled to opposite ends of the tank circuit, with the cathode connected to the tap. The value of C3 must be high enough to provide sufficient feedback to sustain oscillations. One disadvantage to this circuit is the fact that both terminals of the tuning capacitor C1 are above ground. This disadvantage has been overcome, however, in circuit (C), which is a modified Hartley oscillator. In this circuit, the cathode has been lifted from ground and the plate is bypassed to ground by C3. The lower end of the tank circuit is also grounded. This circuit is known as the "floating-cathode," or "grounded-plate," Hartley oscillator. It is the same circuit as the basic Hartley, except that a different point in the circuit is grounded. The "floating-cathode" type Hartley is very widely used in broadcast receivers.

Circuit (D) is a basic Colpitts oscillator. It is similar in operation to the Hartley circuit of (B); however, instead of having a tapped coil to provide feedback, two capacitors are placed in series across L1, and the junction of the two capacitors is connected to ground. The values of C1 and C2 determine the amount of feedback voltage. This oscillator operates satisfactorily in TV applications, but it is seldom used - - probably due to the fact that a split stator tuning capacitor is required.

The circuits shown in (E) and (F) are the most frequently used in TV receivers. Circuit (E) is an ultraudion oscillator. Its operation is similar to that of the Colpitts; however, interelectrode capacities of the tube are used instead of actual components. Cpk, the plate-to-cathode capacity, forms the voltage divider network. The grid-to-plate capacity, Cgp, is across the tank circuit. In some cases, an additional capacitor, usually 10 mmf. or less, will be connected between grid and plate to minimize the effect of capacity change during warmup. Also, capacitors may be connected from grid to cathode, or from plate to cathode, to obtain the proper amount of feedback. In the event of replacement of these components, they should be exact replacements to insure operation on all channels.

To better understand the operation of this oscillator, assume that the phantom ground point on L1 is grounded and a DC blocking capacitor is placed between the plate and L1. The circuit is now identical to the Hartley circuit shown at (B). The ultraudion oscillator is ideal for TV applications since it incorporates only one coil, thus requiring a minimum of contacts for channel transfer. It also permits simplified tuning in switch type or sliding contact tuners.

The push-pull oscillator of circuit (F) is frequently employed as a TV oscillator. The tank circuit consists of L1 and the inter-electrode capacity Unit switch construction houses precision resistors in insulated recesses.

Easy-to-change standard batteries. Double spiral springs give permanent connection.

Direct connections—no harness cabling—no shorts. Molded selector switch fully enclosed. Spiral spring index control—over 150,000 cycles without breaking.



# Here's why top engineers and technicians use Model 630

Features like those shown above are what make this popular V.O.M. so outstandingly dependable in the field. The enclosed switch, for instance, keeps the silvered contacts *permanently clean*. That's rugged construction that means stronger performance, longer life. And tests show that the spiral spring index control, after more than 150,000 cycles of switch rotation, has no disruption or appreciable wear! Investigate this history-making Volt-Ohm-Mil-Ammeter today: 33 ranges, large 5½" meter.

only \$39.50 at your distributor



## TELEVISION TUNING UNITS

of the tube. L2 is in series with B+ and the centertap of L1. This isolates the center-tap of L1 from ground to compensate for any unbalance in the circuit. R1 and R2 are the grid resistors. C1 and C2 form the feedback network, and also act as the grid leak capacitors. This circuit is identical to the push-pull RF amplifier except for the value of C1 and C2. In the RF amplifier, C1 and C2 were of a value that would neutralize the stage, while in the case of the oscillator, the capacitors are larger in value, usually 4.7 mmf., to provide sufficient feedback to sustain oscillations.

The push-pull oscillator generates considerable power and, because it is balanced, there is a minimum of external radiation. The inductance of L1 in the push-pull oscillator is varied by switching in small amounts of inductance in each half of the circuit, or L1 may be shunted by another coil to lower the total inductance. When capacitive tuning is employed, a split stator capacitor is placed across L1. In this case, two coils are used - one for the high channels and one for the low channels.

The design of most TV tuners is such that the oscillator circuits are quite stable. Only in case of replacement of the oscillator tube should it be necessary to align the oscillator circuit, and in many cases, even this is not required.

# MIXER PLATE CIRCUITS

The plate load of the mixer tube is the first tuned circuit of the IF system. Its purpose is to accept the difference frequency from the output of the mixer tube and to reject all other frequencies.

Several types of tuning are employed in mixer plate circuits. The three basic types are seriestuned, shunt-tuned, and the double-tuned transformer. The shunt and transformer-tuned circuits are conventional parallel resonant circuits. The seriestuned circuit differs, however, in that the input and output capacitances of the tubes are a major part of the tuned circuit. At first glance it appears that the coil impedance would actually isolate the signal instead of coupling it.

Figure 1-5, the series-tuned circuit, is broken down to show how tuning is accomplished. Circuit "A" is the circuit as it would appear on the schematic. The tuned circuit only is shown in "B." Cout represents the output capacity of the mixer tube and Cin represents the input capacity of the first IF tube.  $C_2$  has been eliminated from the circuit as its reactance is low enough that its presence does not affect the tuned circuit. C1 is usually around 10 mmf. and is added in parallel to Cout to produce the correct capacity for tuning. During the following discussion, the combination of C1 and Cout will be referred to as Cout. Circuit "C" is exactly the same circuit as "B" except that it is positioned differently. When drawn in this manner, it can easily be seen that L1 is tuned by the series network of Cin and Cout. Somewhere along the coil winding of L1 is a "phantom ground." The location of this point is dependent upon the values of Cin and Cout. If these two capacities are equal, the ground point would be at the center of L1. If Cout were twice the



Fig. 1-5. Series Tuned Coupling Circuits.

value of  $C_{in}$ , the ground point would be one-third the way down the coil; etc. By connecting this "phantom ground" point to actual ground, the circuit would appear as in "D." Again, redrawing the circuit as in "E," it appears as a conventional double-tuned transformer.

In cases where the loading must be kept at a minimum, the plate voltage can be applied to the tube at a tap on the series coil, as shown in circuit "F." If the tap point on the coil is properly selected, there will be no signal present at this point at a certain frequency. At this frequency, there is no IF signal across  $R_1$ , and, therefore, no loading on the circuit. Since a wide band of frequencies is passed by this circuit, the "phantom ground" point will shift with frequency change causing a portion of the signal to be developed across the resistor. The loading, however, is much less than it would be if a conventional, shunt-fed circuit were used.

Jensen Replacement Needle Chart.

••	E.	C.C.R	<b>)</b> 120
			v

CARTRIDGE MFG.	CANT. MFG. NEEDLE NO.	JENSEN MEEDLE NO.	ILLUSTRATION (Actvel Size)	CARTRIDGE NUMBERS	POINT	POINT	CARTRIDGE MFG.	CART. MIG. MEEDLE NO.	JENSEN NEEDLE NO.	(Actual Size)	CARTRIDGE NUMBERS	POINT	POINT
		1					Webster-Electric	N I	W-02	-	M.1	Osmium	Standard
Astatic	Q.33(M)	A-80	_	01	Osmium Shi Osmium Mic	ndard ta-Greeve	Webster-Electric	1.14	80-W	Ľ	F14: F14-1: F14-2: F14-3; F14-4	Osmium	Dual
Astatic	Q-AG(M)	A-802	Γ	CQ.AG.M. CQ.AG.J	Osmium All	Groove	Webster-Electric Webster-Electric	A35 A15	W-14 W-15	>	A1: A8 A1: A2: A3: A4: A5: A4: A8	Stephire Sapphire	Standard Micro-Groave
Astoric Astoric	Q(J) Q-33(J)	A-81 A-81.LP	>	07-33-4; 073-4; 073-4; 100; 100-1 07-33-4; CO-4; 100; 100-1	Sapphire Sto. Samphire Min	ndard to Groove	Webster-Electric Webster-Electric	A30 A10	W-16 W-17	>	AIM: AIM-1; A5M; A6M AIM AIM-1; A2M; A5M; A6M	Osmium Osmium	Standard Micro-Groave
Astotic	D(M)	A-03	/	11-30; 11-40; 11-401; MD 110-30; 11-4; 11-401; MD	Osmium Sto	adord	Webster-Electric	ā	W-30	7	al	Osmium	Standard
Astofic	D-AG(M)	A-802	5	LT-4-AG	Osmium All	Groove	Webster-Electric Webster-Electric	353	W-36 W-36-LP	1	G3M G1M G2M	E E E E	Standard Micro-Graave All Purpose
Astarlic	G(M) G-AG(M)	A-842	[	GC-M GC-M, MG-1M GC-AG-M, MG-AG-M	Osmium Mit	Groove	Webster-Electric	WS AJ	W-37 W-37-LP		WS AJ4	00 E Mineo	Standard Micro-Groove
Astatic	T(M)	A-86	>	LT-1Mg LT-2Mg LT-3M	Osmium Sto	hdard	Webster-Electric	49	w-38		A9M	Osmium	All Purpose
Astaric	C.3(M)	A.00		E-11	Osmium And	ro.Croove	Webster-Electric	A2	W-412	1	Q3: A97 F-13	Osmium	Ail Purpose
Astotic	C-1(M)	A-87-LP	(	WD-1	Osmium Mic	10. Groove	Webster-Electric	0	W-422		C9	Osmium	All Purpose
Astatic Astatic	U(M)	A-88 A-88-LP	l	U.78 M UM	Osmium Sto Osmium Mic	ndard ra-Graave	Webster-Electric	92	W-49	1	02	Osmiwm	Standard
Astotic Astotic	C-3(J) C-1(J)	A-09 A-09-LP	1	MD.3 MD.1	Sopphire Star Sapphire Mic.	ra-Graove	Webster-Electric Webster-Electric	F16-3	52-M	>	F16, F16-1, F16-2 F16, F16-1, F16-2	e simeo E simeo	Standard Micro-Groove
Astoric Astoric	A-3(M) A-1(M)	A-85 A-85-LP	-	AC-78: ACD Serles AC: ACD Serles	Osmium Stor Osmium Mici	odard o-Groove	Webster-Electric Webster-Electric	F15.3 F15.1	w-81 w-82	7	F15, F13-1 F15, F13-1	Osmium Osmium	Standard Micro-Graove
Astatic	A-AG(M)	A-852		AC-AG-M; AC-AG-J	Osmium All	Groove	Webster-Electric	13	13-LP	1	F7; F7-1; F7-2; Q2; F13	Osmium	Migro-Groove
Astatic	Nylan I-M	A-82	ß	Nylan 1J; Nylan 1M	Osmium Sta	ndard	Webster-Electric Webster-Electric	F10.1	JP-30AP	{	F10, F11, F11-1 F11, F11-1	Osmium Osmium	Standard Mitro-Groave
Shure	A62A	JP-30	ſ	P.30, P.57, P.70, P.72, P.74AD, P.76, P.77, P.79, P.45, P.88, P.89, P.94, PN.30	Osmium Sto.	dard	General Electric	100-148	GE-10	-	RPX-040; RPX-041; RPX-046	Sapphire	Standard
			(	W-2285, W-238, W-608, W-60H5; W-60PH2 W-6182, W-658 Admirol 409A11			General Electric	500-144	GE-10-LP	<u> </u> =	RPX.040; RPX.041; RPX.046	Sapphire	Micro-Groove
Shure	A-63MG	JP-30-LP	(	Admirol 409A11; P.73, P.74AD; P.72V; P.76V	Osmium Mic	ro.Groove	General Electric	010-148	GE-11		RPX-030	Sapphire	Dual
Shure	A-66U	JP-312	{	Admiral 409A13-17 P-712 P-812 P-37	Osmium Uni	peint		_					
Shure	A-61A	175-30	1	P.301 P.371 P.302 P.702 P.724 D.7460 P.761 P.77 P.751 P.531 P.681 P.692 P.694 P.130 W.22341 W.2334 W.60A	Sapphire Sta	dord			0	┥			
Shure	A-65MG	11-0E-Saf	1	P.73; P.7440; P.72V; P.76V; W.21A; W.21AR, W.22A; W.22AB	Sapphire Mic	e-Groeve	Philico	45-1996	PH-10	7	Dynamic Reproducer 76-1622	Sapphire	Standard
Shure	A67U	JP5-312	{	P.71; P.01; P.37	Sapphire Unit	toint	Philica	45.1613	FH-13	1	43-1609	Osmium	Micro-Groove
RCA.	72345	M-70	7	7038, 70339 7007	Sapphire Star	dard	Philco	33-2693	PH-12	-{	76-4049	Osmium	Dual
		-	1	0000 - 0000			Philco	45-1613	41-09-W	1	45-1609	Sopphire	Micro-Groove
RCA A	73045	W.71.LP	7	74067	Osmium Micl	o-Groove	Phileo	45.1.597	PH-14	(	35.2671	Osmium	Standard
RCA	£984C	M-72	7	72551; 9890; 39919, 39550; 38598; 70332; 39851	Sapphire Star	Idord	Phileo Wahiton Chicona	45-1651	PH-15		35-2671 318047 318403	Sopphire	Stondard
RCA	38449	67.M	7	72551; 9890, 39919; 39550; 38598; 70332; 39931	Osmium Star	dard	Webster-Chicago	VE-316	NE-366	7	31P404	Osmicm	Pvol
RCA	79407	M-74	1	73425	Sapphire Sta	dard	American Microphone	5-1	AM-20	>	5-1, 5-14, 5-2, 5-2A	Osmium	Standard
	BADE/		T	13413	adphire m	0.00/0	Amedican Microphone	CO.3	AM-21	7	C.3	Osmium	Standard
RCA	News /	M-73 LP	7	73475 73475	Osmium Sto Osmium Mic	nderd ro.Groave	American Microphone	CO.1	AM-21-1	4	c.1	Osmium	Micro-Groove
Electro-Voice Electro-Voice	5.1	41-04-3 06-3	1	M12-5; M12-5; L12-5 14-5; 22-5; 345	Sapphire Stat Sapphire Mice	o-Groove	American	0.3	AM-212	1	C-2	Osmium	All Purpose
Electro-Voice	5.13	14-3	1	1677 2277	Sopphire Twi	Point		T	1	6		İ	
Electro-Voice	0.13	6-12	ł	16TT: 22TT	Osmium Twi.	Point	Crotley	145720	C-99	P	145749	Sopphire	Standard
Electra - Vaica Electra - Vaica Electra - Vaica	5- 5 0 5 0	1-95 1-95-17 1-962	ſ	M122 N122 L12 14: 74: 33: 335	Osmium Stat Osmium All I	a G Late	Magnovak	\$40102	M-02	4	560101	Osmium	Standard
Columbio	101	41-00-M	1	45-1609	Sapphire Mici	o-Groove							
Columbia	102 4 103	A-81-LP	5	ca	Sanphire Mic	o.Groove	Wayangow	360138	W-46	(	360133	Osmivm	Twin Point

These needles are handled by all Radio Parts distributors.

**2** A set of installation instructions is packaged with each needle.

3 Ask for them by the Jensen number indicated.

CHISCH INDUSTRIES, INC. 337 SOUTH WOOD ST., CHICAGO 12, ILL.



(

Fig. 1-6. Mixer Plate Circuits.

# TELEVISION TUNING UNITS

The circuits shown in Figure 1-6 are representative of the basic types of mixer plate circuits. Circuit "A" is a shunt-fed, series-tuned circuit.  $R_1$  is the plate load of the mixer.  $C_2$  couples the signal to the first IF grid, and  $R_2$  is the first IF grid load. L1 is adjustable and is trimmed by the output capacity of the mixer, C1, and the input capacity of the first IF stage. The circuit is well suited for intercarrier applications, since no traps are needed. It is used quite frequently, especially in conjunction with a triode mixer.

A shunt, or parallel-tuned, circuit is shown in "B."  $L_1$  is adjustable and is trimmed by  $C_1$ , along with the input and output capacity of the tubes. The signal is capacitively coupled to the IF tube. This circuit is often used with pentode type mixers. Since there is no appreciable drop in plate supply voltage across  $L_1$ , the plate and screen can operate at the same potential.

In receivers employing a separate sound IF, a trap may be added as shown in "D." The trap is inductively coupled to the mixer plate coil and "sucks out" the frequency at which the trap is tuned. The trap coil has a high "Q," which makes possible the "trapping" of a narrow band of frequencies. The lower end of the trap coil is grounded. The sound IF signal is fed to the sound IF channel from a tap on the coil. By tapping down on the coil, the loading presented by the first IF tube is minimized. With this arrangement, the trap coil performs two functions. It "sucks out" the sound IF frequency, preventing it from being fed to the video IF channel. It also supplies the sound IF signal to the sound IF channel. Since only a narrow band of frequencies will be fed to the sound IF channel, none of the video signal should be present in the sound channel.

A transformer is incorporated in circuit"C." Both primary and secondary are tuned. By changing the spacing between the windings, the pass band of the circuit can be varied to satisfy the receiver requirements.

In cases where a series-tuned circuit is desired in a receiver having a separate sound IF system, a circuit arrangement, as shown in "E," can be employed. Instead of using a resistor as the plate load of the mixer, a coil is used. The sound trap winding is placed near this coil and will absorb the signal at the frequency to which the trap is tuned.

Another method of coupling the signal from the mixer to the first IF grid is shown in "F." An additional coil is added to the mixer plate and first IF grid coils. These coils are then connected by a link which is usually a length of coaxial cable. This method is known as link coupling and is especially desirable where the first IF tube is at a distance from the tuner. Both the mixer plate and IF grid coils are tuned. An absorption trap is shown as a part of L2. This trap may be for rejection of adjacent sound or video, or may be a sound trap, depending upon receiver requirements.

Although there are many variations of the above circuits, the understanding of the function and operation of these basic types should be helpful in servicing all mixer plate circuits.



\*Reissue Patent No. 23,273

**ANTENNAS** 

### OUTSTANDING MECHANICAL SPECIFICATIONS Vield Size Port Material Strengt 0.4 **ps** %" Thinwall Steel 0.922 32,000 0491 Most (galv.) Conduit Lorge Folded Dipole 35 % H AL 19,000 .500° .049' Small Folded Dinote 35 % H AL 19,000 .375 .049 Reflector 35 % H AI 19,000 .500\* .049 Crosserm 35 H AL 26.000 .875 .065" Al. Alloy 45,000 psi tensile strength Center Support & T Casting

ΤV

# **EXCELLENT RADIATION PATTERNS**

These are the radiation patterns of the AMPHENOL Inline antenna at 58 mc., 66 mc., and 88 mc., in the low band, and 174 mc., 194 mc., and 215 mc. in the high band. Notice the uniformity of these lobes at all frequencies. The lack of lobes off the sides and negligible ones off the back maintains high front-to-back and front-to-side ratios necessary for the rejection of various interferences. The



Harizontal radiation pattern of Amphanal TV Antenna Model No. 114-005 presence of a single forward lobe is usually a very desirable feature, especially when it is wide enough to provide adequate interception area for some differences in transmitter location, changes in the wave front's direction of travel, or physical movement of the antenna in high winds. Furthermore, it is not too critical of orientation. It is necessary only to aim it and forget it.

### HIGHER GAIN

These gain curves of the AMPHENOL Inline antenna represent the intercepted voltage of the AMPHENOL Inline Antenna as plotted against the intercepted voltage of a reference folded dipole cut to the frequency being compared. There is no channel in either the low band or high band where there is more than a three decible change within the channel that can cause picture modulation or "fuzziness." Gain of the AMPHENOL Inline antenna is quite flat over all channels.

You will find more gain designed into the high band because of greater need for it, due to higher losses at these frequencies. Also, notice the drop-off on channel six. This is at the edge of the FM band and is subject to FM interference, so the Inline's gain is purposely held down at that frequency.

The excellent broadband characteristics, impedance match, single forward lobe radiation patterns on all channels, maximum gain, lightning protection, and superior mechanical features of the AMPHENOL Inline Antenna make it the antenna for greatest TV picture quality!



Gen al Amphenal Medal No.114-005 Antenni



a reference folded dipole, 174 to 216 mc

YOURS FOR THE ASKING

Send for "The Antenna Story" — a sincere discussion of TV antennas based on actual field tests.



Iso South S4th AVENUE · CHICAGO 50, ILLINOIS

18

To lessen adjacent channel video interference, a series-tuned trap is occasionally used in the mixer plate circuit. It is a series-resonant circuit connected between the plate circuit and ground, and is fixed-tuned to a frequency 6 mc. lower than the center of the video IF band of the receiver. In a receiver having 25.75 mc. video IF, the trap would be tuned between 17 and 17.5 mc. Since the video IF is the same for all channels, the trap is fixed-tuned and no adjustment is required.

## SERVICING THE TV TUNER

An important rule to follow before servicing any TV tuner is to be sure that trouble actually exists in the tuner before any replacements or adjustments are made. As is often true in the case of tubes, the real test is to try a tuner of known merit in the receiver. If the difficulty is overcome, trouble must exist in the original tuner. On the other hand, if the trouble is not corrected by the tuner substitution, it is safe to assume that the original tuner is good. Obviously, it is not practical to keep a stock of all types of tuners on hand for this purpose, so in most cases a practical trouble shooting procedure must be followed. In every instance where tuner trouble is suspected, substitute known good tubes in the tuner, one at a time, and note any change. If, after replacing all tubes, trouble is still present, the signal generator may be used to locate the faulty stage by signal tracing methods.

First, let us discuss troubles that could be encountered in any type tuner. Poor sensitivity is usually caused by a defect in the input circuit or RF amplifier. To check these circuits, connect a VTVM across the video detector load and inject an unmodulated signal from the signal generator into the mixer grid. Adjust the signal generator to the center frequency of the channel to which the receiver is tuned. Attenuate the signal generator to give approximately a 2-volt reading on the VTVM. Move the signal generator lead to the plate of the RF tube. The reading on the VTVM should remain the same or decrease slightly. If there is an appreciable decrease in the reading, trouble must exist in the circuit between the RF and the mixer. If the plate connection of the tube is not accessible from the bottom of the tuner, it can be reached from the top by lifting the tube slightly and touching a wire to the proper pin. Always use a coupling capacitor in series with signal generator lead to block the direct current.

If the RF to mixer coupling circuit is satisfactory, inject the signal at the RF grid. There will be an increase in the VTVM reading if the RF stage is normal; a decrease in the reading indicates a defective stage. When making this check, the bias applied to the tuner should be around 3 volts. The bias may be applied by connecting a 3-volt battery across the AGC line.

The next step is to check the input circuit. Nearly the same meter reading should be obtained when the signal is injected at the antenna terminal or RF grid. If the readings are not of approximately the same value, check all coils in the input circuit. When the receiver is completely dead, the trouble probably lies in the oscillator circuit. If, after substituting a good tube the set is still inoperative, couple the signal generator to the mixer grid through a small capacitor (10 mmf. or less), or through an ungrounded tube shield over the mixer tube. Set the signal generator to the frequency at which the oscillator operates on the channel under test. Choose the channel on which the strongest TV signal is present. With the generator set for maximum output, the signal should be received. It may be weak and distorted, but the test is only intended to show if the local oscillator is operating.

The construction of some tuners is such that many of the component parts are not accessible and could not be readily replaced even if the defective part can be identified. In many cases, the manufacturer of the receiver has a trade-in or service plan for such tuners. Manufacturers who have such a policy, must be contacted for approval to return a defective tuner. On those tuners where the defective part is accessible and replacement is to be made, make sure the new part duplicates the original and that it is positioned exactly the same as the old part. Take care that no other parts are moved while making the replacement. When the new part is in a tuned circuit, the alignment of the tuner should be checked.

Figure 1-7 shows a test equipment setup for tuner alignment. The signal generator is coupled to the antenna terminals through an appropriate matching network. The vertical amplifier of the scope is connected to point  $\bullet$ A in the mixer grid circuit, and the horizontal amplifier of the scope is connected to the synchronized sweep output of the signal generator. This setup is basically the same for all tuners, but the alignment instructions should be read carefully for any possible variations. When a separate marker generator is used, it is loosely coupled to the sweep generator leads. This can be a cc om plished by clipping the marker generator lead to an insulated part of the sweep generator lead, or by coupling with a small capacitor (2 or 3 mmf.).

The signal generator should be capable of producing a frequency modulated signal, free from



Fig. 1-7. Test Equipment Setup for Television Tuner alignment.

• • Please turn to page 23 • •

# Floyd Makstein, field engineering manager at **Emerson** recommends

# Simpson Model 480 GENESCOPE

# FOR TV-FM SERVICING

This is what Floyd Makstein of EMERSON says about the Simpson Model 480 Genescope: ... "The Simpson Model 480 Genescope far surpasses the standards required in the servicing and aligning of all TV-FM receivers. The wide frequency response and the 25 millivolt sensitivity of the oscilloscope, combined with the required fundamental signal sources which are provided in the AM & FM oscillator sections, simplifies the accurate aligning of all TV receivers, including those with intercarrier systems. In addition, the large, easy-to-read dials, having a 20-1 vernier control and 1000 division logging scale, cuts down on servicing time."

Mr. Makstein concludes . . . "The compactness of the complete unit will be a big factor in many of the service shops where space is at a premium. We are sure that the whole TV industry appreciated your efforts in raising the engineering standard in servicing." Emerson Service personnel know that modern FM and TV development and servicing demand test equipment made to the most exacting standards. They prefer the Simpson Model 480 Genescope because it is the most accurate, flexible and convenient instrument available. The Genescope will render many years of uninterrupted service and always produce accurate results.

SIMPSON ELECTRIC COMPANY 5200 W. Kinzie St. \* Chicago 44, Illinois \* Phone: COlumbus 1-1221 In Canada: Bach-Simpson, Ltd., London, Ont.

> THESE RANGES SHOW HOW MUCH THE SIMPSON GENESCOPE CAN DO FOR YOU

FREQUENCY MODULATED OSCILLATOR Band A: 2-120 megacycles Band B: 140-260 megacycles Sweep width variable from zero to 15 megacycles Sweep rate 60 cycles per second Specially designed frequency sweep motor Continuously variable

attenuator Crystal calibrator: 5 megacycles ± .05% Audio Oscillator 400 cycles Output Impedance 75 ohms Step attenuator for control of output AMPLITUDE MODULATED OSCILLATOR

Band A: 3.-15.6 megacycles Band B: 15-75 megacycles Band C: 75-250 megacycles 30% modulation at 400 cycles or unmodulated Continuously variable attenuator Visual method of beat frequency indication

OSCILLOSCOPE Vertical sensitivity: 25 mv per inch Horizontal sensitivity: 70 mv per inch Linear sweep frequency: 2 cycles to 60 kilocycles 60 cycle sine sweep Frequency essentially flat to 200 KC. usable to over 3 megacycles



Simpson Model 480 Genescope: size 22" x 14" x 7½' Weight 45 lbs. Shipping Weight 54 lbs. DEALER'S NET PRICE complete with Test Leads and Operator's Manual, \$395.00.

WALTER R. JONES

Associate Professor of Electrical Engineering, Cornell University

# As I See It

The questions of color television, material shortages, and other irritants, tend to keep the service technician's worry time pretty well occupied. It shouldn't be so well occupied that he can't give some attention to opportunities and responsibilities that exist now, have existed for a long time, and will continue as a major activity in the future. This refers specifically to the large numbers of receivers - both AM and FM - which are due for service ranging from checkups to major overhauls.

While the newer things may be more in the public eye and ear, the tremendous service market, represented by the less spectacular but more numerous conventional sets of preceding years, should never be neglected by the alert serviceman.

As materials become scarce we will be reminded of the days during World War II, when it was very difficult to obtain parts, especially tubes. The ingenuity displayed to keep customers' sets in operation at that time was remarkable. One of the things that was not always done was to indicate changes which had been made so that the next serviceman who works on the set will be able to check things without spending a great amount of time checking over the set.

If you live in an area where television does not exist as yet, have you kept up to date on new techniques and equipment which has become available? Much new TV test equipment will work very well on AM and FM sets and you will then have become fam-

## "SHOP TALK" (Continued from page 4)

ohmmeter. Two readings, one with the meter leads reversed, will normally read greatly different values in each direction for a stack having continuity, while an open rectifier is indicated by the same extremely high reading in forward and reverse directions.

<u>Reverse Leakage</u>: The blocking quality of a selenium receiver stack may be measured in several ways. Probably the simplest and most convenient test circuit is that illustrated in Figure 1.

Polarity of rectifier connection in this circuit is immaterial. It is important that the 20 mfd. cap-



Fig. 1. Rectifier Reverse Leakage Test Circuit.

iliar with its operation when television does arrive in your locality.

The other day I read an article to the effect that only a relatively small percentage of receivers in autos which are on the road today are in first class 'operating condition. That seemed to be a misstatement, so I started checking the cars of my friends and now I feel sure that the article erred on the side of being too conservative. When I questioned them as to why they did not have the receiver fixed, it was the same story - "Who fixes these things?" How many of your customers, or rather prospective customers, do not realize that you are equipped to take care of their service needs. Advertising pays!

Are there any industrial concerns in your locality which employ electronic devices for some part of their production work? Do they employ a full time electronics man or do they send their equipment away to be repaired or perhaps import a man from outside to put it in order? Have you ever investigated this matter to see the possibilities it might have for you?

It has been a long time since I have had the opportunity of presenting my thoughts to many of my friends. Numerous changes have taken place within the industry, and, naturally, the thoughts and expressions herein may similarly range the breadth of these developments. If my remarks seem to ramble, bear with me until I catch up the high spots.

acitor be of the paper or oil-filled type, and not electrolytic.

The input voltage should be increased from zero by means of a suitable potentiometer or variable autotransformer. If the stack begins to sputter and spark as the applied voltage is increased, the value of applied voltage should be allowed to remain for a few minutes at the highest value which will not cause sparking on the alloy, then slowly increased again, the procedure being repeated until the input voltage is up to 117 volts AC or until the AC milliammeter reads full scale. Only damaged or badly deformed rectifiers will exhibit this sputtering effect; for the most part, full rated voltage may be applied without causing sparking. The input voltage should be allowed to remain at 117 volts for about five minutes before a reading of AC milliamperes is taken.

If the AC milliammeter reading is 10% of the rectifier rated DC load current or less, with the 117 volts AC impressed, the stack reverse blocking quality is good. If the current reading is slightly higher than proper for the particular size stack tested the unit is poor in reverse grade, but may reform upon longer voltage application. High current readings indicate a damaged stack. For instance, if a selen-

• • Please turn to page 53 • •



### **ADJUST-A-CONE** Suspension

Permits precision centering of voice coil in final production operation.

## Special Voice Coll Impedances

Speakers used in Intercommunications systems have voice coil impedances that vary from the standard 3.2 Ohms. Quam Speakers with these special impedances can be furnished promptly.

## U-Shaped Coil Pot

Provides an unbroken flux path of sufficient cross section to carry full energy of magnetic field.

## Universal Bracket

Furnished with all  $3\frac{1}{2}$ " to  $6\frac{1}{2}$ " speakers, this bracket simplifies the most difficult installations. May be attached to any two of the four mounting holes in the pot.

# HOME RECEIVERS · AUTO RECEIVERS · T.V. SETS · INTER-COM. SYSTEMS · OUTDOOR THEATRES

Engineered for the replacement and public address fields, Quam Adjust-A-Cone Speakers are offered in a complete line of EM and P.M. Speakers in the following sizes:  $3\frac{1}{2}$ ", 4", 5",  $5\frac{1}{4}$ ",  $6\frac{1}{2}$ ", 7", 8", 10", 12",  $4^*x6"$ ,  $5^*x7"$ and  $6^*x9"$ . Public Address P. M. Speakers in 8", 10" and 12" sizes with 6-8 Ohm Voice Coil Impedance. Coaxial Speakers in 12" and 15" sizes. Television Speakers in 5",  $4^*x6"$  and  $6\frac{1}{2}$ " sizes with 62 and 95 Ohm Field Resistance, and 3.2 Ohm Voice Coil Impedance. Special Field Resistances supplied promptly when T.V. circuits demand it.

# FOCALIZER TRADE MARK

FOR REPLACEMENT OF WIRE WOUND FOCUS COLLS The perfect units for replacement or rebuilding television sets for larger tubes, now used as original equipment in many leading sets. The Quam Focalizer\* Unit provides sharper focus of the television picture and is unaffected by temperature and voltage fluctuations. No wiring required. Kits are available for anode voltages up to 12KV and for 12KV and up, and are furnished complete with centering handle and mounting plate for easy and simple installation.

WRITE FOR COMPLETE CATALOG

# QUAM-NICHOLS COMPANY COTTAGE GROVE & 33rd PLACE + CHICAGO 16, ILLINOIS MAKERS OF QUALITY SPEAKERS FOR OVER A QUARTER OF A CENTURY



I'se your present radio skill to learn practical television servicing the way successful TV servicemen do their servicing. You don't repeat your radio training. Every lesson is on television, based on experience gathered in the shops of Central Television Service... in homes where TV receivers are located... from TV set manufacturers. PRACTICAL TELEVISION is not a theory course in servicing, but non-mathematical training where you actually practice the television servicing procedures used by expert TV servicemen!

# LOOK AT THE EXPERIENCE YOU GET!

You learn the servicing techniques used by more than 200 successful servicinen. You learn testing, servicing, trouble-shooting, repairing, set conversion, master antenna installation, field servicing short-cuts and every other phase of TV servicing by actually doing this work. You work with the tools of your trade, using an FM-TV

TELEVISION COMMUNICATIONS Institute. Dept. PCI

sweep generator, a scope, AM marker generator and a VTVM to get experience tracking down difficult TV troubles quickly.

TRAIN AT HOME-SET YOUR OWN PACE! You don't have to leave your present job. You learn right at home with easy-to-understand practical leasons prepared by Milton S. Kiver. You build and train on your own large screen RCA 630 TS type television receiver, given to you as part of your course. You learn easier and remember longer when you set your own pace and let your mind and hands work together. Your age is no barrier. Many TCI students are over 40!

ACT NOW! Send for FREE Catalog and sample lesson. See why the majority of TCl's students are full time Radio and TV Servicemen training to improve their TV skill. Write NOW!

> 205 W. Wacker Drive Chicage 6, Illineis

## **Unique**—Exclusive TCI Feature

T.C.I. is the only television servicing school connected with such a large organization as Central Television Service. As an optional feature, you get two weeks actual on-the-job experience with the servicemen of C.T.S., making service calls and working on the bench. You learn profitable TV servicing from this leading TV servicing company.

## Facts Worth Knowing About CENTRAL TELEVISION SERVICE Over 200 practical servicemen.

Over 150,000 television sets serviced annually. Over \$3 million in servicing work every year. Largest Master Antenna installer in the Midwest. Authorized service agency for all TV manufacturers.



You'll need to know Color TV servicing to go places in this fast growing field. And C.T.S. is constantly developing new short-cuts and techniques in color servicing. You get complete up to the minute information on color . . . (experiencetested, field-tested information from C.T.S.). Not a theory course in color, but practical servicing information that gives you facts and experience.

MILRON S. KIVER, active previdensi and director of T.C.I.'s training program is a registered professional engineer and Television Consultant. He has written many magazine articles on television and is internationally known as the author of "Television Simplified," "Television and F-M Receiver Gervicing," "Ultra-High Frequency Simplified" and "F.M. Simplified". Continued from page 19

amplitude variation, with a sweep of at least 10 or preferably 15 mc. An output of .1 volt is sufficient providing a high gain scope is available. A scope having a vertical deflection sensitivity of 20 millivolts, or less, per inch, will produce a usable waveform with .1 volt signal input. If the scope is less sensitive, a stronger signal at the input will be required.

In cases where the marker is swamped, it may be helpful to connect a capacitor of approximately 1000 mmf. across the vertical amplifier terminals of the scope. This bypasses the higher frequencies on either side of the marker, resulting in a sharper indication. During alignment, use only enough marker signal to be seen. Excessive marker injection will distort the waveform.

Some troubles that develop are peculiar to certain types of tuners. Broken or bent switch contacts may cause the switch-type tuner to fail. Dirt on the coils of a continuously variable inductance tuner may cause noisy operation. Inoperation on only one channel may show up in the turret tuner. Poor sensitivity may result if a slug is broken in the permeability tuner. Bent capacitor plates may cause poor tracking in the capacitor-tuned unit, etc. Whichever type tuner is being serviced, the faulty stage should be located and repair measures taken applicable to that type tuner.

In general, the TV tuner is a reasonably stable unit, and normally, will cause a minimum of trouble. The B+ supply voltage is low, which lessens the chance of failure of components due to overload. Alignment should be required only after replacement of tubes or components, or in case of damage to the unit.

Except for tube failures, most tuner troubles are of a mechanical nature. Where mechanical breakdown has occurred, it should be determined if repairs can be made or if the replacement of the unit is required.

# GENERAL INSTRUMENT MODELS 45A and 45B TV TUNERS



Fig. 1-8A. General Instrument Model 45 TV Tuner.

The General Instrument Model 45 tuner is a capacitively tuned unit providing continuous tuning in two ranges. One range covers the low channels and the other the high channels. A slide switch is incorporated to transfer from one range to the other. The switch is actuated by a cam arrangement which is on a shaft concentric with the fine-tuning control. A spring and detent are provided to give a positive stop at the correct point. The slide switch extends the length of the tuner, with the contacts so positioned that lead lengths are kept to a minimum. The tuning capacitor is a four-section unit with the oscillator section having a split stator. A 5-to-1 reduction of the tuning capacitor from the tuning shaft is provided through a dial cord drive arrangement. A second concentric shaft is provided for mounting of a pointer to provide calibration. This shaft is driven with a dial cord which is cemented to both the drive and driven pulley to prevent creeping. An anti-backlash spring, with pulley, keeps constant pressure on the cord to prevent slack from developing.

Figure 1-8A illustrates the General Instrument model 45B tuner.

A shield is placed between the RF input and output circuits to prevent feedback. An external shield, which covers the bottom and two sides, is held in place on the tuner by two screws. Two copper bonding clips are so positioned on this shield that they hit the RF shield mentioned above, giving a more positive bond. A terminal strip, with solder lugs, is provided at the back end of the tuner to facilitate connection to the receiver.

Two tubes are employed. The model 45A incorporates a 6AK5 as an RF amplifier and a 6J6 as a mixer and oscillator. The model 45B has a 6CB6 as an RF amplifier, and also uses a 6J6 as a mixer and oscillator. Tubes must not be interchanged in the units. Due to the change in loading and the interelectrode capacities, poor performance may result. A shield is provided for the 6J6 tube.

The primary of the input coil L1 (see Figure 1-8J) is designed to match a 300-ohm balanced transmission line. The coil is center-tapped with the tap returned to ground. The secondary is tuned in both ranges by a section of the tuning gang. In the high range, only a portion of the secondary is used. The switch picks off a tap on the coil and also shunts L2 across the coil. R1 is shorted out and the padder capacitor C1 is in series with the tuning gang. This padder is a + 5% ceramic unit having an N150 temperature coefficient. A3 is a ceramic trimmer and is used to adjust the high end of the high range.

In the low range, the entire secondary of L1 is tuned. R1, 1500-ohm resistor in series with L2, is shunted across L1 to broaden the response. The padder C1 is shorted out placing the full capacity of the tuning gang across L1. R2 is the grid return for the pentode RF amplifier. With this resistor returned to the AGC line of the receiver, the gain of the stage can be controlled.

The tuned circuits between the RF amplifier and mixer employ double-tuned transformers - L4,

# TELEVISION TUNING UNITS

L5, L6, and L7 - having low side mutual inductive coupling to obtain proper bandwidth. The RF stage is shunt fed through L3, and the signal is coupled to the tuned circuit by C8.

In the high range, L4 and the common impedance coil are tuned with a section of the tuning capacitor which has a padder capacitor, C9, in series. The circuit is trimmed by the ceramic trimmer A4. The mixer grid circuit consists of L5 and the common impedance coil tuned by another section of the tuning capacitor with a padder capacitor, C10, in series. This circuit is trimmed by A5. The common impedance coil for the high range consists of 3/8 inch leads, which are the ends of coils L4 and L5. The leads are brought past a window cut in the shield which is placed between L4 and L5. Note that this coil is shown on the schematic as a solid line with the inductance shown dotted. Adjustment of this coil is made by bending the leads nearer or farther away from the window. Capacitor C6 (.68 mmf.) is a high side coupling capacitor which counteracts the low side inductive coupling, thus maintaining a more uniform bandwidth throughout the tuning range.

In the low range, the circuit is essentially the same as that used in the high range, except the padders C9 and C10 are shorted out. This places the tuning capacitor directly across the tuned circuits. In this position, coils L6, L7, and the common impedance coil, L8, are used. R9 is placed in series with L7, which lowers the "Q" of the circuit, to increase the bandwidth on the low channels.

R3 serves as the dropping resistor and C5 as the bypass capacitor for the screen of the RF amplifier. In the model 45B tuner, the leads on C5 are left about 3/8'' long to place a small amount of inductance in series with the capacitor. This allows partial neutralization on the high channels, which reduces loading on the antenna transformer secondary.

The tuner model 45A uses a 6AK5 tube, which has a higher input resistance, making the neutralization unnecessary.



Fig. 1-8B. General Instrument Model 45 Tuner Alignment Points.

C11 and C14 couple the RF and oscillator signals to the triode mixer grid. R4 and R5 make up the mixer grid return. The junction of these resistors is terminated on top of the tuner for scope connection during alignment. R4 isolates the scope from the mixer grid.

The oscillator uses the second section of the 6J6 connected in a Colpitts circuit. R8 and C16 form the grid leak network. R7 serves as the plate load.

The tank circuit of the oscillator, in the high range position, is comprised of L10 and the split stator section of the tuning gang. One stator has a padder, C15, in series, while the other stator has A1 paralleling it. In addition to tuning the tank circuit, this capacitor network governs the amount of feedback voltage to the oscillator tube.

In the high range, L10 and the padder, C15, are shorted out. The tank circuit now consists of L11 and the split stator tuning capacitor. One stator is paralleled by A1, and the other is paralleled by A2. The two parallel networks tune the tank circuit and also govern the amount of feedback to the tube. The values of the tank circuit components have been selected to give satisfactory operation over a wide range of operating voltages. Normal B+ supply to the tuner is 125 volts, but satisfactory operation may be obtained with the supply voltage between 90 and 160 volts.

The padder, C15, is a 12.5 mmf.  $\pm$  5% ceramic capacitor having a temperature co-efficient of N470. In the event replacement of any of the padder or trimmer capacitors in the tuner is required, care must be taken that an exact replacement be made. Failure to do so may result in poor tracking or unstable operation.

The schematic shows a series-tuned, mixer plate circuit. Actually, a series or parallel-tuned circuit could be used, depending upon the receiver in which the tuner is employed.

The heaters are usually connected for parallel operation, but the tuner may also be supplied for series operation, if application warrants. It is



Fig. 1-8C. General Instrument Model 45 Tuned Circuit Coils.

recommended that rewiring of the filament string, from one type to another, not be attempted, as the connections are not readily accessible and damage to the tuner may result.

Most of the component parts of the tuner are accessible, but extreme care must be exercised in making any replacement. First, be sure the new part is an exact replacement for the original. Second, take care not to alter the position of any components, and make sure the tuning capacitor plates are not bent. If the plates are bent, poor tracking will result. If any parts are replaced in a frequency determining circuit, a complete alignment check should be made as outlined in the alignment instructions for this tuner.

When replacing tubes, use the same tube type as the original. Do not attempt to substitute similar pentode-type tubes for the RF amplifier, as previously explained. To do so will change the loading on the tuned circuits and poor tracking may result. Normally, the tuner will not require realignment when tubes are replaced; however, an extreme limit tube may necessitate slight trimmer adjustment. The best method is to select a tube which will not require trimmer adjustment.

If the 6J6 tube is replaced, the injection voltage at point  $\bullet$ A should be checked, using a VTVM. Normally, the injection voltage will be about 2 volts. An "air check" should be made after the 6J6 replacement to see if proper tuning range is maintained. If it is not, slight adjustment of the oscillator trimmer A1 may be made to compensate for variation in inter-electrode capacities.

Immediately following are Figures 1-8B through 1-8J, giving illustrations and instructions for alignment, dial drive stringing information, and the schematic diagram of the General Instrument model 45 tuner.

We wish to acknowledge the cooperation of the General Instrument Corporation in supplying us with technical data and samples which were used in this presentation.



Fig. 1-8I. Dial Drive Stringing.



# **TELEVISION TUNING UNITS**

# ALIGNMENT INSTRUCTIONS GENERAL INSTRUMENT MODEL 45 TV TUNER

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Two marker generators are required to align the circuits of this tuner. Marker No. 1 is coupled through a 2 or 3 MMFD capacitor to the grid of the first video IF amplifier. The frequency to which marker No. 1 is tuned will be indicated in the table by an asterisk (\*). Marker generator No. 2 is connected across the sweep generator at the antenna terminals. If the sweep genera tor has a built in marker, it may be used for marker No. 2. 7 frequency to which marker No. 2 is tuned will be indicated in the table by a dagger (†). The

During alignment it is necessary to switch the scope between alignment point A and the detector circuit connected to the tuner output. It is recommended that a single pole, double throw switch be used for switching the oscilloscope input, connected as shown in figure 1-8D. All connecting leads should be shielded and kept as short as possible.

The sound and video IF frequencies are used as reference points to align the oscillator, and for tracking adjustments, therefore it is necessary to determine these frequencies used in the receiver employing this tuner. Connect the negative lead of a 3 volt battery to the AGC terminal on the tuner, connect the positive lead to chassis or common negative in transformer-

less receivers.

Remove the second video IF amplifier tube from its socket to prevent feedback from the video IF amplifiers. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

HIGH BAND OSCILLATOR ALIGNMENT

Turn th	e bano	d swite	h to "	'high '	band''	(slide	switch	forward).
Remove	the t	ottom	cover	fron	n the t	uner.		

		SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to either antenna terminal. Low side to chassis.	177MC (10MC SWP)	* Sound IF frequency †175.25MC	Tuning gang fully closed	Vert. Amp. thru detector to lst video IF grid. Low side to chassis.	L10	Use a non-metallic tool to adjust Li0 turn spacing until markers coincide as shown in figure 1-8E. Replace the bottom cover. If markers separate, make slight compensating adjustment of Li0 so markers coincide with bottom cover in place.
2.	Direct	**	213MC (10MC SWP)	* Video IF frequency †215.75MC	**	**	Al	With bottom cover in place adjust Al until markers coincide. Repeat steps 1 and 2 until the high band oscillator covers the proper range.

### LOW BAND OSCILLATOR ALIGNMENT

	Turn th Remove	e band switch to "low band the bottom cover of the tu	" (slide switch ner.	back).				
		SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to either antenna terminal. Low side to chassis.	57MC (10MC SWP)	* Sound IF frequency †56.75MC	Tuning gang fully closed	Vert. Amp. thru detector to lat video IF grid. Low side to chassis.	LII	Use a non-metallic tool to adjust L11 turn spacing until markers coincide. Replace the bottom cover. If markers separate, make slight compensation adjust- ment of L11 so markers coincide with bottom cover in place.
4.	Direct	,,	85MC (10MC SWP)	* Video IF frequency †84.35MC	Tuning gang fully open	**	A2	With bottom cover in place adjust A2 until markers coincide. Repeat steps 3 and 4 until the low band oscillator covers the proper range. Recheck steps 1 through 4.

HIGH BAND RF ALIGNMENT

Before attempting the RF alignment the oscillator should first be aligned as outlined in steps 1 through 4.

Turn the band switch to "high band" (slide switch forward). Feed the channel 7 video carrier frequency into the antenna terminals, and the video IF frequency into the first video IF amp grid. With the oscilloscope connected through the detector circuit to the video IF amp grid, adjust the tuning gang until the markers coincide (see figure 1-8D for equipment set up).

Leave at this setting throughout step 5.

For step 6 adjust the tuning gang in a similar manner, except that frequencies used are the channel 13 sound carrier and the sound IF frequency. Leave at this setting throughout step 6.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL		ADJUST	REMARKS
5.	Direct	High side to etther antenna terminal. Low side to chassis.	177MC (10MC SWP)	†175.25MC †179.75MC	7	Vert. Amp. thru 10KΩ to Point •A Low side to chassis.	L4, L5, L2	If the response curve is not within the limits shown in figures 1-8F, G,or H, adjust L4 and L5 by pushing the coils on to or off of the brass studs, for proper band width and then adjust A2 in the same manner for symmetry. Proper adjustment of L4 and L5 is attained when a slight variation of either winding causes the response to shift frequency without notice- able change in band width L2 is properly adjusted when a slight change causes the response curve to rock evenly. The band width of the channel 7 response is adjusted by altering the position of L4 and L5 ground leads past the cut out in the shield plate. For maximum gain the band- width should be adjusted as narrow as possible with the markers still at the top of the peaks. Replace cover and observe pass band.
6.	Direct	**	213MC (10MC SWP)	†211. 25MC †215. 75MC	13	**	A3, A4, A5	Adjust for maximum amplitude with sufficient band width per figures 1-8F, G or H. Recheck step 5.

# **TELEVISION TUNING UNITS**

LOW BAND RF ALIGNMENT

	Turn th Set the frequency Leave a For ste	e band switch to 'low band tuning gang to channel 2 in t this setting for step 7. p 8 set the tuning control t	" (slide switch the manner of o channel 6 u	n back). utlined under sing the char	high band R nnel 6 video	F alignment, using th carrier frequency and	e channel : the video	2 sound carrier frequency and the sound IF IF frequency. Leave at this setting for step 8.
	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to either antenna terminal. Low side to chassis.	57MC (10MC SWP)	†55.25МС †59.75МС	2	Vert. Amp. thru 10KΩ to Point +A Low side to chassis.	L6, L7, L1, L8	Adjust L6 & L7 by expanding or compress- ing coil turns for maximum amplitude with proper band width. Expand or rompress turns of L1 secondary for maximum amplitude and symmetry of response. Adjustment of L6 and L7 is correct when varying either winding causes no noticable change in band width, L1 secondary is properly adjusted when slight variations cause an even rocking of the peaks. Band width is adjusted by varying the turn spacing of the coupling coil L8.
8.	Direct		85MC (10MC SWP)	83.25MC 87.75MC	6	"		With bottom cover in place, check channel 6 response to see if it is within the limits shown in figures 1-8F, G or H. If not <sub>3</sub> remove bottom cover and make compromise adjustments of L5 and L1. Recheck channel 2.



Fig. 1-8J. Schematic of General Instrument Model 45A and 45B TV Tuner.

# SARKES TARZIAN TV TUNER MODEL TT-3

The Sarkes Tarzian Model TT-3 is a switchtype TV tuner in which channel selection is achieved by adding the proper amount of incremental inductances to each tuned circuit. The incremental inductors are wired directly to the switch wafer terminals. Five switch sections are employed, one each for the RF grid, RF plate, mixer grid and oscillator circuits, plus a section for switching the

7

]

input circuit. Fine tuning is accomplished through the use of a small five-plate variable capacitor, which is rotated with a friction drive disc mounted on a shaft concentric to the channel switch shaft. Notches are crimped on the disc to provide limits of rotation of the tuning capacitor. A shield is placed between the RF grid and RF plate coil switch wafer sections to prevent feedback. Two five-lug terminal

• • Please turn to page 45 • •

# HERE'S THE BEST FOR EVERY TEST Sylvania Radio and TV Testing Equipment

# **Television Oscilloscope**

An exceptionally High-Gain, Wide-Band Oscilloscope Designed for Tele-vision. Accurately displays any TV pulse or wave-shape on a large, eye-saving 7" screen. Sensitivity: 0.01 v./in. Vert. response useful to 4.0 mc. Hardtube sweeps to 50 kc; phasing control; pos. or neg. sync. control; many other outstanding features. Recommended for servicemen; laboratories; advanced schools and industry. Price \$249.50.



**Type 400** 



General Purpose Oscilloscope A Versatile 7" 'Scope with Many Features Found in Type 400 above, priced as low as oscilloscopes with smaller screens. Sensitivity: 0.1 v./in.; freq. response: exceeds 7 cps. to 70 kc. Widely used by servicemen, schools and industry for AM-FM-TV test-

Type 132 Z

ing. Price: \$149.50.

Tube Tester Type 220 Made by a Tube Manufacturer for Tube Users, these instruments test for ALL usual faults-not just one particular characteristic. New and exclusive ohmmeter-type shorts/leakage test indicates "GOOD" or "REPLACE," directly on the illuminated meter. Gas and special heater-cathode leakage tests made in single operation.



Single composite dynamic test for emission, trans-conductance and relative tube life. Panel-mounted rollerchart; convenient switches; provisions for future tubes. Portable Type 220 has durable metal case and handle; removable cover. Size: 6" x 111/4" x 17". Price: \$114.50.



Tube Tester Type 219 The counter Type 219 is electrically equivalent to the portable type. Attrac-tively housed in a streamlined wood and metal cabinet. Adaptable to any surroundings. Occupies small coun-ter space. Size: 5¾" x 13" x 18¼". Price: \$114.50.

## **TV Sweep Signal Generator**

An ALL ELECTRONIC Sweep Generator for TV and FM. Fundamental center frequencies: 2-25, 20-64, 60-120, and 140-230 mc. Two adjustable sweep widths: 0-600 kc./15 mc; excellent sweep linearity; output 0.1 v. Edge-lighted dial; simplified controls; small size:  $11\frac{1}{2}$ " x  $8\frac{1}{2}$ " x 7". May be used with any 'scope and marker, including those shown above and below. Price: \$139.50.



**Type 500** 

**Polymeter-TV Vacuum-Tube** Voltmeter A Sensitive DC, AC and RF Vacuum-Tube Voltmeter, Ohmmeter and DC Current Meter. The basic instrument for every TV, FM and AM shop. Ranges: rf to 300 volts (only 3 µµf shunt capacity); ac and dc to 1000 volts (10 or 30 kv dc using h.v. probes); dc current from 50 micro-amperes to 10 amperes; and resistance from

generator at left. Price: \$99.50.

0.5 ohms to 1000 megohms. Frequency range to 300 megacycles. High input impedance on all voltage ranges. Size identical to TV



Type 221 Z



+

Audio Oscillator An Accurate Sine-Wave Generator for Better Equipped Shops and Sound Specialists. Maximum output: 22.5 volts, 20-20,000 cps, flat within 2 db. Price: \$129.50.

For full information about Sylvania's complete line of quality testing equipment, write today to: Sylvania Electric Products Inc., Dept. R-2801, Emporium, Penna.

+

\*



FM-AM Signal Generator Useful as a TV Marker. A versatile AM-FM generator, doubly useful for peaking alignment of TV and as a TV marker. Calibrated to 0.05%. Fundamentals 80 kc to 120 mc; harmonics to 240 mc. Modulation: 0-100% AM; 0-30/150/700 kc FM. 1.0 volt max. output. Low leakage. Builtin circuit for external crystal. Price: \$139.50.

Type 216



# INDEX TO PHOTOFACT RADIO AND TELEVISION SERVICE DATA FOLDERS

No. 24

Covering Folder Sets Nos. 1 thru 120

HOW TO USE THIS INDEX: To find the PHOTOFACT Folder you need, look for the name of the receiver in the alphabetical listing below. Then find the required model number under the receiver name. Opposite the model you will find the number of the Set in which it appears and the Folder number. For example, under ADMIRAL, Chassis 3A1, the reference is 2-24. The bold 2 identifies the PHOTOFACT Set number in which the Folder appears. The light face number, 24, identifies the individual Folder. It's easy to find the set you need. **IMPORTANT:** The suffix letter "A" following the Set or Folder Number in the index listing below indicates a "Preliminary Data Folder." These Folders are designed to provide the service technician *immediately* with preliminary basic data on Television Receivers—pending their complete coverage in the standard, uniform PHOTOFACT Folder Set presentation.

Set Folder No. No.	Set Folder No. No.	Set Folder No. No.	Set Folder No. No.	Set Folder No. No.
ADAPTOL	ADMIRAL-Cont.	ADMIRAL-Cont.	ADMIEAL-Cost.	ADMIRAL-Cont.
CT-1 48—1	Chassis 10A1 3-30	Models 4H155, 4H156,	Model 7C608, 7C60M, 7C60W (See Ch. 681) 48	Models 22X25, 22X26, 22X27 Tel. Rec.
ADMIRAL	Chossis 19A1 Tel. Rec 37-2 Chassis 19A1 Tel. Rec.	Rec. (See Ch. 20A1) 77	Model 7C61, 7C+2, 7C62UL (See Ch. 6M1)	(See Ch. 20X1)100 Models 24A11, 24A12 Tel.
Ch. 1 111 (201)	Change, 2041 2081	4H157 (S or SN) Tel.	Model 7C63, 7C63-UL	Rec. (See Ch. 20A1) 77
(See Charrie 5K1) 30	Tel Rec. 771	Rec. (See Chassis 30B1), 71	(See Ch. 7C1) 25	Model 24A125 Tel. Rec.
Chassis UL7C1	Chassis 2011 Tel. Rec 117-2	Models 4H165, 4H166,	Model 7C64*	(See Ch. 20A1) 77
(See Chassis 7C1) 25	Chassis 20V1 Tel. Rec.	4H167 (A or B) Tel.	Models 7C65B, 7C65M,	Model 24A125AN Jel. Kec.
Chassis 3A1 2-24	(See Ch. 2071)117	Rec. (See Ch. 20A1) 77	7C65W (See Ch. 7E1) 30	[See Ch. 20X1]
Chassis 3C) (See Ch.	Chossis 20X1, 20Y1, 20Z1	Models 4H165, 4H167	Model /C/3 (See Cn. 9AT) 34 Madels 7G11 7G12	(See Ch 20A1)
2011)	Tel. Rec	(C or CN) 101. Kec. (See Ch. 20A1) 77	7G14, 7G15, 7G16)	Tel. Rec
Chassis 4A1 3-31	Read Chan Bul 7 110-1	Models AH165 AH166	(See Ch. 7G1) 54	Models 24C15, 24C16,
Chassis 401	Chassis 21A1 Tel. Rec 77-1	4H167 (S or SN) Tel.	Model 7P32, 7P33, 7P34,	24C17 Tel. Rec.
Chassis 4H1	Chassis 21B1, 21C1, 21D1	Rec. (See Chassis 30B1). 71	7P35 (See Ch. 5HI) 26	(See Ch. 20A1) 77
(See Chassis 3081) 71	Tel. Rec	Models 4R11, 4R12	Model 7RT41, 7RT42,	Models 24R11, 24R12 Tel.
Chassis 4J1, 4K1	Chassis 21H1, 21J1 Tel.	(See Ch. 4R1)108	/R143 (See Ch. oll) 20	Kec. (See Cn. 2011)
(See Ch. 20A1)77	Rec. (See Ch. 2181)118	Models 5F11, 5F12 57	7T04 7T04.111 (See	2414 2415 24155
Chassis 4L1, 4S11001	Chossis 2401, 2461, 2471, 2461, 2461, 2461, 2461, 24814, 2481, 2481, 2481, 2481, 2481, 2481, 2481, 2481, 248	(See Ch. 371)	(Ch. 5N1)	Tel. Rec. (See Ch.
Chassis 4K1	Chassis 24D1, 24E1, 24E1,	5914 (See Ch. 581)	Model 7T06, 7T12	20X1 and 4L1)100
(See Model 6T02) 1	24G1, 24H1 Tel. Rec.	Model 5T12 (Ch. 5T1) 68	(See Ch. 481) 24	Models 25A15, 25A16,
Chassis 581 Phono 4-24	Prod. Chge. Bul. 9114-1	Models 5W11, 5W12 (See	Model 7110, 7114, 7115	25A17 Tel. Rec.
Chossis 5B1A 18-1	Chassis 30A1 Tel. Receiver 57-2	Ch. 5W1) 79	(See Ch. 5K')	(See Ch. 20A1)
Chassis 5B2 100-1	Chassis 3081, 30C1,	Models 5X11, 5X12, 5X13,	ISan Chartis 30A1 (Set	Rec (See Ch 2181) 118
Chassis 5D2	30D1 Tel. Kec	5X14 (See Ch. 5X1) 70	57) and 8D1 (Set 67)1	Models 26R25, 26R26 Tel.
(See Ch. 218)]	(See Ch 4D1)	Models 0A21, 0A22, 0A23 (See Ch. 6A2) 103	Tel. Rec.	Rec. (See Ch. 24D1)103
Chossis 5H1	Models 4H15, 4H16, 4H17	Model 6C11 (See Ch. 6C1) 53	Models 8C14, 8C15, 8C16,	Models 26R25A, 26R26A
Chassis 5K1 30-1	(A or B) Tel, Rec.	Model 6C71 (See Ch. 10A1) 3	8C17 (See Cis. 8D1) 67	Tel. Rec.
Chassis 5N1 311	(See Ch. 20A1) 77	Models 6F10, 6F11, 6F12 *	Models 8015, 8016	(See Ch. 2181)
Chossis 5R1 59-1	Models 4H15, 4H16, 4H17,	Model 6P32 (See Ch. 6E1,	Kadal SPR46	Models 26R35, 26R36,
Chassis 511 08-1	4H18, 4H19 (S or SN)	6E1NJ	(See Chastis 3A1) 2	Ch 24011 103
Chassis SW1	Tel, Rec. (See Chossis	AO14 (See Ch. 6O1) 78	Model 9814, 9815, 9816	Models 26R35A, 26R36A.
Chassis 6A1	Models AH18, AH19 (C or	Model 6R11 (See Ch. 6R1) 54	(See Ch. 981) 49	26R37A Tel. Rec.
(See Model 6T01) 1	CN) Tel, Rec. (See Ch.	Model 6RP48, 6RP49,	Models 9E15, 9E16,	(See Ch. 2181)118
Chassis 6A2103-1	20A1) 77	6RP50 (See Ch. 3A1) 2	9E17 (See Ch. 9E1) 00	Models 26X35, 26X36,
Chassis 681 48-2	Models 4H115, 4H116,	Models 6RT41, 6RT42, 6RT43	Models I (ATT, 12A12 19), Bar (See Ch. 2011) 100	20X37 1el. Kec. (See
	4H117 (S or SN)	Model APTAIA APTAZA	Models 14R11, 14R12 Tel.	Models 26X45, 26X46 Tel.
Chassis 6F1	Tel. Kec. (See Ch. JUBI) /T	6RT43A (See Ch. 5B1A) 18	Rec. (See Ch. 2011)117	Rec. (See Ch. 24D1)103
Chossis 6L1 26-2	CN Tel Per (See Ch.	Model 6RT44 (See Ch. 781) 18	Models 16R11, 16R12 Tel.	Models 26X55, 26X56,
Chassis 6M1 251	20A1) 77	Models 6511, 6512	Rec. (See Ch. 2181)118	26X57 Tel. Rec.
Chassis 6Q1 78-1	Model 4H126 (S or SN)	(See Ch. 651)10/	Models 19A11S, 19A11SN,	(See Ch. 24D1)103
Chassis 6K1	Tel. Rec. (See Ch. 3081) 71		194125, 194125N, 104155, 104155NI (San	Models 20X33A, 20X30A,
Chassis 6/1	Models 4H137 (A or B)	Model 6102, 6104	Ch 19A1) Tel. Rec 59	(See Ch. 2181)
Chassis 6W1 71-1	Tel. Rec. (See Ch. 20A1) 77	Model 6T06, 6T07	Models 20X11, 20X12 Tel.	Models 26X65, 26X66,
Chassis 6Y1 75-1	Model 4H13/ (5 dr 5N)	(See Ch, 4A1) 3	Rec. (See Ch. 20X1)100	26X67 Tel. Rec.
Chassis 7B1 18-2	Models AN146 AN147	Model 6T11	Model 20X122 Tel. Rec.	(See Ch. 24D1)103
Chassis 7C1 23-2	(A or B) Tel. Rec.	(See Model 6T02) 1	(See Ch. 2011)100	Models 26X65A, 26X66A,
Chassis /El	(See Ch. 20A1) 77	Model 6T12 (See Ch. 4A1) 3	Model 20X136 Tel. Rec.	20A0/A 101, Rec. (See Ch. 2181) 118
Chossis 881	Models 4H145, 4H146	Models 6V11, 6V12	1300 CR. 20211	Models 26X75, 26X76 Tel
Chassis 8C1 (See Ch. 8D1) 67	(C or CN) Tel. Rec.	[300 Ch. 071]	201147 Tel Rec.	Rec. (See Ch. 24D1)103
Chassis 8D1 67-1	(See Ch. 20A1)	Chasis (W1)	(See Ch. 20X1)	Models 26X75A, 26X76A
Chassis 9A1 32—1	Models 41143, 41140, 44147 (S. or SN) Tel.	Models 6Y18, 6Y19 (See	Model 22X12 Tel. Rec.	Tel. Rec.
Chassis 981 49-2	Rec. (See Chassis 30B1), 71	Chassis 6Y1) 75	(See Ch. 20X1)100	(See Ch. 2181)118
Chassis At 1	ware frame museus againts and			

\* REGULAR PHOTOFACT SUBSCRIBERS MAY OBTAIN SPECIFIC SERVICING DATA ON THIS RECEIVER PRIOR TO ITS COVERAGE IN A PHOTOFACT FOLDER BY SENDING THE SERIAL NUMBER, CHASSIS DESIGNATION, NAME AND MODEL NUMBER, TO US

# This Service is free to Regular PHOTOFACT Subscribers

Please request—Schematic, Alignment Data, or whatever you require. Please accompany your request with a statement giving the number of the last PHOTOFACT Volume or Set Number that you have purchased and the name of the Parts Jobber who sees to it that you receive each Set of PHOTOFACT Folders as they are published.

BE A REGULAR PHOTOFACT SUBSCRIBER. INSTRUCT YOUR PARTS JOBBER TO SEND PHOTOFACT SETS TO YOU REGULARLY AS THEY ARE PUBLISHED. ASK ABOUT THE EASY PAY PLAN. Production Change Bulletins contain data which is supplementary to previously issued Photofact Folders, and are listed in this Index immediately following the listing of the initial coverage of the same models or chassis.

ADMIRAL-ANSLEY ADMIRAL-Cont. AERMOTIVE 181-AD ..... 12--1 AIRADIO 
 Alkabic
 11—1

 SU-41D
 11—1

 SU-52A, B, C (Receiver)
 13—2

 TRA-1A, B, C (Transmitter)
 13—1

 3100
 37—1

 3100
 37-1

 AIRCASTLE
 DM-700
 85-1

 DM-700 (See Model
 DM-700)
 85

 G-516, G-518
 48-3
 G-521

 G-521
 54-3
 35-1

 FARACASTLE
 93-1
 9-2

 FARACASTLE
 93-1
 9-2

 FARACASTLE
 93-1
 9-2

 FARACASTLE
 93-1
 9-2

 PA22
 87-3
 90-1

 PA-78
 100-2
 9-1

 PX
 13-35
 5C-448
 62-2

 TD-6
 103-3
 92-1

 PX
 13-35
 52-1
 9

 PX
 13-35
 52-1
 9

 PX
 147-2
 93-1
 147-1

 VRA1A
 47-1
 148702, X8703 Tel. Rec.
 93A-1

 X1750, X8703 Tel. Rec.
 93A-1
 31-2
 101

 PA-48</t AIRCASTLE 
 572
 55-1

 602-182144
 114-2

 602-182144
 114-2

 604-100WB
 53-2

 604-400WB
 119-2

 621 (Ch. FJ-91)
 14-2

 626
 18-3

 641
 17-1

AIRCASTLE-Cont.
651 15—1 5000, 5001 16—2
5002 19-1 5003, 5004, 5005, 5006. 20-1
5008, 5009 46—1 5010, 5011, 5012
(Ch. 110) 13-4 5015.1 118-3
5020
5025 24-2
5028 44-1
5035 46-2
5036
5052 45—2 5056-A 120—2
6042 61—1 6050 74—1
60.53
6541 17-2
6541) <b>17</b>
6631, 6632, 6634, 6635 <b>15</b> -2
7004 19-2
7014, 7015 57-3 7015 Early 47-2
7553 45-3 90081, 9008W
90091, 9009W
10002
10005 62—3 10021-1 10022-1 50-3
10023
108014, 108504 \$7-4
121104 73—1 121124 61—2
127084 <b>55</b> -2 131504 <b>60</b> -2
132564 69—1 138104 54—3
138124 64—1 139144 59—4
147114 56-3 149654, 150084
159144 (See Model 139144) 59
AIR CHIEF (See Firestone)
AIR KING
A-400 (Ch. 470) 23-1
A-400 (Ch. 470) 23-1 A-403
A-400 (Ch. 470) 23—1 A-403 20—2 A-410 34—1 A-410 (Revised) 40—1 A-426 43—1
A-400 (Ch. 470)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
A-400 (Ch. 470)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
A-400 (Ch. 470)
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$
A-400 (Ch. 470)       23-1         A-403       20-2         A-410 (Revised)       40-1         A-410 (Revised)       40-1         A-426       40-1         A-420       31-3         A-500       24-3         A-511, A-512       30-2         A-520       49-4         A-600       26-3         A-604       21-2         A-604       21-2         A-604       21-2         A-605       3-4         A-607       40-1         A-101 Tel. Rec.       91-2         A1001 A       75         A1001 A)       75
A-400 (Ch. 470)       23-1         A-403       20-2         A-410 (Revised)       40-1         A-426       40-1         A-426       40-1         A-420       40-1         A-450       40-1         A-420       43-1         A-420       31-3         A-511, A-512       30-2         A-520       49-4         A-600       26-3         A-604       21-2         A-604       21-2         A-605       50-3         A-625       50-3         A-625       50-3         A-625       50-3         A-626       50-3         A-600       45-4         800       45-4         800       45-4         A001 A Tel. Rec.       75         A1001A)       75         A2010 Tel. Rec. (See Model A001)       11         4001 (See Model 4004)       4         4007, 4008 <t< td=""></t<>
A-400 (Ch. 470)       23-1         A-403       20-2         A-410 (Revised)       40-1         A-410 (Revised)       40-1         A-426       43-1         A-430 (Revised)       40-1         A-426       43-1         A-450       43-1         A-450       43-1         A-450       9         A-511, A-512       30-2         A-500       26-3         A-501, A-502 (Ch. 465-4) 31-3         A-500       26-3         A-511, A-512       30-2         A-500       26-3         A-600       26-3         A-604       21-2         A-604       21-2         A-605       30-3         A-606       45-4         A000       A-601         A-607       58-3         A1001 A Tel. Rec.       91-2         A2000, A2001, A2002       71-2         Tel. Rec. (See Model A1001A)       75         A2010 Tel. Rec. (See Model A009)       11         A001 (See Model 4604)       4         4607, 408       3-1         4607, 408       3-1         4607, 4008       3-1         4607
A-400 (Ch. 470)       23-1         A-403       20-2         A-410 (Revised)       40-1         A-410 (Revised)       40-1         A-426       40-1         A-430       40-1         A-426       40-1         A-450       40-1         A-450       40-1         A-426       40-1         A-450       40-1         A-450       40-1         A-426       40-1         A-510       -502 (Ch. 465-4) 31-3         A-510       -502 (Ch. 465-4) 31-3         A-510       -502 (Ch. 465-4) 30-2         A-521       30-2         A-500       26-3         A-600       26-3         A-600       26-3         A-600       26-3         A-600       26-3         A-601       40-2         A-602       50-3         A-603       45-4         A-604       45-4         A001 A Tel. Rec.       75         A1001 A)       75 <td< td=""></td<>
A-400 (Ch. 470) $23-1$ A-403 $20-2$ A-410 (Revised) $40-1$ A-410 (Revised) $40-1$ A-426 $40-1$ A-420 $40-1$ A-420 $40-1$ A-420 $40-1$ A-450 $40-1$ A-426 $40-1$ A-450 $40-1$ A-510 $-502$ (Ch. 465-4) 31-3         A-510 $-502$ (Ch. 465-4) 31-3         A-510 $-502$ (Ch. 465-4) 31-3         A-510 $-512$ (30-2         A-520 $49-4$ A-600 $26-3$ A-604 $81-2$ A-605 $30-2$ A-604 $81-2$ A-605 $49-4$ A-607 $45-3$ A-101A Tel. Rec. $75-2$ A1001A Tel. Rec. (See Model A1001A) $75$ A-2010 Tel. Rec. (See Model A1001A) $75$ A-2012 Tel. Rec. (See Model A604) $4-25$ 4607 $408$ $-25$ 4607 $408$ $407$ 4607 $408$ $3-14$ <
A-400 (Ch. 470)

AIRLINE-Cont.
05WG-3016A, B Tel. Rec.
Set 72 and Set 110
Folder 2) 05WG-3030A Tel Rec 119_3
05WG-3031A Tel. Rec109-1
05WG-30318 Tel. Rec *
05WG-3039A, B Tel. Rec. *
05WG-3040 Tel. Rec *
548R-1501A, 548R-1502A, 2-24
548R-1503A, B, C;
548R-1504A, B, C 3-4
1506A, B 2-34
54KP-1209A, B 8-1
18018 433
54WG-2500A, 54WG-
64BR-916A
64BR-916B (See Model
64BR-917A 10-1
64BR917B (See Model
64BR-1051A 2-32
64BR1051B (See Model
6458-1205A 6488-1206A 10-3
64BR-1208A 16-4
64BR-1503B, 64BR-1504B (See Model: 54BR-
1503A, B, C; 54BR-
1504A, B, C)
64BR-1514A, B 244
648R-1808A 16-5
648R-1208A) 16
64BR-7000A 51-2
6458-7100A, 6458-7110A, 6458-7120A \$7-5
648R-7300A, 648R-7310A,
648R-7810A, 648R-7820A 53-3
64WG-1050A 10-2
1050C, 64WG-1050D
(See Model
64WG-1050A) 10 64WG-1052A 9-2
64WG-1052B (See Model
64WG-1052A) 9 64WG-1207B
64WG-1511A, 64WG-
64WG-1512B
64WG-1801C (See Models
54WG-1801A, 8) 4 64WG-1804A, 8
64WG-1804C (See Model
64WG-1804A) 4 64WG-1807A
64WG-18078 5-4
18098 (See Models
64WG-1511A, B; 64WG-
64WG-2007A.
64WG-20078 \$6
64WG-2009A, 64WG-2009B
64WG-20108 186
Model 54WG-2500A1 4
64WG-2700A,
64WG-27008 (See Models 54WG-2500A
54WG-2700A) 4
74BR-1053A *
74BR-1055A
7488-13018, 7488-15028, " 7488-1507, 7488-1508A, *
748R-1 5138, 748R-1 5148
1513A, B; 648R-
1514A, B) 24
745R-1812A (See Model 745R-1812B)
4BR-1812B 22-2
7488-2001A (See Mode) 7488-20018)
748R-20018 23-2
748R-2701A 24-5
74BR-2702A (See Model
74BR-27028 25-3
74BR-2707A
74BR-2715A
4BR-2717A *
74GSG-8400A, 74GSG-8700A
74GSG-8810A,
74GSG-8820A 52—2 74HA-8200A 58—4
4KR-1210A 41-1
4KR-27065
4WG-925A 24-6
Model 64WG-1050A1 10
14WC 10528 (5
Medels 44WC 10524 21 2

74WG-1054A 22—1	948R-2740A, 948R-
74WG-1054A1 22	94BR3004. C.
74WG-1056A 29—1	94BR3005, C Tel. Rec., 91A-
74WG-1057A 32-2	948R-3017A Tel. Rec 89-
64WG-12078 18	Prod Chon Bul 7 110
74WG-1509A,	94BR-3021, 94BR-3024A
74WG-1510A 27-1	Tel. Rec
74WG-1511B, 74WG- 1512B (See Models	94GAA3654A 95-
64WG-1511A, B:	94GCB-1064A
64WG-1512A, B) 5	Tel. Rec. (See Model
74WG-1802A 25-4	05GCB-3019A)116
74WG-1803A (See Model	94GDC-989A
74WG-1802A)	94GSE-2735A, 94GSE-
64WG-1804A, B) 4	94GSE-3011, B(See Model
74WG-1807A, 74WG-	84GSE-3011A) 82
1807B (See Models	94GSE-3015A Tel. Rec107-
64WG-1807A, B) 5	94GSE-3018A Tel. Rec 93A-
74WG-2002A	94GSE-3023A Tel. Rec
74WG-2007B, 74WG-	94HA-1527C. 94HA-1528C 67-
2007C (See Models	94HA1529A, 94HA1530A
64WG-2007A, B) 5	(See Model 84HA1529A) 85
74WG-20098 (See Models	94WG-1059A 75-
74WG-2010A (See Model	94WG-1811A 99
64WG-20108) 18	94WG-2742A, C. D 71-
74WG-20108 18-6	94WG-2745A 76-
74WG-2500A (See Model	94WG-2746A, B;
74WG-2504A 28 1	94WG-2747A (See
74WG-25048, 74WG-	94WG.2748A 94WG.
2504C (See Model	2749A
74WG-2504A) 28	94WG-2748C (See Model
74WG-2505A 18-7	94WG-2748A) 90
2700B (See Model	94WG-3006A Tel. Rec 72-
54WG-2700A)	94WG-3008A. 94WG-
74WG-2704A, 74WG-	3009A Tel. Rec. (See
2704B, 74WG-2704C	Model 94WG-3006A) 72
(366 Model 74WG-2504A) 28	Model 94WG-300481
74WG-2705A, 74WG-	94WG-3016A, B, C Tel, Rec.
2705B (See Model	(See Model 94WG-3006A
74WG-2505A) 18	Set 72 and Model 05WG-
74WG-2709A	3010A Set 110 Folder 2) 94WG-2022A Tel Bes (See
74WG-2505A1 18	Model 94WG-30068) 85
848R-1065A*	94WG-3026A Tel. Rec. (See
84BR-1503D, 84BR-1504D *	Model 94WG-30068) 85
848R-1515A, 848R-1516A *	94WG-3028A Tel, Rec. (See
846R-18158, 846R-18168, 55-3	94WG-3029A Tel. Rec. (See
84BR-2005A *	Model 94WG-30068) 85
848R-27158 *	ALGENE
1 SARE-7719A	APARIAE
8488 37348	40.611 00
848R-27268 *	AR5U 22-
848R-27268 ************************************	AR5U
84BR-27268 84BR-3004 Tel. Rec	AR5U
848R-27268	AR5U         22—           AR6U         22—           ALTEC LANSING         ALC-101           BLC-101         84—
848R-27268	AR5U         22           AR6U         22           ALTEC LANSING         24           ALC-101         84           ALC-205, ALC-206 Tel.         105
848R-27268	AR5U         22           AR6U         22           ALC-101         84           ALC-205, ALC-206 Tel.         84           A3238         66
848R-27268         •           848R-3004 Teil. Rec.         •           84GRA3967A         •           84GRA967         •           84GRA967         •           84GRA967         •           84GRA967         •           84GRA968         •           84GRA97         •	AFSU         22           AR6U         22           AR6U         22           ALTEC         LANSING           ALC-101         24           ALC-205, ALC-206 Tel,         84           A-3232         66
8488-27268         •           8488-3004         rel. Rec.         •           84GAA3967A         91-3         84GCB-1062A         \$2-26           84GCB-1062A         \$2-26         \$3-3         84GCDC-9638         \$1-3           84GCDC-9638         \$3-4         \$3-4         \$3-4         \$4GCE-2730A,         \$3-4           84GSE-2730A,         \$3-4         \$4GSE-2731A,         70-1         \$4GSE-201A, Tel. Rec.         \$2-1	AR5U         22           AR6U         22           ALTEC LANSING         22           ALTEC LANSING         84           ALC-205, ALC-206 Tel.         84           A3238         66           A-323C (See Model ALC-101)         84
848R-27268	AR5U         22           AR6U         22           ALTEC LANSING         24           ALC-205, ALC-206 Tel.         84           Rec.         105           A2328         66           ALC-101         84           ALC-205, ALC-206 Tel.         86           A3238         66           A1C-101         84           ALC-201         84
848P.27268         •           848P.3004 Tell. Rec.         •           846A3967A         913           846CB-1062A         5226           846CC-9638         513           846CDC-9638         513           846CDC-987A         534           846CH-9268         554           846CE-2730A,         84528A           846SE-2731A         701           844SE-3011A Tell. Rec.         821           844A1-1527A, 844A-1527C, 67         64.4.1529A, 844A1530A	ARSU       22         ARSU       22         ARTEC       LANSING         ALC-101       84         ACC-205, ALC-206 Tel.       105         Rec.       103         A-3232 (See Model       66         ALC-101)       84         AMC       125P         125P       1
8488-27268       •         8488-3004       rel. Rec.       •         84GAA3967A       91-3         84GC8-1062A       \$2-26         84GC4-0538       \$1-3         84GC5-1062A       \$2-26         84GC4-0538       \$1-3         84GDC-987A       \$3-4         84GE4-0528       \$5-4         84G5E-2730A,       \$3-4         84G5E-2731A       70-1         84G5E-2731A       844A-1527C         84MA-1527A, 84HA-1527C       67         84HA152A, 84HA1530A       85-2	AR5U       22         AR6U       22         ALTEC LANSING       22         ALTEC LANSING       84         ALC-205, ALC-206 Tel.       84         A3238       66         A-323C (See Model       66         ALC-101)       84         AMC       125P         126       16
8488-27268         *           8488-3004 Tel. Rec.         *           8438-3004 Tel. Rec.         *           8436-3787A         91-3           843628-1062A         \$2-26           843628-1062A         \$2-26           843628-1062A         \$3-4           843628-2730A         \$3-4           84352-2730A         \$5-4           84352-2730A         \$2-1           844A-1527C         \$67	AR5U         22           AR6U         22           ALTEC LANSING         22           ALTEC LANSING         22           ALC:101         84           ALC:205, ALC:206 Tel.         84           Rec.         105           A323B         66           ALC:101)         84           AMC         125P           126         16           126         16
8488-27268       •         8488-3004 Teil. Rec.       •         8488-3004 Teil. Rec.       •         8488-3004 Teil. Rec.       •         84704 Teil. Statu.       Teil. Rec.	ARSU       22         ARSU       22         ARTEC       LANSING         ALC-101       24         ACC-205, ALC-206 Tel,       84         A2323       66         A-3232C (See Model       66         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)
848R-27268       •         848R-3004 Tel. Rec.       •         84GA.3967A       91-3         84GCB-1062A       \$2-26         84GCB-1062A       \$3-4         84GCB-203BA       \$3-4         84GCB-2730A,       \$3-4         84GSE-2730A,       \$2-1         84HA-1926B       \$5-4         84GSE-2730A,       \$2-1         84HA-1527A, 84HA1528A       \$2-1         158e Model 94HA-1527C       67         84HA1529A, 84HA1530A,       \$3-2         84HA-1810A,       \$4HA-3002A, 84HA-3002B         84HA-3002A, 84HA-3002B       •         84HA-3002A, 84HA-3002B       •         99-3       •	AR5U         22           AR6U         22           ALTEC LANSING         22           AJ238
8488-27268         •           8488-3004 Tel. Rec.         •           8467.3767A         •           8467.3767A         •           8467.3767A         •           8467.3767A         •           8467.4767A         •           8467.4767A         •           8467.4767A         •           8467.4767A         •           8467.4777A         •           8467.4777A         •           8467.4777A         •           8467.4777A         •           8447.4777A         •	AR5U       22         AR6U       22         ALTEC LANSING       22         ALC-205, ALC-206 Tel.       22         Rec.       105         A3238       66         AJ22C (See Model       66         ALC (101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMERICAN CORP.       06         AMERICA       07
8488.272368       •         8488.3004 Teil. Rec.       •         8468.4004 Teil. Rec.       •         8468.4004 Teil. Rec.       •         8468.4004 Teil. Rec.       •         8468.4004 Teil. Rec.       •         8448.415274, 8444.15284       •         1584.415274, 8444.15204.       •         1584.415274, 8444.15204.       •         8444.3274.418100.       •         8444.3274.74       •         8444.3002.8444.30028       •         8444.3002.8444.30028       •         844.3010.4, 8, C       •         844.3010.4, 8, C       •	ARSU       22         ARSU       22         ANTEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         A2323       66         A-3232C (See Model       66         A-2323C (See Model       105         A1C-101)       84         AMC       125         126       16         AMERICAN COMMUNICATION (See Liberty)         AMPLIFIER CORP.       OF AMERICA         OF AMERICA       6000000000000000000000000000000000000
848P27268       •         848P3004 Tel. Rec.       •         84GA.3967A       913         84GCB-1062A       \$226         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$3-4         84GCB-1062A       \$3-4         84GCB-1062A       \$3-4         84GCB-1062A       \$3-4         84GCB-1062A       \$3-4         84GCB-2730A       \$3-4         84GSE-2731A       70-1         84GSE-2730A,       \$2-1         84HA-3527A, 84HA-1527C)       67         84HA1527A, 84HA-1527C)       67         84HA-1810A,       852         84HA-3002A, 84HA-3002B       *         78       84HA-3002A, 84HA-3002B         78       84HA-3010A, 8, C       *         84HA3007A, 8, C       7-1         84HA3010A, 8, C       *         84HA3010A, 8, C       *         84HA3010A, 8, C       *	AR5U       22         AR6U       22         ALTEC LANSING       22         AJ236       34         A.3232 (See Model       65         A.3232 (See Model       66         A.3232 (See Model       64         AMC       34         AMC       34         AMC       36         125 /       36         126 //>Communication       16         AMERICAN COMMUNICATION       36         GF AMERICA       00CR, 00C
8488-27268       •         8488-3004 Tel. Rec.       •         84GA.3967A       91-3         84GCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-063B       \$1-3         84GCCB-063B       \$1-3         84GCCB-063B       \$5-4         84GCCB-073IA       70-1         84GSE-273IA       70-1         84GSE-273IA       70-1         84GSE-273IA       70-1         84GSE-0011A Tel. Rec.       82-1         84GA-1527C       67         84HA-1527A       84HA-152C         584HA-31810A,       85-2         84HA-3002A, 84HA1530A       85-2         84HA-3002A, 84HA-3002B       5-2         84HA-3007A, 8, C Tel. Rec.       99-3         84HA-3010A, 8, C Tel. Rec.       94-2	AR5U       22         AR6U       22         ALTEC LANSING       22         A1201       84         AMC       233         125       3         126       16         AMERICAN COMMUNICATION (See Liberty)       3         AMPLIFIER CORP.       0         OF AMERICA       ACA-100DC, ACA-100GE, 63         AIOV       *
848P.27268       •         848P.2024 Teil. Rec.       •         848P.2028 Teil. Rec.       •         848P.2028 Teil. Rec.       •         8489 Teil. Rec.       •         8489 Teil. Rec.       •         8449 Teil. Rec.       •         8449 Teil. Rec.       •         8449 Teil. Rec.       •         8449 Teil. Rec.       •         8444.18100 A.       •         8444.2027 A.       •         8444.2024 A.       •         8444.30024 A.       •         8444.30027 A.       •         8444.30027 A.       •         8444.30028 Teil. Rec.       •         8444.30100 A.       C.         78441 Solo A.       C.         8444.3010 A.       C.         7844.8007 A.       S.         8444.3010 A.       S.         8444.3010 A.       S.         8444.3010 A.       S.         8444.3010 A.       S.	ARSU       22         ARSU       22         AATEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ACC       105         A-32326 (See Model       66         A-32327 (See Model       66         A-32326 (See Model       105         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF AMERICA ACA-100DC, ACA-100GE.         ACA-100DC, ACA-100GE.       63         *       AMPLIPHONE
848P27268         848P3004 Tel. Rec.         846A.3967A         91-3         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         847         846CB-1062A         847         846CB-1062A         847         846CB-1062A         847         846CB-1062A         847         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846CB-1062A         846A-3002A         846A-3002A         846A-3002A         846A-3002A         846A-3002A         846A-3002A         846A-3002A         846A-3002A         846A-300A         846A-300A         846A-300A         846A-300A         846A-300A         846A-300A         846A-300A         846A-3	AR5U       22         AR6U       22         ALTEC LANSING       22         AJ236       34         A.3232 (See Model       66         A.3232 (See Model       66         A.3232 (See Model       66         A.3232 (See Model       10         A.3232 (See Model       16         AMC       126         AMERICAN COMMUNICATION (See Liberty)       6         AMPLIFIER CORP.       0         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DV, ACA-100GE, 63       3         AMPLIFIONE       10         20       21
8488-27268       •         8488-3004       rel. Rec.       •         846A.3967A       \$1-3         84GCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-1062A       \$2-26         84GCCB-063B       \$1-3         84GCCB-063B       \$1-3         84GCCB-063B       \$5-4         84GCCB-0731A       \$2-26         84GSE-2731A       \$2-26         84GSE-2731A       \$2-26         84GSE-2731A       \$2-26         84GSE-2731A       \$2-26         84GA-1527C       \$6         84GSE-2731A       \$2-26         84HA-1527A       \$8+4A-1527C         84HA-1810A,       \$8-27         84HA-3002A, 84HA-3002B       \$2         84HA-3007A, 8, C       \$2         84HA-3010A, 8, C       \$2         84HA-3010A, 8, C       \$2         84HA-3010A, 8, C       \$2         84HA-3010A, 8, C       \$4         84HA-3010A, 8, C       \$4         84HA-3010A, 8, C       \$4         84HA-1209A       \$4         84KR-1320A       \$6     <	AR5U       22         AR6U       22         ALTEC LANSING       22         A3238       66         A3238       66         A1C101       84         AMC       25         126       16         AMERICA COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0         OF AMERICA       ACA-100GE.         ACA-100DC, ACA-100GE.       63         810DV       *         20       21
848P.27268       •         848P.2004 Teil. Rec.       •         848P.2004 Teil. Rec.       •         846P.27268       •         846P.27268       •         846P.27268       •         846P.27268       •         846P.2730A       •         846P.474       •         846P.2730A       •         846P.2730A       •         846F.2730A       •         846F.2730A       •         846SE-2730A       •         846SE-2730A       •         846SE-2730A       •         846SE-2730A       •         846SE-2730A       •         846SE-2730A       •         846SE-2731A       •         846SE-2731A       •         846SE-2731A       •         846A-3274A       •         846A-1528A       •         (See Model 94HA-1527C)       67         84HA-1810C       •         84HA-1800A       •         84HA-3002A       •         84HA-3002A       •         84HA-3000A       •         84HA-3010A       •         84HA-3010A       •	AFSU       22         AR5U       22         AATEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ACC       105         A-32326 (See Model       66         A-32327 (See Model       66         A-32326 (See Model       16         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF AMERICA         ACA-100DC, ACA-100GE.       63         810DV       *         20       21         20       21         ANDREA       21
848P.27268       •         848P.3004 Tel. Rec.       •         846A.3967A       91-3         846CB-1062A       52-26         846DC-963B       51-3         846DC-963B       55-4         846HA-926B       55-4         846CB-1052A       55-4         846DC-963B       55-4         846DC-963B       55-4         846CB-1052A       55-4         846A-300A, 84HA-152A       82-1         84HA-1810A, 84HA1530A       85-2         84HA-1810A, 84HA1530A       85-2         84HA-3002A, 84HA-3002B       52-2         84HA-3002A, 84HA-3002B       59-3         84HA-3010A, 8, C Tel. Rec.       99-3         84HA-3010A, 8, C Tel.       74-2         84HA-3010A, 8, C Tel.       84         84HA-1520A       56-4         84KR-1209A       56-4         84KR-1209A       56-4         84KR-2060A <t< td=""><td>AR5U       22         AR6U       22         ALTEC LANSING       24         A3238       66         A-3232 (See Model       66         A1C-101       84         AMC       34         I25P       3         126       16         AMERICAN COMMUNICATION (See Liberty)       3         AMPLIFIER CORP.       0F         OF AMERICA       ACA-100DC, ACA-100GE, 63         810DV       9         AMPLIPHONE       10         10       21         20       21         ANDREA       ET-VK12 Tel. Rec</td></t<>	AR5U       22         AR6U       22         ALTEC LANSING       24         A3238       66         A-3232 (See Model       66         A1C-101       84         AMC       34         I25P       3         126       16         AMERICAN COMMUNICATION (See Liberty)       3         AMPLIFIER CORP.       0F         OF AMERICA       ACA-100DC, ACA-100GE, 63         810DV       9         AMPLIPHONE       10         10       21         20       21         ANDREA       ET-VK12 Tel. Rec
8488-27268       •         8488-3004 Tel. Rec.       •         846A.3967A       \$1-3         84GCB-1062A       \$2-26         84GCB-1062A       \$2-27         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$2-26         84GCB-1062A       \$3-4         84GSE-2731A       70-1         84GSE-2731A       70-1         84GSE-2731A       70-1         84GSE-2731A       70-1         84GA-1527C       \$7         84HA-1527A       \$8+2         84HA-1810A,       \$8-2         84HA-3002A, 84HA-3002B       \$8+2         76       84HA-3002A, 8, C         84HA-3010A, 8, C       \$9-3         84HA-3010A, 8, C       \$9-3         84HA-3010A, 8, C       \$9-3         84HA-3010A, 8, C       \$9-3         84HA-3010A, 8, C       \$9-2	AR5U       22         AR6U       22         ALTEC LANSING       22         ALTEC LOI       24         A3238       66         A.32326 (See Model       66         A.32326 (See Model       84         AMC       25         126       16         AMERICA COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0         ACA-100DC, ACA-100GE.       63         810DV       *         AMPLIPHONE       21         20       21         ANDREA       21         BT-VK12 Tel. Rec.       76<
8488.272368       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8467.43967A       \$2	AR5U       22         AR6U       22         AR6U       22         ALC:01       22         ALC:01       84         ALC:03, ALC:206 Tell, Rec.       103         A:3238       66         A:3238       66         A:3232 (See Model       66         A:2326 (See Model       66         A:2327 (See Model       16         A:2326 (See Model       16         A:2327 (See Model       16         A:2326 (See Model       16         AMC       125         126       16         AMREICAN COMMUNICATION (See Liberty)       AMPLIFIER CORP.         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       21         20       21         20       21         20       21         ANDREA       27         CO-VID 5       27         CO-VID 5       27         CO-VID 5       27         CO-VID 5       27
848P.27236       •         848P.3004 Tel. Rec.       •         846A.3967A       91-3         846CB-1062A       52-26         846DC-963B       51-3         846DC-963B       51-3         846DC-963B       55-4         846CB-1062A       55-4         846A-1810A       82-2         844A-1810A       85-2         844A-1810A       85-2         844A-1810A       85-2         844A-3002A, 844A-3002B       50-2         844A-3010A, B, C Tel.       69-2         844A-3010A, B, C Tel.       78-2         844A-3010A, B, C Tel.       78-2         844A-3010A, B, C Tel.       74-2         844A-1209A       56-4         844R-251A       56-4         844R-2010A       56-4         844R-2010A       56-4	AR5U       22         AR6U       22         ALTEC LANSING       24         A2323       66         A-3232 (See Model       66         A1C-101       84         AMC       34         I25P       3         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMERICAN CORP.       0F         OF AMERICA       ACA-100DC, ACA-100GE, 63         810DV       810DV       9         AMPLIPHONE       10       21         10       21       21         ANDREA       BT-VK12 Tel. Rec.       76         CO-VK15 (COVK16 (Ch.       VK1516) Tel. Rec.       103         CO-VK16 Tel. Rec.       103
8488.27268       •         8488.3004 Tel. Rec.       •         846A.3967A       913         84GCB-1062A       \$226         84GCB-1062A       \$227         84GCB-1062A       \$34         84HA-1527A, 84HA1530A       \$52         84HA-1810A,       \$62         84HA-3002A, 84HA-3002B       \$62         84HA-3010A, 8, C Tel.       \$62         84HA-3010A, 8, C Tel.       \$64         84HA-3010A, 8, C Tel.       \$64         84HA-3010A, 8, C Tel.       \$64         84HA-1209A       \$64         84KR-1320A       \$64         84KR-1320A       \$64         84KR-1320A       \$64	AR5U       22         AR6U       22         ALTEC LANSING       22         ALC:01
8488.272368       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$233         8462.43967A       \$233         8462.4497A       \$233         8463.552.2731A	ARSU       22         ARSU       22         ARTEC       LANSING         ALC-101       84         ALC-205, ALC-206 Tel.       Rec.         Rec.       103         A-32326 (See Model       66         A-32327 (See Model       66         A-32326 (See Model       103         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       9         810DV       21         20       21         20       21         CO-UIS       21         CO-UIS       21         ANDREA       27         BT-VK12 Tel. Rec.       76         CO-VK15, COVK16 (Ch.       27         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       103         COVK16 Tel. Rec.       103         COVK16 Tel. Rec.       103         COVK16 Tel. Rec.       103
848P.27236       •         848P.2004 Tel. Rec.       •         846A.3967A       91-3         846CB-1062A       52-26         846CCB-1062A       52-27         846CCB-1062A       53-4         846CCB-1062A       53-4         846CCB-063B       53-4         846CDC-987A       53-4         846CHM-926B       55-4         846A-1810A,       82-1         844A-1810A,       85-2         844A-1810A,       85-2         844A-1810A,       85-2         844A-3002A, 844A-1520A       85-2         844A-3002A, 844A-3002B       59-2         844A-3010A, B, C Tel.       69-2         844A-3010A, B, C Tel.       78-2         844A-3010A, B, C Tel.       78-2         844A-3010A, B, C Tel.       84-2         844A-3010A, B, C Tel.       74-2         844A-3010A, B, C Tel.       74-2         844A-3010A, B, C Tel.       84-4         84WG	AR5U       22         AR6U       22         ALTEC LANSING       24         AC2326 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       16         AA3226 (See Model       16         AMC       125P       3         126       16       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0F       46         ØF AMERICAN CORP.       0F       63         ØS 100V       21       6         10       21       2       2         ANDREA       8T-VK12 Tel. Rec.       76         OVK15 COVK15 (Ch.       VK1516) Tel. Rec.       103         OVK161 Tel. Rec.       16       12         See Model BT-VK12).       76
8488.27268       •         8488.3004 Tel. Rec.       •         8467.43967A       913         8467.61062A       \$226         8467.6204 Tel. Rec.       •         8447.6206 Tel. Rec.       •         8447.6206 Tel. Rec.       •         8447.6206 Tel. Rec.       •         8447.6207 A.       •	AR5U       22         AR6U       22         ALTEC LANSING       22         AJ238       66         A.32326 (See Model       66         A.32326 (See Model       84         AMC       24         AMC       24         AMC       3         1259       3         126       16         AMERICA CORP.       0         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       3         8100V       *         0       21         20       21         AMPLIPHONE       10         10       21         20       21         ANDREA       81-VK12         BT-VK12 Tel. Rec.       76         CO-VK15 COVK16 (Ch.       YM
8488.272368       •         8488.3004 Teil. Rec.       •         8400C.9038       •         8400C.9038       •         8400C.9038       •         84000.9038       •         84000.9038       •         84001.9038       •         84001.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9208       •         8401.9209.8414.1520A       •         8414.30024.8414.30028       •         8414.30024.8414.30028       •         8414.30024.8414.30028       •         8414.30104.8.0.7718       •         8414.30104.8.0.77128       •         8414.30104.8.0.77128       •         8414.30104.8.0.77128       •         8414.30104.8.0.77128	ARSU       22         ARSU       22         ARTEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         Rec.       103         AJ2328       66         A-3232 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       16         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       9         S10DV       21         20       21         20       21         CO-UIS       27         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.       27         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       103 <td< td=""></td<>
8488.272368       •         8488.3004 Tel. Rec.       •         8467.43967A       913         8467.624       5225         8467.624       5225         8467.624       5225         8467.624       5225         8467.624       5225         8467.624       5345         8467.624       5345         8467.624       5345         8467.624       5345         8467.6247       5345         8467.6247       5345         8467.6247       5345         8467.6247       5345         8467.6247       5346         8467.6247       5346         8467.6247       54	AR5U       22         AR6U       22         ALTEC LANSING       24         AC2326 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       16         AMC       125P       3         126       16       3         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0F AMERICA       63         GO AMERICA       ACA-100DC, ACA-100GE, 63       3         S10DV       21       0       21         20       21       21       21         ANDREA       BT-VK12 Tel. Rec.       76         CO-VK15 Tel. Rec.       103       27         CO-VK16 Tel. Rec.       104       12         CO-VK16 Tel. Rec.       12       76      <
8488.272368       •         8488.3004 Tel. Rec.       •         8467.43967A       913         8467.61062A       \$226         8467.6204 Tel. Rec.       •         8447.1810A,	AR5U       22         AR6U       22         ALTEC LANSING       22         AJ238       66         A.32326 (See Model       66         A.32326 (See Model       66         A.32326 (See Model       84         AMC       21         126       16         AMERICAN COMMUNICATION (See Liberty)       3         AMPLIFIER CORP.       07         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       3         BIOV       8         ACA-100DC, ACA-100GE, 63       3         CO-VK15, COVK15, COVK16 (Ch.       21         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.       27         CO-VK15, COVK16 (Ch.
8488.272368       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8462.43967A       \$226         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.43967A       \$223         8462.4497       \$233         8462.4497       \$233         8462.523011A Teil. Rec.       \$234         8448.1527A, 844A-1522C       67         844A.1529A, 844A-1520A       \$523         844A.1810A       \$236         844A.1810A, 85.C       \$62         844A.3007A, 8       \$6	ARSU       22         ARSU       22         ARTEC LANSING       22         ALTEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ACC       103         A-3232 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       16         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE.         ACA-100DC, ACA-100GE.       63         S10DV       21         20       21         CO-UIS       21         CO-UIS       27         CO-VK15, COVK16 (Ch.       27         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       112 <td< td=""></td<>
848P.27288       •         848P.2004 Tel. Rec.       •         846A.3967A       91-3         84GCB-1062A       52-26         84GCCB-1062A       52-27         84GCCB-1062A       53-4         84GCCB-1062A       53-4         84GCCB-1062A       53-4         84GCCB-063B       51-3         84GCCB-063B       55-4         84GCB-1062A       55-4         84GCB-2730A,       55-4         84GSE-2731A       70-1         84GSE-2730A,       55-4         84A-1527A, 84HA-1520A       82-2         84HA-1812A, 84HA-1520A       85-2         84HA-3152A, 84HA-1520A       85-2         84HA-3002A, 84HA-3002B       5-2         84HA-3010A, B, C       7el. Rec.         7el. Rec.       99-3         84HA-3010A, B, C       7el.         7el. Rec.       94-2         84HA-3010A, B, C       7el.         84HA-3010A, B, C       7el.         84HA-3010A, B, C       7el.         84HA-300A, B, C       7el.         84HA-300A, B, C       7el.         84HA-300A, B, C       7el.         84HA-300A, B, C       7el.         84HA-300A	AR5U       22         AR6U       22         ALTEC LANSING       24         A3238       66         A-3232 (See Model       66         A.2326 (See Model       66         A.2326 (See Model       103         ALC-1011       84         AMC       3         1259       3         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0F         OF AMERICA       21         10       21         10       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21
8488.272368       •         8488.3004 Tel. Rec.       •         8467.43967A       913         8467.61062A       5226         8467.6204 Tel. Rec.       •         8447.1810A,       •         8447.1810A,       •         8447.1810A,       •         8447.1810A,       •         8447.3002A, 8444.1320A .       •         8447.3002A, 8444.3002B       •         78       8447.3010A, 8, C Tel. Rec.         8447.3010A, 8, C Tel. Rec.       •         8447.1209A       •         8447.1209A       •         8447.1209A       •         8447.1209A       •         8447.1209A       •         84	AR5U       22         AR6U       22         ALTEC LANSING       24         ACA:2035       66         A:3236 (See Model       66         A:3237 (See Model       84         AMC       24         I259       3         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       07         OF AMERICA       ACA-100DC. ACA-100GE. 63         ACA-100DC, ACA-100GE. 63       3         BIODV       8         ACA-100DC, ACA-100GE. 63       3         CO-WK15, COVK15       21         CO-WK15, COVK16       Ch         VK1510       76         CO-WK15, COVK16       Ch         VK1510       76         CVK1212       18         BU, 8       112
8488.272368       •         8488.2004 Teil. Rec.       •         8488.2004 Teil. Rec.       •         8467.2004 2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         8467.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       •         847.2004.       • <t< td=""><td>ARSU       22         ARGU       22         ARGU       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC:01       22         ALC:01       22         ALC:01       22         ALC:03       103         ALC:03       103         A3238       66         A-3232 (See Model       66         A-3232 (See Model       103         ALC:101)       84         AMC       125         126       16         AMREICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       3100V         S10DV       21         20       21         20       21         20       21         21       20         20       21         20       21         20       21         CO-VK15 Tel, Rec.       103         CO-VK16 Tel, Rec.       103         CO-VK16 Tel, Rec.       103         CO-VK16 Tel, Rec.       112</td></t<>	ARSU       22         ARGU       22         ARGU       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC:01       22         ALC:01       22         ALC:01       22         ALC:03       103         ALC:03       103         A3238       66         A-3232 (See Model       66         A-3232 (See Model       103         ALC:101)       84         AMC       125         126       16         AMREICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       3100V         S10DV       21         20       21         20       21         20       21         21       20         20       21         20       21         20       21         CO-VK15 Tel, Rec.       103         CO-VK16 Tel, Rec.       103         CO-VK16 Tel, Rec.       103         CO-VK16 Tel, Rec.       112
8488.272368       •         8488.3004 Tel. Rec.       •         8467.43967A       913         8467.6438       5226         8467.6438       513         8467.6438       513         8467.6438       513         8467.6438       513         8467.6438       534         8467.6438       534         8467.6438       534         8467.6438       534         8467.6438       534         8467.6439       534         8467.6439       534         8467.6444       527.3         8467.6444       527.3         8467.6444       527.3         8467.6527.3       53	AR5U       22         AR6U       22         ALTEC LANSING       24         AC2326 (See Model       66         A-3232 (See Model       66         A-3232 (See Model       16         AAC101       84         AMC       3         125 P       3         126
8488.27248         8488.2024 Teil. Rec.         9468.43967A         91.3         8462.27248         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8462.2734         8463.2734         847.2724         847.2724         847.2724         847.2724         847.2714      <	AFSU       22         AR6U       22         AR6U       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ALC-205, ALC-206 Tel.       105         Rec.       105         A-32326 (See Model       66         A-32327 (See Model       66         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       63         AMPLIFIER CORP.       OF AMERICA         ACA-100DC, ACA-100GE.       63         810DV       21         20       21         ANDREA       21         BT-VK12 Tel. Rec.       76         CO-VK15 Tel. Rec.       103         CO-VK15 Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       112         CVK12 Tel. Rec.       112         CVK12 Tel. Rec.       112         CVK13 Tel. Rec.       112         CVK14 Frod. Chge.       112         DVK.12 Tel. Rec.       12         CO-VK1
8488.272368       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8462.43967A       \$225         8462.643967A       \$225         8462.7438       \$225         8462.7438       \$225         8462.7438       \$225         8462.7438       \$225         8462.7438       \$225         8462.7438       \$225         8463.747       \$225         8464.7474       \$225         8464.7574       \$225         8444.7574       \$225         8444.7574       \$225         8444.7574       \$225         8444.7574       \$225         8444.7574       \$225         8444.7574       \$226         8444.7574       \$227         8444.7574       \$227         8444.7574       \$227         8444.7574       \$227         8444.7574       \$227         8444.750104, B, C       \$227         8444.750104, B, C       \$227         8444.750104, B, C       \$227         8444.750104, B, C       \$217         8448.750104, B, C       \$217	AR5U       22         AR6U       22         AR1EC       LANSING         ALTEC       LANSING         ALC-101       84         ALC.205, ALC-206 Tell,       Rec.         Rec.       103         A.32326 (See Model       66         A-32327 (See Model       66         A-32326 (See Model       16         AAC.1011       84         AMC       125P         126       16         AMRERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       OF         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       21         20       21         20       21         20       21         CO-VK15 (DIS COVK16 (Ch.       27         CO-VK15 (DIS COVK16 (Ch.       27         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       112         CO-VK16 Tel. Rec.       12         GSee Model BT-VK12).       76
8482.27248       •         8482.3004 Tel. Rec.       •         8462.43967A       \$226         8462.61062A       \$34         8464.61926B       \$54         8464.61926A       \$54         8467.61273A       \$41528A         1844.1327A, 84HA-1520A       \$52         844A.1810A       \$52         844A.1810C       \$62         844A.2002A, 84HA-1520A       \$52         844A.3002A, 84HA-3002B       \$52         844A.3002A, 84HA-3002B       \$62         844A.3010A, 8, C       \$62         844A.3010A, 8, C       \$62         844A.3010A, 8, C       \$64         844A.3010A, 8, C       \$64         844A.2010A       \$64         844A.2010A       \$64         844A.2010A       \$64         844A.2010A       \$64         844A.2010A       \$64         8448	AR5U       22         AR6U       22         ALTEC LANSING       24         A2323 (See Model       66         A-3232 (See Model       66         A1C-101       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0F AMERICA         ACA-100DC, ACA-100GE.       63         S10DV       21         10       21         20       21         20       21         20       21         21       21         20       21         21       21         20       21         21       21         20       21         21       21         21       21
B4BP.27248       •         B4BP.3004 Teil. Rec.       •         B4BP.3004 Teil. Rec.       •         B4GAA3967A       52-26         B4GCB-1062A       52-26         B4GCB-1062A       52-26         B4GCB-1062A       52-26         B4GCB-1062A       52-26         B4GCB-1062A       52-26         B4GCB-1062A       53-4         B4GCB-1062A       53-4         B4GCB-1062A       53-4         B4GCB-1062A       53-4         B4GCB-1062A       53-4         B4GCB-2731A       70-1         B4HA-1527A       84HA-1527C         B4HA-1527A       84HA-1527C         B4HA-1810C       69-2         B4HA-1810C       69-2         B4HA-3002A, B4HA-3002B       7el. Rec.         B4HA-3010A, B, C Teil. Rec.       94-2         B4HA-3010A, B, C Teil.       7el.         B4KR-1209A       56-4         B4KR-1209A       56-4         B4KR-1209A       56-4         B4KR-1209A       56-4         B4KR-1206A       38-1         B4WG-1060A       42-1         B4WG-1060A       42-1         B4WG-2015A       38-5 <td>ARSU       22         ARGU       22         ARGU       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ACC.203, ALC-206 Tel.       105         Rec.       105         A-3232 (See Model       66         A-3232 (See Model       66         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       34         AMAC       125P         ACA-100DC, ACA-100GE.       63         810DV       21         20       21         20       21         20       21         ANDREA       27         CO-VK15 Tel. Rec.       103         CO-VK15 Tel. Rec.       103         CO-VK15 Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CVK13 Tel. Rec.       112         CVK125 Tel. Rec.       21         CVK13 Tel. Rec.       112         CVK14 Tel. Rec.       112         CVK15 Tel. Rec.       12         <t< td=""></t<></td>	ARSU       22         ARGU       22         ARGU       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC-101       22         ALC-205, ALC-206 Tel.       84         ACC.203, ALC-206 Tel.       105         Rec.       105         A-3232 (See Model       66         A-3232 (See Model       66         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       34         AMAC       125P         ACA-100DC, ACA-100GE.       63         810DV       21         20       21         20       21         20       21         ANDREA       27         CO-VK15 Tel. Rec.       103         CO-VK15 Tel. Rec.       103         CO-VK15 Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CVK13 Tel. Rec.       112         CVK125 Tel. Rec.       21         CVK13 Tel. Rec.       112         CVK14 Tel. Rec.       112         CVK15 Tel. Rec.       12 <t< td=""></t<>
8488.272368       •         8488.2004 Teil. Rec.       •         8488.2004 Teil. Rec.       •         8467.43967A       \$223         8467.43967A       \$223         8467.43967A       \$223         8467.43967A       \$223         8467.43967A       \$223         8467.4497.431       \$223         8467.4497.431       \$223         8467.4497.431       \$223         8467.4497.431       \$223         8467.4497.431       \$223         8467.4497.431       \$223         8448.2524.2314.4.1528A       \$223         8448.2524.23730A,       \$223         8448.2524.23730A,       \$223         8448.2524.23730A,       \$223         8448.2524.23730A,       \$223         8448.2524.23730A,       \$223         8448.2524.23734.3002A,       \$223         8448.23010A, B, C Teil. Rec.       \$223         8448.23010A, B, C Teil.       \$223         8448.23010A, B, C Teil.       \$233         8448.23010A, B, C Teil.       \$233         8448.23010A, B, C Teil.       \$234         8448.23010A, B, C Teil.       \$234         8448.23010A, B, C Teil.	ARSU       22         ARGU       22         ARTEC LANSING       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC:101       22         ALC:205, ALC:206 Tell, Rec.       105         A:32326 (See Model       66         A:3232 (See Model       66         A:2326 (See Model       125         A:2327 (See Model       16         A:2326 (See Model       16         A:2327 (See Model       16         AMC       125         126       16         AMRERICAN COMMUNICATION (See Liberty)       AMPLIPHER CORP.         OF AMERICA       ACA-100DC, ACA-100GE, 63         ACA-100DC, ACA-100GE, 63       3100V         3100V       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         20       21         21       21      <
8488.272368       •         8488.3004 Teil. Rec.       •         846A.3767A       91-3         84GCB-1062A       52-26         84GCCB-1062A       52-27         84GCCB-1062A       53-4         84GCCB-1062A       52-27         84GCCB-063B       53-4         84GCCB-063B       53-4         84GCCB-063B       53-4         84GCB-793A       53-4         84GCB-793A       53-4         84GCB-793A       53-4         84GCB-793A       53-4         84GSE-2731A       70-1         84GSE-2730A,       82-1         84HA-1527A, 84HA-1520A       85-2         84HA-1810C       69-2         84HA-1810C       69-2         84HA-2027A       *         84HA-3002A, 84HA-30028       -2         84HA-3010A, B, C       C         Teil. Rec.       99-3         84HA-3010A, B, C       C         Teil. Rec.       94-2         84HA-3010A, B, C       C         Teil. Rec.       94-2         84HA-3010A, B, C       C         B41<1	AR5U       22         AR6U       22         ALTEC LANSING       22         ALC-101       84         A3238       66         A-3232 (See Model       66         A1C-101       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       16         AMPLIFIER CORP.       0F AMERICA         ACA-100DC, ACA-100GE.       63         S10DV       21         20       21         20       21         20       21         20       21         20       21         20       21         CO-VK15 (COVK16 (Ch.         VK1516 Tei. Rec.         See Model BT-VK12). 76         CVK125 Tei. Rec.         (See Model BT-VK12). 76         CVK12 Tei. Rec.         (See Model BT-VK12). 76         Tidi       21         Tuli 5
B4BP.27248       •         B4BP.3004 Teil. Rec.       •         B4GAA3967A       \$2-26         B4GAA3967A       \$2-26         B4GCB-1062A       \$3-4         B4GCB-1062A       \$3-4         B4GCB-1062A       \$3-4         B4GCB-203BA       \$3-4         B4GCB-2731A	ARSU       22         ARGU       22         ARGU       22         ALTEC LANSING       22         ALTEC LANSING       34         ALC-101       84         ACC-205, ALC-206 Tel.       105         Rec.       105         A-32326 (See Model       66         A-32327 (See Model       66         ALC-101)       84         AMC       125P         126       16         AMERICAN COMMUNICATION (See Liberty)       34         AMAC       125P         20       21         20       21         20       21         20       21         CO-UI5       27         CO-VK15 (Tel. Rec.       103         CO-VK15 (Tel. Rec.       103         CO-VK15 (Tel. Rec.       103         CO-VK16 Tel. Rec.       112         CVK125 Tel. Rec.       112         CVK13 Tel. Rec.       21         CO-VK16 Tel. Rec.       112         CVK125 Tel. Rec.       12         CVK126 Tel. Rec.       12         CVK1275 Hell SHORD       12         CVK128 Tel. Rec.       21         C
8488.272368       •         8488.3004 Teil. Rec.       •         8488.3004 Teil. Rec.       •         8462.43967A       \$226         8462.643967A       \$226         8462.74367A       \$226         8462.74367A       \$226         8462.74367A       \$226         8462.7437A       \$226         8462.7437A       \$226         8462.7437A       \$226         8463.747A       \$226         8464.7527A       \$226         847.747A       \$226         847.7527A       \$227         847.7277A       \$227         847.7207A       \$227         847.7207A <td>ARSU       22         ARGU       22         ARTEC LANSING       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC:101       22         ALC:205, ALC:206 Tell, Rec.       103         A:3238       66         A:3232 (See Model       66         A:2326 (See Model       66         A:2326 (See Model       16         A:2327 (See Model       16         A:2326 (See Model       16         AMC       125         125 P       3         126</td>	ARSU       22         ARGU       22         ARTEC LANSING       22         ALTEC LANSING       22         ALTEC LANSING       22         ALC:101       22         ALC:205, ALC:206 Tell, Rec.       103         A:3238       66         A:3232 (See Model       66         A:2326 (See Model       66         A:2326 (See Model       16         A:2327 (See Model       16         A:2326 (See Model       16         AMC       125         125 P       3         126

27/14 8 80 1
94BR3004, C,
94BR3005, C Tel. Rec., 91A-3 94BR-3017A Tel. Rec. RM 2
948R-30178 Tel. Rec.
948R-3021, 948R-3024A
Tel. Rec
94GCB-1064A 96-2
94GCB-3023A, B, C Tel Rec (See Model
05GCB-3019A)116
94GDC-989A
2736A 72—3
94GSE-3011, 8 (See Mode) 84GSE-3011A) 82
94GSE-3015A Tel. Rec 107-2
94GSE-3018A Tel. Rec 93A-2 94GSE-3025A Tel. Rec
94GSE-3033A Tel. Rec *
94HA1529A, 94HA1530A
(See Model 84HA1529A) 85 94WG-1059A 75-3
94WG-1804D 86—2
94WG-1811A
94WG-2745A
94WG-2746A, B; 94WG-2747A (See
Model 94WG-2742A) . 71
2749A 94WG-
94WG-2748C (See Mode) 94WG-2748A) 60
94WG-3006A Tel. Rec 72-4
94WG-30068 Tel, Rec 85-3
3009A Tel. Rec. (See
Model 94WG-3006A) 72 94WG-30098 Tel. Rec. (See
Model 94WG-30068) 85
(See Model 94WG-3006A
Set 72 and Model 05WG- 3016A Set 110 Folder 21
94WG-3022A Tel. Rec. (See
Model 94WG-30068) 85 94WG-3026A Tel. Rec. (See
Model 94WG-30068) 85
94WG-3028A Tel, Rec. (See Model 94WG-3006) 72
94WG-3029A Tel. Rec. (See
MODEL 74 WG-3000B) 83
ALGENE
ALGENE AR5U 22_3
ALGENE AR5U 22—3 AR6U 22—4
ALGENE           AR5U         22—3           AR6U         22—4           ALTEC         LANSING
ALGENE         223           AR5U         224           ALTEC LANSING         442           ALC205         ALC205
ALGENE         223           AR5U         224           Altec Lansing         4           ALC-101         842           ALC-205, ALC-206 Tel.         1053
ALGENE         223           AR6U         224           AR1EC         LANSING           ALC-101         842           ALC-205, ALC-206 Tel.         842           Rec.         1053           AJ238         662           A-323C (See Model         662
ALGENE         223           AR5U         224           AR6U         224           ALTEC LANSING         ALC-101           ALC-101         842           ALC-205, ALC-206 Tel.         Rec.           Rec.         1053           A3238         662           A-323C (See Model ALC-101)         84
ALGENE         223           AR5U         224           AR6U         224           ALTEC LANSING         ALC-101           ALC-101         842           ALC-205, ALC-206 Tel,         Rec.           Rec.         1053           A3238         662           A-323C (See Model         84           AMC         84
ALGENE         223           AR5U         224           AR6U         224           ALTEC LANSING         ALC-101           ALC-101         842           ALC205, ALC-206 Tel,         Rec.           Rec.         1053           A3238         662           A-323C (See Model         662           ALC-101         84           AMC         327           126         161
ALGENE           AR5U         223           AR6U         224           ALTEC LANSING           ALC-101         842           ALC-205, ALC-206 Tel,           Rec.         1053           A3238         662           A-323C (See Model           ALC-101)         84           AMC         327           126         161           AMERICAN COMMUNICATIONS
ALGENE           AR5U         223           AR6U         224           ALTEC LANSING         ALC-101           ALC-101         842           ALC-205, ALC-206 Tel.         Rec.           Rec.         1053           A3238         662           A-323C (See Model         662           A-223C (See Model         84           AMC         125P         327           126         161           AMERICAN COMMUNICATIONS (See Liberty)         161
ALGENE           AR5U         223           AR6U         224           ALTEC LANSING         ALC-101           ALC-101         842           ALC-101         842           AJ323C (See Model ALC-101)         662           A-323C (See Model ALC-101)         84           AMC         327           126         161           AMERICAN COMMUNICATIONS (See Liberty)           AMPLIFIER CORP. OF AMERICA
ALGENE           AR5U         223           AR6U         224           ALTEC LANSING         224           ALTEC LANSING         242           ALC-205, ALC-206, Tel.         842           A3238         1033           A3238         662           A-323C (See Model ALC-101)         84           AMC         125P         327           126         161           AMERICAN COMMUNICATIONS (See Liberty)         161           AMPLIFIER CORP. OF AMERICA ACA-100DC, ACA-100GE, 632
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING       224         ALC-101       842         RC-205, ALC-206 Tel.       862         A-323C (See Model       662         A-323C (See Model       84         AMC       125P       327         126       161       4         AMERICAN COMMUNICATIONS (See Liberty)       AMPLIFIER CORP.         OF AMERICA       ACA-100CC, ACA-100CE, 632         AICA-100V       *
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING       224         ALTEC LANSING       242         ALC-205, ALC-206 Tel.       842         A3238       1053         A-323C (See Model ALC-101)       84         AMC       125P         125P       327         126       161         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.       OF AMERICA ACA-100DC, ACA-100GE, 632         BIODV       21-1
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING       224         ALTEC LANSING       242         ALC-101       842         ALC-205, ALC-206 Tel.       842         A3232
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING         ALTC-101       842         ALC-205, ALC-206 TeI.       842         A32328       662         A-3232C (See Model ALC-101)       84         AMC       125P         125P       327         126       161         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP. OF AMERICA         ACA-100DC, ACA-100GE.         810DV         *         B10DV         *         AMPLIPHONE         10       211         20       2112
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING         ALC-101       842         ALC-205, ALC-206 Tel,       842         A3238       662         A-323C (See Model       662         A-323C (See Model       1053         ALC-101)       84         AMC       125P         125P       327         126       161         AMERICAN COMMUNICATIONS         Gee Liberty)         AMPLIFIER CORP.         OF AMERICA         ACA-100DC, ACA-100GE, 632         100V       -         210DV       -         210DV       2112         ANDREA         BT-YK12 Tel, Rec
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING       224         ALTEC LANSING       224         ALC-101       842         ALC-205, ALC-206 Tel,       842         A32328       662         A-3232C (See Model       662         A-3232C (See Model       84         AMC       327         126       161         AMERICAN COMMUNICATIONS (See Liberty)       327         AMPLIFIER CORP.       0F         OF AMERICA       632         AMPLIPHONE       10         10       2112         ANDREA       BT-VKI2 Tel, Rec.       765         CO-VKI5       COVKIA (CS       273
ALGENE           AR5U         223           AR6U         224           ALTEC LANSING         224           ALTEC LANSING         242           ALC-101         842           Rac.         1053           A1C-205, ALC-206 Tel.         862           A-323C (See Model         662           A-323C (See Model         662           A-323C (See Model         641           AMC         125P         327           126         161         4           AMC         161         AMERICAN COMMUNICATIONS (See Liberty)           AMPLIFIER CORP.         0         -2           OF AMERICA         ACA-1000C, ACA-100GE, 632         8100V           10         211         2           ANDERA         BT-VK12 Tel. Rec
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING       224         ALTEC LANSING       242         ALC-101       842         ALC-205 Tel.       862         A-323G (See Model ALC-101)       84         AMC       125P         125P       327         126       161         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.         OF AMERICA ACA-100GC, ACA-100GE, 632         100V       211         20       2112         ANDREA       273         CO-WK15, COVK16 (Ch. VK 15/6 Tel. Rec.       765         CO-WK15, COVK16 (Ch. VK 15/6 Tel. Rec.       723         Prod. Ches. Bul. B.       1121
ALGENE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC.101       84—2         ALC.205, ALC.206 Tel.       84—2         ALC.205, ALC.206 Tel.       86—2         A-323C (See Model ALC.101)       84         AMC       125P         125P       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.       OF AMERICA ACA-100DC, ACA-100GE.         ACA-100DC, ACA-100GE.       63—2 810DV         AMPLIPHONE       10         10       21—1 20         ANDREA       21—1 20         BT-VK12 Tel. Rec.       76—5 CO-UIS         CO-VK15, COVK16 (Ch. VK131 Tel. Rec.       103—4 CO-VK16 Tel. Rec.         COVK12 Stel. Rec.       103—4 COVK12 Stel. Rec.
ALGENE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC-101       84—2         ALC-205, ALC-206 Tel.       84—2         ALC-205, ALC-206 Tel.       86—2         A-323C (See Model ALC-101)       84         AMC       125P         125P       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.       OF AMERICA         ACA-100DC, ACA-100GE.       63—2         810DV       *         BT-VKI2 Tel. Rec.       76—5         CO-WI 5. COVKI 6 (Ch.       27—3         CO-VKI 5 Tel. Rec.       103—4         CO-VKI 5 Tel. Rec.       103—4         COVKI 5 Tel. Rec.       103—4         COVKI 5 Tel. Rec.       12—1         COVKI 6 Tel. Rec.       12—1         COVKI 7 Tel. Rec.       12
ALGENE         AR5U       223         AR6U       224         ALTEC LANSING         ALC-101       842         ALC-205, ALC-206 Tel.       842         Rec.       1053         A3238       662         A-323C (See Model       662         AC-101)       84         AMC       125P         125P       327         126       161         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.       OF AMERICA         ACA-100DC, ACA-100GE.       632         810DV       -         20       211         20       2112         ANDREA       2112         BT-VK12 Tel. Rec.       765         CO-VK15 COVK16 (Ch.       VK1516 (Ch.         VK1516 Tel. Rec.       1034         COVK.125 Tel. Rec.       1034         COVK.125 Tel. Rec.       1034         COVK.125 Tel. Rec.       12-1         COVK.125 Tel. Rec.       13-2         See Model BT-VK121.       76         CVK19 Prod. Chge.       8-1         Rul A.       12-1
ALGENE ALSU
ALGENE         AR5U
ALGENE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC-101       84—2         ALC205 ALC-206 Tel.       86—2         A-323C (See Model       66—2         A-323C (See Model       64—1         AMC       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)       3—27         ACA-100DC, ACA-100GE, 63—2       16—1         AMPLIFIER CORP.       0         OF AMERICA       ACA-100DC, ACA-100GE, 63—2         BIOV       *         AMPLIFIER CORP.       *         OKACA-100CF, ACA-100GE, 63—2       *         BIOV       *       *         AMPLIFIER CORP.       *         OKACA-100CF, ACA-100GE, 63—2       *         BIOV       *       *         CO-VK15       21—12         ANDREA       *         BT-VK12 Tel. Rec.       76—5         CO-VK15 Tel. Rec.       103—4         CO-VK16 Tel. Rec.       103—4         CO-VK19 Tel. Rec.       See Model BT-VK12)76         CVK19 Tel. Rec.       See Model BT-VK12)76         CVK140 Fol. Red.       See
ALGENE         AR5U
ALGENE         AR5U
ALGENE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC-101       84—2         ALC-205, ALC-206 Tel.       84—2         Rec.       105—3         A3238       66—2         A-323C (See Model ALC-101)       84         AMC       125P         125P       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.         OF AMERICA         ACA-100DC, ACA-100GE.         ACA-100DC, ACA-100GE.         BT-VK12 Tel. Rec.         20       21—1         20       21—1         20       21—1         ANDREA         BT-VK12 Tel. Rec.       103—4         CO-VK15 COVK16 (Ch.         YK15130 Tel. Rec.       103—4         CO-VK16 Tel. Rec.       112—1         CVK16 Tel. Rec.       112—1         CVK16 Tel. Rec.       112—1         CVK16 Tel. Rec.       21—2     <
ALGENE         ARSU       22—3         ARSU       22—4         ALTEC LANSING         ALC-101       84—2         ALC-205, ALC-206 Tel.       84—2         Rec.       105—3         A3238       66—2         A-323C (See Model ALC-101)       84         AMC       125P         125P       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.         OF AMERICA         ACA-100DC, ACA-100GE.         ACA-100DC, ACA-100GE.         810DV         *         AMPLIFIER CORP.         OF AMERICA         ACA-100DC, ACA-100GE.         810DV         *         810DV         *         AMPLIFHONE         10       21—12         ANDREA         BT-VK12 Tel. Rec.         See Model BT-VK12).         76         CVK15, COVK16 (Ch.         VK1516) Tel. Rec.         12       12         12       12         See Model BT-VK12)         76         CVK16) Frod. Chge.
ALGENE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC:205 ALC:206 Tel.         Rec.       103—3         A3238       66—2         A3230       56—2         A3230       56—2         A3230       56—2         AAGEN       66—2         A3230       56—2         AMERICAN COMMUNICATIONS       66—1         Goe Liberty)       AMPLIFIER CORP.         OF AMERICA       ACA-100DC, ACA-100GE, 63—2         BIOV       *         AMPLIFIER CORP.       *         OF AMERICA       CA-100DC, ACA-100GE, 63—2         BIOV       *       *         ACA-100DC, ACA-100GE, 63—2       *         BIOV       *       *         AMPLIFIER CORP.       *       *         OG-VK15, COVK16 (Ch.       *       *         CO-VK15, COVK16 (Ch.       *       *         Goe Model BT-VK12) <t< td=""></t<>
ALGEINE         AR5U       22—3         AR6U       22—4         ALTEC LANSING         ALC: 205, ALC-206, Tel.         Rec.       105—3         A1C: 205, ALC-206, Tel.         Rec.       66—2         A-3232 (See Model         ALC: 101       84         AMC       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)         AMPLIFIER CORP.       0F AMERICA         OF AMERICA       63—2         ACA-100DC, ACA-100GE, 63—2         8100V       *         AMPLIFIER CORP.       6—2         OF AMERICA       21—1         ACA-100DC, ACA-100GE, 63—2       8100V         10       21—1         ANDREA       7—3         CO-VK15 (COVIL6 (Ch.       27—3         CO-VK15 Tel. Rec.       103—4         CO-VK16 Tel. Rec.       103—4         CO-VK19 Tel. Rec.       [See Model BT-VK12]
ALGENE         ARSU       22—3         ARGU       22—4         ALTEC LANSING         ALC.101       84—2         ALC.205 ALC-206 Tel.       86—2         A-323C (See Model       66—2         A-323C (See Model       64—1         AMC       3—27         126       16—1         AMERICAN COMMUNICATIONS (See Liberty)       3—27         ACA-100DC, ACA-100GE, 63—2       16—1         AMPLIFIER CORP.       OF AMERICA         ACA-100DC, ACA-100GE, 63—2       8100V         10       21—1         ANDREA       76—5         BT-VK12 Tel. Rec.       76—5         CO-VK15 Tel. Rec.       103—4         CO-VK15 Tel. Rec.       103—4         CO-VK16 Tel. Rec.       103—4         CO-VK16 Tel. Rec.       112—1         COVK16 Tel. Rec.       112—1         COVK16 Tel. Rec.       12—1         COVK16 Tel. Rec.       12—1         COVK16 Tel. Rec.       12—1         CVK125 Tel. Rec.       [See Model BT-VK12] 76         CVK126 Tel. Rec.       [See Model BT-VK12] 76         TVK12 Tel. Rec.       21—2         I.0       21—2         J
ALGENE         ARSU       223         ARSU       224         ALTEC LANSING         ALC-101       842         ALC-206 Tel.       Rac.         Robit       1053         A1C2 Colo Tel.       Rac.         Robit       662         A-323C (See Model       84         AMC       125P       327         126       161       AMERICA         ACA-100DC, ACA-100GE. 632       8100V       -2         ACA-100DC, ACA-100GE. 632       8100V       -2         10       211       2       -2         ACA-100DC, ACA-100GE. 632       3100V       -2         10       211       2       -2         10       211       2       -2         ACA-100CF, ACA-100GE. 632       -2       -2         10       211       2       -2         CO-VK15 Tel. Rec.       1034

AIRLINE-Cont.

APEX 485 37-2
192A 17—6
INSTRUMENT CORP.
FM Tuner 41—2
ARC 601 25—5
ARCADIA 37D14-600 9—3
ARIA 554-1-61A 7—2
ARTHUR ANSLEY LP-2, LP-3
LP-4A
SP-1 60—4
ARTONE AR-23TV-1 Tel. Rec 80—1 524 76—6
ARVIN 140-P (Ch. RE-209) 25-6
150-TC, 151-TC (Ch. RE-228) (Late) 25-7
150TC, 151TC (Ch. RE-228-1) 392 152 T 153.T 331
1607, 1617 (Ch. RE-232) 49-5 1827FM (Ch. RE-237) 32-3
240-P (Ch. RE-243) 42-2 241P, 244P, 2410P (Ch. RE-244, RE-254, RE-255,
RE-256, RE-259) 47-3 242T, 243T (Ch. RE-251). 52-3 250 P (Ch. PE-248) 43-4
253T, 254T, 255T, 256T (Ch. RE-252) 53-5
264T, 265T (Ch. RE-265) 64-2 280TFM, 281TFM (Ch. RE-253)
341T (Ch. RE-274) 84-3 350P (Ch. RE-267) 69-3
350-PB (Ch. RE-267-1), 350-PL (Ch. RE-267-2) .100-4 351P (Ch. RE-267) (See
Model 350P) 69 351-PB (Ch. RE-267-1), 261 PL (Ch. RE-247-2)
(See Model 350-PB)100 352-PL, 353-PL (Ch.
RE-267-2) (See Model 350-PB)
(See Model 356T) 78 356T, 357T (Ch. RE-273) 78-2
(See Model 152-T) 33 360TFM, 361TFM (Ch.
RE-260) 70-2 440T (Ch. RE-278) 96-3 442 (Ch. RE-01) 34-2
444, 444A (Ch. RE-200) 1-3 444AM, 444M
(Ch. RE-200M) 23-3 446P (Ch. RE-280)106-2 450T, 451T (Ch. RE-281)110-3
460T, 461T (Ch. RE-284)107-3 462-CB, 462-CM
480TFM, 481TFM (Ch. RE-277, RE-277-1) 107-4
482CFB, 482CFM (Ch. RE-288-1)117-4 544, 544A, 544AR.
544R (Ch. RE-201) 1-7 547A (Ch. RE-242) 42-3
RE-231); 555, 555A (Ch. RE-202) 13-9
558 (Ch. RE-204) 3-16 664, 664A (Ch. RE-206) 3-23 664, 664A (Ch. RE-206-1).
6640 (Ch. RE-206-2) 29-2 665 (Ch. RE-229) 18-10
Tel. Rec
Tel, Rec. (See Model 2120CM)120 2122TM (Ch. TE-289)
Tel. Rec
(See Model 2120CM)120 2124CCM (Ch. TE289-2)
Tel. Rec. (See Model 2120CM) <b>120</b> 21 <u>26CM</u> (Ch. TE289-2)
Tel, Rec. (See Model 2120CM)120 3100TB, 3100TM, 3101CM
3120TM, 3121TM (Ch. TE-272-1, TE-272-2)
3160CM (Ch. TE-276) Tel. Rec
4080T (Ch. TE282) Tel. Rec
Ch. RE-200 (See Model 444)

ARVIN-Cont.	
Ch. RE-200M (See Model 444M)	
Ch, RE-201 (See Model 544) 1	
Ch. RE-202 (See Model 552AN)	
Ch, RE-204 (See Model 558) 3	
Ch. RE-206 (See Model	
Ch. RE-206-1, 206-2	
Ch. RE-209 (See Model	
140P) 25 Ch. RE-228 (See Model	
150TC) 25	
Model 150TC Late) 39 Ch. RE-229 (See Model	
665)	
552AN) 13	
Ch. RE-232 [See Model 160T]	
Ch. RE-233 (See Model 152T) 33	
Ch. RE-237 (See Model 182TFM) 32	
Ch. RE-242 (See Model	
Ch. RE-243 (See Model	i
Ch. RE-244 (See Model	
241P]	
250P) 43 Ch. RE-251 (See Model	
242T) 52 Ch. RE-252 (See Model	l
253T) 53	ĺ
280TFM) 44	
Ch. RE-254, 255, 256, 259 (See Model 241P) 47	
Ch. RE-260 (See Model 360TFM) 70	
Ch. RE-265 (See Model 2647) 64	l
Ch. RE-267 (See Model	ł
Ch. RE-267-1, RE-267-2	
Ch. RE-273 (See Model	
3567) 76 Ch. RE-274 (See Model	l
3417) 84 Ch. RE-277, RE-277-1	۱
(See Model 480TFM)107 Ch. RE-280 (See	
Model 446P)	Ì
Model 450T)	ļ
Model 4607)107	
(See Model 462-CB)116	l
Ch. RE-288-1 (See Model 482CFB)117	I
(See Model 3100TB) 80	ļ
Ch. TE-276 (See Model 3160CM) 93	
Ch. TE282 (See Model 4080T)	
Ch. TE-289 (See Model 2122TM)	
Ch. TE289-2 (See Model 2120CM)120	
ASTRASONIC	
748 53—6	
ATLAS	
AB-45 14—5	
AUDAR	
P-1A	
P-5	
P-7	
PR-6A 19—4 RE-8A 25—8	
Telvar BM-25, BMP-25 62-5 Telvar FMC-12 35-2	
Telvar RER-9 65—2	
AUTOMATIC	
Tom Thumb Buddy 53-7	
Tom Thumb Lamera-Radio 49—6 Tom Thumb Jr 26—7	
Tom Thumb Personal ATTP 23-4 B-44	
C60 5-20 C-60X 24-10	
C-65X (See Model C-60X). 24 C300 102-1	
D200	
F-790 23-5	
M-90	
IN-FATURE, ERC	
TV-707, TV-709, TV-710	

(See Model TV-707)	60
TV-1205 Tel. Rec. Prod. Chge. Bul. 51	06—1
TV-1249, TV1250 Tel. Rec	035
Prod. Chge. Bul. 5] TV-1605 Tel. Rec. (See	061
Model TV-1249)1 TV-1615 Tel. Rec. (See	03
Model TV-1249)1 TV-1649, TV-1650,	03
TV-1651 Series B Tel. Rec	•
TV-1694 Tel. Rec. (See Model TV-1249)1	103
TV-5006 Tel. Rec TV-5061 Tel. Rec	- 1
TV-5077 Tel. Rec TV-5116R Tel. Rec	
TVX313 Tel. Rec. (See Model TV-707)	60
TVX404 Tel. Rec. (See Model TV-707)	60
601, 602 (Series A) 601, 602 (Series B)	13—11 22—5
612X 613X (See Model 612X)	1-34
614X, 616X	8 <u>2</u> 12 <u>3</u>
640, Series B 660, 662, 666	22_6
720	21-4
AVIOLA	7_3
511	15_3
608 612 (See Model 601)	16—6 15
618 (See Model 608)	16
BELL SOUND SYSTEMS 8-23	75-4
511 RC-47 (RE-CORD-O-FONE)	30-3
440L, 440S "Belfone" 2075	25—9 10—5
2122 2122R	77-3
2159 3715	22-8
3728M	24-11 31-5
BELLTONE	
500	5-33
500	5—33 ytheon)
500	5—33 ytheon) 17—7 10—7
500 BELMONT (Also See Rg A-6D110 3AW7 4B115 4B17 4B17	5-33 ytheon) 17-7 10-7 2-27
Solo         BELMONT (Also See Re           A-6D110	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10
BELMONT (Also See Re           A-6D110           3AW7           48115           48117           48113           5D128 (Series A)           SP19 (Series A)	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-5 20-5
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B13           5D128 (Series A).           5P113 (Series A).           5P113 (Series A).           5P113 (Bollevard''.           6D120	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-5 28-2 2-33 24-12
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B15           4B17           4B13           4B142           4B15           5D128           5D128           5P113           6D110           6D120           8A59           21421           741	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-5 28-2 2-33 24-12 6-4 93A-4
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B17           4B17           4B17           5010           5010           50110           50110           50128 (Series A)           50128 (Series A)           5013 (Souleward'           6D111           6D120           8A59           21A21 Teil, Rec	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-5 28-2 2-33 24-12 6-4 93A-4
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B112           4B113           5010           50110           50128 (Series A)           50128 (Series A)           50113 "Boulevard"           60111           60120           8A59           21A21 Tel, Rec           BENDIX           22A21, 22AX21, 22AX22, 22AX22           Televilon Receiver	5-33 ytheon) 17-7 10-7 22-27 10-6 22-10 9-4 9-5 28-2 2-33 24-12 6-4 93A-4 55-5
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B115           4B117           5D128 (Series A).           5D128 (Series A).           5P19 (Series A).           5P113 "Boulevard"           6D111           6D120           8A59           21A21 Tel. Rec.           BENDIX           22A21, 22AX21, 22AX22           Television Receiver           05264, 05264, 05264, 05264           05264, 05265, 05264	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-4 9-4 9-4 9-4 9-4 9-4 9-4
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B113           4B17           5D128 (Series A)           5204 (S268, 05264, 052	$\begin{array}{c} 5 - 33 \\ 17 - 7 \\ 10 - 7 \\ 2 - 27 \\ 10 - 6 \\ 22 - 10 \\ 9 - 4 \\ 9 - 5 \\ 28 - 2 \\ 2 - 33 \\ 24 - 12 \\ 6 - 4 \\ \mathbf{93A} - 4 \\ \mathbf{93A} - 4 \\ 55 - 5 \\ 1 - 22 \\ 39 - 3 \\ 51 - 4 \end{array}$
Solo           BELMONT (Also See Re           A-6D110           3AW7           4B115           4B117           4B113           4B114           4B115           4B117           4B113           4B114           4B115           4B112           4B113           4B114           4B115           4B117           4B117           4B117           4B117           4B112           4B113           5D128           5D128           60120           60120           6359           21A21           22A21           22421	5-33 ytheon) 17-7 10-7 2-27 10-6 22-10 9-4 9-5 2-33 24-12 6-4 93A-4 55-5 1-22 39-4 55-5 1-22 39-4 55-6
Solo           BELMONT (Also See Re           A-6D110           JAW7           4B17           4B17           4B13           4B14           4B15           50128 (Series A)           5D128 (Series A)           5D128 (Series A)           5D121 (Series A)           5D123 (Series A)           6D110           8A59           21A21 Tel, Rec.           BENDIX           22A21, 22AX21, 22AX22           Television Receiver           0526A, 0526B, 0526C, 0526F, 0526F, 0526F, 0526F, 0526F, 0526F, 0526F, 0526F, 0526F, 05526F, 05	5-33 ytheon) 17-7 10-7 22-37 10-6 22-10 9-4 9-5 22-33 24-12 93A-4 55-5 1-22 351-4 52-4 63-3 52-4 63-3 52-4 63-3 52-4 63-4 55-5
BELMONT (Also See Re           A-6D110           3AW7           4B15           4B17           4B13           4B14           4B17           4B113           4B114           4B115           4B115           4B115           4B117           4B112           4B113           50148           50128           50128           50128           6D110           6D111           6D120           8A59           21A21 Tel, Rec.           BENDIX           22A21, 22AX21, 22AX22           Television Receiver           052dA, 052d8, 052d6, 052d5           052d3, 052d8, 052d6, 052d5           052d4, 052d8, 052d5           55X4           65P4           6988, 69M8, 69M9           7585, 75M5, 75M5           79M7           79M7	5-33 ytheon) 17-7 10-7 22-71 10-6 22-10 9-4 9-5 22-33 24-32 2-33 24-32 2-5 22-33 24-32 2-5 22-33 24-32 2-5 239-3 51-4 55-5 52-4 6-3 59-5 66-3 40-7 55-5
BELMONT (Also See Re           A-6D110           SAW7           4B17           4B13           4B142           4B17           5D128 (Series A)           5D113 (Souleward           6D120           8A59           21A21 Tel, Rec.           EENDIX           22A21, 22AX21, 22AX22           Television Receiver           05264, 05265, 05264, 05264, 05264, 05264, 05264, 05264, 05284, 0584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 6584, 0584,	5-33 ytheon) 17-7 10-7 · 22-27 10-6 9-4 9-5 22-33 24-12 6-4 93A-4 55-5 1-22 39-3 51-4 63-3 59-5 66-3 60-7 60-7 60-7 60-7 61-7
BELMONT (Also See Re           A-6D110           3AW7           4B17           4B12           4B13           500           Series A)           5010           Sp17           Sb112           Sb113           Sb114           Sb115           Sb116           Sb117           Sb118           Sb119           Sb111           Sb112           Sb113           Sb114           Sb113           Sb114           Sb112           Sb113           Sb114           Sb114           Sb114           Sb113           Sb114           Sb113           Sb114           Sb128           Sb128           Sb129           Sb129           Sb129           Sb129           Sb20           Sb220           Sb226           Sb237           Sb24           Sb25           Sb25           Sb26           Sb27	$\begin{array}{c} 5-33\\ 17-7\\ 10-7\\ \cdot\\ 2-27\\ 10-6\\ 9-5\\ 2-32\\ 2-32\\ 2-32\\ 2-32\\ 2-32\\ 2-32\\ 32-12\\ 6-4\\ 93A-4\\ 93A-4\\ 55-5\\ 1-22\\ 39-3\\ 51-4\\ 58-6\\ 52-4\\ 66-3\\ 52-4\\ 58-6\\ 66-3\\ 52-5\\ 66-3\\ 60-7\\ 61-3\\ 60-7\\ 41-3\\ \end{array}$
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B117           4B117           4B113           4B114           4B115           4B115           4B117           4B113           4B112           4B113           4B114           4B115           4B117           4B117           4B113           4B114           4B117           5D128           5D128           650120           6D120           8A59           21A21           72A21           72A21           72A21           72A20268           732A6           732A6           732A6           732A6           732A7           732A8           732A8           732A9           732A8           732A9           732A8           732A9           732A9           732A9           732A9           732A9           7334	$\begin{array}{c} 5 - 33 \\ 17 - 7 \\ 10 - 7 \\ 2 - 27 \\ 10 - 6 \\ 22 - 10 \\ 9 - 4 \\ 9 - 5 \\ 28 - 2 \\ 2 - 33 \\ 24 - 12 \\ 6 - 4 \\ \mathbf{93A} - 4 \\ \mathbf{93A} - 4 \\ 55 - 5 \\ 1 - 22 \\ 39 - 3 \\ 51 - 4 \\ 58 - 6 \\ 52 - 4 \\ 63 - 3 \\ 59 - 5 \\ 66 - 3 \\ 59 - 5 \\ 66 - 7 \\ 41 - 3 \\ 69 - 4 \\ 49 - 2 \\ \end{array}$
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B117           4B113           4B114           4B115           4B117           4B113           4B113           4B114           4B115           4B112           4B113           4B114           4B117           4B117           4B117           4B117           4B117           5D128 (Series A)           5D128 (Series A)           5D128 (Series A)           6D110           6D120           8A59           21A21 Tel. Rec.           BENDIX           22A21, 22AX21, 22AX22, 22AX22           Televilon Receiver           052A0, 05268, 05264, 05264, 05264, 05264, 05264, 05264, 05264, 05264, 05264, 05264, 5544, 05544, 5583, 5583, 5583, 7588, 7589, 7585, 7588, 7588, 7589, 7585, 7588, 7588, 7589, 7589, 7588, 7588, 7588, 7588, 7588, 7589, 7589, 7589, 7588, 7588, 7588, 7589,	$\begin{array}{c} 5 \\ 5 \\ 7 \\ $
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B113           4B17           4B113           4B17           4B113           4B17           4B113           4B114           4B115           4B117           4B117           4B117           4B117           4B117           5D128           5D128           62ries           6D110           6D111           6D120           8A59           21A21 Tel. Rec.           BENDIX           22A21, 22AX21, 22AX22           Television Receiver           052A0, 05268, 05264, 05267, 05267, 05267, 05267, 05267, 05268, 05267, 05267, 05268, 05267, 05267, 05268, 05267, 05267, 05268, 05267, 05267, 05573, 5533, 75M5,	5-33 17-7 10-7 2-27 10-6 22-10 9-4 9-5 22-33 24-12 6-4 93A-4 55-5 1-22 35-3 51-4 52-4 63-3 52-4 63-3 60-7 41-3 69-4 40-2 43-5 29-3 40-2 43-5 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 40-2 43-5 40-2 43-5 29-3 40-2 40-2 43-5 29-3 40-2 40-3 40-2 40-3 40-4
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B113           4B17           4B113           4B114           4B17           4B115           4B113           4B114           4B115           4B117           4B117           4B113           4B114           4B115           4B117           4B117           5D128           5D128           650120           6D110           6D111           6D111           6D120           8A59           21A21 Tel. Rec.           EENDIX           22A21, 22AX21, 22AX22           Televialon Receiver           052d0, 052d6, 052d7, 052d7           PAR 80           55X4           65P4           6988, 69M8, 69M9           7585, 75M5, 75M6, 75W5           79M7           73581, 235M1 (Ch. Codes           MA, MB, MC, MD)           Tel, Rec.           300, 300W, 301, 302           416A	5-33 17-7 10-7 2-27 10-6 22-10 9-4 9-4 9-4 9-4 9-4 9-4 9-4 9-4 9-4 9-4 9-4 6-3 6-3 60-7 41-3 69-4 40-2 43-5 22-33 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4 15-4 12-4
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B17           4B115           4B17           4B115           4B17           4B115           4B117           5D128 (Series A)           5D121 (Series A)           6D110           6A59           21A21 Teil. Rec.           BENDIX           22A21, 22AX21, 22AX22           Television Receiver           052dA, 052d8, 052dC, 052dF, 0583, 75M8, 7	5-33 17-7 10-7 2-27 10-6 22-10 9-4 9-5 22-33 24-33 24-3 22-33 24-3 22-33 24-4 93A-4 55-5 1-22 39-3 51-4 55-5 1-22 39-3 51-4 55-5 52-4 63-3 60-7 41-3 69-4 40-2 43-5 29-3 12-4 15
BELMONT (Also See Re           A-6D110           SAW7           4B17           5D128 (Series A)           5D121 Teil. Rec.           EENDIX           22A21, 22AX21, 22AX22           Televition Receiver           0526A, 0526B, 0526C, 0536C,	5-33 17-7 10-7 2-27 10-6 22-10 9-4 9-5 22-33 24-33 24-4 93A-4 55-5 1-22 39-3 51-4 55-5 1-22 39-3 51-4 55-5 52-4 63-3 60-4 40-2 41-3 69-4 40-2 41-3 15-2 41-3 15-2 40-3 15-2 41-3 15-2 40-3 15-2 41-3 15-2 46-3 15-2 41-3 15-2 40-3 15-2
Solo           BELMONT (Also See Re           A-6D110           SAW7           4B17           4B17           4B17           4B17           4B17           4B17           4B17           5010           50110           Sp114           50110           Sp113           Souleward           6D110           SAM7           Sp113           Souleward           6D120           8A59           21A21 Tel. Rec.           BENDIX           22A21, 22AX21, 22AX21, 22AX22           Talevialon Receiver.           0526A, 0526E, 0526C, 0526C, 0526F, 0528F, 05583, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55584, 55684, 55684, 55684, 55684, 55684, 55684, 52604C, 513           100, 100W, 111, 111W, 111W, 111W, 112W, 112, 114, 115.           112, 114, 115.           112, 114, 115.           112, 114, 115.           114, 114, 115.           112, 114, 115.           114, 114, 115.           114, 114, 115.           1	5-33 17-7 10-7 10-7 2-27 10-6 22-10 9-4 9-5 22-33 24-12 6-4 93A-4 93A-4 55-5 1-22 39-3 51-4 52-4 52-4 63-3 59-6 52-4 63-3 59-6 52-4 63-3 59-6 52-4 40-2 43-5 24-3 40-2 43-5 24-3 40-2 43-5 24-3 40-2 43-5 29-3 12-4 15-4 12-281 3-4 12-281 1
BELMONT (Also See Re           A-6D110           3AW7           4B17           4D110           5D128 (Series A)           5D111 (Souleward           6D120           8A39           21A21 14.           22A21, 22AX21, 22AX21, 22AX22           22A20, 0526E, 0526F           S2A4, 0526B, 0526C           9583, 95M3, 75M8, 7300, 3000W, 301, 302, 302, 416A           300, 300W, 301, 302, 3244, 14, 115	5-33 17-7 10-6 22-10 0-4 9-5 28-22 2-33 24-12 6-4 93A-4 55-5 1-22 39-3 52-4 52-4 52-4 63-3 52-4 63-3 52-4 64-4 40-2 29-3 12-4 15-4 12-23 12-4 15-4 22-31 12-4 15-23 12-4 12-4 12-31 12-4 12-31 12-4 12-31 12-4 12-31 12-4 12-31 12-4 12-32 24-3 12-4 12-4 12-32 24-3 12-4 22-31 24-3 24-4 25-4 24-4 25-4
BELMONT (Also See Re           A-6D110           3AW7           4B115           4B115           4B117           4B113           4B113           4B114           4B115           4B115           4B117           4B113           4B114           4B117           4B117           4B117           4B117           4B117           4B117           4B117           5D128           5D128           62eries A)           5D128           60120           8A59           21A21 Tel. Rec.           BENDIX           22A21, 22AX21, 22AX22, 22A22           Television Receiver           052A0, 05268, 05264, 05267, 05267, 05267, 05268, 05267, 05268, 05267, 05268, 052647, 05268, 052647, 05268, 052647, 05268, 052647, 05268, 052674, 7585, 75M5, 75M5	5-33 17-7 10-7 2-27 10-6 22-10 9-4 9-5 22-33 24-12 6-4 93A-4 93A-4 93A-4 55-5 1-22 39-3 52-4 63-3 52-4 63-3 52-4 63-3 52-4 63-3 60-7 41-3 69-4 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 40-2 43-5 29-3 29-3 26-4 15-2 29-3 29-3 26-4 15-2 29-3 29-3 26-4 15-2 29-3 29-3 26-4 15-2 29-3 29-3 26-4 15-4 15-2 29-3 29-3 26-8 27-5 29-3 29-4 44-3 27-5 29-3 29-3 29-3 29-3 29-3 29-3 29-3 29-4 37-3 37-3

AUTOMATIC-Cont.

T

# | BENDIX-Cont. 2020, 2021 Tel. Rec. (See Model 2001)..... 84 **BOGEN (See David Bogen)** BREWSTER 9-1084, 9-1085, 9-1086. 2-13 BROOK 10C 41-4 10C2-A 43-7 10C3 72-5 10D (See Model 10C)... 41 12A 89-3 BROWNING PF-12, RJ-12 47--4 RJ-12A, RJ-14A 56--6 RJ-20, RJ-22 67--5 RV-10, RV-11 46--6 BRUNSWICK BJ-6836 'Tuscany,'' C-3300 'Darby' Deba (Darby') 28-4 D-1000, D-1100 See Model T-4000)... See Model T-4000)... 1900, T-4000/4 T-60005, T-6000/4 T-60005, T-6000/4 T-60005, T-6000/5 T-60005, T-6000/2 See Model T-4000 <tr BRUNSWICK BUICK 980690, 980733 ..... 18—9 980744, 980745 ..... 19—5 980782 ...... 62—6 980797, 980798 ..... 59—6 980868 ...... 104—4 BUTLER BROS. (See Air Knight or Sky Rover) CADILLAC CADILLAC \* 7241938 \* 7253207 \* 7256409 \* 7258155 \* 7258755 109–2 CALLMASTER (See Lyman) CAPEHART

# APEX—COLLINS

CAPEHART-Cont.	
3006-M (Ch. CX-31, Prod. C-274) Tel. Rec. (See	
Model 3004-M) 3007 (Ch. CX-30, Prod.	73A 00a 2
3008 (Ch. CX-32, Prod.	77M-1
Model 3005)	93A
(Ch. CX-33) Tel. Rec. (See Model 323M)]	12
4001-M (Ch. CX-31, Prod. C-268) Tel. Rec. (See	-
Model 3004-M) 4002-M (Ch. CX-31, Prod.	93A
C-274) Tel. Rec. (See Model 3004-M)	93A
Ch. CX-33, CX-33F (See Model 323M)1	12
	20-4
T-13	28 <u>5</u>
CARDWELL, ALLEN D.	~/~·
CE-26	14—6
CENTURY (Also See Industrial Television)	
226, 326 (Ch. IT-26R, IT-35R, IT-39R, IT-46R)	
Tel. Rec. 721, 821, 921, 1021 (Ch.	99A-7
IT-21R) Tel. Rec	97 A-8
100X, 101, 104	12-5
200 300	21—5 21—6
CHALLENGER	
CC8	63-4
CC30	68—6 70—3
CC618	65-4
20R	67-3 62-7
600 (See Model 60R)	62
CHANCELLOR (See Radi	onic)
	30-23
985792	6-5
985792 985793 985986 986067	65 196 902
985792 985793 985986 986067 986146 986240	65 196 902 286 755
985793           98586           985986           986067           986047           98604           986240           986241           98638	65 196 - - 286 75-5 58-7 04-5
CHEVERCLEI           985792           985783           985986           986067           986146           986240           986240           986388           CHRYSLER (See Moper)	6-5 19-6 90-2 28-6 75-5 58-7 04-5
CHEVERCLEI           985792           985793           986146           986446           986146           986146           986146           986146           986146           986146           986146           986146           986146           98618           986388           CHRYSLER (See Moper)           CISCO	6-5 19-6 90-2 28-6 75-5 58-7 04-5
CHEVROLE           985792           985793           985986           986067           986146           986240           986241           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5	65 196 902 286 75-5 58-7 04-5 374 203
CHEVROLE           985792           985793           985986           986067           986146           986241           986241           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CLARION	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3
CHEVERCLE: 985793 985983 986067 986146 986241 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CIO1 CIO1	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9
CHRVRCLE           985793           985793           985984           985984           986047           986146           986240           986388           CHRYSLER (See Mopar)           CISCO           1A5           9A5           CLARION           C100           C102           C103	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6
CHEVERCLE:           985792           985793           985984           980986           986446           986446           986240           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CLARION           C100           C101           C102           C103           C104           C105 (See Model C104)	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4
CHEVERCLE:           985792           985793           985984           986986           986146           986240           986388           786388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CLARION           C101           C102           C103           C105 (See Model C104)           C105 (See Model C104)           C105 (See Model C104)	65 19-6 90-2 28-6 75-5 58-7 04-5 9 04-5 1-5 5-9 9-6 6-6 6-6 1-4 1 1 5-8
CHEVERCLE:           985792           985793           985984           986984           986146           986240           986241           986388           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CLARION           C100           C102           C103           C104           C105 (See Model C104)           C1054           Ch 101)	6-5 19-6 90-2 28-6 75-5 58-7 58-7 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1 -5 5-8 *
CHEVERCLE:           985792           985793           985984           986046           986146           986240           986241           986243           986244           986244           986248           98628           CHRYSLER (See Moper)           CISCO           1A5           9A5           CLARION           C100           C101           C102           C103           C104           C105 (See Model C104)           C105 (See Model C104)           Sto           150           155           167 Tel. Rec.           11305	6-5 19-6 75-5 75-5 75-5 75-5 9-6 6-6 6-6 6-6 6-6 1 1 6-7 5-8 9-6 6-6 1-4 1 1 5-8 9-9 9-6 6-6 1-4 1 1 1 -8 1-8 1-8 1-8 1-8 1-8 1-8 1-8 1-
CHEVERCLE           985792           985793           985984           985984           986067           985984           986041           986241           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CIO0           C101           C102           C103           C104           C105 (See Model C104)           C108 (Ch. 101)	6-5 19-6 75-5 75-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1 6-7 5-8 9 9-6 6-5 1-4 1 1-5 5-8 9 9-6 6-5 1-4 1 1-4 20-5 1-4 20-5 1-4 20-5 1-4 20-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1
CHEVERCLE           985793           985793           985984           985984           986388           CHRYSLER (See Moper)           CISCO           1A5           9A5           CIO0           CI00           CI01           CI02           CI03           CI04           CI05A           Sold (ch. 101)           155           156           11303           1141-N           11801           11801	6-5 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1 5-8 9 9-6 1-4 1 7-8 5 8 9 9-6 1-4 20-3 1-5 5 9 9-6 22 1-5 5 8 7 9 9 9 6 6 6 1-6 1-4 1 7 8 8 7 8 8 7 8 8 7 8 8 8 9 9 9 6 6 6 1 1 7 8 8 8 8 8 8 8 8 8 8 8 8 8
CHEVERCLE: 985793 985793 985984 98047 986346 986446 986241 986388 CHRYSLER (See Moper) CISCO 1A5 1A5 CLARION C100 C101 C102 C102 C102 C103 C104 C105A	6-5 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-9 9-6 6-6 1-4 1-5 5-5 9-1 9-0 1-5 5-5 9-0 9-0 1-5 5-5 1-5 1
CHEVENCLE: 985793 985793 985984 986047 986446 986240 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CLO CIO CIO CIO CIO CIO CIO CIO CI	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 99-6 6-6 1-4 1-5 99-6 1-4 23-6 23-6 23-6 23-6 23-6 23-6 23-6 23-6 23-7 23-6 23-5 58-7 23-6 23-6 23-7 23-5 58-7 24-5
CHEVERCLE: 985793 985793 985986 986047 986146 986240 986240 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CI00 CI01 CI02 CI02 CI02 CI03 CI04 CI05 CI04 CI05 CI05 CI05 CI05 CI05 CI05 CI06 CI06 CI07 CI07 CI08 CI	6-5 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 99-6 6-6 1-4 1-5 99-6 1-4 1-5 23-6 1-5 23-6 1-5 23-6 1-5 23-6 1-5 23-6 1-5 23-6 1-5 23-6 23-6 23-7 20-3 1-5 23-6 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-7 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-5 23-6 23-5 23-6 23-5 23-6 23-5 23-6 23-7 23-6 23-7 23-6 23-7 23-6 23-7 23-6 23-7 23-6 23-7 23
CHEVERCLE: 985793 985793 985984 986047 985984 986144 986144 986240 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CI00 CI01 CI02 CI03 CLARION CI04 CI05 (See Model CI04) CI05 CI05 (See Model CI04) CI05 CI05 (See Model CI04) CI05 CI05 CI07 Tel. Rec. 11411-N 11801	6-5 19-6 75-5 75-5 75-5 90-2 28-6 75-5 75-5 9-6 6-6 6-6 6-6 6-6 -6 -7 5-8 -8 -8 -8 -8 -5 23 -5 23 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5
CHEVERCLE: 985793 985793 986146 986240 986240 986240 986241 986240 98	6-5 90-2 28-6 75-5 8-7 04-5 37-4 20-3 1-5 9-6 6-6 1-4 1-7 5-8 9-6 6-6 1-4 1-7 5-8 9-6 6-5 31-5 54-5 31-5 61-5 54-5 31-5 61-
CHEVERCLE:           985792           985793           985793           985984           986046           986144           986240           986241           986241           986243           986244           986240           986241           986241           986242           986241           986241           986241           986242           986241           986241           986241           986242           986241           986241           986241           986241           986241           986241           986241           986241           986241           986241           986241           1001           102           1030           1301           12100A           13101           13101           13101           13101           13101           13102           13103           13104	6-5 -5 -5 -5 -5 -7 -2 -2 -2 -5 -7 -5 -7 -5 -7 -7 -5 -7 -7 -5 -7 -7 -7 -5 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7
CHEVERCLE: 985793 985793 985984 986047 986446 986240 986240 986388 CHRYSLER (See Moper) CISCO 1A5 985388 CLARION CIO CIO CIO CIO CIO CIO CIO CIO	6-5 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-8 95A-1 17-8 1-5 5-8 9-5 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 5-8 -7 -8 -8 -8 -8 -8 -8 -8 -8 -8 -8
CHEVERCLE: 985793 985793 985986 986047 986146 986240 986241 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CIO CIO CIO CIO CIO CIO CIO CIO	6-5 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-6 6-6 1-4 1-5 5-9 9-9 6-6 1-4 1-5 5-9 9-9 6-6 1-4 1-5 5-9 9-9 6-6 1-4 1-5 5-9 9-9 6-6 6-6 1-4 1-5 5-9 9-9 6-6 6-6 1-4 1-5 5-9 9-9 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-6 1-4 1-5 5-9 9-5 6-6 6-1 1-4 1-5 5-9 9-5 6-6 6-1 1-4 1-5 5-9 9-5 2-3 1-5 5-9 9-5 2-3 1-5 5-9 9-5 2-3 1-5 5-9 9-5 2-3 1-5 5-9 9-5 2-3 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5
CHEVERCLE: 985793 985793 985986 986047 986146 986240 986240 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CIO0 CIO1 CIO2 CIO2 CIO3 CIO4 CIO3 CIO4 CIO5 CI	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 58-7 04-5 1-5 58-7 04-5 1-5 58-7 04-5 1-5 58-7 99-6 6-6 1-1 1-5 58-7 99-6 6-6 1-1 1-5 58-7 99-6 6-6 1-1 1-5 58-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 1-1 1-5 58-7 99-7 99-6 6-6 6-6 1-1 1-5 58-7 99-7 6-6 6-6 1-1 1-5 58-7 95-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 58-7 1-5 1-5 58-7 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5
CHEVERCLE: 985793 985793 985984 986047 985984 986146 986240 986241 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CIO CIO CIO CIO CIO CIO CIO CIO	6-5 19-6 90-2 28-6 75-5 58-7 04-5 37-4 20-3 1-5 58-7 04-5 1-5 58-7 04-5 1-5 23-6 1-4 1-5 23-6 1-4 1-5 23-6 1-4 1-5 23-6 1-5 23-7 1-5 23-6 1-5 23-6 1-5 23-7 1-5 23-6 1-5 23-7 1-5 23-6 1-5 23-7 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5
CHEVERCLE: 985793 985793 985984 986047 985984 986144 986144 986348 986348 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CI00 CI01 CI02 CI03 CLARION CI04 CI05 (See Model CI04) CI05 CI04 CI05 (See Model CI04) CI05 CI05 CI05 CI07 CI08 Ch I01 CI04 CI05 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI04 CI05 CI05 CI04 CI05 CI05 CI05 CI05 CI05 CI07 C	6-5 19-6 75-5 75-5 90-2 28-6 75-5 90-2 28-6 75-5 90-6 6-6 6-6 1-4 1-5 9-6 6-6 6-7 5-8 -7 9-6 6-6 6-5 102-2 23 -5 -7 -5 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -6 -6 -6 -6 -6 -6 -6 -6 -7 -5 -7 -5 -7 -7 -8 -7 -7 -8 -7 -5 -7 -5 -7 -7 -5 -7 -7 -5 -7 -7 -8 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -5 -7 -6 -5 -7 -5 -7 -6 -5 -7 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -7 -6 -5 -7 -6 -7 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -5 -7 -6 -7 -6 -7 -5 -7 -6 -7 -7 -6 -7 -7 -6 -7 -7 -6 -7 -7 -7 -6 -7 -7 -6 -7 -7 -7 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7
CHEVERCLE: 985793 985793 985984 986047 985984 986144 986144 986388 CHRYSLER (See Moper) CISCO 1A5 9A5 CLARION CIO CIO CIO CIO CIO CIO CIO CIO	6-5 19-6 90-2 28-6 75-5 75-7 04-5 37-4 20-3 1-5 5-9 9-6 6-6 6-6 1-4 1-4 1-7 5-8 9-6 6-6 6-7 5-8 9-6 6-5 1-4 1-4 1-5 5-9 9-6 6-6 6-5 1-4 1-4 1-5 5-9 9-6 6-6 6-5 1-4 1-4 1-5 5-9 9-6 6-6 6-5 1-4 1-4 1-5 5-9 9-6 6-6 6-7 1-4 1-4 1-5 5-9 9-6 6-6 6-7 1-4 1-4 1-4 1-5 5-9 9-6 6-6 6-7 1-4 1-4 1-5 5-9 9-6 6-6 6-7 1-4 1-4 1-5 5-8 9-7 1-4 1-4 1-4 1-4 1-5 5-8 9-7 1-4 1-4 1-4 1-4 1-4 1-5 1-4 1-4 1-5 1-4 1-5 1-4 1-5 1-4 1-4 1-5 1-4 1-5 1-5 1-5 1-5 1-5 1-5 1-5 1-5

# COMMANDER-EMERSON

COMMANDER INDUSTRIES Commander 3 Tube Record Player ..... 17—10 CONCORD CONPAC CONTINENTAL ELECTRONICS (See Skyweight) CONVERSA-FONE MS-5 (Master Station) SS-5 (Sub-Station) .... 16-7 CO-OP 6AWC2, 6AWC3, 6A47WCR, 6A47WT, 6A47WTR ..... 56—8 

 6A47WTR
 56—8

 CORONADO

 FA43.8965 [See Model

 43.8965] Tel. Rec.
 86

 FA43.8966 Tel. Rec.
 •

 TV43.8905 Tel. Rec.
 •

 TV43.8905 Tel. Rec.
 •

 OSRAI.43.7755A.05Ra1.
 43.7755B

 43.7755B
 101—2

 OSRAI.43.7751A.05Ra1.
 115—2

 OSRAI.43.8915A
 110—5

 OSRAI.43.8915A
 11

 43.9005A, 051V1.43.8915A
 110—5

 OSTV1.43.895A
 11.8ec.
 •

 OSTV2.43.9012A, 15TV2.
 43.9005A
 12—3

 43.9005A
 Tel. Rec.
 •
 •

 5005
 Model A3.76018
 10—10
 43.6451

 43.6451
 10
 11—3
 43.6451
 10
 </t CORONADO

CORONADO-Cont. 94192-43-8972A, 94192-43-8973A, 94192-43-8985A, 94192-43-8985A, 94192-43-8987A, 94192-43-8993A, 94192-43-8993A, 94192-43-8995A 94140-43-6733A 181, Not. 199 165 (See Model 94RA31-43-8115A) ... 81 197, 197U (See Model 94RA31-43-8115A) ... 81 CORONET C2 ..... 6—8 CRESCENT H-16A1 ..... 76-8 CROMWELL (Mercantile Stores) 1010 ..... 88—2 1020 ..... 89—5 CROSLEY (See Model 10-404MU).114 10-419MU Tel, Rec.....104—6 10-420MU Tel, Rec. (See Model 10-404MU).114

CROSLEY-Cont.
10-421MU Tel, Rec106-4
(See Model 10-414MU) 116
11-442MU Tel. Rec115-1A
11-445MU Tel, Rec.
(See Model 11-442MU), 115 11-447MU Tel, Rec,
(See Madel 11-442MU). 115
11-471BU Tel. Rec *
(See Mode) 11-442MU), 115
11-473BU Tel. Rec * 11-475BU Tel. Rec.
(See Model 11-442MU), 115 11-477BU Tel. Rec.
(See Model 11-442MU).115
56FA, 56FB, 56FC 31-7
56TA-L, 56TC-L 4-9
56TD 21—9 56TG 4—3
56TJ 5—14
Models 56TA-L, 56TC-L) 4
56TQ, 56TZ 33—2
56TR, 56TS 17-11 56TU 10-13
58TA
58TK 34-5
58TW 36
66CA, 66CP, 66CQ (See Model 66CS) 18
66C5, 66C5M 18-14
68CP, 68CR 37-5
86CR, 86CS 12-10
87CQ (Revised Models 86CR, 86CS) 36-5
88CR (See Model 87CQ) 36 88TA, 88TC 38-3
88TA, 88TC (Revised) 43-8
146CS 25—10
148CP, 148CQ, 148CR 42-6 307TA Tel. Rec
348CP-TR1, 348CP-TR2, 348CP-TR3 Tel. Rec. *
CROSLEY CAR 5MX080*
CROSLEY CAR 5MX080
CROSLEY CAR SMX080
CROSLEY CAR 5MX080
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS (See Coronet)         DALBAR         Barcombo Jr., Barcombo Jr., Barcombo Sr.         10-114         M8 'Tonomatic''         100-1000 Series         100-1000 Series         100-1000 Series         100-1000 Series         204VID BOGEN         DAVID BOGEN         2162         1235         1240         25-21         60-50         26-9         GO-125         22-12         GX50         115         15         15         150, HL50, H2150
CROSLEY CAR           SMX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10—14 8—34           Barcombo Jr., Barcombo Sries         10—15 400           DALBAR         8—34 64         8—34 7—9           DAVID BOGEN         0.15 400         9—9           DAVID BOGEN         102—4 66         85—4 76—9 6.50         26—9 6.50           EX.326         76—9 6.50         26—9 6.125         22—12 6.50           M30         715         8—6 H30, H150, H2150         78—5 H30, H150, H2150
CROSLEY CAR           SMX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10—14           M8 "Tonomatic"         8—34           100-1000 Series         10—13           400         9—9           DAVID BOGEN         102—4           E66         85—4           E75         83—2           E1620         •           EX.326         76—9           G-50         25—9           M30         25—11           H15         8—32           FX.326         76—9           G-2125         22—12           GX50         25—11           H15         8—6           H30, H150, H2150         78—5           H050, H150, H2150         78—6           H051         80—5           H050, H215         84—5           H051         84—5
CROSLEY CAR           SMX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10—14           M8 "Tonomatic"         8—34           100-1000 Series         10—13           400         9—9           DAVID BOGEN         9—9           DAVID BOGEN         102—4           E66         85—4           E75         83—2           E1620         6—9           G-50         30—6           GO-125         22—12           GX50         25—11           H15         79—5           H30, H150, H2150         78—5           H00, H01         80—5           H001, H01         80—5           H0125         87—4           HX50         87—4
CROSLEY CAR           SMX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10—14           M8 "Tonomatic"         8—34           100-1000 Series         10—13           400         9—9           DAVID BOGEN         102—4           E66         85—4           E75         83—2           E1620         •           EX.326         76—9           GO-125         22—12           GX50         25—11           H15         78—5           H30         H50, H2150           H00, H50, H2150         78—5           H00, H01         80—5           H001, 25         87—4           M30         82—4           HX30         82—4           HX30         75—7           H01, LOL (See Model         1
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS         (See Coronet)         DALBAR         Barcombo Jr., Barcombo Sr.         Borcombo Sr.         100-100 Series         100-100 Series         100-100 Series         100-100 Series         100-100 Series         100-100 Series         25-9         DAVID BOGEN         D8-10         102-4         E66         650         60-23         76-9         GO-125         22-12         GX50         25-11         115         15         160         175         28-9         Co-125         22-12         GX50         25-11         115         15         160         178-8         180         190         190         190         190         190         190         190         190         190         190
CROSLEY CAR 5MX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR Barcombo Jr., Barcombo Sr.         10—14 8—34           Barcombo Sr.         10—14           M8 "Tonamatic"         8—34           Edit Coronetic         9—9           DAVID BOGEN         9—9           DAVID BOGEN         102—4           E66         85—4           E75         83—2           E1620         •           EX-326         76—9           GO-125         22—12           GX50         25—11           H15         8—5           H30         78—5           H00, H2L50         78—5           H0125         87—4           HX30         82—4           HX30         80—14           H10         80           H10         80           H10         80           H10         80           H10         80           H10         80           H11         80           H11         80           H11         80           H13         80           H14         80
CROSLEY CAR 5MX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR Barcombo Jr., Barcombo Sr.         10-14 -14           Barcombo Sr.         10-14           M3 "Tonamatic"         8-34           Editor         10-12           A00         9-9           DAVID BOGEN         10-14           D8.10         102-4           E66         85-4           E75         83-2           E1620         83-2           E1620         83-2           E1620         25-11           H15         80-6           GO-50         26-9           GO-125         22-12           GX50         25-11           H15         80-5           H00, H01         80-5           H0125         87-4           HX30         82-4           HX30         82-4           HX30         82-4           HX30         80-5           H010         73-3           PH10         73-3           PX10         73-3           PX10         73-3           PX10         73-3           PX10         73-
CROSLEY CAR           SMX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10-14           M8 "Tonamatic"         8-34           100-1000 Series         10-14           M00         9-9           DAVID BOGEN         10-14           D8.10         102-4           E66         85-4           E75         83-2           E1620         •           EX.326         76-9           G-50         26-9           GO-50         26-9           H15         80-5           H00         79-5           H15         80-5           H01         80-5           H030         82-4           HX30         82-4           HX30         82-4           HX30         82-4           HX30         82-4           HX30         82-4           HX30         80-5           PH10         73-3           PX10         63-5           B02-5         72-7           B04         73-3           PX10         73-3
CROSLEY CAR           5MX080         •           CRYSTAL PRODUCTS (See Coronet)         •           DALBAR         Barcombo Jr., Barcombo Sr.         10-14           Ma "Tonamatic"         8-34           100-1000 Series         10-14           Matter State         10-14           Barcombo Sr.         10-14           Barcombo Sr.         10-14           E66         85-4           E75         83-2           E1620         22-12           GAC-15         22-12           GAC-25         22-12           GAC-30         25-31           H15         80-5           H04         H01         80-5           H050         H250
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS (See Coronet)         DALBAR         Barcombo Jr., Barcombo Sr.       10—14         M8 "Tonamatic"       8—34         100-1000 Series       10—14         M8 "Tonamatic"       8—34         100-1000 Series       10—14         Barcombo Sr.       10—14         M8 "Tonamatic"       8—34         100-1000 Series       102—4         E66       85—4         E75       83—2         E1620       •         EX.326       76—9         G-50       26—9         GO-50       26—9         GO-50       26—9         GO-50       26—9         H15       8—5         H00       78—5         H01       80—5         H030       79—5         H030       84–5         H041       80         H15       75—7         LOH, LOL (See Model       75—7         H041       80         H041       86         H050       73—3         FX10       73—3         Ro202       67—8      L
CROSLEY CAR SMX080
CROSLEY CAR         SMX080       *         CRYSTAL PRODUCTS       (See Coronet)         DALBAR       Borcombo Jr., Borcombo Jr., Borcombo Jr., Borcomotic'       B-34         100-1000 Series       10—14         M8 'Tonomotic'       B-34         100-1000 Series       10—15         400
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS (See Coronet)         DALBAR         Barcombo Jr., Barcombo Sr.       10—14         M8 "Tonamatic"       8—34         100-1000 Series       10—14         Karson Series       10—14         M8 "Tonamatic"       8—34         100-1000 Series       10—14         EX35       10         EX4       85—4         E75       83—2         E1620       83—2         E1620       25—7         G-50       30—6         GO-30       26—9         M30       25—11         H15       80—5         H00, H2L50       78—5         H012       80—55         H012       80—57         H012       80—57         H013       80—57         H014       80         H15       73—3         R602       67—8         PX10       68—57         FX15       72—7         SouthSouthSouthSouthSouthSouthSouthSouth
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS         (See Coronet)         DALBAR         Borcombo Jr.,         Barcombo Jr.,         Borcombo Sr.         100-1000 Series         100-100 Series         100-100 Series         100-100 Series         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100         100
CROSLEY CAR SMX080
CROSLEY CAR         SMX080       •         CRYSTAL PRODUCTS         (See Coronet)         DALBAR         Borcombo Jr., Borcombo Jr., Borcomotic'         Barcombo Sr.         100-1000 Series         1010 SOGEN         102-4         EX326         1050 F000 25         1050 H150, H2L50, 78-6         1050 H150, H2L50, 78-6         1050 H0125         1050 H0125         1050 H014         1050 H014         1011 See Model         1011 X         1011 X         102-7         103         104         1050 H014         1050 H014         1

	DELCO	DUMONT-Cont.
	R-705 427	RA-109-A1, -A2, -
	R-1227, R-1228, R-1229 156 R-1230.A R-1231.A	-A6, -A7 Tel. I RA-110A Tel. Rec
	R-1232-A 14—33	(See Model RA-
	R-1233 42-8	RA-110A Tel, Rec.
	R-1234, #-1235 77 R-1236 R-1237 90 7	Prod. Chge. Bul RA.111A Tel Per
	R-1238	RA-112A Tel, Rec
	R-1241 62-11	RA-113 Tel, Rec.
	R-1242 318 R-1243	(See Model RA-
	R-1244, R-1245; R-1246. 52-6	DUOSONIC
	R-1248, R-1249, R-1250 66-7	K1, K2
	R-1251, R-1252 21-10 R-1257 R-1254 R-1255	K3, K4
	R-1408, R-1409	DYNAVOX
	R1410	AP-514 (Ch. AT).
	TV-71, TV-71A Tel. Rec 99A-3	Swingmaster
	TV-101, TV-102 T01, Kec., 88-3	3-P-801
	TV-201 (Television Receiver) 59-8	ECA
	DefOTO (fee Merror)	101 (Ch. AA)
	Desoro (see Mopar)	102
	DETROLA	104
	554-1-61A (See Aria	105
	Model 554-1-61A) 7	108
	568-13-221D 0 10	121
	571, 571A, 571B, 571L.	131
	571AL, 571BL 10-16	201
	571X, 571AX, 571BX 9-11	204
	576-1-6A	ECHOPHONE
	579 7—9	(Also See Hallie
	579-2-58B (See Model 579) 7	EC-1A
	610-A	ECI13
	611-A	EC-306
	626 Series 11-5	EC-403, EC-404 .
	7156 48 6	EX-102. EX-103
	10-8	EX-306 (See Model
	DEWALD	EC-306)
	A500, A5001, A500W,	EDWARDS
	A504, A505 16-9	Fidelatuner
	A-507 26—10	ELCAR
	A-509	602
	A-514	ELECTONE
	A608 (See Model A602) 16	T5TS3
	B-400 353	FLECTRO
	B-402	820
	B-403 52—7	
	B-504	ELECTROMATIC
	B-510	606A. 607A
	8-512	
	B-515 63-6	ELECTRO-TONE
	B-012	706, 712 (See Mod
	BT-100, BT-101 Tel, Rec., 79-6	
	C-516 64-4	
	C-800 69—7	OT AMERICA
	(See Model BT-100) 79	ELECTRONIC SPI
	CT-102, CT-103, CT-104	(see kanger)
	D-508 106-5	E/L (ELECTRONI
	D-518 100-5	(
		75 (Sub-Station) (S
	D519 (See Model B-506) 38	75 (Sub-Station) (S Model 76RU) 76E, 76K, 76M, 76
	D519 (See Model 8-506) 38 D-616	75 (Sub-Station) (S Model 76RU) 76E, 76K, 76M, 76 (See Model 270
	D519 (See Model B-506) 38 D-616	75 (Sub-Station) (S Model 76RU) 76E, 76K, 76M, 76 (See Model 270 76RU (''Radia-Utili 7108 7104 7177
	D519 (See Model B-506) 38 D-616	75 (Sub-Station) (S Model 76RU) 76E, 76K, 76M, 76 (See Model 270 76RU ("Radia-Utili, 710B, 710M, 710T, Orthosonic (Ch.
	D519 (See Model B-506)38 D-616	75 (Sub-Stotion) (5 Model 76RU) 76E, 76K, 76M, 76 (See Model 270 76RU ("Radia-Utili, 710B, 710M, 710T, Orthosonic (Ch. 710PB, 710PC Orth
	D519 (See Model B-506)38 D-616	75 (Sub-Stotion) ( Model 76RU) 76E, 76K, 76M, 76 (See Model 270 76RU ("Radia-Utili 710B, 710M, 710T, Orthosonic (Ch. 710PB, 710PC Orth (Ch. 2887) 2600 "Martar Hilli Martar Hilli
	D519 (See Model B-506)38 D-616	75 (Sub-Station) (S Model 76RU) 76E, 76K, 76M, 76 (See Model 270 76RU ("Radio-Utili 710B, 710M, 710T, 710B, 710P, 710P, 710P, (Ch. 2887) 2660 "Master Utili 2701
	D319 (See Model B-306)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76RU ("Radia-Utili 710B, 710M, 710T, Orthosonic (Ch.</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili 2701</li></ul>
	D519 (See Model B-506)38 D-616	<ul> <li>TS (Sub-Stotion) (S</li> <li>Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70B, 710M, 710T,</li> <li>Orthosonic (Ch.</li> <li>710B, 710P, Ortho</li> <li>710B, 710P, Ortho</li> <li>710B, 710P, Ortho</li> <li>70B, 700 Orthosonic</li> <li>2000 Orthosonic</li> <li>EMERSON</li> </ul>
	D519 (See Model B.506)38 D-616	<ul> <li>75 (Sub-Stotion) (S</li> <li>Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70B, 710M, 710T, 70T</li> <li>710B, 710M, 710T, 710B, 710P, 07th</li> <li>(Ch. 2887)</li> <li>2600 "Master Utili</li> <li>2701</li> <li>3000 Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 1200</li> </ul>
	D519 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76RU ("Radia-Utili 710B, 710M, 710T, Orthosonic (Ch.</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili 2701</li> <li>3000 Orthosonic</li> <li>3000 Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 120 120029)</li> </ul>
	D519 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Storion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>76E, 76K, 76M, 76</li> <li>76E, 76K, 76M, 76</li> <li>70E, 710M, 710T, Orthosonic (Ch. 2887)</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>700 PB, 710PC Orth (Ch. 2887)</li> <li>701</li> <li>701</li> <li>700 Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 12000, 120029)</li> <li>504 (Ch. 120000,</li> </ul>
	D519 (See Model B-506)38 D-616	<ul> <li>TS (Sub-Stotion) (S Model 76RU)</li> <li>TS (Sub-Stotion) (S Model 70RU)</li> <li>Tok, 76K, 76K, 76 (See Model 270 76RU ("Redia-Utilit 710B, 710M, 710T, Orthosonic (Ch. 710PB, 710PC Ortho (Ch. 2887)</li> <li>TOPS, 710PC Ortho (Ch. 2887)</li> <li>Solo Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 120 120029)</li> <li>503 (Ch. 120000, (See Models 50)</li> </ul>
	D519 (See Model B-506)38 D-616	<ul> <li>TS (Sub-Storien) /li></ul>
	519 (See Model B.506)       38         0.616       1025         D.120, DT-122 Tel. Rec. 1006       1025         DT-160 Tel. Rec.       1006         (See Model CT-102)82       10116         DT-161 Tel. Rec.       11818         DT-162, DT-163 Tel. Rec1185       101102         DT-162, DT-163 Tel. Rec118	<ul> <li>TS (Sub-Storion) (S Model 76RU)</li> <li>Tolk, 76K, 76M, 76 (See Model 270 76RU ("Radia-Utili 710B, 710M, 710T, Orthosonic (Ch</li> <li>T10PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili 2701</li></ul>
:	D519 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>76E, 76K, 76M, 76</li> <li>76E, 76K, 76M, 76</li> <li>76E, 76K, 76M, 710T, Orthosonic (Ch. 710PB, 710PC Ortho (Ch. 2887)</li> <li>701</li> <li>701</li> <li>701</li> <li>700 Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 1200</li> <li>504 (Ch. 120000), 503 (Ch. 120002), 505 (Ch. 120002), 505 (Ch. 120002), 505 (Ch. 120001)</li> <li>705 (Ch. 12001), 505 (Ch. 120002), 505 (Ch. 120002),</li> </ul>
:	D519 (See Model B-506) 38 D-616	<ul> <li>TS (Sub-Storien) (S Model 76RU)</li> <li>TS (Sub-Storien) (S Model 76RU)</li> <li>TS (Sub-Storien) (S See Model 270</li> <li>TOB, 710M, 710T, Orthosonic (Ch. 710PB, 710PC Orthout (Ch. 2887)</li> <li>TOPS, 710PC Orthousenic</li> <li>TOOD Orthosonic</li> <li>EMERSON</li> <li>S01, 502 (Ch. 12000, 120029)</li> <li>S03 (Ch. 120000, (See Models 501)</li> <li>S05 (Ch. 120001).</li> <li>S05 (Ch. 120002).</li> </ul>
	D519 (See Model B-506) 38 D-616	<ul> <li>TS (Sub-Stotion) (S Model 76RU)</li> <li>TS (Sub-Stotion) (S Model 76RU)</li> <li>ToE, 76K, 76M, 76</li> <li>See Model 270</li> <li>TRadia-Utili 710B, 710M, 710T, Orthosonic (Ch.</li> <li>TOPB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili 2701</li> <li>2660 "Master Utili 2701</li> <li>Solo Orthosonic</li> <li>3000 Orthosonic</li> <li>3000 Orthosonic</li> <li>3000 Orthosonic</li> <li>501 (Ch. 12000, 503 (Ch. 120000, 503 (Ch. 120000, 503 (Ch. 120001)</li> <li>505 (Ch. 120001, 506</li> <li>507</li></ul>
:	D319 (See Model B-306)	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70E, 710W, 710T, Orthosonic (Ch</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili</li> <li>2701</li> <li>3000 Orthosonic</li> <li>3000 Orthosonic</li> <li>3000 Orthosonic</li> <li>503 (Ch. 120000, 504 (Ch. 120000, 504 (Ch. 120000, 505 (Ch. 120001)</li> <li>505 (Ch. 120001)</li> <li>Model 523)</li> <li>506 (Ch. 120008), 507 (See Model 501</li> <li>509 (See Model 503</li> <li>504 (See Model 503)</li> <li>505 (See Model 503)</li> </ul>
	DS19 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>710B, 710M, 710T, Orthosonic (Ch.</li> <li>710PB, 710PC Ortho</li> <li>710PB, 710PC Orthosonic</li> <li>2680 "Master Utili</li> <li>701</li> <li>3000 Orthosonic</li> <li>EMERSON</li> <li>501, 502 (Ch. 1200</li> <li>504 (Ch. 120000),</li> <li>503 (Ch. 120002),</li> <li>503 (Ch. 120002),</li> <li>503 (Ch. 120002),</li> <li>503 (Ch. 120002),</li> <li>504 (Ch. 120002),</li> <li>505 (Ch. 120002),</li> <li>506</li></ul>
	D319 (See Model B-506) 38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70Hostonic (Ch.</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Moster Utili 2701</li></ul>
	519 (See Model B-506)       1025         D-616	<ul> <li>TS (Sub-Stotion) (S Model 76RU)</li> <li>TS (Sub-Stotion) (S Model 76RU)</li> <li>ToE, 76K, 76M, 76</li> <li>See Model 270</li> <li>TOW, 710T, /li></ul>
	DS10 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Storion) (S</li> <li>Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70E, 710F, /li></ul>
	D310 (See Model B-506)33 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>710B, 710M, 710T, Orthosonic (Ch.</li> <li>710PB, 710PC Ortho</li> <li>710PB, 710PC Orthosonic</li> <li>700 Orthosonic</li> <li>700 Master Utili</li> <li>701</li> <li>3000 Orthosonic</li> <li>503 (Ch. 120000, S04 (Ch. 120000, S04 (Ch. 120000, S04 (Ch. 120000, S05 (Ch. 120000), S05 (Ch. 120000, S06</li> <li>505 (Ch. 120001, S05 (Ch. 120000, S07</li> <li>508 (Ch. 120000, S08 (Ch. 120000, S010, S10A (Ch. 120000, 120</li> <li>S11 (See Model 500 S11 (See Model 500 S11 (Ch. 120010), S12 (Ch. 120005), S12 (Ch. 120005), S14 (Ch. 120005),</li> </ul>
	519 (See Model B.506)       1025         D.616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>70Hostonic (Ch</li> <li>710PB, 710PC Orth (Ch. 2887)</li> <li>2660 "Master Utili 2701</li></ul>
	D310 (See Model B-306)32 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>710Pb, 710Pc, 710M, 710T, Orthosonic (Ch)</li> <li>2660 "Master Utili 2701</li></ul>
	DS10 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li></ul>
	D319 (See Model B-506)38 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 76K, 76M, 76</li> <li>(See Model 270</li> <li>76E, 710K, 710T, 710T, 710T, 710T, 710T, 710K, 7</li></ul>
	D319 (See Model B.506)32 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76 (Jub-Stotion) (S See Model 270 76 (Jub Charles) (Comparison of Comparison (Ch. 710 PB, 710 PC Orth (Ch. 2887)</li></ul>
	DS10 (See Model B.506)33 D-616	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li></ul>
	DS19 (See Model B-506)33 D-616	<ul> <li>75 (Sub-Stotion) (S</li> <li>76 (Sub-Stotion) (S</li> <li>76 (76K, 76M, 76</li> <li>76 (76K, 76M, 76</li> <li>76 (76K, 76M, 76</li> <li>76 (76K) (76 (76 (76 (76 (76 (76 (76 (76 (76 (76</li></ul>
	DS10 (See Model B.506)	<ul> <li>75 (Sub-Stotion) (S Model 76RU)</li> <li>76 (Jok, 76M, 76 (See Model 270 76E, 76K, 76M, 76 (See Model 270 76E, 76K, 76M, 76 (See Model 270 76E (Contemportance) (Contemportance) 70 (Contemportance) (Contemportance) 71 (Contemportance) (Contemportance) 71 (Contemportance) (Contemportance) 71 (Contemportance) (Contemportance) 71 (Contemportance) (Contemportance) 71 (Contemportance) (Contemportance) (Contemportance) 71 (Contemportance) (Contempor</li></ul>
	DS10 (See Model B.506)32 D-616	<ul> <li>75 (Sub-Stotion) (S</li> <li>76 (Sub-Stotion) (S</li> <li>76 (76K, 76M, 76</li> <li>76 (76K, 76M, 76</li> <li>76 (76K, 76M, 76</li> <li>76 (76K, 76M, 76</li> <li>70 (76K) /li></ul>

RA-109-A1, -A2, -A3, -A5,	
RA-110A Tel, Rec. (See Model RA-103D) 93	
RA-110A Tel, Rec. Prod. Chge. Bul. 91141	
RA-111A Tel. Rec	
(See Model RA-112A)119	
DUOSONIC K1, K2 19—15	
K3, K4 19—16	
AP-514 (Ch. AT) 28-9	
Swingmaster	
ECA	
101 (Ch. AA)	
105 16—11 106	
108 3—6 121 13—15	
131 16—12 132 45—9	
201 15—9 204 32—5	
EC-1A	
C-306 14—8	
EC-403, EC-404 22—14 EC-600 4—18	
EX-102, EX-103 64-5 EX-306 (See Model FC-306) . 14	
IDWARDS	
fidelatuner 33—4 ELCAR	
02 <b>5</b> —19	
ELECTONE 15753 12—34	
ILECTRO	
06A. 607A	
LECTRO-TONE	
ELECTRO-TONE 155	
LECTRO-TONE 155 13-16 106, 712 (See Model 555) 13 LECTRONIC CORP. OF AMERICA (See ECA)	
LECTRO-TONE 13 10 106, 712 (See Model 555) 13 SLECTRONIC CORP. OF AMERICA (See ECA) LECTRONIC SPECIALTY CO. (See Ranger)	
LLECTRO-TONE 13	
LECTRO-TONE 13-16 155	
LECTRO-TONE 13-16 135	
LLECTRO-TONE 13-16 1306, 712 (See Model 555) 13 14. CECTRONIC CORP. OF AMERICA (See ECA) LECTRONIC SPECIALTY CO. (See Ranger) 14. (ELECTRONIC LABS.) 5 (Sub-Stotion) (See Model 76RU)	
LECTRO-TONE 35	
LLECTRO-TONE 13-16 130, 712 (See Model 555) 13 LLECTRONIC CORP. OF AMERICA (See ECA) LECTRONIC SPECIALTY CO. (See Ranger) //L (ELECTRONIC LABS.) S (Sub-Storion) (See Model 76RU)	
LECTRO-TONE 13-16 13/12 (See Model 55) 13 LECTRONIC CORP. OF AMERICA (See ECA) LECTRONIC SPECIALTY CO. (See Ranger) 1/L (ELECTRONIC LABS.) S (Sub-Stotion) (See Model 76RU)	
LECTRO-TONE 13-16 160, 712 (See Model 555) 13 LECTRONIC CORP. OF AMERICA (See ECA) LECTRONIC SPECIALTY CO. (See Ranger) 7/4 (ELECTRONIC LABS.) S (Sub-Stotion) (See Model 76RU)	
LLECTRO-TONE 355	
LLECTRO-TONE 13-16 13/12 (See Model 55) 13 LLECTRONIC CORP. OF AMERICA (See ECA) LLECTRONIC SPECIALTY CO. (See Ranger) //L (ELECTRONIC LABS.) S (Sub-Storion) (See Model 76RU)	
ILECTRO-TONE       13-16         155       13         155       13         1600, 712 (See Model 555) 13         ILECTRONIC CORP.         OF AMERICA (See ECA)         ILECTRONIC SPECIALTY CO.         (See Ranger)         1/L (ELECTRONIC LABS.)         S (Sub-Stotion) (See Model 76RU)         20         66, 70K, 76A, 76W         (See Model 2701)	
LLECTRO-TONE 13-16 13/12 (See Model 555) 13 LLECTRONIC CORP. OF AMERICA (See ECA) LLECTRONIC SPECIALTY CO. (See Ranger) 1/L (ELECTRONIC LABS.) S (Sub-Stotion) (See Model 76RU)	
ILECTRO-TONE       13—16         355       13         1355       13         14       ILECTRONIC CORP.         OF AMERICA (See ECA)         LECTRONIC SPECIALTY CO.         (See Ranger)         1/1       (ELECTRONIC LABS.)         S (Sub-Stotion) (See Model 76RU)       20         66, 76K, 76AW       8         Model 76RU)       20         66, 76K, 76AW       20         (See Model 2701)	
LLECTRO-TONE       13—16         135       13         14       CRONIC CORP.         OF AMERICA (See ECA)         LECTRONIC SPECIALTY CO.         (See Ranger)         1/L (ELECTRONIC LABS.)         S (Sub-Storion) (See         Model 76RU)       20         6£, 76K, 76M, 76W         (See Model 2701)       4         6KU ("Radie-Uiliphene") 20—6         108, 710M, 7107, 710W,         Orthosonic (Ch. 2873).       20—7         109B, 710P (Orthosonic         (Ch. 2887)       2—1         000 Orthosonic       31—10         MERSON       2000(120029)         120029)       2—1         03 (Ch. 120000, 120029)       1—18         (Gh. 120000, 120029)       1—18         Meterson       5         06       501, 502, 2         95 (Ch. 120000, 120029)       5         97       5         98       501, 502, 2         97       5         98       507         90       5         91, 510A       5         92       5         93       5         94       507	
ILECTRO-TONE       13-16         155       13         155       13         ILECTRONIC CORP.       OF AMERICA (See ECA)         ILECTRONIC SPECIALTY CO.       (See Ranger)         1/L (ELECTRONIC LABS.)       S         S (Sub-Stotion) (See Model 76RU)       20         66, 70K, 76A, 76W       (See Model 2701)	
ILECTRO-TONE       13—16         155       13         155       13         ILECTRONIC CORP.       OF AMERICA (See ECA)         ILECTRONIC SPECIALTY CO.       (See Ranger)         1/1       (ELECTRONIC LABS.)         S (Sub-Stotion) (See Model 76RU)       20         66, 76K, 76A, 76W       20         (See Model 2701)	
ILECTRO-TONE       13—16         1355       13         14ECTRONIC CORP.       0         OF AMERICA (See ECA)         LECTRONIC SPECIALTY CO.         (See Ranger)         1/1       (Electronic LABS.)         S (Sub-Stotion) (See Model 76RU)       20         66, 76K, 76AW       20         66, 76K, 76AW, 76W       20         7010, 710M, 710T, 710W, 710W, 710T, 710W, 710W, 710T,	
ILECTRO-TONE       13—16         355	
ILECTRO-TONE       13—16         355	
ILECTRO-TONE       13—16         1355       13         14ECTRONIC CORP.       07         05       AMERICA (See ECA)         LECTRONIC SPECIALTY CO.       (See Ranger)         1/L       (ELECTRONIC LABS.)         S (Sub-Stotion) (See Model 76RU)       20         66, 70K, 76A, 76W       (See Model 2701)	
ILECTRO-TONE       13—16         1355       13         ILECTRO-TONE       13         ILETRONIC CORP.       OF AMERICA (See ECA)         ILECTRONIC SPECIALTY CO.       (See Ranger)         1/1       (ELECTRONIC LABS.)         S (Sub-Stotion) (See Model 76RU)       20         66, 76K, 76A, 76W       20         (See Model 2701)	

EMERSON-Cont. 

EMERSON-Cont. 607 (Ch. 120074A) (See Model 597)..... 90 608A (Ch. 120089B) Tel. 

EMERSON-Cont. Tel. Rec. \* 667B (Ch. 120134-B) G758 (Ch. 1201338) \* -14 EMPRESS 55, 56 ..... 7—14 ESPEY (Also see Philharmonic) 60-10, 65-4 ..... 14—11 FADA

# FADA-Cont. PADA-Cont. 899 Tel. Rec. (See Model TV30) 74 925 (See Model G-925). 89 930, 940 Tel. Rec. (See Model G-925). 965 (See Model G-925). 89 1000 Series 1-17 1001 17-15 FARNSWORTH FARNSWORTH EC-260 7—15 EK-081, EK-082, FK-083. 26—13 EK-034, EK-082, EK-083. 26—13 EK-262, EK-263BL, E-263WL, E-264BL, EK-264WL, E-264BL, EK-264BL, EK-263 FK-263BL, EK-264BL, EK-263 FK-263BL, EK-264BL, EK-264 FK-263D, 7 EK-681 [See Madel EK-081] 26 ET-060, ET-065, ET-066. 4—2 GK-103, GK-1042, GK-104, GK-110, GK-112, GK-104, GK-111, GK-112, GK-114, GK-140, GK-141, GK-142, GK-143, GK-143, GK-144, 24—18 GT-050, GT-051, GT-052, 35—5 GT-064, FEDERAL MFG. CO. 104 (Select-A-Call) ..... 18—1: 135 (Select-A-Call) ..... 11—7 FEDERAL TEL. & RADIO CORP. FERRAR Image: C-81-8 Image: Image: T-618 T-618 39-4 WR-11 15-10 $$\begin{split} & \text{WR-11} \dots 15-10 \\ & \text{FIRESTONE} (AIR CHIEF) \\ & \text{4.A.2} (Code \\ & \text{No. 297-6-LMMU-143}) . 14-4 \\ & \text{4.A.3} (Code No. 297-6-LMFU-134) . 31-13 \\ & \text{4.A.10} (Code \\ & \text{No. 182.6-4A11}) \dots 41-7 \\ & \text{4.A.11} (Code \\ & \text{No. 188.6-4A11}) \dots 41-7 \\ & \text{4.A.12} (Code No. 213-6370) \dots 49-8 \\ & \text{4.A.13} (Code No. 213-6370) \dots 49-8 \\ & \text{4.A.13} (Code No. 213-7.7270) \dots 35-7 \\ & \text{4.A.17} (Code No. 35-700.4) 15-11 \\ & \text{4.A.12} (Code No. 35-700.4) 15-11 \\ & \text{4.A.21} (Code No. 35-700.4) 15-11 \\ & \text{4.A.21} (Code No. 35-700.4) 15-11 \\ & \text{4.A.21} (Code No. 5-590018) . 11-19 \\ & \text{4.A.22} (Code S-5.90018) . 12-29 \\ & \text{4.A.23} (Code 91-6.572) 13-6 \\ & \text{4.A.26} (Code 91-6.572) 13-6 \\ & \text{4.A.23} (Code 177-5-4A37) 13-7 \\ & \text{4.A.30} \dots 8 \\ & \text{5.4-27} \dots 8 \\ & \text{5$$ FIRESTONE (AIR CHIEF) 332-8-1436531 \$3-11 4-A-69 (Code No. 155-8-5 155-8-85 61---8 4-A-79 (Code 291-8-628) \$9-9 4-A-78, 4-A-79 117--5 4-A-85 118--7 4-A-87 118--7 4-A-87 119--7 4-A-89 119 4.A.89 (97 Series) Tel. Ré (See Model 4 A-85)...118 4.B-1 (Code 7-6 PM15) ... 7—1 1900 Tel. Rec.... 4-B-2 (Code 7-6 PM14) ... 18—18 1900 97 Series Tel.

## EMERSON-GAROD EIRESTONE (AIR CHIEF)-Cont

I-B-6 (Code	20 0
I-B-31	*
I-C-1	+ 10 17
I-C-5 (Code 291-7-574)	33-6
I-C+6 (See Model 4C3)	19
332-8-140623)	66—9
I-C-16, 4-C-17	20-6
3-G-3 Tel, Rec	86-5
3-G-4 (Code 347-9-2498)	73 6
3-G-5 (Code 291-9-651)	/3—5
Tel. Rec	833
	000
P P	26-14
(ABA	
GE890 (OA.18805.8)	1095
M-1 (8A-18805A)	46-4
N-1A-1 (OA-18805-A1)	1068
Model M-1A-1)	106
OZF (OA-18805-B) [See Model GF890]	109
5MF080 (51A-18805-A1	10 10
5MF780 (51A-18805-A1) .	62-12
BMF880 (8A 18805B)	42-12
SMF980 (8A-18805B)	61-9
SMF983 (8A-18805B-1),	
3XF983-E (8A-18805) . 3ZT (8A-18805-B)	834
(See Model 8MF881)	47
(See Model M-1)	46
OF (8A-18805-A2)	
(See Model 6072)	
(See Model 8072)	44
(See Model 8MF983)	83
7070 (51A-18805-82)	45-10
5072 (8A-10003-A)	44-4
KEED EIJEMAN	11_8
54, 55, 56, 58 (Ch. 1620C)	
Tel, Rec	13-1A
GALVIN (See Motorolo	)
GAMBLE-SKOGMO	
(See Coronado)	
GAROD	
GAROD (A-1, 4A-2	<b>29</b> —9 51—4
GAROD IA-1, 4A-2 IB-1	29—9 51—6 22—15
GAROD (A-1, 4A-2 (B-1) (5A-1) (5A-2)	29—9 51—6 22—15 5—28
GAROD IA-1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-3 SA-4	29-9 51-6 22-15 5-28 44-5 40-6
GAROD GAROD I&-1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-3 SA-4 SA-1 SA-4 SA-1 SA-4 S	<b>29</b> —9 <b>51</b> —6 <b>22</b> —15 <b>5</b> —28 <b>44</b> —5 <b>40</b> —6 <b>15</b> —12 <b>12</b> —12
GAROD (A-1, 4A-2	<b>29</b> —9 <b>51</b> —6 <b>22</b> —15 <b>5</b> —28 <b>44</b> —5 <b>40</b> —6 <b>15</b> —12 <b>12</b> —12 <b>12</b> —12 <b>22</b> —16
GAROD GA	<b>29</b> —9 <b>51</b> —6 <b>22</b> —15 <b>5</b> —28 <b>44</b> —5 <b>46</b> —6 <b>15</b> —12 <b>12</b> —12 <b>22</b> —16 <b>33</b> —7 <b>36</b> —8
GAROD IA-1, 4A-2 IB-1 JA-2 JA-2 JA-3 JA-4 JA-3 JA-4 JA-3 JA-4 JA-3 JA-4 JD-3 JD-3 JD-3 JD-4	<b>29</b> —9 <b>\$1</b> —6 <b>22</b> —15 <b>5</b> —28 <b>44</b> —5 <b>40</b> —6 <b>15</b> —12 <b>12</b> —12 <b>22</b> —16 <b>33</b> —7 <b>36</b> —8 <b>28</b> —13
GAROD GAROD IA-1, 4A-2 IB-1 IA-2 IA-2 IA-3 IA-3 IA-4 IA-2 IA-3 IA-4 IA-2 IA-4	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18
GAROD IA-1, 4A-2 IB-1 IA-2 IA-2 IA-3 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-2 IA-4 IA-4 IA-2 IA-4 IA-2 IA-4	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13
GARCD IA-1, 4A-2 IB-1 IA-1 IA-2 IA-3 IA-4 IA-3 IA-4 IA-3 IA-4 IA-3 IA-4 IA-3 IA-4 IA-3	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12
GAROD (A-1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SD-3	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 3-29 13-18 12-13 60-12
GAROD IA.1, 4A-2 IB.1 JA-2 JA-3 JA-4 JA-2 JA-4 JA-2 JA-4 JA-2 JA-4 JA-2 JA-4 JD-3, 5D-3 JD-3, 5D-3 JD-4, 5D-5 JD-3, 5D-3 JD-4, 5D-5 JD-3, 5D-3 JD-4, 5D-5 JD-3, 5D-3 JD-4, 5D-5 JD-4, 5D-5	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 60-12 95A-4 38-7
GAROD GAROD GAROD GAL1, 4A-2 IB-1 SA-2 SA-3 SA-4 SA-2 SA-3 SA-4 SA-3 SA-4 SD-5 SD-3 SD-	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7
GAROD GAROD IA-1, 4A-2 IB-1 JA-2 JA-2 JA-3 JA-4 JD-5 JD-5 JD-5 JD-5 JD-4, 5D-5 JD-4, 5D-5	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7
GAROD GAROD IA-1, 4A-2 IB-1 JA-2 JA-2 JA-2 JA-3 JA-4 JA-2 JA-4 JA-2 JA-4 JO, 50-2 JO, 50-2 JO, 50-5 JO, 70-5 JO, 70-5	29-9 51-6 22-15 5-28 44-5 40-6 15-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7 60
GAROD (A.1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-3 SA-4 SA-3	29-9 51-6 22-15 5-28 44-5 15-12 12-12 12-12 12-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7
GAROD (A.1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4	29-9 51-6 22-15 5-28 44-5 15-12 12-12 12-12 12-12 33-7 36-8 33-7 13-18 12-13 60-12 95A-4 38-7 60
GAROD GA	29-9 51-6 22-15 5-28 40-6 15-12 12-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A
GAROD GAROD GA.1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SD-3, 5D-3A SD-3, 5D-3A SD-4, 5D-3 SD-3, 5D-3A SD-4, 5D-3 SD-3, 5D-3A SD-4, 5D-3 SD-3, 5D-3A SD-4, 5D-3 SD-3, 5D-3A SD-3, 5	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A 95A-4
GAROD GAROD IA.1, 4A-2 IB.1 JA.2 JA.2 JA.3 JA.4 JA.2 JA.4 JA.2 JA.4 JA.2 JA.4 JA.2 JA.4 JA.2 JA.4 JO.5 JO.2	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 13-18 12-13 60-12 95A-4 38-7 60 95A 95A-4 97A-4
GARCD (A.1, 4A-2 IB-1 A.1 (A.2 (A.3) (A.3) (A.3) (A.4) (A.3) (A.4) (A.3) (A.4) (A.3) (A.4) (	29 9 51 6 22 15 5 -28 40 5 15 12 12 -12 22 -16 33 -7 36 8 28 -13 5 -29 13 -18 12 -13 60 -12 95 A 95 A 95 A 95 A 95 A 97 A 40 -6 97 A
GAROD (A.1, 4A-2 IB-1 A.1 (A.2 (A.2 (A.3 (A.3 (A.3 (A.4 (A.3	29 -9 51 -6 22 -15 5 -28 44 -5 15 -12 22 -16 33 -7 36 -8 28 -13 35 -29 13 -18 12 -13 36 -9 13 -16 12 -13 38 -7 95 A -4 95 A -4 97 A -4 29 -10 97 A -4 97 A -5 95 -10 95 -10 97 A -5 97 A -5
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 97A-2 95A-4
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 3-13 12-13 60-12 95A-4 38-7 60 95A-4 97A-4
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A 95A-4 97A-4 97A-4 97A-4 97A-4 97A-10 48-8 50-7 99A5
GARCD (A.1, 4A-2 (B.1) (A.1, 4A-2 (B.1) (A.2) (A.3) (A.3) (A.4) (A.3) (A.4)	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A 95A-4 97A-4 97A-4 97A-4 97A-4 97A-5 50.7
GAROD (A.1, 4A-2 B.1 (A.1, 4A-2 (B.1 (A.2) (A.3) (A	29 -9 51 -6 22 -15 5 -28 44 -5 15 -12 22 -16 33 -7 36 -8 28 -13 5 -29 13 -18 12 -13 60 13 -16 13 -12 95 A 95 A 95 A 95 A 95 A 95 A 97 A 29 -10 48 -5 50 -7 50 -7 50 -7 50 -7 50 -7 -7 -8 -8 -8 -8 -8 -8 -8 -8 -8 -8
GAROD GA	29-9 \$1-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 97A-4 99A-5 \$0 \$50 \$50 \$50 \$50 \$50 \$50 \$50
GAROD KA.1, 4A-2 IB-1 SA-1 SA-2 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-3 SA-4 SA-2 SA-4 SD-3, 50-5 SD-3, 50-5 SD-3, 50-5 SD-3, 50-5 SD-4, 50-5 SD-4, 50-5 SD-4, 50-5 SD-4, 50-5 SD-4, 50-5 ST-2 SD-3, 50-5 SD-4, 50-5 ST-2 SD-3, 50-5 ST-2 SD-3, 50-5 ST-2 SD-3, 50-5 ST-2 SD-3, 50-5 ST-2 SD-3, 50-5 ST-2 SD-4, 50-5 ST-2 SD-4, 50-5 ST-2	29-9 51-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 97A-4 97A-4 97A-5 50 50 92A
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 97A-4 97A-5 50 99A-5 50 99A
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 12-12 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A-4 95A-4 97A-4 97A-4 97A-10 48-8 50-7 99A-5 50 99A
GARCOD           (A.1, 4A-2           (B-1)           (A.1, 4A-2           (B-1)           (A-1)           (A-2)           (A-3)           (A-4)           (A-2)           (A-3)           (A-2)           (A-2)           (A-3)           (A-2)           (A-3)           (A-3)           (A-4)           (A-2)           (A-3)           (A-3)           (A-3)           (A-3)           (A-3)           (A-2)           (A-3)           (A-1)           (A-1)      (A-1) <td>29 -9 51 -6 22 -15 5 -28 44 -5 15 -12 22 -16 33 -7 36 -8 28 -13 5 -29 13 -18 12 -13 60 -12 95 A -4 97 A -5 50 99 A -5 50</td>	29 -9 51 -6 22 -15 5 -28 44 -5 15 -12 22 -16 33 -7 36 -8 28 -13 5 -29 13 -18 12 -13 60 -12 95 A -4 97 A -5 50 99 A -5 50
GARCD GARCD (A.1, 4A-2 (B.1) (A.1, 4A-2 (B.1) (A.2,, (A.2) (A.3,, (A.3, .	29 -9 51 -6 22 -15 5 -28 44 -5 15 -12 22 -16 33 -7 36 -8 28 -13 5 -29 13 -18 12 -13 60 -12 95 A -4 95 A -4 97 A -4 97 A -4 97 A -2 99 A -5 50 99 A -5 50 90 90 90 90 90 90 90 90 90 9
GAROD GA	29-9 \$1-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 28-13 5-29 13-18 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 99A • 99A • 97A-3
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 28-29 13-18 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-4 97A-5 50 99A • 99A • 97A-3 97A
GAROD GA	29-9 51-6 22-15 5-28 44-5 15-12 22-16 33-7 36-8 22-16 33-7 36-8 12-13 60-12 95A-4 38-7 60 95A-4 97A-4 97A-1 99A-5 50 99A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • 97A • • 97A • • 97A • • 97A • • 97A • • • • • • • • • • • • •

# GAROD-LAFAYETTE

GAROD-Cont. GENERAL ELECTRIC 817 Tel, Rec. (See Model 805)..... 78 (See Model 805)..... 78 830 Early, Tel. Rec...... 81—9 835 Early, Tel. Rec. (See Model 830 Early).. 81

GENERAL ELECTRIC-Cont. 
 340 Tel. Rec.

 (See Model 830 Eorly).

 901 Tel. Rec.

 910 Tel. Rec.

 910 Tel. Rec.

 901 Tel. Rec.

 903 Tel. Rec.

 904 Tel. Rec.

 905 Tel. Rec.

 907 Tel. Rec.

 908 Tel. Rec.

 909 Tel. Rec.

 901 Tel. Rec.

 901 Tel. Rec.
 GENERAL IMPLEMENT 9A5 ..... 37—7 GENERAL MOTORS CORP. (GMC) 2233029 ..... 93- 
 GENERAL TELEVISION

 1A5, 2A5, 3A5, 5A5

 (Ch. 1-1)

 1485

 27-11

 5856, 585Y

 27-12

 9A5

 986P

 14A4F

 15A5 (Ch. 1-1) (See

 Models 1A5, 2A5, 3A5, 5A5)

 17A5

 3A5, 5A5)

 19A5 (Ch. 1-1) (See

 Models 1A5, 2A5, 3A5, 5A5)

 219A5 (Ch. 1-1) (See

 Models 1A5, 2A5, 3A5, 5A5)

 121A4

 21A5

 23A6

 14-14

 24b6

 23B5

 26B5

 26B5

 27C5

 36-11
 GENERAL TELEVISION GILFILLAN 
 36A, 56B
 1—27

 56BC1, 56BCR, 56C, 56D, 56E
 1

 56E (See Model 56A).
 1

 58M, 58W
 45—12

 66A, 66AM
 16

 66B "The Overland"...
 8—16

 66B "Che Overland"...
 8—17

 66D, 66DM (See Model
 64

 66D, 66DM [See Model
 66A)
 8

 66P, 66PM
 9-15
 9

 'The El Dorado''
 9-15
 46

 68B-D
 46
 10

 68F
 46
 16

 684
 61-10
 16

 68-48
 61-10
 10

 108-48
 59-10
 10
 GLOBE GODFREY 6AD ..... 28—16 65M ..... 28—17 GON-SET 3-30 Meter Converter.... 61-11 10-11 Meter Converter ... 37-9 B. F. GOODRICH (See Mantola) GOODELL W. T. GRANT (See Grantline) GRANTLINE 
 GRANTLINE
 9--16

 300 (series 8)
 9--17

 301-7
 35--10

 301-7
 21-19

 508-7
 21-19

 510-A
 24-19

 605, 606
 2-17

 641
 12-15

 651
 11-9

 5647
 11-10
 HALLICRAFTERS (Also See Echophone) 
 (Also See Echophone)

 CA-2, CA-2A
 30—12

 CA-4
 36—13

 S-38
 3—7

 S-40
 33—10

 S-41G, S-41W
 10—19

 S-47
 46—12

 S-51
 40—8

 S-52
 48—9

 S-53
 39—8

 S-55, S-56
 53—9

 S-58
 57—8

 S-59
 58—10

6 70 86 4
SX-42
\$X-43 45-13 \$X-62 61-12
SX-71
T-54 (Lote) Tel. Rec 91-6
T-61, T-64, T-67 Tel, Rec. 65-7
T-68 (Tel, Rec.) (See Model T-60)
T-69 Tel. Rec
412 52-9
505, 506 Tel. Rec. (See Model T-54) 48
505, 506 (Late) (See
509, 510 Tel. Rec.
(See Model 161) 63/ 511 Tel. Rec
512C, 513 Tel. Rec 807 514 Tel. Rec. (See
Model T-54 Late) 91
(See Model 512C) 80
518, 519, 520 Tei. Rec 92-3 520E Tei. Rec.
(See Model 512C) 80
Model 518) 92
521E lel. Rec. (See Model 512C) 80
524 Tel, Rec. (See Model 512C)
600, 601, 602, 603, 604
518)
605, 606 Tel. Rec 107-5 680, 681 Tel. Rec
690 Tel. Rec.
715 Tel. Rec.
(See Model 680),113 730, 731 (Run 1) Tel. Rec.
(See Model 680) 91A 740 741 (Run 1) Tel Rec
(See Model 680) 91A
750, 751, Tel. Rec. (See
Model 745)
Model 745) 105
HAMILTON ELECTRONICS
H-15-5 16-17 H-50-25 16-18
HAMILTON BADIO CORR
(See Olympic)
(See Olympic) HAMMARLUND
(See Olympic) HAMMARLUND HQ-129-X
(See Olympic) HAMMARLUND HQ.129-x
(See Olympic) HAMMARLUND HQ.129-X
(See Olympic) HAMMARLUND HQ-129-X
(See Olympic) HAMMARLUND HQ-129-X
Kineton         Kable Corp.           (See Olympic)         HAMMARLUND           HQ.129-X         8—18           SP-400-X         10—20           HARVEY-WELLS         32—11           AT-38-6, AT-38-12         36—14           HEATH         HBR-5         24—20
(See Olympic)         HAMMARLUND         HQ-129-X         HQ-129-X         HARVEY-WELLS         AT-38-6, AT-38-12         AT-38-6, AT-31-2         JEATH         HEATH         HBR-5         HOFFMAN
Image: Second control of the second
Image: Second
Image: Second
Image: Second
Image: Second
Image: Second
Image: Second
Image: Sec Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS         AT-38-6, AT-38-12       36—14         HEATH         HBR-5       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A-200 (Ch. 103)       4—41         A-300 (Ch. 102)       11—11         A-300 (Ch. 102)       11—12         A-500 (Ch. 102)       11—12         A-501 (Ch. 102)       11—12         A-501 (Ch. 1083)       3—35         A-700 (Ch. 105)       12—16         B-400       17—17         B-400       17—17         B-400       17—17         B-400       17—17         B-400       20—14
Image: Second symple         (See Olymple)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         HARVEY-WELLS         AT-38-6, AT-38-12       36—14         HEATH         HBR-5       24—20         HOFFMAN       4—41         A-200 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300 (Ch. 103)       4—33         A-300 (Ch. 102)       11         A-300 (Ch. 102)       11         A-300 (Ch. 102)       11         A-300 (Ch. 103)       4—33         A-300 (Ch. 103)       4—34         A-401 (Ch. 102)       11         A-401 (Ch. 1083)       3=35         A-500 (Ch. 107)       4—34         S-400 (Ch. 103)       12—16         A-501 (Ch. 1083)       3=35         A-700 (Ch. 103)       4—34         C-501       48         E-400       17—17         B-1000       20—14         C-501       48         C-502       51—9         C-503       50—9         C-504 (Ch. 123)       47—10
Image: Sec Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         HARVEY-WELLS       32—11         AT-38-6, AT-38-12       36—14         HEATH       HBR-5       24—20         HOFFMAN       4—41         A-309 (Ch. 103)       4—23         A-401 (Ch. 102)       11—11         A-500 (Ch. 107)       4—34         A-501 (Ch. 108ST)       3—35         A-501 (Ch. 105)       12—16         8-400       17—17         B-1000       20—14         C-501       48—11         C-501       49—10         C-504 (Ch. 123)       47—10         C-504 (Ch. 123)       47—10         C-500       50-9         C-504 (Ch. 123)       47—10
Image: Second symple         (See Olymple)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         HARVEY-WELLS       32—11         AT-38-6, AT-38-12       36—14         HEATH       HBR-5       24—20         HOFFMAN       4—41         A-300 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300 (Ch. 103)       4—34         A-300 (Ch. 107)       4—34         A-300 (Ch. 107)       4—34         A-501 (Ch. 10851)       3—35         A-700 (Ch. 105)       12—16         B-400       17—16         B-400       17—16         B-400       17—16         B-400       17—16         B-400       17—16         S-400 (Ch. 123)       47—10         C-501       48—11         C-501       49—10         C-504 (Ch. 123)       47—10         C-504 (Ch. 123)       47—10         C-510       51
Image: Second state of the second s
Image: Second symple         (See Olymple)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         HARVEY-WELLS       32—11         AT-38-6, AT-38-12       36—14         HEATH       HBR-5       24—20         HOFFMAN       4-23         A-200 (Ch. 103)       4—23         A-200 (Ch. 103)       4—41         A-309 (Ch. 119)       11—11         A-300 (Ch. 107)       4—34         A-501 (Ch. 1085)       3—35         A-600 (Ch. 107)       4—34         C501       20—14         C-502       51—9         C-503       50—10         C-510       *         C-511 (See Model C-501) 50       50         C-511 (See Model C-502) 51       50         C-511 (See Model C-502) 51       50         C-513 (See Model C-502) 51       50         C-514 (See Model C-502) 51       50         C-514 (See Model C-502) 51       51
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         HARVEY-WELLS         AT-38-6, AT-38-12       32—11         ATR-3-6, AT-38-12       36—14         HEATH         HBR-5       24—20         MOFFMAN       4—23         A.200 (Ch. 103)       4—23         A.200 (Ch. 103)       4—11         A.300       4—41         A.300 (Ch. 107)       4—34         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—21         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—41         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—34         A.500 (Ch. 107)       4—10         C.501       48—11         C.502       51—9         C.503       50—9         C.
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS         AT-38-6, AT-38-12       32—11         ATR-3-6, AT-38-12       36—14         HEATH         HBR-5       24—20         MOFFMAN       4—23         A.200 (Ch. 103)       4—23         A.300       4—11         A.300 (Ch. 103)       4—23         A.200 (Ch. 107)       434         A.500 (Ch. 107)       434         A.500 (Ch. 107)       434         A.500 (Ch. 107)       434         A.500 (Ch. 107)       42         B-1000       10         C.501       48—11         C.502       51=9         C.503       50—9         C.504 (Ch. 123)       47—10         C.505       534 (See Model C.501)       48
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS         AT-38-6, AT-38-12       32—11         ATR-3-6, ATR-3-12       36—14         HEATM         HBR-5       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A.300       4—11         A-300 (Ch. 103)       4—23         A-300 (Ch. 103)       4—23         A-500 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 105)       12—16         B-400       17—17         B-1000       20—9         C503       50—9         C504 (Ch. 123)       47—10         C510       50         C-512 (See Model C-501) 48         C-513 (See Model C-503) 50         C-514 (See Model C-503) 50         C-513 (See Model C-503) 50         C-514 (See Model C-503) 50         C-518       61—13         C-518       61—13         C-518       61—13         C1000, CT-801, C
Image: Control of the second secon
Image: Control of the second secon
Image: Control of the second secon
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS       32—11         AT.38-6, AT-38-12       36—14         HEATM       HBR-5         HBR-5       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300       4—41         A-300 (Ch. 103)       4—23         A-200 (Ch. 103)       4—21         A-500 (Ch. 103)       4—23         A-200 (Ch. 103)       4—41         A-300       4—41         A-300 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 107)       4—34         A-500 (Ch. 103)       3—35         A-700 (Ch. 103)       3—53         A-500 (Ch. 103)       3—53         A-500 (Ch. 103)       3—53         A-501 (Ch. 103)       3—53         A-500 (Ch. 107)       4—14         A-501 (Ch. 103)       3—53         A-500 (Ch. 107)       4—14         C501 (See Model C-501)       48         C-511 (S
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS       32—11         AT-38-6, AT-38-12       36—14         HEATM       HBR-5         HBR-5       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300       4—41         See Model A-202)       11         (See Model A-202)       11         A-300 (Ch. 103)       4—33         A-300 (Ch. 103)       3—35         A-200 (Ch. 103)       3—35         A-200 (Ch. 103)       3—35         A-200 (Ch. 105)       12—16         A-500 (Ch. 103)       3—35         A-500 (Ch. 103)       4—11         C-5
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS       10—20         HARVEY-WELLS       36—14         HEATM       HBR-5       36—14         HEATM       HBR-5       24—20         MOFFMAN       4—23       36—14         A-200 (Ch. 103)       4—23       4—41         A-300       (Ch. 103)       4—23         A-202 (Ch. 103)       4—41       4—41         A-300 (Ch. 103)       4—23       4—41         A-300 (Ch. 103)       4—23       3.5         A-200 (Ch. 103)       4—41       4—41         A-309 (Ch. 103)       4—33       5.3         A-401 (Ch. 102)       11—11       4—41         A-500 (Ch. 103)       3.35       3.5         A-401 (Ch. 102)       11—12       4.500 (Ch. 1085)       3.35         A-501 (Ch. 1085)       3.35       3.50       5.51         See Model A-202       11       1.12       4.50         A-501 (Ch. 1085)       3.35       3.50       5.50         C502       .50       .50       .50       9.71         See Model C-501       48<
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS       13         AT-38-6, AT-38-12       36—14         HEATM       HBR-5         HBR-75       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300       4—41         See Model A-202)       11         A-300 (Ch. 102)       11—12         A-500 (Ch. 103)       3=35         A-700 (Ch. 103)       3=35         A-601 (Ch. 103)       3=35         A-700 (Ch. 103)       4—31         C-501       4=34         C-502       50         C-503       50         C-504 (Ch. 123)       47—10         C-505       50         C-514 (See Model C-503)       50 </td
Image: Control of the second secon
Image: See Olympic)         HAMMARLUND         HQ.129-X       8—18         SP-400-X       10—20         MARVEY-WELLS       32—11         AT-38-6, AT-38-12       36—14         HEATM       HBR-5         HBR-5       24—20         MOFFMAN       4—23         A-200 (Ch. 103)       4—23         A-202 (Ch. 119)       11—11         A-300       4—41         See Model A-202)       11         See Model A-202)       11         A-401 (Ch. 102)       11—12         A-500 (Ch. 107)       4—34         A-501 (Ch. 1083)       3—35         A-601 (Ch. 1083)       3—35         A-601 (Ch. 103)       4—31         C-501       4—34         C-501       4—34         C-501       4—34         C-501       4—41         C-501       4—34         C-501       4—34         C-501       4—34         C-501       4—34         C-501       4—34         C-501       4—11         C-502       50         C-503       50         C-514 (See Model C-503)       50

# HOFFMAN-Cont. 4 (See Model 830)..., 97A 836, 837 (Ch. 153) Tel. Rec. ..... 5 HOWARD HOWARD 472AC, 472AF, 31—14 472AC, 472F. 32—12 475TV Teil, Rec. Photofact Servicer Photofact Servicer 84 4818, 481C, 481M. 67—11 482, 482A 48—12 901A.F. 901A.H, 901A.I. 67—11 901A.Series 1.\* 902 5—7 HUDSON DB47 (Fact, Na. 6MH089) 25—10 DB48 (Fact, No. 6MH889) 39—9 INDUSTRIAL ELECTRONIC

# CORP. (See Simplon) INDUSTRIAL TELEVISION (Also See Century) IT-40R. IT-42R (Ch. IT-26R.

# 

# GAROD-LAFAYETTE

JACKSON

3200, 3230 iSee Model	6 <b>8</b> —3
5000) Tel. Rec	88
5000) Tel. Rec	88
JEFFERSON-TRAVIS	
MR-28	1022 1719
JEWEL	
300	23-11
500A, 8, C; 501A, B, C;	35-12
502A, B, C; 503A, B, C; 504A, B, C; 505A, B, C;	15_14
505 ''Pin-Up''	18-21
814	<b>51</b> —10
910	99 <u>8</u>
920	<b>55</b> —10
949	105-5
960	98—3 97—8
985 (See Model 910) 5010	99 111-7
5057U	109-7
KAISER-FRAZER	98 10
200002	<b>56</b> —13
KAPPLER	
1027	<b>54</b> —10
KARADIO 80.C	66-10
1275, 1275A	85-7
1276	115-4
821-C, 821-T Tel. Rec	*
921-C, 921-D Tel. Rec 1621-C, 1621-T Tel. Rec	*
KAY MUSICAL	
INSTRUMENT CO.	42-13
KITCHENAIRE	
5 Tube Radio	6-14
KNIGHT 4D-450	400
4G420	88-6
5A-190	14-15
58-160 58-175, 58-176	20—15 20—16
58-185	22-17
5D-250, 5D-251	55-11
5E-250, 5E-251	34-9
5E-250, 5E-251 (Similar to Chassis) 5E-457 (Similar to Chassis)	34—9 36—25 53—23
5E-250, 5E-251 (Similar to Chassis) 5E-457 (Similar to Chassis 5F-525, 5F-526	34-9 36-25 53-23 53-13 55-13
5E-250, 5E-251 (Similar to Chassis) 5E-457 (Similar to Chassis) 5F-525, 5F-526 5F-563 (Similar to Chassis)	34-9 36-25 53-23 53-13 55-12 97-1
52-250, 52-251 (Similar to Chassis) 52-457 (Similar to Chassis 57-525, 57-526 57-565 56-563 (Similar to Chassis) 5H-607, 5H-608 (Similar to Chassis)	34—9 36—25 53—23 53—13 55—12 97—1 97—15
50-435 5E-230, 5E-251 (Similar to Chassis) 5E-437 (Similar to Chassis) 5F-525 5G-533 (Similar to Chassis) 5H-607, 5H-608 (Similar to Chassis) 5H-678, 5H-679 (Similar to Chassis)	34—9 36—25 53—23 53—13 55—12 97—1 97—15
50-435 52-230, 55-251 (Similar to Chassis) 54-37 (Similar to Chassis) 55-535 56-533 (Similar to Chassis) 5H-607, 5H-608 (Similar to Chassis) 5H-678, 5H-679 (Similar to Chassis) 5H-700 (Similar to Chassis)	34-9 36-25 53-23 53-13 55-12 97-1 97-15 109-7 99-1 9-18
50-435 52-230, 55-251 (Similar to Chassis) 54-37 (Similar to Chassis) 55-535 56-533 (Similar to Chassis) 51-607, 514-608 (Similar to Chassis) 514-578, 514-679 (Similar to Chassis) 514-700 (Similar to Chassis) 514-700 (Similar to Chassis) 54-127	34-9 36-25 53-23 53-13 53-12 97-1 97-15 109-7 99-1 9-18 9-19
50-435 52-230, 55-251 (Similar to Chassis) 54-57 (Similar to Chassis) 55-535 56-533 (Similar to Chassis) 51-607, 514-608 (Similar to Chassis) 514-508, 514-679 (Similar to Chassis) 514-700 (Similar to Chassis)	34-9 36-25 53-23 53-13 55-12 97-15 97-15 99-1 9-18 9-19 16-19
50-435 52-230, 55-251 (Similar to Chassis) 55-437 (Similar to Chassis) 55-535 55-535 55-536 (Similar to Chassis) 5H-607, 5H-608 (Similar to Chassis) 5H-678, 5H-679 (Similar to Chassis) 5H-700 (Similar to Chassis) 6A-122 6A-122 6A-122 5H-705 (See Model	34-9 36-25 53-23 53-13 55-12 97-1 97-15 109-7 99-1 9-18 9-19 16-19 9
50-435 52-230, 55-251 (Similar to Chassis) 55-437 (Similar to Chassis) 55-535 55-535 55-536 (Similar to Chassis) 5H-607, 5H-608 (Similar to Chassis) 5H-678, 5H-679 (Similar to Chassis) 5H-700 (Similar to Chassis) 6A-127 6A-127 6A-127 (Sae Model 6A-127 5D-225 4D-225 5D-2	34-9 36-25 53-23 53-13 55-12 97-1 97-15 109-7 99-1 9-19 16-19 9 9 9 16-19 9 9 16-19
3D-435	34 9 36 25 53 23 53 13 55 12 97 1 97 15 109 7 99 16 199 16 199 9 9 9 9 16 19 9 9 14 54 11 109 109 109 109 109 109 109
3D-435	34 9 36 25 53 23 53 13 55 12 97 1 97 15 109 7 99 16 99 16 19 9 9 16 19 9 9 30 14 55 14 55 14 13 14 15 14 15 14 15 14 15 14 15 14 15 14 15 15 15 15 15 15 15 15 15 15
3D-435	34 9 36 25 53 23 53 13 55 12 97 1 97 15 109 7 99 1 9 - 18 9 - 19 16 19 9 9 30 14 54 11 39 - 10 83 27 - 14 39 - 11
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-536, Similar to Chassis)         SH-677, SH-679         (Similar to Chassis)         SH-78, SH-679         (Similar to Chassis)         SH-670, SH-679         (Similar to Chassis)         SH-78, SH-679         (Similar to Chassis)         SH-700         SH-700         SH-701         SH-702         SH-703         SH-	34 9 36 25 53 23 53 13 55 12 97 1 97 15 109 7 99 1 9 - 18 9 - 19 16 19 9 9 30 14 54 11 39 - 10 83 27 - 14 37 - 11 20 - 17 46 13 20 - 17 46 13 21 20 - 17 20 -
3D-435	34 9 36 25 53 23 53 12 97 1 97 1 97 15 109 7 99 1 9 18 9 19 16 19 9 9 9 9 9 10 8 10 10 10 10 10 8 10 10 10 10 10 10 10 10 10 10
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-5363 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Samodel Samodel S	34 9 36 25 53 23 53 12 97 1 97 1 97 15 109 7 99 1 9 18 9 19 16 19 9 9 9 9 9 10 8 3 10 27 11 33 10 8 3 7 10 8 3 7 10 8 3 7 10 8 3 7 10 8 10 10 8 10 10 10 10 10 10 10 10 10 10
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-5363 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Sae Model         6A-127         (Sae Model         6A-127         (Sae Model         6A-123	34 9 36 25 53 23 53 12 97 1 97 1 97 15 109 7 99 1 9 16 9 19 9 19 9 19 16 19 9 9 9 9 9 9 10 83 10 83 10 83 10 83 10 10 9 10 8 10 10 9 10 9 10 8 10 10 10 8 10 10 10 10 10 10 8 10 10 8 10 10 8 10 10 8 10 8 10 8 10 8 10 10 8 10 8 10 8 10 8 10 8 8 10 8 8 8 8 8 8 8 8 8 8 8 8 8
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-563 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SA-122         SA-127         SA-127         SA-128         SA-127         SA-127         SA-127         SA-127         SA-128         SB-120 (See Model         SA-127         SA-128         SB-210 (See Model 449)         7B-220         7D-403         SB-210         <	34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 16 9 19 16 19 9 9 9 9 9 9 9 10 83 9 10 83 9 10 83 9 10 83 9 10 83 9 10 9 9 9 10 83 11 10 9 10 83 11 10 83 10 10 83 10 20 11 10 83 10 20 11 10 83 10 20 11 20 17 46 17 46 17 46 17 46 17 46 17 46 17 46 17 46 17 46 17 46 17 46 17 45 7 14 20 17 45 7 9 10 8 8 8 8 8 8 8 8 8 8 11 20 17 8 8 8 8 8 8 11 20 17 8 8 8 8 11 20 17 8 8 8 11 20 17 8 8 11 20 17 9 5 7 9 5 8 11 12 14 12 15 16 17 16 17 16 17 16 17 16 17 16 17 16 17 11 12 11 11 12 11 11
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-563 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-122         G&-127         GA-122         GA-127         GA-128         GD-306         G-205         GD-205         GD-205         GD-205         GD-205         GD-205         GD-205         GD-205         GD-205         GD-205         GD-205<	34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 16 19 9 9 9 9 9 10 9 9 9 10 9 9 10 9 9 10 9 9 10 10 10 10 10 10 10 10 10 10
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-563 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-122         G&-127         GA-122         GA-127         GA-128         GD-205         GD-204	34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 16 19 9 9 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 10 9 10 9 10 9 10 10 10 10 10 10 10 10 10 10
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-437 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-563 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-78, SH-679         (Similar to Chassis)         SH-707, Similar to Chassis)         SH-700 (Similar to Chassis)         SH-122         Gae Model         GA-122         GA-127         GA-128         GD-235         GD-236         GD-235         GD-240         SB-210         BB-210         ID8-249         ID8-249         ID8-249         ID8-249 <td< td=""><td>34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 16 19 9 9 30 14 54 11 39 10 83 9 19 9 9 9 16 19 9 9 9 10 83 9 11 27 14 54 11 39 10 83 78 8 42 14 29 12 57 - 9 57 10 10 10 10 10 10 10 10 10 10</td></td<>	34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 16 19 9 9 30 14 54 11 39 10 83 9 19 9 9 9 16 19 9 9 9 10 83 9 11 27 14 54 11 39 10 83 78 8 42 14 29 12 57 - 9 57 10 10 10 10 10 10 10 10 10 10
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-437 (Similar to Chassis)         SF-525, SF-526         SF-536, Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-707 (Similar to Chassis)         SH-122         GA-122         GA-127         GA-128         B-210         B-340         Sec-200 (Similar to Chassis)         GS-200 (Similar to Chassis)         V10 10         IB-20         IB-20         IB-20         IB-20         IB-20	34 9 36 25 53 23 53 12 97 1 97 15 109 7 99 1 9 - 19 9 - 19 9 - 19 9 - 19 16 19 9 30 14 54 11 39 - 10 83 78 8 42 - 14 39 - 10 83 78 8 42 - 14 29 - 12 57 - 9 63 - 12 58 - 12 57 - 10 38 - 11 53 - 12 57 - 10 38 - 12 57 - 10 38 - 12 57 - 10 38 - 12 57 - 10 57 - 5 57 - 10 57 - 5 57 - 57
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-437 (Similar to Chassis)         SF-525, SF-526         SF-536, Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SA-122         GA-127         GA-128         GA-129         C-225, 6D-225, 6D-226         6D-340         SE-210         BB-210         BB-210         BB-210         C-225, 6D-225, 6D-226         GD-340         SG-200 (Similar to Chassis	34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 1 9 - 19 9 - 19 9 - 19 16 - 19 9 30 - 14 54 - 11 39 - 10 83 78 - 8 429 - 12 57 - 9 53 - 12 53 - 12 53 - 12 57 - 9 53 - 12 53 - 12 53 - 12 57 - 9 53 - 12 53 - 12 53 - 12 57 - 9 53 - 12 53 - 12 57 - 9 58 - 12 58 - 12 57 - 9 58 - 12 58 - 12 57 - 9 58 - 12 57 - 9 58 - 12 57 - 9 58 - 12 57 - 9 58 - 11 53 - 12 57 - 9 58 - 12 57 - 9 58 - 11 53 - 12 57 - 9 58 - 12 57 - 9 58 - 11 58 - 12 57 - 9 58 - 11 58 - 12 57 - 19 58 - 12 58 - 12 57 - 9 59 - 10 58 - 11 53 - 12 58 - 12 57 - 10 38 - 12 58 - 12 57 - 10 38 - 12 57 - 10 37 - 10 38 - 12 57 - 10 37 - 10 38 - 12 57 - 10 38 - 12 57 - 10 38 - 12 57 - 10 38 - 12 57 - 10 57
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-437 (Similar to Chassis)         SF-525, SF-526         SG-563 (Similar to Chassis)         SH-607, SH-608         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-700 (Similar to Chassis)         SH-122         GA-122         GA-127         GA-128	34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 1 9 - 19 9 - 19 16 - 19 9 30 - 14 54 - 11 39 - 10 83 9 - 10 83 9 - 10 83 27 - 14 39 - 11 27 - 14 39 - 11 39 - 12 59 - 11 30 - 28 59 - 9 76 - 13 77 - 9 59 - 13 77 - 9 50 - 13 77 - 15 50 - 15
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-437 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-707, Similar to Chassis)         SH-708, SH-679         (Similar to Chassis)         SH-707, Similar to Chassis)         SH-708, SH-679         (Similar to Chassis)         SH-704, SH-679         (Similar to Chassis)         SH-704, SH-679         (See Model         6A-122         Case Model         6A-121 (See Model         6A-122, See Model         6A-235         SG-200 (See Model 449).         7B-200         SB-340         SG-200 (Similar to Chassis)         93-017         S024         SG-200 (Similar to Chassis)         93-017         S024         S024         S024         S0211         S0221	34 - 9 36 - 25 53 - 23 55 - 12 97 - 1 97 - 1 97 - 1 97 - 1 97 - 1 97 - 1 99 - 1 9 - 19 16 - 19 9 30 - 14 54 - 11 39 - 10 83 42 - 14 39 - 10 83 42 - 14 39 - 10 83 42 - 14 39 - 10 83 42 - 14 39 - 11 57 - 9 63 - 12 58 - 11 58 - 12 58 - 12 58 - 11 58 - 12 58 - 12 58 - 11 58 - 12 58
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-706, SH-679         (Similar to Chassis)         SH-707, SH-679         (Similar to Chassis)         SH-708, SH-679         (Similar to Chassis)         SH-700, Similar to Chassis)         6A-122         See Model         6A-121         See Model         6A-122         See Model         6A-123         See Model         6A-124         SG-200 (Similar to Chassis)         Y0-101 Tel. Rec.         108-200         110-302         14F490, 14F495, 14F496, 14F496, 14F496, 19498, 93-017         Y3-024         Y3-103         Y3-104         Y3-103         Y3-	34 9 36 25 53 23 55 12 97 1 97 15 109 7 99 1 9 9 16 19 9 9 9 9 9 16 19 9 9 9 9 16 19 9 9 9 9 9 10 83 11 9 9 9 10 83 12 9 9 9 10 9 9 9 10 9 9 9 10 9 9 10 9 9 10 9 9 9 10 9 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 9 9 9 10 9 9 10 9 9 10 9 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 9 9 10 9 9 9 10 10 9 9 10 10 9 9 9 10 10 9 9 9 10 10 83 11 26 17 42 11 26 17 42 11 28 7 9 12 57 9 10 83 12 57 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 11 15 32 10 8 8 7 9 9 9 9 9 9 9 9 9 9 9 9 9
3D-435         SD-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-78, SH-679         (Similar to Chassis)         GA-127         GA-195         GA-122         GA-122         GA-122         GA-122         GA-122         GA-122         GA-122         GA-123         GA-124         GA-127         GS-60 (See Model         GA-235         GD-235         GD-235         GD-205         GB-200 (Similar to Chassis)         Y-10 Tel. Rec.         108-200         110-300         110-300         110-302         14F490, 14F495, 14F496, 19F498         93-017         93-024         93-024         93-024         93-024         93-103	34 9 36 25 53 23 55 12 97 1 97 15 109 7 99 1 9 9 16 19 9 9 9 9 9 9 14 54 11 39 14 54 11 39 14 57 14 39 11 20 17 42 14 39 12 57 -9 63 12 58 11 31 15 32 13 31 16 37 -10 38 -12 57 -9 75 -10 99 -5 76 -9 75 -10 99 -18 76 -9 75 -10 99 -18 76 -19 76 -19 77 -9 75 -10 78 -12 57 -10 57 -10 57 -10 78 -10 57 -5 57
3D-435         SD-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         Similar to Chassis)         SH-678, SH-679         Similar to Chassis)         SH-670, SH-679         (Similar to Chassis)         SH-670, SH-679         (Similar to Chassis)         SH-78, SH-679         (Samilar to Chassis)         SH-78, SH-679         (Samilar to Chassis)         SH-78, SH-679         (Samolar to Chassis)         SG-200 (Samilar to Chassis)         SG-200 (Similar to Chassis)	34 9 36 25 53 23 53 13 55 12 97 1 97 15 109 7 99 1 9 9 9 16 9 9 9 16 19 9 9 9 16 19 9 9 9 9 9 14 54 11 39 11 20 17 42 14 39 11 27 14 39 11 31 15 32 12 57 9 58 11 57 9 58 11 53 12 57 9 78 9 78 12 57 - 9 78 - 10 78 - 5 78 - 10 78 - 5 55 - 10 78 - 5 55 - 10 55 - 10
3D-435         SD-435         SE-230, SE-251         (Similar to Chassis).         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-536 (Similar to Chassis)         SH-677, SH-679         Similar to Chassis).         SH-678, SH-679         Similar to Chassis).         SH-670, SH-679         (Similar to Chassis).         SH-670, SH-679         (Similar to Chassis).         SH-780, SH-679         (See Model         6A-1221         See Model         See Model         1D-235         See Model         1D-240 <tr< td=""><td>34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 19 9 - 19 9 - 19 9 - 19 9 - 19 16 - 19 9 9 - 10 13 - 10 03 27 - 14 39 - 10 28 - 13 31 - 15 37 - 10 38 - 8 76 - 19 99 - 9 75 - 10 99 - 9 75 - 10 99 - 9 75 - 10 99 - 9 75 - 10 76 - 9 99 - 9 75 - 10 76 - 10 76 - 9 75 - 10 76 - 1</td></tr<>	34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 19 9 - 19 9 - 19 9 - 19 9 - 19 16 - 19 9 9 - 10 13 - 10 03 27 - 14 39 - 10 28 - 13 31 - 15 37 - 10 38 - 8 76 - 19 99 - 9 75 - 10 99 - 9 75 - 10 99 - 9 75 - 10 99 - 9 75 - 10 76 - 9 99 - 9 75 - 10 76 - 10 76 - 9 75 - 10 76 - 1
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         Similar to Chassis)         SH-678, SH-679         Similar to Chassis).         SH-670, SH-679         Similar to Chassis).         SH-670, SH-679         Similar to Chassis).         SH-780, SH-679         SH-780, SH-679         SG-200 (Similar to Chassis)         SG-400 (See Model         SG-200 (Similar to Chassis)         SG-200 (Similar to Chassis)         Y-101 Tel. Rec.         108-249         110-300         110-302         110-303         30.0         S-301         S-310         S-320         S-330         S-330         S-330         S-330         S-330         S	34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 1 97 - 15 109 - 7 99 - 19 9 - 19 9 - 19 9 - 19 9 - 19 16 - 19 9 9 9 9 9 9 9 10 27 - 14 39 - 10 83 27 - 14 31 - 15 31 - 15 37 - 10 99 - 8 76 - 13 77 - 10 99 - 8 76 - 13 77 - 10 99 - 8 75 - 10 99 - 19 14 - 15 37 - 10 99 - 19 15 - 15 37 - 10 99 - 19 15 - 15 37 - 10 99 - 9 75 - 10 99 - 19 15 - 15 37 - 10 99 - 19 15 - 15 37 - 10 99 - 19 75 - 10 99 - 19 75 - 10 99 - 19 75 - 10 90 - 19 75 - 10 90 - 19 75 - 10 97 - 10 9
3D-435         SE-230, SE-251         (Similar to Chassis)         SE-457 (Similar to Chassis)         SF-525, SF-526         SF-535, SF-526         SG-5363 (Similar to Chassis)         SH-677, SH-679         (Similar to Chassis)         SH-678, SH-679         (Similar to Chassis)         SH-78, SH-679         (Similar to Chassis)	34 - 9 36 - 25 53 - 23 53 - 12 97 - 1 97 - 15 109 - 7 99 - 1 9 - 19 9 - 10 83 44 - 11 33 - 10 83 74 - 8 84 75 - 10 83 74 - 11 31 - 15 32 - 13 31 - 15 37 - 10 97 - 15 15 - 15 16 - 19 9 - 10 9

LAMCO 1000 ..... 16-20 LEARADIO 
 LEARADIO

 Chassis R-971
 51—11

 RM-402C (Learovian)
 42—15

 561, 562, 563
 1—26

 565, 5658L, 566, 567, 568
 9—20

 1281-PC (Ch. 78)
 49—11

 6610PC, 6611PC, 6612PC
 9—21

 6614, 6615, 6616, 6619
 3—18

 6617PC
 16—22
 LEE TONE AP-100 ..... 16-23 LEWYE LEXINGTON 6545 ..... 13-20 LIBERTY A6K, A6P, 6K..... 20-18 507A ..... 20-19 LINCOLN (Auto Radio) 7ML080 (5EH-18805-A), 7ML081 (5EH-18805-B), 66-11 8ML882 (8L-18805-A), 8ML882Z (8H-18805-A), (Ch. 8E82) ...... 8ML985 (8L-18805-A). ML985 (8L-18805-A), 8ML985E (8L-18805-B), 8ML985Z (8H-18805-A), 8ML985ZE (8H-18805} . 83-4 LINCOLN S13L-B ..... 2—10 LINCOLN (ALLIED RADIO CORP.) 5A-110 ..... 5—34 LINDEX CORP. (See Swank) LIPAN (See Supreme) LULLABY (See Mitchell) LYMAN CM10, CM20 ..... 44-8 LYRIC (Also See Rauland) 546T, 546TY, 546TW .... 7-MAGIC TONE MAGNAVOX

MAGNAVOX-Cont. MAGUIRE 
 MAGURE

 500BI, 500BW, 500DI,

 500DW

 561BW, 561DI,

 561BW, 561DW

 6—16

 571

 661A

 700A

 700E

 13—17
 MAIESTIC 

 (Ch. 5805A)
 280-74

 (FM714 (Ch. 68020)
 50

 7/8/73 (Ch. 68110)
 57-10

 7/8/73 (Ch. 68110)
 27

 7C32 (Ch. 4704)
 27

 7C32 (Ch. 4704)
 14

 7/8/73 (Ch. 4704)
 14

 7/8/73 (Ch. 4704)
 27

 7C32 (Ch. 4704)
 27

 7C32 (Ch. 4705)
 26

 (Ch. 7C110)
 56

 7/8/33 (75450, 75470
 60-11

 (Ch. 7C253, 640)
 26

 (Ch. 4702, 4703)
 28

 7/8/75 (Ch. 78043, 12
 29-13

 7/8/75 (Ch. 7809A, 11)
 29

 7/8/75 (Ch. 80060)
 30

 8/7/75 (Ch. 80060)
 30

 8/7/75 (Ch. 80060)
 30

 8/7/75 (Ch. 80070)
 29

 8/8/75 (Ch. 80070)
 29

 10/7/8031
 54

 11884 (Ch. 88070)
 29

 Model 5AK711)... 27 See Model 5AK711)... 27 5805A See Model 5AK731}... 28 Ch. 6802D (See Model 6FM714)... 50 Ch. 6811D (See Model 6FM773)... 57

Ch. 7804A (See Model 7YR752)... 29 [See Model 77R752]... 29 (See Model 77R752]... 42 (See Model 77R772]... 42 Ch. 7B09A1 [See Model 77R753]... 42 Ch. 7C110 [See Model 7FM887]... 56 Ch. 7C25A [See Model 7JL866]... 60 Ch. 8B06D [See Model 8FM774]... 30 Ch. 8B07D [See Model 8FM776]... 29 Ch. 8B08D [See Model 8FM775]... 29 (See Model 8FM775)... 29 Ch 78094 (See Model 5A430)... 1 (See Model SA430)... 1 (See Model 12FM475)... 28 Ch. 12622E (See Model 12FM475)... 28 Ch. 12627E (See Model 12FM895)... \* Ch. 18C90, 18C9) (See Model 7TV850)... \* Ch. 4501 (See Model 5A410)... 1 Ch. 4504 Ch 80070 h. 4504 (See Model 5A430).... 1 
 (See Model 5A430)...
 1

 Ch. 4506
 (See Model 5A445)...
 23

 Ch. 4702, 4703
 (See Model 75A33)...
 22

 Ch. 4705
 (See Model 77420)...
 26

 Ch. 4706
 (See Model 7C432)...
 14

 Ch. 4707
 Ch.
 26
 Ch. 4707 (See Model 7C447).... 14 Ch. 4708R (See Model 7JK777R).. 27 Ch. 4810 (See Model 85452).... 8 Ch 4810B (See Model 8JL885)... 47 (See Model 12FM475)., 28 Ch MANTOLA (B. F. Goodrich Co.) R643W) ..... 
 R643W)
 4

 R463W
 4--29

 R643-PM, R643W
 4--29

 R652, R652N
 9--22

 R654, R654-PV
 3--5

 R655W (Ch. No. 501APH)
 8--20

 R662, R662N
 3--33

 R664-PW, R664-PV,
 3-31

 R664-PW, R664-PV,
 23-13

 Rod-Z, Rod/N
 3-33

 Rod-Z, Rod/N
 23-13

 Rod-Z, Rod/N
 23-13

 R-73-3W [See Model
 4

 R-7343
 18-23

 R-75143
 39-12

 R-75143
 39-12

 R-75143
 39-12

 R-75143
 39-12

 R-75143
 56-004

 R-76162
 25

 R-76162
 40-10

 R-76162
 11-12

 R-78162
 43-11

 11-701
 2466

 2486
 25-17
 MARK SIMPSON (See Masco) 
 MASCO

 IM-5
 41-13

 JMR
 31-17

 JM-5 (Matter Stotion),
 42-18

 MA-SNO
 45-15

 MA-SNO
 45-15

 MA-10HF
 112-4

 MA-10EX
 113-4

 MA-17
 14-32

 MA-17N
 50-11

 MA-17N
 50-11

 MA-17N
 50

 MA-17N
 50

 MA-17N
 50

 MA-17N
 50

 MA-17N
 50

 MA-20HF
 28-21

 MA-25X
 16-24

 MA-25NR
 49-12

 MA-25NR
 49-12

 MA-25NR
 49-12
 MASCO 
 MA-25N
 49-12

 MA-25N
 49-12

 MA-25P [See Model MA-25]
 16

 MA-25N
 43

 MA-25N
 43

 MA-35N
 44-11

 MA-35N
 44-11

 MA-35N
 44-11

 MA-35N
 41-11
 

MAJESTIC-Cont.

# MASCO-Cont. MA3CO-Cont. MA-50NR 53-14 MA-60 119-9 MA-75 28-22 MA-75N 52-27 MA-121 24-21 MA-808 26-18 MAP-15 26-19 MAP-105 25-12 MAP-105 25-12 MAP-105 25-12 MAP-120 21-21 MAP-120 58-12 MAP-120 21-21 MAP-120N 46-15 MAP-120N 46-15 MB-75 61-15 MC-10 47-12 MC-25, MC-25P 17-21 MC-25N, MC-25PC 17-21 MC-25N, MC-25PC 11-18 MC-120, MC-126P 111-8 MHP-110 114-6 MHP-110X 115-5 Midgetolk 116-25 MCR-5 13-18 MU-5 117-6 T0-16 120-81 T6, 711 20-20 86, 811 20-21 MASON . 14-18 MAYFAIR McGRADE M-100 ..... 16-27 MECK (Trail Blazer-Plymouth)

## LAMCO-MOTOROLA

MEDCO (See Telesonic) MEISSNER 
 MEISSNER

 TV-1 (Ch. 24TV) Tel, Rec..
 56—15

 SA (See Maguire Model
 571)

 SF (See Maguire Model
 644

 6H (See Maguire Model
 661, 661A)
 12

 8C
 37-12

 9-1065
 3-15

 9-1091A, 9-1091B
 35-15

 9-1091C
 16-8

 9-1091C
 16-8

 9-1091C
 16-8

 9-1091C
 16-5

 24TV Tel. Rec.
 105-6

 25TV Tel. Rec.
 \*

 574 (See Maguire Model
 571)

 601
 571)

 601
 12
 661) ..... 12 2961 Series ..... 27—19 MERCURY MIDLAND M6B ..... 2-30 MIDWEST 
 MIDWEST
 14--19

 P-6, PB-6
 14--19

 R-12, RG-12, RT-12
 (Ch. RGL-12)

 (Ch. RG-12, RT-12
 44--12

 (Ch. RG-12, RT-14
 (Ch. RG-15, RT-16)

 (Ch. RG-16, RT-16)
 45--16

 S8, ST-8, TM-8
 (Ch. SGT-12)

 (Ch. SGT-12, SG-12, ST-12)
 (Ch. SGT-12)

 (Ch. SGT-16)
 21-23

 S-16, SGT-16, ST-16
 (Ch. SGT-16)

 (Ch. SGT-16)
 21-24

 716, 716A
 (See Model S-16)

 (See Model S-16)
 21

 MINERVA
 21
 MINERVA MIRRORTONE (See Meck) MITCHELL 1250, 1251 ..... 55-14 MOLDED INSULATION CO. (Also see Viz) MR-6 (Wiretone) ...... 41-15 MONITOR 
 MONITOR
 Add3 (Foct. No. 470-2).
 22—20

 M-403 (Foct. No. 475).
 28—23

 M-510 (Foct. No. 475).
 23—15

 M-3070
 29—15

 RA-50
 24—23

 TA56M, TW36M
 6—18
 MONTGOMERY WARD (See Airline) MOPAR 
 MOLTAR
 602 (Colonial Model

 671A)
 65-9

 603
 65-9

 604
 106-9

 802 (Philco C-4608)
 18-24

 802 (Philco C-4608)
 49-10
 MOTOPOLA 
 MOTOROLA

 AR-96-23 (M-5)

 BKC-A (See Ch. 10A)

 10—25

 BKC-A (See Ch. 10A)

 BK-B (BkCK (See Ch. 8A).

 46

 CR-6 (Chrysler)

 CR-6 (Chrysler)

 20—21

 CT0 (See Model CT9)

 B2

 CT-6 (Chevrolet)

 CT6 (See Ch. 8A).

 46

 CT6 (See Ch. 8A).

 CT6 (See Ch. 8A).

 CT6 (See Ch. 8A).

 CT9

 See Ch. 10A).

 CT9

 See Ch. 8A).

 See Ch. 8A).

 CT9 A (See Ch. 10A)
 106

 CT9 A (See Ch. 10A)
 106

 CT9 A (See Ch. 10A)
 7 

 FD0 (Ford)
 7 

 FD0 (Ford)
 7 

 FD6 (See Ch. 8A)
 46

 GM97 (See Ch. 8A)
 46

 GM97 (See Ch. 10A)
 106

 HN0 (See Ch. 10A)
 106

 HN8, HN9 (See Ch. 10A)
 106

 ILOT (See Ch. 10A)
 106

 NH6 (Nosh)
 9 
 7-20

# MOTOROLA-MUSITRON

MOTOROLA-Cont. 
 SR6, SR9, SR9
 SR6, SR9
 SR6

 SR6, SR9, SR9
 SR6
 SR6

 SR6, SR9, SR9
 SR6
 SR6

 SR6, SR9, SR9
 SR6
 SR6

 VF102, A, C Tel, Rec.
 S1
 S1

 VF103, VF103M (Ch. TS-8)
 Tel, Rec.
 S1

 VK101, M. Tel, Rec.
 S1
 S1

 VK104, M. Tel, Rec.
 S1
 S1

 VK105, VK105M, VK106M
 VK106, VK106M, VK106M
 Y1

 VK106, VK106M, VK106M, VK106M
 VK106, VK107 (Ch. TS-9E, TS-9E)
 S1

 VT11 (Ch. TS-48 Thru J)
 Tel, Rec.
 S5

 VT21 (Ch. TS-48 Thru J)
 S5
 S1
 

MOTOPOLA\_Cont 12K2 (Ch. TS-53) 
 59F11 (Ch. HS-188).....68—12

 59H110, 59H1210

 97—9

 59L110, 59L120, 59L140

 (Ch. HS-187)

 10, 59R121, 59R13M,

 59R144, 59R156,

 59R164 (Ch. HS-167).......79—10

 59X11, 59X121

 (Ch. HS-180)

MOTOROLA-Cont.	
(Ch. HS-192)	98-6
65F12 (See Model 65F11).	6
65F21 (Ch. HS-26) 65L11, 65L12 (Ch. HS-7) .	412 822
65T21, 65T21B (Ch. HS-32)	11
65X11A, 65X12A, 65X13A, 65X14A.	
65X14B (Ch. HS-2)	48
(Ch. HS-63)	31-20
67F61BN (Ch. HS-69)	44-14
67X11, 67X12, 67X13	31-21
67XM21 (Ch. HS-64)	<b>30</b> —20 <b>32</b> —14
68F14B, 68F14M	58-13
68L11 (Ch. HS-119) 68T11 (Ch. HS-144)	<b>45</b> 18 5 <b>4</b> 14
68X11, 68X12 (Ch. HS-127), 68X11A,	
68X12A (Ch. HS-127A). 69L11 (Ch. HS-175)	56—16 76—15
69X11, 69X121 (Ch. HS-181)	829
75F21 (Ch. HS-91)	19-21
75F31A, B (Ch. HS-36A), 76F31 (Ch. HS-98)	20
77FM21 (Ch. HS-89)	A 9-10
77FM22WM, 77FM23	
(Ch. HS-97) 77XM21, 77XM22,	33-13
77XM22B (Ch. HS-102) . 78F11, 78F11M (Ch.	3412
HS-150, 78F12M (Ch. HS-155)	<b>56</b> —17
78FM21, 78FM21M (Ch. HS-132), 78FM22M	
(Ch. HS-128) 79FM21, 79FM218,	<b>59</b> —13
79FM21R (Ch. HS-178). 79XM21, 79XM22	88—7
(Ch. HS-168) 85F21 (Ch. HS-22)	<b>85</b> 9 6
85K21 (Ch. HS-52) 88FM21 (Ch. HS-133)	5-3 54-15
95F31, 95F31B (Ch. HS-39)	10 22
99FM21R (Ch. HS-170)	<b>80</b> —10
(Ch. HS-87)	33—14
400	<b>99</b> —10
405 (Ch. AS-13)	3—8 21—25
408 409 (See Model 408)	38—12 38
500 505 (Ch. AS-34)	98—7 4—37
508 509 (See Model 508)	<b>39</b> —13 <b>39</b>
600 605 (Ch. AS-15)	97—10 5—1
608 609 (See Model 608)	39—14 39
7001 705 (Ch. AS-16)1	008 719
708	40-12
8001 Ch. AS-13 (See Model 405)	03_10
Ch. AS-14 (See Model 505) Ch. AS-15 (See Model 505)	4
Ch. AS-16 (See Model 705) Ch. AS-16 (See Model 705)	7
BK-6)	10
65X11A)	4
Ch. HS-6 (See Model 5A1) Ch. HS-7 (See Model	2
65L11) Ch. HS-8 (See Modèl	8
45812) Ch. HS-15 (See Model 5A5)	9 3
Ch. HS-18 (See Model WR6)	5
Ch. HS-22 (See Model 85F21)	6
Ch. HS-26 (See Model 65F21)	4
Ch. HS-30 (See Model 55F11)	4
Ch. HS-31 (See Model 65F11)	6
Ch. HS-32 (See Model 65721)	1
Ch. HS-36 (See Model 75F31)	20
Ch. HS-36A (See Model	20
Ch. HS-38 (See Model	47
Ch. HS-39 (See Model	17
95F31) Ch. HS-50 (See Model	19
55X11A) Ch. HS-52 (See Model	2
85K21) Ch. HS-58 (See Model	5
67X11)	30
67[11]	31

MOTOROLA-Cont.		
57X11)	28	
Ch. HS-62 (See Model 5A7) Ch. HS-62A (See Model	29	
5A7A)	29	
67F11)	31	
67XM21)	33	
Ch. HS-69 (See Model 67F61BN)	44	
Ch. HS-72 (See Model	20	
Ch. HS-87 (See Model		
Ch. HS-89 (See Model	33	
77FM21) Ch. HS-91 (See Model	33	
75F21)	19	
56X11)	28	
77FM22)	33	
Ch. HS-98 (See Model 76F31)	29	
Ch. HS-102 (See Model 77XM21)	34	
Ch. HS-108 (See Model		
Ch. HS-113 (See Model	31	
48L11) Ch. HS-114 (See Model	47	
58L11)	45	
58R11)	49	
68L11)	45	
67F14)	55	
Ch. HS-124 (See Model 68F11)	58	
Ch. HS-125 (See Model	53	
Ch. HS-127 (See Model		
Ch. HS-127A (See Model	20	
68X11A) Ch. HS-128 (See Model	56	
78FM22M) Ch. HS-132 (See Model	59	-
78FM21)	59	
88FM21)	54	
Ch. HS-137 [See Model VK101]	51	
Ch. HS-144 (See Model 68T11)	54	
Ch. HS-150 (See Model 78F11)	56	
Ch. HS-155 (See Model	24	
Ch. HS-158 (See Model	30	
Ch. HS-160 (See Model	52	
58G11) Ch. HS-167	64	
(See Model 59R11)	79	
Model 79XM21)	85	
(See Model 99FM21R)	80	
(See Model 69L11)	76	
Ch. HS-178 (See Model 79FM21)	88	
Ch. HS-180 (See Model 59X11)	81	
Ch. HS-181	82	
Ch. HS-183		
Ch. HS-184 (See Model		
58R11A) Ch, HS-187	69	
(See Model 59L11Q) Ch. HS-188 (See Model	78	
59F11)	68	
(See Model 59X21U)	98	
Ch. HS-210 (See Model 59H11U)	97	
Ch. HS-223 (See Model 5M1)1	01	
Ch. HS-224 (See Model 5J1)	00	
Ch. HS-226 (See Model	02	
Ch. HS-228	14	
HS-230 (See Model 19F1).1	iĩ	
Cn. H5-234 [See Model 16F1]1	02	
Ch. HS-242 (See Model 5R11U)1	15	
Ch. HS-243 (See Model 5X1111)	14	
Ch. HS-244	17	
Ch. HS-245	17	
(See Model 6X11U)1 Ch. HS-246	12	
(See Model 9FM21)1 Ch. HS-249 (See Model	14	
5M1)1	01	
(See Model 5J1)1	00	
1 0 03-733		

MOTOROLA-Cont Ch. HS-258 (See Model 5C1).....116 Ch. HS-259

Ch. HS-244 (see Model 6F11]....117 Ch. HS-245 (See Model 7F11]....113 Ch. HS-270 (See Model 5C1]....116 Ch. HS-271, HS-272 (See Model 5C1]....116 Ch. M-5 (See Model SROB).105 Ch. 75.3 (See Model SROB).105 Ch. 75.4 B Thru J. (See Model VT.71)....51 Ch. 75.4 B Thru J. (See Model VT.71)....51 Ch. 75.5 (See Model VK.101).....51 Ch. 75.7 (See Model VK101).....51 Chasis 75.8 (See Model VF103)....73 Ch. 75.9 (See Model VK101).....51 Chasis 75.8 (See Model VF103)....73 Ch. 75.9 (See Model VK101)....73 Ch. 75.9 (See Model VK101)....73 Ch. 75.9 (See Model VT105).....67 Ch. 75.90 (See Model VT105)....67 Ch. 75.90 (See Model VT105).....67 
 VT1053
 Photofact
 82

 Ch. TS-901
 \*\*
 \*\*

 Ch. TS-15.4
 \*\*
 \*\*

 Ch. TS-15.5
 \*\*
 \*\*

 Ch. TS-15.4
 \*\*
 \*\*

 Ch. TS-15.5
 \*\*
 \*\*

 Ch. TS-15.5
 \*\*
 \*\*

 Ch. TS-15.5
 \*\*
 \*\*

 Ch. TS-16.7
 \*\*
 \*\*

 Ch. TS-16.7
 \*\*
 \*\*

 Ch. TS-16.4
 \$\*
 \*\*

 See Model 12VK18B).
 \*\*
 \*\*

 Ch. TS-16.4
 \$\*
 \*\*

 See Model 12VK15
 \*\*
 \*\*
 (See Model 12VK15)... 93 Ch. TS-52 (See Model 16K2).... 93A Ch. TS-53 (See Model 12K2)....115 Ch. TS-60 (See Model 102 
 Ch. 75-67
 [See Model 19F1]....111

 Ch. 75-74 (See Model 16F1]....102
 [See Model 14K1]....102

 Ch. 75-88
 [See Model 14K1]....112

 Ch. 75-94
 [See Model 16F1BH]....99A

 Ch. 75-95
 [See Model 16K2BH]....99A

 Ch. 75-95
 [See Model 16K2BH]....99A
 e Model 17K4A)....\* (Se MUNTZ MURPHY 
 112
 2 

 113
 2 

 122 (See Model 112)
 2
 MUSITRON 

MASH 6MN082 ..... 9—25 Ch. 6C82 (See Model 6MN082) ..... 9 NATIONAL CO. NC-TV-1201, NC-TV-1202 Tel, Rec. (See Model NC-TV-10C) 94 NC-TV-1201 Tel. Rec. Prod. Chge. Bul. 1.....103—19 NC-TV-1225, NC-TV-1226 V-1 Part NATIONAL UNION G-613 ''Commuter'' .... 19—23 G-619 ...... 11—35 571, 571A, 571B ..... 17—22 NEWCOMB NIELSON NOBLITT SPARKS (See Arvin) OLDSMOBILE 
 OLDSMOBILE

 982375
 20-25

 982376
 \*

 982379
 59-14

 982420
 57-12

 982421
 87-7

 982454
 60-16

 982455
 \*

 982454
 982-573
 OLYMPIC OLTMPIL DX-214, DX-215, DX-216 Tel. Rec......106—11 DX-619, DX-620, DX-621, DX-622, Tel. Rec. (See Model DX-214)......106 DX-921 DY-932 

OLYMPIC-Cont. 6-604V-110, 6-604V-220, 6-604W-110, 6-604W-150, 6-604W-220 (See OPERADIO 
 OPEEADIO

 1A30
 34-15

 1A35
 33-15

 1A45
 48-16

 1A65
 52-14

 1A70-A
 47-16

 1A140
 46-17

 4A30-A
 101-8

 4A30-A
 102-9

 4A35-A, 4A51-A (See Model 4A30-A)
 102

 Ma25C
 99-11

 11A55
 113-6

 530, 531, 1335
 "Soundcaster"

 "Soundcaster"
 37-14
 ..... **37**—14 'Soundcaster'' ORTHOSONIC (See Electronic Labs.) PACKARD PA-382042 ..... 20-26 PA-393607 ...... 57-15 PACKARD-BELL 

 PARKAREPBEL

 C1362
 12—21

 C1461
 12—22

 SDA
 16—29

 SDA
 16—29

 SDA
 14—12

 StP
 1—29

 100
 53—16

 241
 21—28

 251
 100

 StFP
 1—29

 100
 21—28

 St1
 151-0

 St3
 16

 241
 2

 St3
 16

 St4
 151-1

 St51
 568

 St53
 158

 St4
 16

 St53
 158

 St54
 158

 St57
 22—22

 St8
 19—24

 St71
 158

 St72
 22—22

 St8
 164

 St72
 22—22

 St8
 158

 G2
 13—23

 G41
 13—23

 G42
 53

 G52
 1054

 St4
 16

 St11
 181.1

 <tr PHILCO C-4608 (See Mopar Model C-4608 (Revised) (See Mo-par Model 802 Revised) 42

# PHILCO-Cont. 49-506 (See Model 49-500) 48 49-601 42-21 49-602 41-18 49-603 59-15 49-604, 49-607 58-15 49-900-E, 49-900-1 49-16 49-901 56-19 49-902 51-16 49-904 58-16 49-905 52-16 49-906 57-16 49-909 55-17

# PHILCO-Cont. 49-1100 (See Model 48-485) 47 49-1101 (See Model 49-009) 55 49-1150 (Codes 121 & 123) Tel. Rec. 70-6 49-1150 (Codes 122, 124) Tel. Rec. Tel, Rec. (See Model 49-1040)... 92 A9-1175 [Content of the section of t 49-1240 [Cours .... Tel. Rec. (See Model 49-1075)... 93A 49-1240 (Code 128) 49:1240 (Code 126) Tel. Rec. (See Model 49:1040)... 92 49:1275 (Code 121) Tel. Rec. (See Model 49:1075)... 93A 49:1278 (Code 122) Tel. Rec. 49-1278 (Code 122) Tel. Rec. [See Model 49-1075]... 93A 49-1278 (Code 123), 49-1279 (Code 122), 49-1280 (Code 121), 30-620 89-11 50-621 89-11 50-702 (Code 122) 88-8 50-920 (Sociel 23) Sociel 80-920 50-122 (Code 123) Sociel 97-11 50-122 (Sociel 23) Sociel 97-11 50-1720 (Sociel 98-9 50-1723 (Sociel 98-9 50-1724 (Sociel 91 50-1725 (Sociel 91 50-1726 (Sociel 91 50-1727 (Sociel 91 50-1720 (Sociel 91 50-1740 (Code 121 Tel. Rec. \* 50-11400 (Code 123)</td 30-1144.3 (Coles 142, 147, 147, 147, 1478, 1477, 50-11478, 50-11477, 50-11478, 1479, 50-11480, 50-1000, 50-1000, 50-1000, 50-1000, 50-1000, 50-

## NASH-PURITAN

PHU CO\_C----

50-T1482 Tel. Rec 93A-12
(See Model 50-T1477). 93A 50-T1600 Tel. Rec 91A-10
50-T1600 (Code 122) Tel. Rec
50-T1632, 50-T1633 Tel. Rec. (See 50-T1600) 91A
50-T1632, 50-T1633 (Codes 122) Tel. Rec. (See
51-PT1207, 51-PT1208 Tel. Rec
51-PT1282 Tel. Rec
Code 121) 1el, Rec115-1A 51-T1604 (Code 122) Tel, Rec. (See Model
50-T1600 Code 122)110 51-T1606 (Code 122)
Tel. Rec. (See Model 50-T1600 Code 122)110 51-T1634 (Code 122)
Tel, Rec. (See Model 50-T1600 Code 122),110
51-T1634 (Code 123) Tel. Rec. (See Model 51-T1601) 115
51-631
PHILHARMONIC
100T
349-C 58—17 6810, 8701, 8702, 8703,
(Ch. RR14) 18-27 Ch. RR14 (See Model 6810) 18
PHILLIPS 66 (See Woolarec)
3-62A (See Woolgroc Model 3-71A)
PHONOLA
K-105
TK-134
PILOT T-411-U 15—25
T-500 Series
T-521
T-700
TV-37 Tel. Rec
PLYMOUTH (See Mopar)
PLYMOUTH (Interstate Stores)
1010 88—2 1020 89—5
POLICALARM PR-8103-12
PR-31 105—8 PONTIAC
984170 20-27 984171 14-22
984172 ************************************
984273
PORTO BARADIO (Also See Porto Products)
PA-510 (9008-A), PB-520 (9008-B) 33-16
PA-510, P8-520 (Revised). 48-21 PORTO PRODUCTS
SR-600 (Ch. 9040A ''Smokerette'') (See
Parta Baradia Model PA-510)
PREMIER 15LW 6—24
PURE OIL (See Puritan)
501 (Ch. 5D15WG), 502
(CR. 5025WG) 4-5
501X (Ch. 5D15WG), 502X (Ch. 5D25WG)
501X (Ch. 5D15WG), 502X (Ch. 5D25WG) 4—26 503 10—25 503W (See Model 503) 10
501X (Ch. 5D15WG),         4—26           502X (Ch. 5D25WG)         4—26           503 :
Soltx (Ch. SDI3WG),         4—26           Soltx (Ch. SD25WG)         4—26           Soltx (Ch. SD25WG)         10—25           Soltx (Ch. 6A35WG)         5—39           Soltwigs (See Model 503)         5—39           Soltwigs (See Model 504)         5—39           Soltwigs (See Model 504)         5           Solt (See Model 504)         5           Sold (Solt) SSW),         50           Soltx (Sort (See Model         3—10
301X (Ch. 3D13WG),         4—26           502X (Ch. 5D23WG),         4—26           503

# RADIO APPARATUS CORP.-RADIOLA

RADIO APPARATUS CORP. (See Policalarm) RCA VICTOR 

 KCS24-1, KRK1-1,

 KRS20-1, KRS21-1]

 Tel. Rec.

 B2-C, B2-F, B2-G, B2-H

 [Ch. KCS24-1, KRK1-1,

 KRS20-1, KRS21-1]

 Tel. Rec.

 B3-A, B3-B.

 B4-A, B4-B, B4-C.

 B5-A, B5-B.

 B5-A, B5-B.

 B5-A, B5-B.

 B5-A, B5-B.

 B5-C, C-10282].

 B0-C-10883, BX57

 [Ch. RC-1082, L.

 B1-12224, M1-12224A.

 M1-12236, -A, -B, -C,

 M1-12237, -A,

 M1-12239, -A, -B, -C,

 M1-12239, -A, -M-12

 M1-12239, -A, -M-12

 M1-1229, M1-1290.

 M1-1229, M1-1290.

 M1-1229, M1-1290.

 M1-12295, M1-12294.

 M1-12295, M1-12294.

 M1-12295, M1-12294.

 M1-12295, M1-12294.

 See Model M1-12287.

 See Model M1-12287.

 See Model M1-12289.

 MI-12297
 See Model M1-12287).
 89

 MI-13159
 10—26

 MI-13167
 35—19

 PPAU-1
 •
 Model M1-12287). 89 

RCA VICTOR-Cont. Rec. (See Model 81241) 9TW390 (Ch. KC531-1, RC617A) Tel. Rec. (See Model S1000)... 9W101, 9W102, 9W103 (Ch. RC-6188), 9W105 (Ch. RC-6186)... 9W106 (Ch. RC-622) (See Model A106)... 9VE1 (Ch. RC-622) .. 91A 73-10 . . . . 97 (See Model A106)..... 97 9X561 (Ch. RC-1079B), 9X562 (Ch. RC-1079C).101-9

RCA VICTOR-Cont.	R
9X572 (Ch. RC-1079A) 107-7	
9X642 (Ch. RC-1080A). 879	
9X652 (Ch. RC-1085A). 104-9	
9Y7 (Ch. RC-1057B) 75—13 9Y51 (Ch. RC-1077) 98—11	C
5481, 5481-N, 5482, 5483 (Ch. RC589) 7—22	C
5485 (Ch. RC1047) 17—25 55AU (Ch. RC1017) 2—16	c
55U (See Model 55AU) 2	C
55FA (See Model 55F) 4	c
(Ch. RC-1011) 1-16	c
56X10 (Ch. RC-10238) 1-12	c
58AV, 58V (Ch. RC-604) . 1-32 59AV1, 59V1 (Ch. RC-605) 6-25	6
63E (Ch. RS-127) 28-28 64F1, 64F2 (Ch. RC1037),	
64F3 (Ch. RC1037A) 4—16 65BR9 (Ch. RC-1045) 23—16	
65F (See Model 55F) 4 65AU (Ch. No. RC-1017A) 14-23	
65U, 65U-1 (See Model	<
65X1, 65X2 (Ch. RC-1034) 4-30 65X1, 65X2 (Ch. RC-1064) 31-26	•
65X8, 65X9 (See Model	•
668X (Ch. RC-1040,	•
66E (Ch. RS-126) 17-26	
66X1, 66X2, 66X3, 66X4 7-23 66X7, 66X8, 66X9	
(See Model 66X1) 7 66X11 (Ch. RC-1046A),	
66X12 (Ch. RC-1046), 66X13, 66X14, 66X15	
(Ch. RC-10468) 27—20 67V1. 67AV1	
(Ch. RC-606)	
(Ch. RC-608) 23—17 75¥11 75¥12	
(Ch. RC-1050) 33-21	Ι.
RC-1050) (See Model	
75x16, 75x17, 75x18,	
(See Model 75X11) 33	
77U (Ch. RC-1057A) 38-17 77V1 (Ch. RC-615) 38-18	
77V2 (Ch. RC-606-C) 39-18 610V1 (Ch. RC610C)	1
610V2 (Ch. RC610) 31-27 612V1, 612V2, 612V3	1
(Ch. RK-121, RS-123) 17-27 612V4 (See Model 612V1) 17	
621TS (Ch. KCS21-1) Tel. Rec. (Servicer) 78	1
630TCS Tel. Rec. (See Model 630TS) 54	
630TS Tel. Rec 54-18	
KCS25C-2, RK117A, PS-123A1 Tel Per 91A-11	
648PTK (Ch. KCS24-1,	
KR521A-1, RK-121A,	
(See Model 8PC541) 90	
648PV (Ch. KCS24A-1, KRK-1A, KRS20-1,	
KRS21A-1, RK-121A, RS-123B) Tel. Rec.	
(See Model 8PC541) 90 710V2 (Ch. RC-613A) 40-15	
711V1 (See Model 711V2) 22 711V2, 711V3 (Ch.	
RK-117 & RS-123) 22-24 721TCS (Ch. KCS26-1, 2)	
Tel. Rec. (See Model 730TV1)	
730TV1 (Ch. KCS27, RC610A) Tel. Rec 70-7	
730TV2 (Ch. KCS27, PC610B) Tel. Rec	
(See Model 730TV1) 70	
KRKIA-1, KRS20A-1,	
Tel, Rec. (See	
Ch. KCS-20A-1 (See Model 42015) 54	
Ch, KCS-208-1	
(See Model 6301C3 34 Ch. KCS-20J-1	
(See Model 81530) 34 Ch. KCS21-1	
(See Model 62115) " Ch. KCS24-1	
(See Model 8PCS41) 90 Ch. KCS24A-1	
(See Model 8PCS41) 90 Ch. KCS248-1	
(See Model 8PCS41) 90	
(See Model 8PCS41) 90	
(See Model 8PCS41) 90	
LR. ALGZGAI-I	

CA VICTOR-Cont.
h. KCS25C-2
(See Model 641TV)*
h, KCS250-1 (See Model 8TV41) *
h. KCS25E-2
h. KCS26-1, KCS26-2
(See Model 721TCS) *
(See Model 730TV1) 70
h. KCS28
h. KCS28, A, B C
(See Model 81241) 74
(See Model 87270) 85
h. KCS29C (See Model 8T270)
h, KCS30-1
(See Model 81241) 79 h. KCS31-1 (See Model
\$1000) 91A
KCS328, KCS32C (See
Model 8TK29) 88
(See Model 87270) 85
h. KCS34, B, C /See Model T1001 93
h. KCS-38, C
(See Model 1100) 93 (h. KCS40, A, B (See
Model T164)109
Model TA-128)110
h. KCS42A (See Model TA:128)
h. KCS43 (See
Model TA169]
(See Model 2T51)111
(See Model 6754)113
Ch. KCS48 (See
Ch. KCS49, A
(See Model 9157)
(See Model 9189)111
(See Model 8PCS41) 90
Ch. KRK1-1 (See Model RPCS41) 90
Ch. KRK1A-1
(See Model 8PCS41) 90
(See Model 8PCS41) 90
Ch. KRS20-1 (See Model 8PCS41) 90
Ch. KR520A-1
(See Model BPC341) 90 Ch, KRS208-1
(See Model 8PCS41) 90
(See Model 8PCS41) 90
Ch. RC-589
Ch. RC-604
(See Model 58AV) 1
(See Model 59AV1) 6
Ch. RC-606 (See Model 67V1) 9
Ch. RC-606C
(See Model 77V2) 39 Ch. RC-608
(See Model 68R1) 23
(See Model 610V1) 31
Ch. RC610A, RC610B
Ch. RC610C
(See Model 610V1) 31
(See Model 710V2) 40
Ch. RC-615 (See Model 77V1)
Ch. RC-616
(See Model 37111) 38 Ch. RC-616A, RC-616H
(See Model 8V91) 56
(See Model 81241) 74
Ch. RC-616J, RC-616K (See Model 8T241) 74
Ch. RC-616N
(See Model 81241) 74 Ch. RC617A (See Model
9TW390) 91A
(See Model \$1000) 91A
Ch. RC-618, RC-618A
Chassis RC-618 B, C
(See Model 9W101) 73 Ch. RC-622
(Sep Model A106) 97
Ch. RC-1004E (See Model 55F) 4
Ch. RC-1011
Ch. RC-1017
(See Model 55AU) 2 Ch. RC-1017A
(See Model 65AU) 14
Cn. KC-10238

RCA VICTOR-Cont.
Ch. RC-1034 (See Model 65X1) 4
Ch. RC-1037, RC-1037A
(See Model 64F1) 4 Ch. RC-1037B
(See Model 8F43) 97
(See Model 66X1) 7
Ch. RC-1040, RC-1040A (See Model 66BX) 14
Ch. RC-1040C
Ch, RC-1045
(See Model 658R9) 23
(See Model 66X11) 27
Ch. RC-1047 (See Model 5485) 17
Ch. RC-1050, RC-10508
Ch. RC-1057A
(See Model 77U) 38 Chassis PC-1057B (See
Model 9Y7) 75
Ch. RC-1059 (See Model 88X5) 46
Ch. RC-1059B, RC-1059C
Ch. RC-1060
(See Model 8R71) 53
(See Model '8872) 53
Ch. RC-1061 . (See Model 8X61) 65
Ch. RC-1064
Ch. RC-1064
(See Model 65X1) 31 Ch. RC-1065, RC-1065A
(See Model 8X541) 59
Ch. RC-1066 (See Model 8X521) 52
Ch. RC-1066A
Ch. RC-1068
(See Model 98X56) 79 Ch. RC-1069A. B
(See Model 8841) 76
(See Model 8X71) 63
Ch. RC-1077 (See Model 9Y51) 98
Ch. RC-1079, A (See
Ch. RC-1079B, RC-1079C
(See Model 9X561)101 Ch. BC-1082 (See Model
BX6)
(See Model 9X651)104
Ch. RC-1087 (See Model A55)109
Ch. RC-1088, RC-1088A
(See Model 8355)
Model 2781)*
Model 2781)
Ch. RK-117 (See Model 711V2) 22
Ch. RK-117A
Ch, RK-121
(See Model 612V1) 17
(See Model 8PCS41) 90
Ch. RK-121C (See Model RV151) 61
Ch. RK-135, RK-135A
(See Model 81K29) 00 Ch. RK-135A-1
(See Model 8T270) 85
(See Model 9TW309) 95A
Ch. RK135D (See
Ch. RS-123
(See Model 612V1) 17 Ch. R5-123
(See Model 711V2) 22
(See Model 8PCS41) 90
Ch. RS-1238 (See Model 8PCS41) 90
Ch. RS-123C
(See Model 8PC341) 90 Ch. RS-123D
(See Model RV151) 61
(See Model 66E) 17
Ch. RS-127 (See Model 63F)
PAS
D8-22A 50-1-
HF10-20 49-1
VHF-152A 51-1
45 13-2 84 14-1
RADIOLA
61-1, 61-2, 01-3
(Ch. RC-1011) 14-2 61-5 (Ch. RC-1023)

R

RADIOLA-Cont. 
 RADIOLA-Cent.

 62-2 (See RCA Model 65U-1)

 65U-1)

 75ZU (Ch. RC-1063A)

 76ZX11, 76ZX12 (Ch. RC-1058, RC-1058A)

 RC-1058, RC-1058A)

 Gew Model 61-1)

 (See Model 61-5)

 (See Model 76ZX11)

 (See Model 76ZX11)

 36

 Ch. RC-1063A

 (See Model 75ZU)

 36

 Papilo CRESTEMENT
 RADIO CRAFTSMAN 
 RC-1 (Tuner),
 S9-19

 "Kitchenoire"
 6-14

 RC-8
 66-13

 RC-10
 110-12

 RC10 Tel, Rec.
 96-9

 RC-10A Tel, Rec.
 117-11
 RADIO DEVELOPMENT & RESEARCH CO. (See Magic-Tone) RADIOETTE PR-2 ..... 50—15 **RADIONIC** (See Chancellor) Y62W, Y728 ..... 26-22 RANGER 118 ..... 28—27 RADIO MFG. ENGINEERS (See RME) RADIO WIRE TELEVISION (See Lafayette) 
 RAULAND

 6A21
 87—10

 W-819-A
 43—16

 1814
 99—13

 1820
 100—10

 1821, 1822
 59—17

 1823
 97—14

 1835
 60—17

 1841
 58—19

 2100-5 (Sub-stotion)
 58—19

 2101-A (Master Station).
 39—20

 2105 (Master Station).
 39—20

 2105 (Master Station).
 36—21

 2206, 2206H, 2212,
 2218H,

 22124, 2224H
 220—13

 2306, 2312, 2324
 58—19

 (See Model BA21)...
 87

 2400 Series
 33—22

 PAY ENERGY
 83—22
 RAULAND RAY ENERGY **RAYTHEON** (Also See Belmont) • • 

RAYTHEON-Cont. 10AXF43, 10DX22 Tel. Rec. Prod. Chge, Bul. 1. 103—19 10AXF44 Tel. Rec. [See Model C-1102 (Set 94) 
 Model C-1102 (Sei 94)

 ond Model A-10DX24

 [Set 75]

 10DX21, 10DX22 Tel, Rec.

 [See Model A-10DX24].

 10DX24 Tel, Rec.

 [See Model A-10DX24].

 [See Model A-10DX24].

 TS

 10DX24 Tel, Rec.

 [See Model A-10DX24].

 [See Model A-10DX24].

 TS

 18DX21A Tel, Rec.

 [See 7DX21].

 [See Model A-10DX24].

 TS

 18DX21A Tel, Rec.

 [See Model A-10DX24].

 [See 7DX21].

 800

 M701]
 1 1 RECORDIO (Wikex-Gay) 
 RECORDIO (Wilcox-Gay)

 6A10, 6A20 (Ch. 6A)
 10—27

 6B10, 6B20, 6B30, 6B32
 8—27

 7D42, 7D44 (Ch. 7D1)
 52—18

 7E40, 7E44
 47—28

 8J10, 8J50
 62—17

 9G10
 91—10

 9G40, 9G42
 84—9

 9H408
 89—13

 Ch. 6A (See Model 6A10)
 10

 Ch. 7D1 (See Model 7D42)
 52

 Ch. JD1 (see model /D4/) 32

 REGAL (TOK-FONE)

 Tak-Fone (20-wait Amp.)

 13—27

 A-16731 Tel, Rec.

 A-8740, AR7400, AR7430

 Large (20-wait Amp.)

 13—27

 A-16731 Tel, Rec.

 See Model 16731)

 80

 CD34 Tel, Rec.

 CR761

 Son-16

 FM78

 W700 (See Model W800)

 14—26

 16733 Tel, Rec.

 900, W901

 13—26

 16733 Tel, Rec.

 905

 205

 777

 27-22

 777

 27-22

 777

 1030, 1031 Tel, Rec.

 [See Model W800)
 14

 747
 27-22

 777
 27-22

 777
 27-22

 1030, 1031 Tel, Rec.
 83-9

 1030, 1031 Tel, Rec.
 83-9

 1034
 177-28

 1047
 17-28

 1047
 17-28

 1047
 17-28

 1049
 17-28

 REGAL (TOK-FONE) 3 4 REMBRANDT 4 REALER 4 4 4 RENARD L-1A, PT-1A, 185T-1 ..... 9-28 SCOTT (E. H.) . . 1 33 . 13 455 6-SCOTT (H. H.) 10

SEARS-ROEBUCK (See Silvertone)
SENTINEL
IU-284GA (See Model
284GA) 22 IU-2841, IU-284NA,
1U-284N1, 1U-284W (See Model 2841)
IU-285P (See Model 285P) 6
293CT)
U-2931, IU-293T, IU-293W (See Model 293 Series), 1
U-2941, IU-294N, IU-294T (See Model 294 Series) 1
U312PG, IU312PW 103-15
(See Model 3131) 39
U-314E, IU-314I, IU-314W (See Model 314E) 38
U-316PM, JU-316PT (See Model 316PM) 48
U-335PG, PI, PM, PW. 1059
U416 Tel. Rec
U419, IU420 Tel. Rec115-9 U4208 Tel. Rec
U423, 1U424 Tel. Rec * -2841, L-284NA, L-284NI.
L-284NR, L-284W 23-19
1-2 <sup>24</sup>
(See Model 2841) 1
185P 6-27 286P 286PE 23-20
289T 628
1-14
93-CT
(See Model 293 Series). 1
1941, 294N, 294T
[See Model 294 Series] 1 [95-T
1968, 296M 46-22 102-1, 302-T, 302-W 33-23
305-1, 305-1-3, 305-W,
109-1, 309N, 309-R,
12PG, 312 PW (See Model
IU312PG)
14-E, 314-I, 314-W <b>38</b> 21
16PM, 316PT 48-22
32 (See Model 313-1) 39 33 (See Model 315-1) 40
35PG, PI, PM, PW (See Model IU-335PG) 105
39-K (See Mode) ((1339-K) 111
00TV Tel. Rec
01, 402 Series Tel. Rec., 70-9 05TVM Tel. Rec.
(See Model 400TV) 73 06 Series Tel. Rec.
(See Model 401 Series). 70 07 Series Tel. Rec
09 Series Tel. Rec *
(See Model 401 Series) 70
12, 413, 414, 415 (Series YA, YB, YC, YD, YE, YF)
Tel. Rec
Rec, Prod. Chge. Bul. 4. 105-2
(See Model 1U416)117
(See Model 1U419)115
208 lei. Rec
ETCHELL-CARLSON
16 2—14
27
47
69 <b>99</b> —15
(See Vogue)
IGNAL
F252 37-19
41 44—21   41 33—25
41-A
ILVERTONE
, 2 (Ch. 132.878)101-10
3 (Ch. 548.363)111—13 1, 41A (Ch. 135.245)101—11
1, 53 (Ch. 132.887)112-8
4, 65 (Ch. 101.859-2) <b>113</b> -8
(Ch. 549,100), 101A (Ch. 549,100-1) Tel.
Rec
Tel Per +

SULVERTONE\_Com 

 194.16 (Ch. 132.890)

 Tel. Rec.

 195.16 (Ch. 132.890)

 Tel. Rec.

 210 (Ch. 132.890)

 1215 (Ch. 528,173)

 1111-113

 225 (Ch. 528,173)

 1111-113

 225 (Ch. 528,173)

 1111-114

 225 (Ch. 528,173)

 1111-114

 225 (Ch. 528,173)

 1111-114

 230 (Ch. 528,173)

 1111-114

 245 (Ch. 348,330-1)

 (See Model 239)

 1300-1 (Ch. 319,2004)

 1300-1 (Ch. 319,2004)

 1300-1 (Ch. 319,2004)

 1300-1 (Ch. 319,2004)

 1300-1 (Ch. 132,816)

 6001 (Ch. 132,818)

 5-35

 6011 (Ch. 132,816)

 6012 (Ch. 132,818)

 5-35

 6013 (Ch. 132,825-4)

 13-29

 6014 (Ch. 132,825-4)

 13-29

 6017 (Ch. 132,825-4)

 13-29

 6017 (Ch. 132,825-4)

 13-29

 6017 (Ch. 101,642-1)

 6073 (Ch. 101,642-1)

 6073 (Ch. 101,642-2)

 13-29

 7013
 \*

 7016
 \*

 7017
 \*

 7020 (See Model 7021).
 16

 7021 (Ch. 101.807,
 16—31

 7025 (Ch. 132.807-2)
 29—24

 7054 (Ch. 101.807,
 16—31

 7070 (Ch. 101.817)
 30—32

 7080, 7080A (Ch.
 16—32

 7080 (Ch. 101.817)
 30—26

 7080 (Ch. 101.817)
 30—27

 7086 (Ch. 101.814)
 30—27

 7096 (Ch. 101.814)
 30—27

 7096 (Ch. 101.814)
 30

 7090 (Ch. 101.814)
 16

 7100 (Ch. 101.814)
 16

 7100 (Ch. 101.814)
 17—29

 7100 (Ch. 101.814)
 30

 7103 (Ch. 101.814)
 30

 7111 (Ch. 101.825).
 30

 7113 (Ch. 101.825).
 30

 7115 (Ch. 101.825).
 16—33

 7114 (Ch. 434.140)
 30—28

 7114 (Ch. 101.825.18)
 16—33

 7145 (Ch. 434.200) 7100 (Ch. 101.823, 101.823-1) ..... 10—29 7210 (Ch. 101.820) .... 32—20

# **RADIOLA-SILVERTONE**

SILVERTONE-Cont.
(See 6220) 9 7226 (Ch. 101.819A) 31-28
7230 (Ch. 101,802-2A) (See 6230) 11
7350 (Ch. 435.240) 45—22 7350 (Ch. 435.410) 38—22 7351
7352
8000 (Ch. 132.838) 31-29 8003 (Ch. 132.818-1) 53-22
8004 (See Model 8003) 53 8005 (Ch. 132.839) 33-26 8010 (Ch. 132.840) 40-21
8011 (See Model 8010) 40 8020 {Ch. 132.841} 43-17
8021 (Ch. 132.868) 70-10 8022
8024, 8025 (Ch. 478.206-1) 80-15
8050 (Ch. 101.813) 33-27 8051 (Ch. 101.839) 49-19 8052 (Ch. 101.808-1C) 68-15
8053 (Ch. 101.808-1D) (See Model 8052) 68
8070 (Ch. 101,817-1A) (See Model 7070) 30-26
8072 (Ch. 101.834) 34—19 8073 (Ch. 125.242) 84
8080 (Ch. 101.852) 52-20 8083, 8083A (Ch.
101.809-1A) (See Model 7080) 58
8084, 8084A (Ch. 101,809-18) (See
Model /080j
101.814-6C) (See Model 8086) 61
8090 (Ch. 101.821) 49-20 8092
8097A (Ch. 101.825-4) (See Model 7119) 62
8100 (Ch. 101.829)
(See Model 7080) 58 8102 (Ch. 101.814-28)
(See Model 8086) 61 8102A (Ch. 101,814-38)
(See Model 8086) 61 81028 (Ch. 101.814-28) (See Model 8084) 61
8103 (Ch. 110.473) 56-21 8104 (See Model 8086) 61
8105, 8105A (Ch. 101.833) 35—20
8106, 8106A (Ch. 101,833-1A) (See Model 8105) 26
8107A, 8108, 8108A (Ch. 101.851), 8109 (Ch.
101.851-1) 64—10 8112, 8113 (See
8115 (Ch. 101.825-3D), 8115A B C (Ch
101.825-4), 8117 (Ch. 101.825-3E), 8118 (Ch.
101.825-3F), 8118A, B, C (Ch. 101.825-4) (See
8124, 8125, 8126 (Ch. 101.831A, Ch.
101.831-1) (See Model 8127) 41
8127, A, B, C (Ch. 101.831A), 8128, A, B, C (Ch. 101.821), Wise
Recorder Amp. (Ch. 101.773)
8130 Television Receiver. 49-21 8132 (Ch. 101.854)
101 846) Tel. Rec
(See Model 8132) 66 8144 (Ch. 431.199) 32-21
8145 (Ch. 109.631) 45-23 8148 (Ch. 109.632) 44-22
8149 (Ch. 109.633) 40-23 8150 (Ch. 109.634) 32-22
(See Model 8153) 42 8153 (Ch. 109.635).
8153A (Ch. 109.635-1) 42-22 8155 (Ch. 463.155) 57-17
8160 (Ch. 109.636), 8160A (Ch. 109.636A). 50-17
8168 (Ch. 109.638) 46-23 8169 (Ch. 109.638)
8200 (Ch. 101.800-28) (See Model 6200A
[Ch. 101.800-3]) 65 8201 (See Model 6200A). 65
5210 (Ch. 101.820-1A) 71-13 5220, 5221 (Ch. 101.501-30) 5222
(See 6220) 9 8230 (Ch. 101.835) 59-18
8231 (See Model 8230) 59 8260 (Ch. 101.823-28)
(300 Models /105, 7106) 10-29

# SILVERTONE—STARRETT

SILVERTONE-Cont.	
8270 (Ch. 101.822), 8270A (Ch. 101.822A)	57-18
9000 (Ch. 132.857) 9005 9006 (Ch. 132.858)	65-13
9022 (Ch. 132.871)	76-17
9054 (Ch. 101.849) 9073, 9073A (Ch.	63-16
135.244), 90738 (Ch. 135.244-11	83-10
9073C (Ch. 135.243-1)	••
9082 (Ch. 135.245) (See	•3
Model 41) 9101 (Ch. 101,809-3C)	101
(See Model 7080) 9102 (See Model 7080)	58 58
9105 (Ch. 132.875)	89-14
(See Model 8107A)	64
9115 (Ch. 478.224), 9116 (Ch. 478.221) Tel, Rec.,	<b>97</b> 16
9119, 9120 (Ch. 101 865) Tel Rec	
9120A (Ch. 101.865-1)	
9121 (Ch. 101.867)	
Tel. Rec 9122 (Ch. 101,864) (See	•
Model 8132)	66
Tel. Rec.	•
9123 (Ch. 110,499), 9124 (Ch. 110,499-1), 9126	
(Ch. 110,499-2) Tel. Rec.	79-16
9125 (Ch. 478.252)	•
9125A (Ch. 478.253) Tel.	
Rec. (See Model 125)] 9128A (Ch. 101.868)	104
Tel. Rec	•
Tel. Rec	84—10
Rodio Ch. 101.859)	
Tel. Rec	95—5 67—16
9161 (Ch. 548,358)	88-10
9270 (Ch. 547.245)	<b>82</b> —11
9280 (Ch. 528.168) Ch. 100.043	949
(See Model 133)	**
161-16)	99A-10
(See Model 6100)	6
Ch 101 662.28	
101.662-20. 101.662-30	
101.662-2D, 101.662-3C (See Model 6105)	7
101.662-2D, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A)	7 29
<ul> <li>Ch. 101.662-20, 101.662-3C</li> <li>(See Model 6105)</li> <li>Ch. 101.662-4E, 101.662- 5F (See Model 6106A)</li> <li>Ch. 101.666-1B</li> <li>(See Model 6285A)</li> </ul>	7 29 20
Ch. 101.602-2D, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A) Ch. 101.666-1B (See Model 6285A) Ch. 101.672-1A, 101.672- 1B (See Model 6092)	7 29 20 10
Ch. 101.622-20, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A) Ch. 101.662-4E, 101.662- 5F (See Model 6285A) Ch. 101.672-1A, 101.672- 1B (See Model 6292) Ch. 101.6778 (See Model 6290)	7 29 20 10
Ch. 101.622-20, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A) Ch. 101.662-4E, 101.662- 5F (See Model 6285A) Ch. 101.672-1A, 101.672- 1B (See Model 6292) Ch. 101.6778 (See Model 6290) Ch. 101.773	7 29 20 10 20
Ch. 101.622-2D, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A) Ch. 101.664-18 (See Model 6285A) Ch. 101.672-1A, 101.672- 18 (See Model 6092) Ch. 101.6778 (See Model 6290) Ch. 101.773 (See Model 8127) Ch. 101.800-1, 101.800-	7 29 20 10 20 41
Ch. 101.662-20, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- 5F (See Model 6106A) Ch. 101.666-18 (See Model 6285A) Ch. 101.672-1A, 101.672- 18 (See Model 6292) Ch. 101.6778 (See Model 6290) Ch. 101.800-1, 101.800- 1A (See Model 6200A). Ch. 101.800-3	7 29 20 10 20 41 9
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6106A] Ch. 101.666-1B [See Model 6285A] Ch. 101.677a [See Model 6285A] Ch. 101.677b [See Model 6290] Ch. 101.677b [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A]	7 29 20 10 20 41 9 65
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6106A]. Ch. 101.664-1B [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.677b [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-3, 101.801-1A [See Model 6200A] Ch. 101.801, 101.801-1A [See Model 6200]	7 29 20 10 20 41 9 65 9
Ch. 101.662.2D, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105A] Ch. 101.664-1B [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.677b [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-1, 101.801-1A [See Model 6200A] Ch. 101.801, 101.801-1A [See Model 6200] Ch. 101.802, 101.802-1] [See Model 620] Ch. 101.802, 101.802-1]	7 29 20 10 20 41 9 65 9 11
Ch. 101.662.2D, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. SF [See Model 6105] Ch. 101.662-18, 101.662. SF [See Model 6285A] Ch. 101.672.1A, 101.672. IS [See Model 6285A] Ch. 101.677B [See Model 6290] Ch. 101.800-1, 101.800- IA (See Model 6200A] Ch. 101.800-1, 101.800- IA (See Model 6200A] Ch. 101.800-1, 101.801-IA [See Model 6200] Ch. 101.802, 101.802-1 [See Model 6200] Ch. 101.802, 101.802-1 [See Model 620] Ch. 101.807.101.802-1 [See Model 6200] Ch. 101.807.101.807.1 [See Model 620] Ch. 101.807.101.807.1 [See Model 702] Ch. 101.807.101.807.1 [See Model 702] [See Model 702]	7 29 20 10 20 41 9 65 9 11
Ch. 101.662.2D, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. SF [See Model 6105] Ch. 101.662-18E, 101.662. SF [See Model 6285A] Ch. 101.672.1A, 101.672. IB [See Model 6285A] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- IA [See Model 6200A] Ch. 101.800-3 (See Model 6200A] Ch. 101.800-3 (See Model 6200A] Ch. 101.800-1 (See Model 6200A] Ch. 101.800-1 (See Model 6200] Ch. 101.802, 101.802-1 (See Model 6200] Ch. 101.807, 101.807.A (See Model 6200] Ch. 101.807. Ch. 100.807. Ch. 100.807. Ch. 100.807. Ch. 10	7 29 20 10 20 41 9 65 9 11 16
Ch. 101.662-2D, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6106A]. Ch. 101.664-18 [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.773 [See Model 8290] Ch. 101.800-1, 101.800- TA [See Model 8127] Ch. 101.800-3 [See Model 6200A] Ch. 101.801, 101.801-1A (See Model 6200] Ch. 101.802, 101.802-1 [See Model 620] Ch. 101.807, 101.802-1 [See Model 7024] Ch. 101.807, 101.807A [See Model 7024] Ch. 101.808 [See Model 7054] Ch. 101.808-1C, 101.808- [See Model-C, 101.808- [See Model 7054]	7 29 20 10 20 41 9 65 9 11 16 15
Ch. 101.662.2D, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. SF [See Model 6105A]. Ch. 101.662-18E, 101.662. SF [See Model 6285A] Ch. 101.672-1A, 101.672. I [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.778 [See Model 8127] Ch. 101.807-1, 101.800- 1A [See Model 8127] Ch. 101.800-3 [See Model 8200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-1, 101.800-1 (See Model 6200A] Ch. 101.807, 101.802-1 [See Model 7021] Ch. 101.807, 101.807A [See Model 7054] Ch. 101.808-1C, 101.808-1 D [See Model 8052] Ch. 101.809-1.	7 29 20 10 20 41 9 65 9 11 16 15 68
Ch. 101.662-20, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- SF (See Model 6105A) Ch. 101.662-18, 101.662- SF (See Model 6285A) Ch. 101.672-1A, 101.672- IS (See Model 6285A) Ch. 101.773 (See Model 6290) Ch. 101.775 (See Model 8127) Ch. 101.807- IS (See Model 8127) Ch. 101.800-1, 101.800- IA (See Model 8200A) Ch. 101.800-3 (See Model 6200A) Ch. 101.800-1, 101.802-1 (See Model 6200A) Ch. 101.807, 101.802-1 (See Model 7021) Ch. 101.807, 101.807A (See Model 7054) Ch. 101.808-1C, 101.808- ID (See Model 8052) Ch. 101.809-1A (	7 29 20 10 20 41 9 65 9 11 16 15 68 16
Ch. 101.662-20, 101.662-3C (See Model 6105) Ch. 101.662-4E, 101.662- SF (See Model 6105) Ch. 101.662-18, 101.662- SF (See Model 6285A) Ch. 101.672-1A, 101.672- 18 (See Model 6285A) Ch. 101.773 (See Model 6290) Ch. 101.773 (See Model 6290) Ch. 101.807-1, 101.800- 1A (See Model 8127) Ch. 101.800-1, 101.801-1A (See Model 6200) Ch. 101.807, 101.802-1 (See Model 6220) Ch. 101.807, 101.802-1 (See Model 6220) Ch. 101.807, 101.807-4 (See Model 7054) Ch. 101.808-1C, 101.808- 10 (See Model 8052) Ch. 101.809-1A, 8, Ch. 101.809-1A, 8, Ch. 101.809-3C	7 29 20 10 20 41 9 65 9 11 16 15 68 16
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105] Ch. 101.662-18, 101.662- 5F [See Model 6285A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.773 [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 8200A] Ch. 101.800-1, 101.801-1A (See Model 6200] Ch. 101.807, 101.801-1A (See Model 6200] Ch. 101.807, 101.807-1 [See Model 6230] Ch. 101.807, 101.807-1 [See Model 6230] Ch. 101.807, 101.807-1 [See Model 7054] Ch. 101.808-1C, 101.808-1 [See Model 7054] Ch. 101.808-1C, 101.808-1 [See Model 7080] Ch. 101.809-2, 101.809-3C [See Model 7080] Ch. 101.809-2, 101.809-3C	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- SF [See Model 6105] Ch. 101.662-4E, 101.662- SF [See Model 6285A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.8778 [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 8200A] Ch. 101.800-1, 101.801-1A [See Model 6200] Ch. 101.802, 101.807-1 [See Model 6230] Ch. 101.807, 101.807A [See Model 7054] Ch. 101.808 [See Model 8052]. Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.807-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.810	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 16
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- SF [See Model 6105] Ch. 101.662-4E, 101.662- SF [See Model 6105A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.773 [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-1, 101.801-1A [See Model 6200] Ch. 101.802, 101.802-1 [See Model 6230] Ch. 101.802, 101.807-A [See Model 6230] Ch. 101.807, 101.807-A [See Model 7054] Ch. 101.808-1C, 101.807-A [See Model 7054] Ch. 101.808-1C, 101.807-A [See Model 7054] Ch. 101.809-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.810 [See Model 7090] Ch. 101.810	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105] Ch. 101.662-18, 101.662- 5F [See Model 6285A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.807-1A [See Model 6092] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-1, 101.801-1A (See Model 6200A] Ch. 101.802, 101.807-1 [See Model 6230] Ch. 101.807, 101.807A [See Model 6230] Ch. 101.807, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7080] Ch. 101.809-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.810 [See Model 7090] Ch. 101.811 [See Model 7090] Ch. 101.813 [See Model 7090]	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.773 [See Model 6290] Ch. 101.773 [See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 5200A] Ch. 101.800-1, 101.801-1A [See Model 6200] Ch. 101.802, 101.807-1 [See Model 6230] Ch. 101.807, 101.807A [See Model 6230] Ch. 101.807, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.809-1A, 8, 101.809-2, 101.807-3C [See Model 7080] Ch. 101.809-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.811 [See Model 7090] Ch. 101.813 [See Model 7090] Ch. 101.814, 100.814-11A [See Model 7005] Ch. 101.814, 101.814-11A [See Model 7085]	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. SF [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.677a [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.801-1A [See Model 6200A] Ch. 101.800-1, 101.801-1A [See Model 6200A] Ch. 101.800-1, 101.801-1A [See Model 6200] Ch. 101.800-1, 101.802-1 [See Model 6200] Ch. 101.802, 101.802-1 [See Model 6200] Ch. 101.807, 101.807A [See Model 6220] Ch. 101.808-1C, 101.807A [See Model 7054] Ch. 101.808-1C, 101.807A [See Model 7080] Ch. 101.809-1A, 8, 101.809-2, 101.807A] [See Model 7080] Ch. 101.811 [See Model 7080] Ch. 101.813 [See Model 7090] Ch. 101.814, 101.814-1A [See Model 700] Ch. 101.814, 101.814-1A [See Model 700] Ch. 101.814, 101.814-1A [See Model 708] Ch. 101.814, 101.814-15C	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.672-1A, 101.672- 18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- 14 [See Model 6200A] Ch. 101.800-1, 101.800- 14 [See Model 6200A] Ch. 101.800-1, 101.802-11 (See Model 6200A] Ch. 101.800-1, 101.807A (See Model 7054] Ch. 101.808-1C, 101.808-1C, 101.809-2, 101.809-3C (See Model 7080] Ch. 101.811 [See Model 7090] Ch. 101.814, 101.814-1A (See Model 7090] Ch. 101.814, 101.814-1A (See Model 7085) Ch. 101.814-36, 101.814-5C, 101.814-36, 101.814-5C, 101.814-3C [See	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30
Ch. 101.662-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.677a [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800-1 Ch. 101.800-1, 101.800-1 Ch. 101.800-3, 101.801-1A (See Model 6200A] Ch. 101.800-3, 101.802-1 [See Model 6200A] Ch. 101.800-3, 101.802-1 [See Model 6200A] Ch. 101.800-3, 101.802-1 [See Model 6200A] Ch. 101.800-1, 101.802-1 [See Model 6200A] Ch. 101.800-1, 101.802-1 [See Model 7020] Ch. 101.808-1C, 101.808-1 [See Model 7080] Ch. 101.809-1A, 8, 10 (See Model 7080] Ch. 101.809-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.811 [See Model 7080] Ch. 101.813 (See Model 7080] Ch. 101.814, 101.814-1A [See Model 7085] Ch. 101.814.805 (See Model 7085] Ch. 101.814.80	7 29 20 10 20 41 9 65 9 11 16 15 68 15 15 17 13 30 61
Ch. 101.632-20, 101.662-3C [See Model 6105] Ch. 101.632-4E, 101.662- 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.677a [See Model 6290] Ch. 101.677a [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- Ch. 101.800-1, 101.800- Ch. 101.800-1, 101.800- Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-1, 101.800- Ch. 101.800-1, 101.800- Ch. 101.800-1, 101.802-11 (See Model 6200A] Ch. 101.800-1, 101.802-11 [See Model 7021] Ch. 101.802, 101.807A [See Model 7024] Ch. 101.808-1C, 101.808- D [See Model 8052] Ch. 101.809-2, 101.809-3C [See Model 7080] Ch. 101.809-1A, 8, 101.809-2, 101.809-3C [See Model 7080] Ch. 101.811 [See Model 7080] Ch. 101.814, 101.814-1A [See Model 7085] Ch. 101.814-28, 101.814-38, 101.814-1A [See Model 7085] Ch. 101.814-28,	7 29 20 10 20 41 9 65 9 11 16 15 68 15 15 17 13 30
Ch. 101.862-20, 101.662-3C [See Model 6105] Ch. 101.662-4E, 101.662- 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.6778 [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- 1A (See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.802, 101.802-1 [See Model 7021] Ch. 101.808-1C, 101.807A [See Model 7024] Ch. 101.809-1A, 8, 10 [See Model 7080] Ch. 101.810 [See Model 7080] Ch. 101.811 [See Model 7085] Ch. 101.814-28, 101.814-28, 101.814-1A [See Model 7085] Ch. 101.814-28, 101.814, 101.820, 10	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105] Ch. 101.664-18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.6778 [See Model 6290] Ch. 101.807.1 (See Model 6200A] Ch. 101.800-1, 101.800- 1A (See Model 6200A] Ch. 101.800-1, 101.802-11 (See Model 7021) Ch. 101.807, 101.807A (See Model 7024) Ch. 101.809-1A, 5, 10 (See Model 7080) Ch. 101.809-1A, 5, (See Model 7080) Ch. 101.810 (See Model 7080) Ch. 101.811 (See Model 7080) Ch. 101.814-28, 101.819A (See Model 7226) Ch. 101.820	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31 32
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105] Ch. 101.664-18 [See Model 6285A] Ch. 101.672.1A, 101.672. 18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- 1A (See Model 6200A] Ch. 101.800-1, 101.801-1A (See Model 6200A] Ch. 101.800-1, 101.802-11 (See Model 7020] Ch. 101.802, 101.802-11 (See Model 7021] Ch. 101.808-1C, 101.808- 1D (See Model 7054] Ch. 101.809-1A, 5, 10.1809-1A, 5, Ch. 101.810 (See Model 7080] Ch. 101.813 (See Model 7080] Ch. 101.813 (See Model 7080] Ch. 101.814, 101.814-1A [See Model 7070] Ch. 101.814, 101.814-1A [See Model 7070] Ch. 101.819A (See Model 7070] Ch. 101.819A (See Model 7070] Ch. 101.819A (See Model 7226] Ch. 101.820 (See Model 7226] (See Model 7226] (	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31 32 49
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105] Ch. 101.662-18, 101.642. 5F [See Model 6285A] Ch. 101.672.1A, 101.672. 18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.807.1 101.800. 1A [See Model 6200A] Ch. 101.800.1, 101.800. 1A [See Model 6200A] Ch. 101.800.1, 101.800. 1A [See Model 6200A] Ch. 101.800.1, 101.800. Ch. 101.800.1, 101.800. Ch. 101.800.1, 101.800. Ch. 101.800.1, 101.801.1A [See Model 6200A] Ch. 101.800.1, 101.801.1A (See Model 6200A] Ch. 101.800.1, 101.802.1 (See Model 7021] Ch. 101.807.101.807.4 (See Model 7054] Ch. 101.809.1A, 5, 10.1809.1A, 5, Ch. 101.809.1A, 5, 10.1809.2, 101.809.3. Ch. 101.810 (See Model 7080] Ch. 101.813 [See Model 7080] Ch. 101.813 [See Model 7080] Ch. 101.814, 101.814.1A [See Model 7070] Ch. 101.814, 101.814.1A [See Model 7070] Ch. 101.819A (See Model 7070] Ch. 101.820 (See Model 7226] Ch. 101.820 (See Model 7226] Ch. 101.827 [See Model 7226] Ch. 101.819A (See Model 7226] Ch. 101.822, 101.822A [See Model 7226] Ch. 101.822, 101.822A [See Model 8090] Ch. 101.822, 101.822A [See Model 8090] Ch. 101.822, 101.822A [See Model 8090] Ch. 101.822, 101.822A [See Model 8020] Ch. 101.822, 101.822A [See Model 8020] Ch. 101.822, 101.822A [See Model 8020] Ch. 101.822, 101.822A [See Model 8020] Ch. 101.822A [See Model 8020] [See Model 8020] Ch. 101.822A [See Model 8020] [See Model 8020] Ch. 101.822A [See Model 8020] [See Model 8020]	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31 32 49 57
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.6778 [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-10, 101.800- IA [See Model 6200A] Ch. 101.800-10, 101.801-1A [See Model 6200A] Ch. 101.800-10, 101.802-11 (See Model 7021] Ch. 101.802, 101.802-1 (See Model 7054] Ch. 101.809-1A, 5, 101.809-1A, 5, 101.809-1A, 5, 101.809-1A, 5, 101.809-1A, 5, 101.809-1A, 5, Ch. 101.809-1A, 5, 101.809-1A, 5, 101.809-1A, 5, Ch. 101.810 (See Model 7080] Ch. 101.813 [See Model 7080] Ch. 101.813 [See Model 7085] Ch. 101.814, 101.814-1A [See Model 7070] Ch. 101.819 (See Model 7070] Ch. 101.822, 101.822A (See Model 8090] Ch. 101.822, 101.822A (See Model 8020] Ch. 101.823, 101.823A (See Model 8020].	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31 32 49 57
Ch. 101.632.20, 101.662.3C [See Model 6105] Ch. 101.662.4E, 101.662. 5F [See Model 6105A] Ch. 101.664-18 [See Model 6285A] Ch. 101.672.1A, 101.672. 18 [See Model 6285A] Ch. 101.6778 [See Model 6290] Ch. 101.773 (See Model 6290] Ch. 101.800-1, 101.800- 1A [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-3 [See Model 6200A] Ch. 101.800-10.101.802-11 [See Model 6200] Ch. 101.802, 101.802-11 [See Model 7021] Ch. 101.808-1C, 100.1.808-1C, 101.808-1C, 101.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.808-1C, 100.1.814, 101.814-1A [See Model 7070] Ch. 101.814, 101.814-1A [See Model 7070] Ch. 101.819A [See Model 7070] Ch. 101.822, 101.822A. [See Model 7226] Ch. 101.823, 101.823-1A [See Model 8080] Ch. 101.823-1, 101.823-1A [See Model 8080] Ch. 101.823-1, 101.823-1A [See Model 726] Ch. 101.823-1, 101.823-1A [See Model 716] Ch. 101.825, 101.823-1A	7 29 20 10 20 41 9 65 9 11 16 15 68 16 58 15 17 13 30 61 30 31 32 49 57

SILVERTONE-	-Cont.
Ch. 101.825-20 3D, 101.825	., 101.825- -3E.
101.825-3F, (See Model	101.825-4 7119) 62
Ch. 101.829 (See Model	8100) 51
(See Model Ch. 101.829-1	8132) 66
101,831-1 (S Model 8127)	···· 41
Ch. 101,833 (See Model	8105) 35
Ch. 101,834 (See Model	8072} 34
(See Model Ch 101 839	8230) 59
(See Model Ch. 101,846	8051) 49
(See Model Ch. 101.849	8132) 66
(See Model Ch. 101,850	9054) 63
Ch. 101.851, 1 (See Model 1	01.851-1 8107A1 64
Ch. 101.852 (See Model	8080) 52
Ch. 101.854 (See Model	8132) 66
Ch. 101.859 (See Model 9	133} 95
Ch. 101,859-2 See Model 6	4)113
(See Model Ch. 101 865	9122) 66
(See Model Ch. 101.865-1	9119) *
(See Model ' Ch. 101,866	9120A) *
(See Model 9 Ch. 101.867	133} 95
(See Model Ch. 101.868 (See Model )	9121)
Ch. 109.626	7152) 25
Ch. 109.627 (See Model	7153) 26
Ch. 109,631 {See Model	8145) 45
Ch. 109.632 (See Model	8148) 44
Ch. 109,633 (See Model Ch. 109,634	8149) 48
(See Model Ch. 109.635, 1	8150) <b>32</b> 09.635-1
(See Model Ch. 109.636, 1	8153) 42 09.636A
(See Model Ch. 109.638	8160) 50
(See Model ) Ch. 110.451, 1	8168] 40 10.452
Ch. 110.454	60721 13
Ch. 110.466, 1 [See Model	10.466-1 7086) <b>27</b>
Ch, 110,473 (See Model	8103) 56
Ch. 110.499 (See Model 1 Ch. 110.499.1	9123) <b>79</b>
(See Model ' Ch. 110.499-2	9124) <b>79</b>
(See Model 1 Ch. 132,807-2	9126) <b>79</b>
(See Model ) Ch. 132.816, 1	7025) <b>29</b> 32.816A
Ch, 132,818 (See Model )	60011) 15
Ch. 132.818-1 {See Model	8003) 53
Ch. 132,820 (See Model	6016) 27
Ch. 132.825-4 {See Model	6050) 15
(See Model ) (See Model )	6071) <b>15</b>
(See Model ) Ch. 132.839	8000) 31
(See Model Ch. 132.840	8005) 33
(See Model ) Ch. 132.841	8010} <b>40</b>
(See Model ) Ch. 132.858 (See Model )	9005)
Ch. 132.868 (See Model )	8021) <b>70</b>
Ch. 132.871 (See Model	9022) 76
Ch. 132,875 (See Model '	9105) <b>89</b>
(See Model 1 Ch. 132.880	)
Model 210) . Ch. 132.882	
(See Model 1) Ch. 132.887 (See Model 4	5)

SILVERTONE-Cont.	- 1
Ch. 132,888 (See Model 54)	
Ch. 132.889	
(See Model 106)	
(See Model 179-16) *	
(See Model 8073) 84	
Ch. 135.243-1 (See Model 9073) 83	
Ch. 135.244, 135.244-1	
Ch. 135.245	
(See Model 41)101	
(See Model 246)111	
(See Model 6685) 15	
Ch. 185.706	
Ch. 319.190	
(See Model 1301) 91 Ch. 319.200. 319.200-1	
(See Model 1300) 90	
(See Model 7148) 23	
Ch. 431,199 (See Model 8144) 32	
Ch. 431.202	
(See Model 8130) 49 Ch. 434.140	
(See Model 7111) 30	
(See Model 7300) 45	
Ch. 435,410 (See Model 7350) 38	
Ch. 435,417	
Ch. 436.200	
(See Model 7145) 23	
(See Model 8155) 57	
(See Model 8024) 80	
Ch. 478,210 (See Model 9131)	
Ch. 478,221	
Ch. 478.224	
(See Model 9115) 97 Ch. 478.252	
(See Model 9125) *	
(See Model 125)104	
Ch. 478.257 (See Model 125)104	
Ch. 478.289	
Ch. 478.309	
(See Model 120)115 Ch. 478.311	- 1
(See Model 120)115	
(See Model 9280) 94	
Ch. 528.171-1 (See Model 225)107	
Ch. 528.173 (See Model 220) 110	
Ch. 528.174	
(See Model 215)117 Ch. 528.6293-2	
(See Model 6293) 99	
(See Model 6295) 98	
Ch. 547.245 (See Model 9270) #2	
Ch. 548,358	
Ch. 548.358-1 (See	
Model 245} 107 Ch. 548,360-1	
(See Model 239)115	
(See Model 33)111	
Ch. 549.100, 549.100-1 (See Model 101) 102	
Ch. 549.100-3	
Ch. 549.100-4	
(See Model 160-12) 97A	
SIMPLON	
CA-5	-27
SKT KNIGHT (See Air Knig	nt)
SKTRIDER (See Hallicrafte	rs)
SKYROVER	
N5-RD-250 (9022-N),	-31
N5-RD295 (Ch. 5A7) 21-	-30
SKY WEIGHT	
818 20- 82 13-	-30   -13
SONORA	
RBU-176 5-	-31
R8-207 (See Model R8-176) \$	-30
RDU-209	-29
RGMF-212, RGMF-230 27-	-24 -26
RKRU-215 (Ch. RKRU) 9- RMR-219 19-	-31

BMB 000 BMB 0/7	
KMR-220, KMR-245	
(See Model KMR-219)	-23
RWFU-238 23	-24
WAU-243 27—	-27
WBRU-239 32	-23
WDU-233 25	27
WDU-249 37-	20
WGFU-241, WGFU-242 24	-25
WJU-252	-23
WLRU-219A 37-	-21
WLRU-220A (See Model	
WLRU-245A See Model	
WLRU-219A) 37	
Tel. Rec	
Y8-299112	.9
101 48	24
102 53-	-23
172 (See Model 171)109	.13
302, 303 Tel. Rec 97A	13
401 47—	-21
402A (See Model RMR-219) 19	
WLRU-219A}	
50000 INC	
SOUND, INC.	27
MB6P3, MB6P6, MB6P30.	· 4 /
MB6R4 35-	21
MB7E8 24-	-24
5R2 28	32
SPARKS-WITHINGTON	
(See Sparton)	
SPARTON	•
4AW17 (Ch. 417)	.18
4AW17-A (Ch. 417A) 49-	22
5AH06, 5A106 (See Model 5AW06) 4	
5A116 (Ch. 5-16) 30-	-29
5AM26-PS (Ch. 5-26-PS) . 5-	17
5AW16 (Ch. 5-16) See	·'/
Model 5A116 (Ch. 5-16) 30	" I
6AMU6 (Ch. 6-U6) 34- 6AM26 (See Model	21
6AW26PA) 15	
6AW26PA (Ch. PC5-6-26) 15-	33
744444 (Ch. 7.44)	21 1
/Am40 (Cn. /·40) I—	31
7AM40 (CH. 7-40) I-	31
7AM46PA, 7BM46PA, 7BW46PA, 8AM46 (See Model 7AM46) 1	31
7AM46PA, 7BM46PA, 7BW46PA, 7BM46PA, 7BW46PA, 8AM46 (See Model 7AM46) 1 10AB76-PA, 10AM76-PA, 10BM76 PA (5-	31
7AM469 (Cn. /*40)	31
ZAMAGO (L.H. 740)	31
ZAMAGO (CH. 740) I ZAMAGOA. ZBMAGOA, ZBWAGPA, BAMAG (See Model ZAMAG) 1 IOABZO-PA, IGAMZG-PA, IOBMZG-PA (See 15 IOBWZG-PA (Ch. 10-76PA) 15- IOBWZG-PA (Ch. 10-76PA) 15- 108/76-PA (See (See (See (See (See (See (See (Se	-21 -31 -34 -23
ZAMAGO (C.H. 246)	31 31 34 -23
ZAMAGO (CH. 740)	34 -23 -19
ZAM4667A. ZBM4667A, ZBW46PA, ZBM46FA, ZBW46PA, ZBM466, 1 10AB76-PA, 10AM76-PA, 10BM76-PA (See Model 10BW76-PA) 15 108,W76-PA (Ch. 10-76PA) 15- 100, 101 (Ch. 5A7) 38- 102, 103, 104 (See Model 100) 38 121 (Ch. 8L9) 57 122 (See Model 121) 57 130, 132, 135, 139	34 -23 -19
ZAMAGRA, ZBMAGRA, ZBMAGRA, ZBMAGRA, ZBWAGPA, ZBMAGA, ZBWAGPA, ZBMAGA, ZSee Model ZAMAGA, 108W76-PA [See . 13 108W76-PA [Ch. 10-76PA] 15- 108W76-PA [Ch. 10-76PA] 102, 103, 104 (See Model 100) 38 121 (Ch. 819) 57- 122 (See Model 121) 57 130, 132, 135, 139 (Ch. 5A10)	-21 -31 -34 -23 -19 -10
ZAMAGO (L.R Yea)	-21 -31 -34 -23 -19 -10 -6
ZAMAGO (L.R Yea)	-21 -31 -34 -23 -19 -10 -6
7AM367A.     7BM467A.     7BM467A.       7BW46PA.     7BM467A.     7BM467A.       (See Model 7AM46)     1       10AB76-PA.     106M76-PA.       10BW76-PA.     108W76-PA.       10BW76-PA.     10-10-76PA.       10BW76-PA.     15.       10BW76-PA.     15.       10BW76-PA.     15.       10BW76-PA.     16.       10C, 101 (Ch. 5A7)	-21 -31 -34 -23 -19 -10 -6 -12
7AM4667A.       7BM4667A.         7BW4667A.       7BM4667A.         7BW4667A.       7BM4667A.         (See Model 7AM446)       1         10AB76-PA.       106M476-PA.         10BM76-PA (See       Model 10BW76-PA)         10BM76-PA (See       15         1000, 101 (Ch. 5A7)	-21 -31 -34 -23 -19 -10 -6 -12
ZAMAGO (L.R 780)	-21 -31 -34 -23 -19 -10 -6 -12 -18
ZAMAGO (L.R 780)	-21 -31 -34 -23 -19 -10 -6 -12 -18
7AM4667A.       7BM4667A.         7BW46PA.       7BM4667A.         7BW46PA.       7BM4667A.         [See Model 7AM466]       1         10AB76-PA.       106AM76-PA.         10BW76-PA [See       Model 10BW76-PA].         10BW76-PA [Ch. 10-76PA]       15         10BW76-PA [Ch. 10-76PA]       15         10BW76-PA [Ch. 10-76PA]       15         102, 103, 104       38         121 [Ch. 8L9].       57         122 [See Model 121]       57         130, 132, 135, 139       {Ch. 5A10}	-21 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22
7AM4667A.       7BM4667A.         7BW46PA.       7BM4667A.         7BW46PA.       7BM4667A.         (See Model 7AM466)       1         10AB76-PA.       106AM76-PA.         10BW76-PA.       108W76-PA.         Model 10BW76-PA.       15         10BW76-PA.       16.         Model 10BW76-PA.       15         100, 101 (Ch. SA7)	-21 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22
ZAMAGO (Ch. 740)	-21 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22
ZAMAGO (Ch. 740)	-21 -31 -33 -19 -10 -6 -12 -18 -25 -22
ZAMAGO (Ch. 240)	21 31 31 34 -23 -19 -10 6 -12 -18 -25 -22 -22
ZAMAGO (Ch. 290)	-21 -21 -31 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22 -22
ZAMAGO (Ch. 780)	-21 -31 -31 -34 -23 -19 -10 -6 -12 -18 -22 -22 -22
ZAMAGO (Ch. 780)	-21 -31 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22 -22
ZAMAGO (Ch. 780)	-21 -21 -31 -31 -34 -23 -19 -10 -6 -12 -18 -25 -22 -22 -22 -19
7AM4667A.       7BM4667A.         7BW46PA.       7BM46FA.         7BW46PA.       7BM46FA.         [See Model 7AM46]1       1         10AB76-PA.       106M76-PA.         10BW76-PA [See       Model 10BW76-PA]         10DW76-PA [Ch. 10-76PA]       15         10BW76-PA [Ch. 10-76PA]       15         10BW76-PA [Ch. 10-76PA]       15         102, 103, 104       38         121 [Ch. 8L9]	-21 -21 -13 -19 -10 -6 -12 -18 -25 -22 -22 -22 -22 -19 -19 -10 -6 -12 -12 -12 -12 -12 -12 -12 -12 -12 -12
ZAMAGO (Ch. 780)	-21 -31 -31 -31 -31 -31 -31 -31 -31 -31 -3
ZAMAGO (Ch. 280)	-21 -31 -31 -33 -19 -10 -6 -12 -12 -12 -12 -12 -22 -22 -22 -19 -21
ZAMAGO (Ch. 296)	-21 -31 -31 -31 -31 -31 -32 -19 -10 -6 -12 -19 -22 -22 -22 -19 -21 -11
ZAMAGO (Ch. 290)	-21 -31 -31 -31 -31 -31 -32 -19 -10 -6 -12 -19 -10 -6 -12 -12 -18 -22 -22 -22 -22 -19 21 -11
ZAMAGO (Ch. 280)	-19 -10 -10 -12 -19 -10 -6 -12 -12 -18 -25 -22 -22 -19 -11 -11
ZAMAGO (Ch. 280)	-21 -31 -31 -31 -31 -31 -32 -32 -19 -10 -6 -12 -18 -22 -22 -22 -19 -21 -11
ZAMAGO (Ch. 290)	-21 -31 -31 -31 -31 -32 -19 -10 -6 -12 -19 -10 -6 -12 -18 -22 -22 -22 -19 -21 -11
ZAMAGO (Ch. 280)	-21 -31 -31 -31 -31 -32 -19 -10 -6 -12 -12 -12 -12 -12 -22 -22 -22 -19 -21 -11
ZAMAGE (Ch. 296)	-21 -31 -31 -31 -19 -10 -6 -12 -12 -19 -10 -6 -12 -12 -19 -22 -22 -19 -21 -11
ZAMAGO (Ch. 28446/A, ZBM46/A, ZBM46	-21 -31 -31 -31 -31 -31 -32 -32 -19 -10 -6 -12 -18 -25 -22 -22 -22 -19 -11 -12 -119 -12 -119 -12 -119 -119
ZAMAGO (Ch. 290)	-21 -31 -31 -31 -19 -10 -6 -12 -12 -12 -12 -22 -22 -22 -19 -11
ZAMAGO (Ch. 290)	-21 -31 -31 -31 -31 -31 -32 -32 -19 -10 -6 -12 -12 -18 -22 -22 -19 -21 -11

4900TV 64 4954 (Ch. 23TC10) Tel. Rec. 4 4960 (Ch. 23TC10) Tel. Rec. Ch 417 Ch. 417 (See Model 48W17).... 50 Ch. 417A (See Model 48W17A).. 49 Ch. 666A (See Model 6-66A).... 51 SPIEGEL (See Aircustie) STARK STARRETT 

SPARTON-Cont.

STEELMAN STEWART-WARNER Tel, Rec. (See Model T-711).... 95A T-712 (Code 9031-8) STRATOVOX 579-1-58A ..... 6---32 STROMBERG-CARLSON 

:

STROMBERG-CARLSON-Cont. 
 STRUMBERG-LARLEVIT-LBH.

 1101-HPW
 41--23

 1105 (Series 10-11)
 18--29

 1110-HW, 1110-PTW
 (Series 10)

 (Series 10)
 18--30

 1120 (See Model 1220
 56

 [Series 10]
 18—30

 1120 [See Model 1220
 58

 Series)
 50

 1121 -HW, W, M1.0,
 50

 M2-W, M2-Y, PFM, PFW,
 FSM (Series 10-11-12)

 PSM (Series 10-11-12)
 10—31

 1135-FFM, 1135-FLM,
 113-FFW, 1135-FLM,

 1135-FFM, 1135-FLM,
 57—20

 1202 (Series 10)
 53—21

 120 (Ch. 112021)
 34—22

 1210M2-Y, 1210PGW,
 1210PLM, 1210PGW

 (Series 10-11)
 37—23

 1220 Series
 49—23

 1400 FW, 1407PLM
 58—23

 1400PM3-M, 140PPC-M, 140PPG-M,
 1409PG-M, 140PFC-M,

 1409M3-M, 140PPC-M, 140PFC-M,
 58—23

 1409PG-W
 62—20

 STUDEBAKER
 50
 STUDEBAKER SUPREME (Lipen) 
 309 REZINE (LEURON)

 711

 712

 63—17

 733

 64—13

 750

 55—22
 **SWANK**  
 SYLVANIA

 1-075 [Ch. 1-138] Tel. Rec. 92—8

 1-076 [Ch. 1-108] Tel. Rec. 95—11

 1-076 [Ch. 1-108] Tel. Rec. 95—11

 1-076 [Ch. 1-108] Tel. Rec. 99—17

 1-113, 1-114 Tel. Rec. 99—17

 1-113, 1-114 Tel. Rec. 99—17

 1-113, 1-114 Tel. Rec. 91

 1-24, 1-125 Tel. Rec. 92

 1-124, [L-125 Tel. Rec. 92

 1-125 Tel. Rec. 92

 1-125 Tel. Rec. 113—9

 1-126 [Ch. 1-186] Tel. Rec. 92

 Tel. Rec. (See Model 1-076). 96

 1-128 [Ch. 1-108] Tel. Rec. [See Model 1-076]. 96

 1-128 [Ch. 1-108] Tel. Rec. 92

 1-127 [Ch. 1-186] Tel. Rec. 92

 1-197 [Ch. 1-138] Tel. Rec. 92

 1-197 [Ch. 1-136] Tel. Rec. 92
 SYLVANIA 1-197-1 (Ch. 1-156) Tel. Rec. (See Model 1-125-1)...113 1-210 (Ch. 1-139) Tel. Rec. (See Model 1-075). 92 1-245, 1-246 (Ch. 139) (See Model 1-125-1)...113 CH. 1-215 (See Model 1-250)....103 Ch. 1-261 (See Model 51308)....120 Ch. 1-271 Cb. 1-271 (See Model 51308)....120 Cb. 1-290 (See Model 51308)....120 TELECHRON 8H67 "Musalorm" ..... 44-23 TELECOIN M5TS4 ..... 25-28 THE-KING 1

TELE-KING-Cont.	TELE-TONE-Cont.
612 Tel, Rec. (See Model 410) 85	183 53-24 185 (Ch. Series Arl) 52-21
710 Tel. Rec. (See Model 410) 85	190 (Ch. Series AZ) 61-19 195 (Ch. Series BHB 71-15
712 Tel. Rec. (See Model 410) 85	198 (See Model 158) 59
TELEQUIP	(See Model 1901 61
Ch. 12TR, 14T, 14TR, 16T,	201 (Ch. Series AK) 74-9 205 (Ch. Series BD) 73-12
16TR, 19T, 19TR Tel. Rec	214 (Ch. Series A.') (See Model 1901
5135, 5136, 5140A 11-24	215 (Ch. Series BC) (See Model 205) 72
TELESONIC (Medce)	Ch. Series A
1635 <b>20</b> -22 1636 <b>21</b> 33	Ch. Series AA
1642	(See Model 159) 38 Ch. Series AE
TELE-TONE	(See Model 157) 49 Ch. Series AG
TV149 Television Rec 56-22	(See Model 165) 50
TV-170 Tel. Rec	(See Model 185) 52
TV208TR Tel. Rec	Ch. Series AT (See Model 158) 59
(See Model TV-249) 57	Ch. Series AX (See Model 2011
TV-220 Tel. Rec.	Ch. Series AZ
(See Model TV208TR) 95 TV-245, 246 Tel. Rec *	Chassis Series BD
TV-249 Television Rec 57-21 TV-250 Tel. Rec	(See Model 205) 73 Chassis Series BH
TV-254 Tel, Rec.	(See Model 195) 71 Ch. Series C
TV-255, TV-256	(See Model 134) 13
(Ch. T3) Tel. Rec101-13 TV259 Tel. Rec.	(See Model 133) 11
(See Model TV249) 57 TV-282 Tel, Rec	Ch. Series D {See Model 117A} 1
TV-283 Tel, Rec.	Ch. Series H (See Model 135) 14
TV-284 Tel. Rec	Ch. Series K (See Model 1001)
TV-203 Tel. Rec 87-13 TV-286, 287, 288 Tel.	Ch. Series N
Rec. (See Model TV-284) 93 TV-300, TV-301 (Ch. TAA.	(See Model 138) 23 Ch. Series R
TAB) Tel. Rec	(See Model 145) 23 Ch. Series S
(Ch. TW) Tel. Rec 107-10	(See Model 145) 24
TAB) Tel. Rec.	(See Model 159) 38
(See Model 1V-300) 99A TV-304, TV-305 (Ch. TX)	Model TV-315)
Tel. Rec. (See Model TV-300)	Ch. TAC (See Model TV-308)
TV-306, TV-307	Ch. TS (See Model TV 255) 101
Tel. Rec	Ch. TW, TX (See
Tel. Rec	Ch. TY, TZ
Tel. Rec115-13	(See Model 17-306)104 Ch. Series U
FY-317 Tel. Rec * 190, 100-A, 101, 109	(See Model 156) 35 Ch, Series Y
(Ch. Series A) 39-26	(See Model 160) 36
110 (See Model 117-A) 1	TELEVOX
17-A (Ch. Series 'D''). 1-35	27.J8-2W
117-A)	27-P-T
122, 123 (See Model 100) 39 124 (See Model 117-A) 1	TEL-VAR (See Auder)
125 (See Model 100) 39	TEMPLE
127, 130, 131 (See Model 100) 39	E-301
132 (See Model 117-A) 1	E-511 11-26
34	E-512, E-514 (300 Model E-510)
138 (Ch, Series N) 23-27	E-519 (See Model E-510) . 2 F-301 12-26
139, 140, 141 (Ch. Series H) (See Model 135) 14	F-610 9-32 F-616 5-38
142, 143, 144 (See Model 145) 23	F-617
45 (Ch. Series ''R'') 23-28 48 (Ch. Series S)	G-415
149 (Ch. Series H) (See Medel 128)	G-513 23-29
150 (Ch. Series T) 38-25	G-515 17—34 G-516 18—31
(See Model 148) 24	G-518
152 (Ch. Series R) (See Model 145)	G-522 26-26
156 (Ch. Series U) 35-23	G-622
(See Model 135) 14	G-722
157 (Ch. Series AE) 49-24   [58 (Ch. Series AT) 59-20	G-723 (See Mode: G-722). 24 G-724
59 (Ch. Series AA) 38-26 60 (Ch. Series Y) 36-24	G-725
161, 162 (Ch. Series T) (See Model 150) 38	G-4108 (See Model
163, 164 (Ch. Series H)	G-7205 (See Models,
(300 Model 135) 14 65 (Ch. Series AG) 50-20	G-721, G-722, G-723) . 24 H-411
66 (Ch. AE) (See Model 157) 49	H-521 (See Model G-521) 28 H-622 (See Model G-622). 44
167, 168, 171 (Ch. Series T) (See Model 150)	H-727 (See Model G-725) 34
172 (Ch. Series U) (See Model 156) 35	TV-1778, TV-1779
174 (Ch. Series T) (See Model 1501 38	TEMPOTONE
176 (Ch. Series U)	500 E Series 2-8
82 51—22	TEMPLETONE (See Temple)

THE-KING-Cost

# STEELMAN—TRUETONE

THORDARSON

T-30W08A	-31
T.31W10.AX	57-22
T-31W25A	9-33
T-31W50A	20-34
T-32W00, T-32W10	76-18
TONE BAK	
ACOME	
ACONF	24-28
TRANSVISION	
Chossis Model A Tel. Rec	107-11
WRS-3 Tel. Rec	112-10
TRANSVUE	
401 /Ch 144 Y22 26 241	
Tel Rec	
610 (Ch. 16AX23, 25, 26)	
Tel. Rec.	
IRAV-LER	
10T Tel. Rec.	86-11
12LSO, A Tel. Rec	108-13
10T)	86
14850, A. 14C50, A	
Tel, Rec. (See	
Model 12L50)	108
16G50A Tel, Rec. (See	
Model 12L50)	108
Tel. Rec. (See	
Model 12L50)	108
16T Tel. Rec.	
(See Model 10T)	86
5000 (See Model 5000i)	11
50001	11-27
5007 5008 5000	12-28
(Ch 104)	1_24
5010, 5011, 5012	1-30
(Ch. 105)	2-5
5015	36-25
5019	23-30
5020 (Ch. 800)	11-28
5021	43-20
5022	31 20
5028	34-24
5029	33-29
5030, 5031	32-25
5036	54-19
5049	45-24
5054	32-26
5054	30-20
5060 5061	
5066	42-24
5066	42-24
5066 6040 6050	42-24 49-25 56-23
5066 6040 6050 7000, 7001	42—24 49—25 56—23 59—21
5066 6040 6050 7000, 7001 7003 (Ch. 501) 7014 (Ch. 4041) 70001	42-24 49-25 56-23 59-21 12-29
5066 6040 6050 7000, 7001 7003 (Ch. 501) 7014 (See Model 7000) 7014 (See Model 7000)	42-24 49-25 56-23 59-21 12-29 59
5066 6040 6050 7000, 7001 7003 [Ch. 501] 7014 [See Madel 7000] 7016, 7017 7023	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13
5056 6040 6050 7000, 7001 7003 (Ch. 501) 7014 (See Medel 7000) 7016, 7017 7023	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 12-11
5066 6040 6050 7000, 7001 7015, 501} 7014 (See Model 7000) 7016, 7017 7023 7036 Chessis 104	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11
5066 6040 6050 7003 (Ch. 501) 7014 (See Model 7000) 7014, 7017 7023 7036 Chessis 104 (See Model 5007)	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1
5056 6040 6050	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1
5066 6040 6050 7003 (Ch. 501) 7014 (See Model 7000) 7015, 7017 7023 7036 Chessis 104 (See Model 5007) Chessis 105 (See Model 5010) Chessis 105	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1 2
5066 6040 7000, 7001 7003 (Ch. 501) 7014, 7017 7023 7016, 7017 7023 7026 7017 7027 7026 7017 7027 7026 7027 7027 7027 7027 7027 702	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1 2
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7013           7014, 7017           7033           Chessis 104           (See Model 5007)           Chessis 105           (See Model 5007)           Chessis 107           (See Model 5007)           Chessis 109           (See Model 5002)           Chessis 501	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1 2 12
5066 6040 6050 7003 (Ch. 501) 7014 (See Model 7000) 7013 (Ch. 501) 7013 (Ch. 501) 7013 (See Model 7000) 7033 7036 Chessis 104 (See Model 5010) Chessis 109 (See Model 5002) Chessis 501 [See Model 7003]	42_24 49-25 56-23 59-21 12_29 59 84-11 83-13 112_11 1 2 12
5066           6040           6040           6050           7003 (Ch. 501)           7014, 7017           7015, 7017           7033           Chessis 104           (See Model 5007)           Chessis 105           (See Model 5010)           Chessis 501           (See Model 5002)           Chessis 800	42_24 49_25 56_23 59_21 12_29 59 84_11 83_13 112_11 1 2 12 12
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7013           7014, 7017           7023           7036           7036           Chassis 104           (See Model 5007)           Chessis 105           (See Model 5010)           Chossis 109           (See Model 7003)           Chessis 800           (See Model 5021)	42_24 49_25 56_23 59_21 12_29 59 84_11 83_13 112_11 1 2 12 12 12
5066 6040 6050 7003 (Ch. 501) 7014 (See Model 7000) 7013 (See Model 7000) 7036 7036 7036 7036 7037 7038 7036 7037 7038 7038 7039	42_24 49_25 56_23 59_21 12_29 59 64_11 83_13 112_11 1 2 12 12 12
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7014, 7017           7034           (See Model 7000)           7034           (See Model 5010)           Chessis 104           (See Model 5010)           Chessis 501           (See Model 7003)           Chessis 800           (See Model 5021)           TEELA           HW301	42_24 49_25 56_23 56_23 59_21 12_29 59 84_11 83_13 112_11 1 2 12 12 12 12 11
5066 6040 6050 7003 (Ch. 501) 7014, 7017 7014, 7017 7023 7036 Chessis 104 (See Model 5007) Chessis 105 (See Model 5010) Chessis 109 (See Model 5002) Chessis 501 (See Model 7003) Chessis 800 (See Model 5021) TREEA HW301	42-24 49-25 56-23 59-21 12-29 59 84-11 12-11 1 2 12 12 12 12 12 12
5066 6040 6040 7000 (7001 7003 (Ch. 501) 7014, 7017 7023 Chessis 104 (See Model 7000) Chessis 105 (See Model 5010) Chessis 109 (See Model 5010) Chessis 501 (See Model 5021) Chessis 800 (See Model 5021) TRELA HW301 TRELO	42-24 49-25 56-23 59-21 12-29 59 84-11 83-13 112-11 1 2 12 12 12 12 11
5066           6040           6050           7003 (Ch. 501)           7014, 7003           7015, 7017           7023           7034           7035           15ee Model 7000)           7023           7036           7037           7038           15ee Model 5007)           Chexis 105           (See Model 5002)           Chexis 501           (See Model 5002)           Chexis 800           (See Model 5021)           TELELA           HW301           TRUETONE           D10348, C           (See Model 100444)	42 24 49 25 56 23 59 21 12 29 59 84 11 1 2 12 12 12 12 12 12 12 12 12 12 12
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7015, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036, 7017           7023           Chessis 104           (See Model 5007)           Chessis 501           (See Model 7003)           Chessis 800           (See Model 5021)           TEBLA           HW301           TRUETONE           D10348, C           (See Model D1046A)           10464A	42-24 49-25 56-23 59-21 12-29 84-11 12-11 1 2 12 12 12 12 12 12 11 14-28
5066           6040           6040           6050           7003 (Ch. 501)           7014, 7017           7014, 7017           7033           Chessis 104           (See Model 7007)           Chessis 104           (See Model 5010)           Chessis 109           (See Model 5010)           (See Model 5002)           Chessis 800           (See Model 5021)           TEELA           HW301           TRUETONE           D10446, D           D1046A, D           D1046A, D	43 - 24 49 - 25 56 - 23 59 - 21 12 - 29 59 59 - 21 12 - 29 59 59 - 21 12 - 21 12 - 11 1 2 12 12 12 12 11 14 - 28
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7034 (See Model 7000)           7034 (See Model 5007)           Cheasis 105           (See Model 5010)           Cheasis 109           (See Model 5002)           Cheasis 800           (See Model 5021)           Cheasis 800           (See Model 5021)           TRUELA           HW301           D10446, C           (See Model D1046A)           D10464, D           D10464, D	42-24 49-25 55-23 55-21 12-29 59 59 59-21 12-29 59 59 59 59 59 59 12-29 59 59 59 59 59 59 59 59 59 59 59 59 59
5066 6040 6050 7000, 7001 7003 (Ch. 501) 7014, 5016, 501) 7014 (See Madel 7000) 7023 7036 Chassis 104 (See Madel 5007) Chassis 105 (See Madel 5007) Chassis 109 (See Madel 5002) Chassis 501 (See Madel 7003) Chassis 501 (See Madel 7003) Chassis 800 (See Madel 5021) TREEA HV301 TREEA HV301 TRUETONE D10348, C (See Madel D1046A) 10464, D 10464, D 10464, L 101090 Tel Rec.	42-24 49-25 56-23 59-21 12-29 59 59-11 12-29 59 11 2-11 12 12 12 12 12 12 11 14-28 102 102 15 102 *
5066           6040           6040           6050           7003 (Ch. 501)           7014, 7017           7023           7036, 7017           7023           7036           7037           7038           Chessis 104           (See Model 5007)           Chessis 105           (See Model 5002)           Chessis 800           (See Model 7003)           Chessis 800           (See Model 5021)           TEBELA           HW301           TRUETONE           D1046A           D1046A, D1046A)           D1090 Tol, Rec.           D1097 Tel, Rec.           D1042, D	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 59 59-21 12-29 59 59-21 12-21 12 12 12 12 12 11 14-28 102-15 102 59-25 112-25 59-25 112-25 59-25 112-25 59-25 112-25 59-25 112-25 59-25 112-25 12-
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7014, 7017           7023           7034           7034           (See Model 5007)           Chemis 105           (See Model 5010)           Chemis 109           (See Model 5002)           Chemis 109           (See Model 7003)           Chemis 800           (See Model 5021)           TELELA           HW301           D10348, C           (See Model D1046A)           D10446, C           (See Model D1046A)           D1097 Tel. Rec           D1097 Tel. Rec           D10444	42 - 24 49 - 25 59 - 21 12 - 29 59 - 31 12 - 29 59 - 11 12 - 29 59 - 11 12 - 11 12 13 14 - $281021021021212121212121212121212121212121212121228 - 3412$ - $3912-39-3912-39$
5066           6040           6040           6050           7003 (Ch. 501)           7014, 7017           7035           7016, 7017           7023           7036           7017           7036           Chessis 104           (See Model 5007)           Chessis 105           (See Model 5002)           Chessis 501           (See Model 5002)           Chessis 800           (See Model 5021)           TBELA           HW301           TBUETONE           D10445, C           (See Model D1046A)           D10445, C           (See Model D1046A)           D10445, C           (See Model D1046A)           D1047, D           Tel. Rec           D1047, D           See Model D1046A)           D1047, D           D1048, C           (See Model D1046A)           D10462, D           See Model D1046A)           D1047, D           Tel. Rec           D1042, Ferctory 26A76-6501	42-24 49-25 56-23 59-21 12-29 59 59-11 12-11 1 2 12 12 12 12 12 12 11 14-28 102 102-15 102 0-34 12-30 6-33
5066           6040           6050           7003 (Ch. 501)           7014, 7003           7015, 7017           7023           7034 (Ch. 501)           7023           7034           (See Model 7000)           (See Model 5010)           Chexis 105           (See Model 5002)           Chexis 501           (See Model 7003)           Chexis 800           (See Model 5021)           TRUETONE           D1046A           D1046A           D1046A           D1097 Tel. Rec           D1642           D10452           D10452           D10454           D10455           D10450           D10451           D10452           D10453           D10454           D1045	42-24 49-25 55-23 59-21 12-29 59 59-21 12-29 59 59-21 12-29 59 59-21 12-21 12-21 12-21 12-21 12 12 12 11 14-28 102 12-30 6-33 32-27
5066           6040           6050           70003 (Ch. 501)           7014, 7017           7013           7014, 7017           7023           7036, 7017           7036           7016, 7017           7023           7036           Chexasis 104           (See Model 5007)           Chexasis 105           (See Model 5002)           Chexasis 109           (See Model 5002)           Chexasis 501           (See Model 7003)           Chexasis 800           (See Model 5021)           TEUELA           HW301           TRUETONE           D10348, C           (See Model D1046A)           10464, D           10464, C           10464, D           10464, D           10464, D           D10442           10444           10444           10444           10444           10444           10444           10444           10445           10447, D1748           10142           10142 <td><math display="block">\begin{array}{c} 42 = -24 \\ 44 = -25 \\ 55 = -23 \\ 59 = -21 \\ 59 = -21 \\ 12 = -29 \\ 59 = -11 \\ 83 = -13 \\ 112 = -11 \\ 12 \\ 12 \\ 12 \\ 12 \\ 11 \\ 14 = -28 \\ 102 \\ 102 \\ 102 \\ 102 \\ 102 \\ 102 \\ 103 \\ 102 \\ 103 \\ 102 \\ 103 \\ 1</math></td>	$\begin{array}{c} 42 = -24 \\ 44 = -25 \\ 55 = -23 \\ 59 = -21 \\ 59 = -21 \\ 12 = -29 \\ 59 = -11 \\ 83 = -13 \\ 112 = -11 \\ 12 \\ 12 \\ 12 \\ 12 \\ 11 \\ 14 = -28 \\ 102 \\ 102 \\ 102 \\ 102 \\ 102 \\ 102 \\ 103 \\ 102 \\ 103 \\ 102 \\ 103 \\ 1$
S066         S066           6040         S070           6040         S070           7003 (Ch. 501)         7016, 707           7016, 7017         7036           7016, 7017         7023           7036         S077           7036         S077           Chessis 104         S007           (See Model 5007)         Chessis 109           (See Model 5002)         Chessis 501           Chessis 501         S021           (See Model 5002)         Chessis 800           (See Model 5021)         TRUETONE           D10445, D         See Model 101046A)           D10462, D         See Model 101046A)           D10462, C         See Model 101046A)           D10462, C         See Model 101046A)           D1047, D14, Rec.         D1042           D1642         See Model 101046A)           D1643         See Model 101046A)           D1644         See Model 101046A)           D1752 (Feactery 7061-14)         D1835 (Feactery 7061-14)           D1835 (Feactery Model 10146A)         26.86.86.41	42-24 49-25 56-23 59-21 12-29 59 59 59 112-11 1 2 12 12 12 12 11 14-28 102 102-15 102 59 59 59 59 59 59 59 59 59 59 59 59 59
5066           6040           6050           6050           7003 (Ch. 501)           7014, 7003           7015, 7017           7023           7034 (Ch. 501)           7023           7034           (See Model 5007)           Chexis 105           (See Model 5002)           Chexis 501           (See Model 5002)           Chexis 501           (See Model 7003)           Chexis 800           (See Model 5021)           TRUETONE           D1046A           D1046C, D           Sloge Model D1046A)           D1044C, D           D1044C, D           D1044A           D1045C, D           D1044A           D1045C, D           D1044           D10452 (Fectory 26A76-650)           D1747, D1748           D1835 (Fectory 7901-14)	$\begin{array}{c} 42 = -24 \\ 49 = -25 \\ 55 = -23 \\ 55 = -21 \\ 12 = -29 \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ 59 \\ $
5066           6040           6050           70003 (Ch. 501)           7014, 7017           7014, 7017           7023           7036, 7017           7023           7036, 7017           7023           7036           Chexais 104           (See Model 5007)           Chexais 107           (See Model 5002)           Chexais 109           (See Model 5002)           Chexais 109           (See Model 7003)           Chexais 109           (See Model 7003)           Chexais 800           (See Model 5021)           TEUELA           HW301           TRUETONE           D10446, C           (See Model D1046A)           D1097 Tel. Rec           D10462, C           (See Model D1046A)           D1097 Tel. Rec           D10453 (Fectory 700-144)           D1722 (Fectory 700-144)           D18336, D1836A (Fectory           25A88-856)           D18346, (Fectory 701-144)	42 - 24 49 - 25 56 - 23 59 - 21 59 - 21 84 - 11 83 - 13 112 - 11 1 2 12 12 11 14 - 28 802 - 15 102 - 30 6 - 33 32 - 27 34 - 25 44 - 25 45 - 25
5066           6040           6040           6050           7003 (Ch. 501)           7014, 7017           7015, 7017           7023 (Ch. 501)           7014, 7017           7023           7036           (See Model 7000)           7023           7036           (See Model 5007)           Chexis 105           (See Model 5002)           Chexis 800           (See Model 7003)           Chexis 800           (See Model 5021)           Chexis 800           (See Model 5021)           TRUETONE           D10462, D           (See Model D1046A)           D10462, C           (See Model D1046A)           D10462, C           (See Model D1046A)           D1047, D148           D1642           D1643           (Fectery 700-14)           D1836 (Fectery 700-14)           D1836 (Fectery 700-14)           D1836 (Fectery 700-15)           D1836 (Fectery 700-15)           D1836 (Fectery 700-15)           D1836 (Fectery 700-16)           D1836 (Fectery 700-16)	$\begin{array}{r} 42 = -24 \\ 49 = -25 \\ 56 = -23 \\ 59 = -21 \\ 12 = -29 \\ 59 \\ 59 = -21 \\ 12 = -21 \\ 12 = -21 \\ 12 = -21 \\ 12 = -21 \\ 12 \\ 11 \\ 12 \\ 12 \\ 11 \\ 14 = -28 \\ 102 \\ 102 \\ 11 \\ 14 = -28 \\ 102 \\ 102 \\ 12 \\ 12 \\ 12 \\ 12 \\ 12 \\ $
5066           6040           6050           70003 (Ch. 501)           7014, 7003           7015, 7017           7023           7034, Ch. 5017           7023           7034, Ch. 5017           7035, Ch. 5017           7023           7036, 7017           7036, 7017           7023           7036, 7017           7036           (See Model 5007)           Cheasis 109           (See Model 5002)           Cheasis 109           (See Model 7003)           Cheasis 501           (See Model 7003)           Cheasis 800           (See Model 7003)           Cheasis 800           (See Model 5021)           TRUETCONE           D10445, C           (See Model D1044A)           D10445, C           (See Model D1044A)           D10445, C           (See Model D1044A)           D10445, (Factory 26A/76-650)           D1644           D1644           D1645           D1247, D1748           D1835 (Factory 26A/76-650)           D1836, (Factory 701-14) <t< td=""><td>42 - 24 49 - 25 56 - 23 56 - 23 58 - 21 12 - 29 59 59 59 - 21 12 - 29 59 59 - 21 12 - 29 59 - 21 12 - 21 12 - 21 12 13 28 - 34 32 - 37 34 - 25 44 - 25 45 - 25 45 - 24</td></t<>	42 - 24 49 - 25 56 - 23 56 - 23 58 - 21 12 - 29 59 59 59 - 21 12 - 29 59 59 - 21 12 - 29 59 - 21 12 - 21 12 - 21 12 13 28 - 34 32 - 37 34 - 25 44 - 25 45 - 25 45 - 24
S066         S066           6040         S000, 7001           7003 (Ch. 501)         7016, 7017           7014, 7017         S017           7023 (Ch. 501)         S007)           7024, 7017         S02           7035         S007)           Chessis 104         S007)           (See Model 5010)         Chessis 105           (See Model 5010)         S002)           Chessis 600         S002)           (See Model 5021)         TEELA           HW301         TEUETONE           D1046A         D1046A)           D1046C, D         See Model 101046A)           D1046C, D         See Model 101046A)           D1046C, D         See Model 101046A)           D1047, D1748         See S00           D1522 (Fectory 26A76-650)         D1742           D1423 (Fectory 7901-14)         D1833 (Fectory 201-14)           D1835 (Fectory 7001-14)         D1836 (Fectory 201-14)           D1845 (Fectory 7801-14)         D1836 (Fectory 201-14)           D1836 (Fectory 7801-14)         D1840 (Fectory 201-14)           D1845 (Fectory 7801-14)         D1845 (Fectory 201-14)           D1845 (Fectory 7801-14)         D1845 (Fectory 7801-14)           D1840 (Fector Neco<	42 - 24 49 - 25 56 - 23 59 - 21 12 - 29 59 - 21 12 - 29 59 - 21 12 - 21 12 - 11 1 - 21 12 - 11 1 - 21 12 - 11 14 - 28 102 - 15 102 - 15 102 - 30 6 - 33 32 - 27 34 - 25 44 - 25 45 - 24 31 - 31 -31
5066           6040           6050           70003 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7016, 7017           7023 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7034 (See Model 7000)           (See Model 5010)           Chexis 109           (See Model 7003)           Chexis 800           (See Model 7003)           Chexis 800           (See Model 5021)           TRUETONE           D1046A           D1046A           D1046A           D10453 (Factory 26A76-650)           D1247, D1748           D1247, D1748           D1247, D1748           D1835 (Factory 7901-14)           D1835 (Factory 7901-14)           D1835 (Factory 701-14)           D1840 (Factory 701-14)	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 59-21 12-29 59 59-21 12-21 12-21 12-21 12 12 12 12 12 11 14-28 102 102-15 102 12-30 6-33 32-27 34-25 44-25 44-25 44-25 45-25 44-25 55 44-23 55-25 44-25 55 57-21 12-29 59 59-21 12-29 59 59 59 59 59 59 59 59 59 59 59 59 59
S066         S066           6040         S070           6050         S0700           7003 (Ch. 501)         T016, 7017           7014, 7017         S0717           7033 (Ch. 501)         T016, 7017           7034, Som Model 5007)         Som Model 5007)           Chemis 104         Som Model 5007)           Chemis 105         (See Model 5002)           Chemis 107         Som Model 5002)           Chemis 108         Som Model 5002)           Chemis 109         (See Model 7003)           Chemis 101         See Model 5021)           Chemis 800         (See Model 5021)           Chemis 800         (See Model 5021)           TELELA         HW301           TU0464, C         See Model D1046A)           D10454, C         See Model D1046A)           D10452, Fectory 26A76-6500         D10452           D1645         (Fectory 26A76-650)           D1644         State 6360           D1747, D1748         See 3660           D1836, Clarctery Model         25A86-856)           D18450 (Fectory Action         138PCLMA)           D18464, B, C         D18464, C           D18464, B, C         D18464           D18464, C	42-24 49-25 56-23 59-21 19-29 59 112-11 1 2 12 12 12 11 14-28 102 102 102 102 102 102 102 102 102 102
S066         S066           6040         S070           6040         S070           7003 (Ch. 501)         7016, 707           7016, 7017         S070           7014, 7017         S070           7015, 7017         S070           7016, 7017         S070           7016, 7017         S070           7016, 7017         S070           7036         S0717           7036         S077           Chessis 104         S007           (See Model 5001)         Chessis 501           Chessis 800         (See Model 7003)           Chessis 800         (See Model 5021)           Chessis 800         (See Model 5021)           TRUETONE         D10445, C           D10445, C         See Model 101046A)           D10445, C         See Model 101046A)           D10452, Fectory 701-141         D1642           D10452, Fectory 701-142         D1752 (Fectory 701-141)           D1752 (Fectory 701-141)         D1752 (Fectory 701-141)           D1835 (Fectory 701-141)         D18354 (Fectory 72648)           D1830 (Fectory No1-141)         D18354 (Fectory 72648)           D1830 (Fectory No1-141)         D18364 (Fectory 72648)	42-24 49-25 56-23 59-21 12-29 59 59-11 12-29 11 12-11 1 2 12 12 11 14-28 102-15 102 6-33 32-27 34-25 44-25 44-25 45-25 44-25 45-25
5066           6040           6050           70003 (Ch. 501)           7014, 7003           7015, 7017           7023           7016, 7017           7023           7034, Ch. 5011           7023           7034           (See Model 5007)           Chexis 105           (See Model 5002)           Chexis 501           (See Model 5002)           Chexis 501           (See Model 5021)           Chexis 800           (See Model 5021)           Chexis 800           (See Model 5021)           Chexis 800           (See Model 5021)           TRUETONE           D10445, C           (See Model D1044A)           D10442, C           (See Model D1044A)           D10442, D           D10443, C           (See Model D1044A)           D10442, D           D10442, D           D10443, C           (See Model D1044A)           D10442, D           D10442, C           See Model D1044A)           D10442, C           D10443           D10444     <	42-24 49-25 55-23 55-21 12-29 59 59-21 12-29 59 59-21 12-29 59 12-21 12 12 12 12 12 11 14-28 60-20 51
S066         S066           6040         S000, 7001           7003 (Ch. 501)         7016, 7017           7014, 7017         S016, 7017           7023         S0717           7034         Soe Model 7000)           7015, 7017         Soe Model 7000)           7016, 7017         Soe Model 5007)           Chessis 104         Soe Model 5010)           (See Model 5010)         Chessis 501           (See Model 5002)         Chessis 6002           (See Model 5021)         TEELA           HW301         TEUETONE           D10462, C         See Model D1046A)           D10462, C         See Model D1046A)           D10463, C         See Model D1046A)           D10464, C         See Model D1046A)           D10452, C         See Model D1046A)           D10463, Fractury 701-14)         D1835 (Fractury 701-14)           D1835 (Fractury 701-14)         D1835 (Fractury 701-14)           D1836, D1836A (Fractury 701-14)         D1836, Seise)           D1845 (Fractury 701-14)         D1845 (Fractury 701-14)           D1845 (Fractury 701-14)         D1845 (Fractury 701-14)           D1845 (Fractury 701-14)         D1845 (Fractury 701-14)           D1840 (Fractury 10000000000000000000000	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 12 12 12 12 12 12 12 12 12 12 12 12 12
5066           6040           6050           7003 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7016, 7017           7023 (Ch. 501)           7016, 7017           7036           (See Model 7000)           7036           (See Model 5007)           Chexis 105           (See Model 5010)           Chexis 501           (See Model 7003)           Chexis 800           (See Model 1003)           Chexis 800           (See Model 101046A)           10040 C, D           (See Model 101046A)           10090 Tel, Rec           101092 Tel, Rec           10142           101435 (Fectory 726A76-650)           11435 (Fectory 7901-14)           11835 (Fectory 7901-14)	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 59-21 12-29 59 59-21 12-21 12 12 12 11 12 12 12 12 12 12 12 12 1
5066           6040           6050           70003 (Ch. 501)           7014, 7017           7033 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7034 (See Model 5007)           Chexis 105           (See Model 5002)           Chexis 109           (See Model 5002)           Chexis 109           (See Model 7003)           Chexis 800           (See Model 5021)           (See Model 7003)           Chexis 800           (See Model 5021)           TRUETONE           D10446, C           (See Model D1044A)           D10446, D           D10446, C           (See Model D1044A)           D10444, D           D10445 (Fectory 26A76-650)           D1642           D1644           D1645           D1644           D1645           D1836           D1836           Chectory 26A76-650)           D1836           D1836           D1836           D1836           D1836	42-24 49-25 56-23 59-21 12-29 59-11 83-13 112-11 1 2 12 12 12 12 11 14-28 102 102 15 602 102 102 102 102 102 102 102 102 102 1
S066         S066           6040         S070           6040         S070           7003 (Ch. 501)         T016, 707           7016, 7017         T016, 7017           7033 (Ch. 501)         T017           7034 (See Model 7000)         T017           7035         S077           Chessis 104         S007           (See Model 5010)         Chessis 109           (See Model 5002)         Chessis 501           Chessis 501         S002           (See Model 5021)         TELEA           HW301         TEUETONE           D10445, D         See Model 1044A)           D10446, D         See Model 101044A)           D10447, D1748         T01643           D10445, D         See Model 101044A)           D10447, D1748         T0143           D1643         Fractnery 7001-14)           D1835         (Fractnery 7001-14)           D1835         Fractnery 7001-14)           D1836         Chestries A)           D1840         Fractnery Model           D1840         Fractnery Model           D1840         Fractnery Model           D1840         Fractnery Model           D1840	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 112-11 1 2 12 12 11 14-28 102 102 102 102 102 102 102 102 102 102
S066         S066           6040         S070           6050         S070           7003 (Ch. 501)         S070           7016, 7017         S070           7016, 7017         S070           7033 (Ch. 501)         S070           7034 (See Model 7000)         S070           Chessis 104         See Model 5010)           Chessis 501         See Model 7003)           Chessis 501         See Model 5021)           Chessis 800         See Model 5021)           Chessis 800         See Model 5021)           TRUETONE         D1046A           D1046A         D1046A           D1046A         D1046A           D1046A         D1046A           D1046A         D1644           D10452 (Fectory 26A76-650)           D1247, D1748           D1252 (Fectory 7901-14)           D1836 (Fectory 7001-14)           D1836 (Series A)           D1836 (Series A)           D1840, Fectory Neo.           D1840, Fectory Neo. <td< td=""><td>42       -24         43       -25         44       -25         55       -21         12       -29         59       59         59       -21         12       -29         59       -11         12       11         12       11         14       -28         102       -11         14       -28         102       -10         12       -30         6       -33         32       -27         34       -25         44       -25         45       -24         31       31         40       -23         51       -20         51       -20         51       -21         60       -13         77       -11</td></td<>	42       -24         43       -25         44       -25         55       -21         12       -29         59       59         59       -21         12       -29         59       -11         12       11         12       11         14       -28         102       -11         14       -28         102       -10         12       -30         6       -33         32       -27         34       -25         44       -25         45       -24         31       31         40       -23         51       -20         51       -20         51       -21         60       -13         77       -11
S066         S066           6040         S07001           7003 (Ch. 501)         S07003           7016, 7017         S0703           7014, 7017         S0703           7014, 7017         S08           7034         Som Model 7000)           7014, 7017         S08           7036         Som Model 7000)           7023         Som Model 5010)           Chexsis 105         Som Model 5010)           (See Model 5002)         Chexsis 501           (See Model 5021)         TELEA           HW301         TELEA           TRUETONE         D10445, C           See Model D1044A)         D10445, C           See Model D1044A)         D10445, C           See Model D1044A)         D10445, C           D10445, C         See Model D1044A)           D10447, D1748         See Se           D1752 (Fectory 7901-14)         D1835 (Fectory 7901-14)           D1835 (Fectory 7901-14)         D1836 (Series A)           D18445, NB         See           D18346, (Factory 7901-14) <td< td=""><td>42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 12-29 12-29 12-21 12-</td></td<>	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 12-29 12-29 12-21 12-
S066         S066           6040         S0700           6040         S0700           7003 (Ch. 501)         7016, 7071           7016, 7017         7023           7016, 7017         7036           7016, 7017         S08           7034         Som Model 7000)           7023         Som Model 5007)           Chexis 105         Som Model 5002)           Chexis 501         Som Model 7003)           Chexis 800         See Model 5021)           Chexis 800         See Model 5021)           Chexis 800         See Model 5021)           TRUETONE         D10446, D1046A)           D1044C, D         See Model D1046A)           D1044C, D         See Model D1046A)           D1045C, D         See Model D1046A)           D10452, Fectory 701-14)         D1752 (Fectory 701-14)           D1643         See Solo           D1752 (Fectory 701-14)         D1836 (Fectory 726A76-650)           D1747, D1748         D1836A (Fectory 726A76-650)           D1752 (Fectory 701-14)         D1835           D1835 (Fectory 701-14)         D1835           D1836 (Fectory 701-14)         D1835           D18353 (Fectory 701-14)         D1835      <	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 112-11 1 2 12 12 12 12 11 14-28 102 102-15 102 6-33 32-27 34-25 44-25 44-25 44-25 45-25 44-25 45-25 44-25 45-25 44-25 51 60 6-31 51-21 60 6-31 77-11 68
5066           6040           6050           6050           7003 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7016, 7017           7033 (Ch. 501)           7034 (See Model 7000)           7036           (See Model 5010)           Chexis 105           (See Model 5002)           Chexis 501           (See Model 5002)           Chexis 600           (See Model 5021)           Chexis 800           (See Model 5021)           TRUETONE           D10436, C           (See Model 101044A)           D10442, D           10444           D10442, D           101042           D10444           D10445           D10442           D10443           D10442           D10444           D10442           D10443           D10444           D10445           D1845<	42       -24         43       -25         44       -25         55       -21         12       -29         59       59         59       -21         12       -29         59       -11         12       11         12       11         14       -28         102       -102         102       -102         102       -102         102       -102         102       -102         102       -102         102       -33         102       -33         102       -33         102       -34         12       -30         6       -33         32       -27         34       -25         44       -25         45       -24         31       -31         60       -20         51       60         69       -13         77       -11         68       -1
S066         S066           6040         S000, 7001           7003 (Ch. 501)         7016, 7017           7016, 7017         7016, 7017           7023 (Ch. 501)         S007)           7016, 7017         S02           7036         S007)           Chessis 104         Soo           (See Model 5010)         Chessis 109           (See Model 5002)         Chessis 501           (See Model 5002)         Chessis 800           (See Model 5021)         TEELA           TRUETONE         D1046A           D1046C, D         See Model D1046A)           D1046C, D         See Model D1046A)           D1046C, D         See Model D1046A)           D1047, D1748         Soo           D10462, D         See Model D1046A)           D10463         Soo           D10464         Soo           D1752 (Feactory 7001-14)           D1835 (Feactory 7001-14)           D1835 (Feactory 7001-14)           D1835 (Feactory 7001-14)           D1835 (See Model D1940)           D1845         Soo           D1845         Soo           D1845         See Model D1949           D1990, D1951 (See	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 112-11 1 2 12 12 12 12 11 14-28 102 102-15 102 102-15 102 44-25 45-25 45-25 44-25 45-55 45-25 45
S066         S066           6040         S0700           6050         S0700           7003 (Ch. 501)         S0700           7016, 7017         S0700           7016, 7017         S0700           7016, 7017         S0700           7036         S0717           7036         S0717           7036         S0717           7036         S077           Chessis 104         S0077           (See Model 5007)         Chessis 501           Chessis 501         S0021           Chessis 800         (See Model 7003)           Chessis 800         (See Model 5021)           TEUETONE         D10348, C           See Model D1046A)         D1046A           D10407, Teil, Rec.         D1642           D10407, Teil, Rec.         D1643           D1644         D1644           D1645 (Fectery 26A76-650)           D1747, D1748         D1830           D1830         Chestery 26A76-650           D1845 (Fectery 701-14)         D18350	42-24 49-25 56-23 59-21 12-29 59 59-21 12-29 59 59-21 12-29 59 59-21 12-29 59 59-21 12-21 12 12 12 11 12 12 12 12 12 12 12 12 1
S066         S066           6040         S0700           6050         S0700           7003 (Ch. 501)         S0700           7016, 7017         S0700           7016, 7017         S0700           7033 (Ch. 501)         S0707           7034         Som Model 5007)           Chexis 105         S070           (See Model 5002)         Chexis 501           (See Model 5002)         Chexis 501           (See Model 5002)         Chexis 501           (See Model 5021)         Chexis 501           (See Model 5021)         Chexis 800           (See Model 10044A)         D1044A           D1044C, D         See Model 101046A)           D10452 (Fectory 26A76-650)         D1845           D1845 (Fectory 26A76-650)         D1835           D1845 (Fectory 26A76-650)         D1835           D1845 (Fectory 26A76-650)         D1845           D1845	42-24 43-25 55-23 59-21 12-29 59 112-11 1 2 12 12 12 12 12 12 12 11 14-28 102 102 102 102 102 102 102 102 102 102

# **TRUETONE**—WESTINGHOUSE

TRUETONE-Cont. Model 6D117) ..... 10-32 31-32 
 Model 6D117
 10-32

 D2616-8
 31-32

 D2619 (Foctory No. 2701)
 27-29

 D2620
 1-28

 D2621
 4-32

 D2622
 14-30

 D2623
 11-29

 D2624 (Foctory 27D14-600)
 2-6

 D2623 (Foctory 27D14-600)
 2-6

 D2624 (Foctory 27D14-600)
 2-6

 D2626 (Foctory X0-10-52-22
 D2630) (Foctory

 Z7D14-602 Issue A)
 1--10

 D2640 (Foctory No. 457-2)
 52-22

 D2640 (Foctory No. 459)
 43-21

 D2644 (Foctory No. 459)
 12-32

 D2644 (Foctory No. 459)
 12-32

 D2644 (Foctory No. 459)
 12-32
 D2642 ..... 12-32 D2644 (Foctory No. 101C) 11-30 
 Series A)
 22—31

 D2692
 39—28

 D2709 (Factory No. 470)
 27—30

 D2101 (Factory No. 24D22-63098)
 23—31

 D2718 (Factory No.
 23—31

 D2718 (Factory No.
 23-32

 227D14-638(U)
 23-32

 D2743
 25-29

 D2745 (See Model D1645)
 6

 D2748 (Ch. 7156)
 26-27

 D260, D2807 (Factory
 44-26

 D2810 (Factory No.
 24D24-73088)
 36-27

 D2819 (Factory No.
 24D24-73088)
 35-24

 D2819 (Factory No.
 26A82-738)
 35-24

 D2819 (Factory No.
 26A82-738)
 35-24

 D3910 (Fact, Model
 74-10

 140611)
 74-10

 D4620 (Factory No. 5C12)
 25-28

 D4630 (Factory ZéC19-61)
 7--26

 D4818 (Fact. No. 1340X)
 45-26

 D4818 (Fact. No. 1200X)
 47--25

 D4842 (Fact. No. 26-21)
 201088A Tel. Rec. 105-11

 D10898 Tel. Rec. 105-11
 2010898 Tel. Rec. 113-10

 D10993A, 201094A
 14-12

 D1094A Tel. Rec. 119-12
 201094A Tel. Rec. 119-12

 D10953 Tel. Rec. 120-11
 140-12

 D10974 Tel. Rec. 1120-11
 50-21
 ULTRADYNE L-46 ..... UNITED MOTORS SERVICE (See Delce or Buick, Chevrolet, Oldsmobile and Pontiac) U. S. TELEVISION CFM-16926 Tel, Rec.... K-25936 Tel, Rec.... K-30936 Tel, Rec.... KFM-25-PIC Tel, Rec.... KFM-258636 Tel, Rec.... KFM-30836 Tel, Rec.... KRM-15933 Tel, Rec.... KRM-1591P Tel, Rec.... KRM-15831P Tel, Rec... RTV-13431P Tel. Rec..... 1 5024, 1502P Tel. Rec.... 1 5027, 1502P Tel. Rec... 1 - 5027, 1502P Tel. Rec... 1 - 52251 Tel. Rec.... 1 - 52251 Tel. Rec... 1 - 10823 Tel. Rec... 1 -

U. S. TELEVISION-Cont. UNITONE 88 ..... S--26 V-M 1001-A ..... 10-34 VAN-CAMP 576-1-6A ..... 7-29 VIDEO CORP. OF AMERICA (See Videole) VIDEODYNE VIDEOLA VS-160, VS-161 Tel. Rec. 92-VS-165, VS-166, VS-167, VS-168 Tel. Rec. (See Model VS-160).... 92 VIEWTONE RC-201A. RRC-201 ..... 11-32 VIZ RS-1 ..... 14-31 VOGUE 532 A-P ..... 11-33 Ch. Models 553R, 554R ... 8-32 WARWICK (See Clarica) WATTERSON 
 WATLEBOOM
 16-36

 ARC-4591A
 16-36

 PA-4585, APA-4587
 3-2

 SC-4581
 16-35

 4582
 6-31

 4782
 24-31

 4790
 16-31

 4800
 43-23
 WEBSTER-CHICAGO 
 WEBSTER-CHICAGO

 66-1A
 34-26

 100-621
 113-11

 130
 119-13

 161-1
 55-23

 288
 117-14

 362
 105-12

 760
 112-12

 762
 (See Model 362)....105
 WEBSTER (Telehome) WESTERN AUTO (See Truetone) WESTINGHOUSE

 
 WESTINGHOUSE-Cont.

 H-183, H-183A
 48-26

 H-184 (See Model H-153)
 35

 H-185 (Ch. V-2131, V-2131, V-2131-1)
 54-20

 H-186 (Ch. V-2131, V-2131, V-2131, V-2131, V-2133)
 51-25

 H-190, H-187
 60-21

 H-186 (Ch. V-2133, V-2134, V-2134)
 51-25

 H-190, H-191, H-191A
 (Ch. V-2134, V-2134, V-2130-1)

 H-196 Tel. Rec. (See Model H-184), 54
 54

 H-196 (Ch. V-2130-1)
 59-23

 H-196 (Ch. V-2130-1)
 59-23

 H-196 (Ch. V-2137, V-2137, V-2130-1)
 59-16

 H-196 (Ch. V-2137, V-2137, V-2130-1)
 50-16

 H-203 (Ch. V-2137, V-2137, S2-15
 50-16

 H-2074 (Ch. V-2137, V-2137, S2-15
 50

 H-2073 (Ch. V-2137, S2-1, S3
 50

 H-2074 (DX) (Ch.
 50

 H2074 (DX) (Ch.
 51

 H2074 (DX) (Ch.
 54

 H2077 (DX) (Ch.
 54

 H2078 (DX) (Ch.
 54
 WESTINGHOUSE-Cont. [See Model H196A [DX] H2078 (DX) (Ch. V-2130-21DX or V-2130-22DX and Radio Ch. V-2137) Tel. Rec. [See Model H196A 

WESTINGHOUSE-Cent. H-005112 (Ch. V-2150-101) Tel. Rec... 97—19 H-006K12 (Ch. V-2150-111, A) Tel. Rec... 120—12 H-007K12 (Ch. V-2150-111, A) Tel. Rec. (See Model 406K12)...120 H-008C12 (Ch. V-2152-01, V-2149-3) Tel. Rec. (See Model 4-030C12)..100 H-009T10 (Ch. V-2150-94C) Tel. Rec... 95—7 H-610112 (Ch. V-2150-136] Tel. Rec.......105—13 H-611C12 (Ch. V-2152-16] Tel. Rec.......112—14 H-613K16 (Ch. V-2150-146] Tel. Rec.........107—12 WESTINGHOUSE-Cont. ...116-13 H-627/K17 (Ch. V-2171) Tel. Rec. [See Model 626716]...116 H-628K16, H-629K.16 (Ch. V-2171) Tel. Rec. [See Model H-626716].116 H-630714 (Ch. V-2176) Tel. Rec. [See Model H-626716].116 H-633717 (Ch. V-2175) Tel. Rec. [See Model H-626716].116 H-6337114 (Ch. V-2177) Tel. Rec. Tel, Rec. (See Model H-626T16).116 Ch. V-2102 (See Model H-104).... 4 Ch. V-2102 (See Model H-104)... 4 Ch. V-2102-1 (See Model H-138)... 6 Ch. V-2103 (See Model H-133)... 35 Chazsis V-2103-3 (See Model H-214)... 75 Ch. V-2107 (See Model H-133)... 14 (See Model H-161)... 33 (Ch. V-2119-1 V.2119.1 Ch Ch. V-2119-1 [See Model H-164].... 36 Ch. V-2120 [See Model H-165].... 32 Ch. V-2122 [See Model H-157].... 33 Ch. V-212 [See Model H-157].... Ch. V-2123 [See Model H-178].... 35 Ch. V-2124-1 [See Model H-169].... 37 Ch. V-2128, V-2128-1 [See Model H-182].... 53 (See Model H-182).... 53 Ch. V-2128-2 (See Model H-202).... 50 Chensis V-2130-1 (See Model H-196).... 65 Ch. V-2130-11DX, V-2130-11DX, See Model H196A [DX]}... 84

WESTINGHOUSE-Cont. WESTINGHOUSE-LON7. (Ch. V-2130-0210X, V-2130-0210X (See Model H196A [DX])... 84 Ch. V-2130-310X, V-2130-320X (See Model H196A [DX]]... 84 Ch. V-2131, V-2131-1 (See Model H186A) 56 Ch. V-2132 c Ch Ch ïs. See Model nove V-2149 See Model H-2178).... 91 Model H300T5)... 88 Ch is Ch. V-2150-01, V-2150-02 (See Model H-223)... 78 Ch. V-2150-11 (See Model H-606K12). \* Ch. V-2150-31 (See Model H-600T16)... 97 Ch. V-2150-61, A, 8 (See Model H-600T16). 98 Ch. V-2150-61, A, 8 (See Model H-600T16). 98 Ch. V-2150-61, A, 8 (See Model H-600T16). 99 Ch. V-2150-74 (See Model H-600T10)... \* Ch. V-2150-101 (See Model H-600T12)... 97 Ch. V-2150-111, A (See Model H-610T12).105 Ch. V-2150-136 (See Model H-610T12).103 Ch. V-2150-146 (See Model H-617T12).103 Ch. V-2150-145, (See Model H-617T12).103 Ch. V-2150-176, U (See Model H-617T12).103 Ch. V-2150-186, A, C, CA (See Model H-617T12).103 Ch. V-2150-186, A, C, CA (See Model H-625T12)...104 (See Model H-625T12)...107 (See Model H-625T12)...104 (See Model H-625T12)...104 (See Model H-625T12)...104 (See Model H-625T12)...105 Ch. V-2150-186, A, C, CA (See Model H-625T12)...104 (See Model H-625T12)...104 (See Model H-625T12)...104 (See Model H-612712)...105 Ch. V-2150-186, A, C, CA (See Model H-625T12)...114 (See Model H-612712)...104 (See Model H-612712)...104 (See Model H-612712)...104 (See Model H-612712)...105 Ch. V-2152-01 (See Model H-612712)...104 (See Model H-612712)...104 (See Model H-612712)...104 (See Model H-612712)...105 Ch. V-2150-186, A, C, CA (See Model H-612712)...104 (See Mod Ch. V-2171 (See Model H-626T16)..116 (See Model H-620116)...119 (See Model H-633C17). \* Ch. V-2175, V-2176, V-2177 (See Model H-626116) ....116 Ch. V-2178 , v-21/8 (See Model H-638K20). \*

WILCOX-GAY (Also See Recordie) G403, G404 Tel. Rec. (See Majestic Model 1272)..108 OD-446M (OD Series) WILLYS-OVERLAND 8030 ..... 50—23 WILMAK W-446 "DENchum" ..... 21-11 
 WOOLAROC

 3-1A (Ch. 6-9022-J).

 3-2A (Ch. 6-9022-K).

 6-37

 3-3A (Code 7-9003-D).

 2-34

 3-6A/5

 2-4A/5

 2-17A/3

 2-14A(Ch. 56A76)

 2-33

 3-13A, 3-14A, 3-15A,

 3-14A (Ch. 56A76)

 3-12A, 3-18A

 3-20A

 2-27

 3-270A

 3-270A

 3-270A

 3-14A (See Model 3-71A) 36

 3-71A

 3-70A

 3-70A

 3-70A

 3-70A

 3-70A

 3-70A

 3-70A

 3-70A

 3-70A

 WOOLABOC ZENITH . 91A-13 Tel. Rec. ..... G-2322Z1 (Ch. 23G24Z1) Tel, Re (See N (300 Model G2322Z)... 91A G2353E21 (Ch. 23G24Z1) Tel. Rec Rec. Model G2322Z). Tel. Rec. ..... G2356EZ (Ch. 23G24) Tel. Rec. (See Model G2322Z)... 91A G2420E (Ch. 24G20) G2420-EOX (CR. 24G20-OX) Tel. Rec. (See Model G2420E)... 93 G2420R (Ch. 24G20) Tel, Rec. (See Model G2420E)... 93

ZENITH-Cont. ZENTTH-Cent. G2420-R0X [Ch. 2420-R0X] Tel. Bac. [See Model G2420E]... 93 G243782 (CA.243882, Z, G243982 (CA.24G24)-el. Rec. [See Model G2322] 98 G2441 [Ch. 24624] Tel. Tel. Bac. [See Model G2322]... 98 G244182, Z (Ch. 24624) Tel. Fel. Rec. G3158RZ1 (Ch. 23G24Z1) G3259821 [Ch. 24G2621] Tel. Rec. ..... G32622 (Ch. 24G26, BG20/22] Tel. Rec. (See Model G325982).. G326221 [Ch. 24G2621] Tel. Rec. . 91A 

1	ZENITH-Cent.	ZENITH-Cont.
	H2328E2, #2 (Ch. 23H222) Tel. Rec	9H881, 9H882R, 9H885, 9H888R (Ch. 9E21) 43-
	H2352RZ, H2353EZ (Ch. 23H227) Tol. Ber (See	9H984, 9H984LP
2	Model H2328EZ]118	9H995 (Chassis 9E21Z) 74-
	H2437E, R, H2438R, H2439R (Ch. 24H20)	12H090, 12H091, 12H092, 12H093, 12H094
	Tel. Rec	(CH. 11C21) 2-
	Rec. (See Model	27T965R [Ch. 27F20] Tel.
	H2437E)	Rec. (See Model G2951) 95 281925 (Chossis 28522)
	Rec. (See Model H2437E) 120	Tel. Rec
	H2449E (Ch. 24H20) Tel.	(Chossis 28F25)
	112437E)	Tel. Rec. (See Model 281925)
	H3267R (Ch. 24H20 and Badia Ch. 8H20) Tel.	287960, 287961, 287962,
	Rec. [See Model H2437E	281965 (CR. 28720, 28720Z, 28721)
	H880RZ (Set 114)]	Tel. Rec. (See Model 287925)
	H3467R (Ch. 24H20 and Radio Ch. 10H20) Tel.	287964R (Chassis
	Rec. (See Model	29T926R, E (Ch. 28F25)
	H3475R [Ch. 24H20 and	Tel. Rec. (See Model 28T925)
	Radio Ch. 10H20) Tel. Rec. (See Madel	371996 RLP (Ch.
	H2437E)	Rec. (See Models
	Rodie Ch. 10H20) Tel.	421999RLP and 9H995). 74 371998 RLPU (Chamis
	Rec. (See Model H2437E)120	28F20, 9E21Z) Tel. Rec.
	H3478E (Ch. 24H21 and Badia Ch. 10H20) Tel	64) and Model 911995
	Rec. (See Model	{Set 74)} 471999RLP (Chessia 28F23
	H2437E) 120 4G800 (Ch. 4E41) 35-27	Redie Ch. 13022) Tel.
	4G800WZ, 4G800YZ,	28T964R) 74
	4G903, 4G903Y (Ch.	Ch. 4C52 (See Model 4K816)
Į	4F40) 76—20 4K016 (Ch. 4C52) 6—39	Ch. 4C53
	4K035 (Ch. 4C53) 6-40	(See Model 4K035)  Ch. 4E41
	(Ch. 5C01, 5C01Z) 3-17	(See Model 4G800) 35
	50810 (Ch. 5E02) 54-21 56003 (Ch. 5C40) 17-35	(See Model 4G800Z) 52
	5G003Z (Ch. 5C40Z),	Ch. 4P40 (See Model 4G903)
	5G036 (Ch. 5C51) 30-32	Ch. 5C01, 5C01Z (See Medial 50011) 3
	58080-58086 (Ch. 5C02, 5C04) 4-4	Ch. 5C02, 5C02Z
	6D014, 6D014W, 6D029,	(See Model 58080) 4 Ch. 5004
3	6D015, 6D015Y, 6D030	(See Model 58080) 4
	(Ch. 6C05, 6C05Z) 3-24 6D815, 6D815W,	(See Model 5G003) 17
	6D815Y (Ch. 6E05) 55-24	(See Model 5G003Z) 30
	{Ch. 6C40} 3-14	Ch. 5C51 (San Madel 5G036) 30
	6G001YZ1 (See Model 6G001)	Ch. 5E02
	6G004Y (Ch. 6C41) 28-35	[See Model 50610] 34 Ch. 5G01 (See Model
	6G801 (Ch. 6E40) 53-26	G511) 85
	68060	G510) 84
	68087 (Ch. 6C22) 7-32 68886 (Ch. 6502) 34-30	Ch. 5G03 (See Medel G516)
3	7H820, 7H820W	Ch. 5G40 (See Model
	(Ch. 7E01) 43—24 7H822 (Ch. 7E02),	Ch. 5G41
	7H822WZ, 7H822Z (Ch. 7E02Z) 55—25	(See Medel G303) 99 Ch. 6C01
	7H918 (Chassis 7F03) 75-18	(See Model 60014) 9
	7F01} 77—13	{See Model 6D105} 3
	7H921 (Chossis 7F04) 73-16 7H922 (Ch. 7F02) 87-15	(See Model 78070) 37
	7R070 (Ch. 6C06) 37-25	Ch. 4C21 (See Model 68084) 20
	78887 (Ch. 7E22) 54-22 8G005Y (Ch. 8C40) 7-33	Ch. 6C22
	8G005YT (Z1) (Ch. 8C40T)	Ch. 6C40
	(Ch. 8C40T) (Z2) 53-27	(See Model 6G001) 3 Ch. 6C41
2	8H023 (Ch. 8C01) 4-40	(See Model 6G004Y) 28
	(Ch. 8C20) 1—33	(See Model 6G038) 32
	8H034 (See Medel 8H023) 4 8H050, 8H051, 8H052.	Ch. 6E02 (See Model 62886) 34
	8H061 (See Model	Ch. 6E05
3	SH832, SH861 (Ch. 8E20) 53-24	Ch. 6E40
	9H079, 9H079E, 9H079E, 9H081, 9H082E, 9H085E,	See Medel 6G801} 53 Ch. 6G01
	911068R (Ch. 8C21) 7-34	(See Model Gi60) 96

# WILCOX-GAY-ZENITH

TH-Cent. ZENITH\_Cost. Ch. 6G05 (See Model G615).... 86 Ch. 6G20 (See Model G2957).... 98 1, 9H882R, 9H885, 888R (Ch. 9E21) ... 43-25 4, 9H984LP -12 Ch 7F01 

 H093, 12H094

 H, 11C21)
 2—20

 89 (Ch. 13D22)
 41—24

 65R (Ch. 27F20) Tel.
 5

 c. (See Model G2951)
 95

 25 (Chassis 28F22)
 4

 7H920)
 77

 Ch. 7F02
 (See Model 7H922)

 (See Model 7H922)
 87

 (See Model 7H918)
 75

 (See Model 7H918)
 75
 . Rec..... 64-15 26E, 28T926R assis 28F25) . Rec. (See Model . 64 925) ..... 0, 28T961, 28T962, 1963 (Ch. 28F20, 202, 28F21) (See Model 7H921).... 73 7G01 Ch del G725)....101 ïs See Madei G724)....103 Ch . Rec. (See del 287925)..... 64 (See Model G724)....103 (See Model G724)....103 (See Model G723)....104 (Ch. 8C01 AR (Chessis F23) Tel. Rer..... 74-13 (See Model 8H023).... 4 See Model 8H032).... 1 Ch. 8C20 [See Model 8H032].... 1 Ch. 8C21 [See Model 9H079].... 7 Ch. 8C40 [See Model 8G005Y]... 7 Ch. 8C40(721), 8C407(72) [See Model 8G005YT(71)] [See Model 8H832].... 52 Ch. 8C30 [See Model G881]..... 98 Ch. 8C20/22 (See Model G3157R2]...... 91// Ch P23, 9E212, 1e1. c. (See Model: 1999 RLP and 9H995). 74 98 RLPU (Chaesis F20, 9E212) Tel. Rec. es Model 281925 (Set ) and Model 9H995 et 74)] DPB18 (Chaesis 28573 Ch. 8G20/22 (See Model G31578Z) ..... 91A Ch. 8H20 (See IVD4ay ..... IC52 In Model 4K916).... 6 Indel H880RZ) .....114 M a 9E21 h. 9E21 [See Madel 9H881].... 43 hassis 9E21Z [See Madel 9H995].... 74 h. 9F22 [See Madel 9H984].... 64 CI Model 4G8001.... 35 Ch Z odel 4G800Z)... 52 See Model 9777007, 10H20 See Model H2437E)...120 IF40 (See Model Ch ïs Ċ, ïs Model 50011).... 3 iC02, 5C02Z [See Model 12H090]... Z Ch. 13022 (See Model 14H789)... 41 Ch. 22H20 [See Model H22268].....114 del 58080).... 4 Model 56080).... 4 IC40 se Model 5G003}.... 17 IC402, 5C4022 se Model 5G0032]... 30 IC51 Model 5G0361.... 30 se Model 5G036).... 30 jE02 se Model 5D810).... 54 jG01 (See Model 5041 10 Model G303)..... 99 1001 Model 6D014}.... 9 ye Model during, ICO5, 6CO5Z ee Model 6D105}.... 3 (See Mod Ch. 24G24 (See Me a 'is a a) adel 68067).... 7 pe Model 6G001).... 3 VC41 **Ch** Model (G004Y)... 28 iC50 se Model 6G038).... 32 adal 62886).... 34 Medel 60615).... 55 Medel 6G801).... 53 a

Set No.

15.

16-

del G2441}.... 98 24G24/25 See Model 3059R}..... 98 (See Model 3037K).... -h. 24G26 (See Model G2437RZ).. 91A h. 24G2621 (See Model G2441Z1). \* h. 24H20, 24H21 (See Model H2437E)...120 (380 Model (1243/2)... (See Medel 271965R)... Ch. 28F20, 28F20Z, 28F21, 28F22 (See Medel 287925) ..... 64 Ch. 28F23 (See Model 28T964R).. 74 Ch. 28F25 (See Model 28T925)... 64 . 29G20 {See Model G2951}.... 95 ADDITIONAL BENEFITS From time to time, PHOTOFACT Folder Sets include valuable "bonus" materials, as well as useful data of a special nature. The following useful materials are extra benefits available in the Sets indicated at no additional cost. Set No. 12-Certificate entitling subscriber to PHOTO-FACT Volume Labels for Vols. 11-20...102 -Certificate entitling subscriber to Photofact Television Course -CR (Electromagnetic) Tube Characteristics Chart ... -CR Tube Interchangeability Chart.....112

		·•.
I-RMA Production Source Code		
(July 1, 1946)	• • • •	5
2-RMA Production Source Code		
(Jan. 1, 1949)		70
3-RMA Production Source Code		
(Revisions as of July 1, 1949)		92
Parts Manufacturers		12

-National Electrical Code on Antennas.... 88 5

FROM PHOTOFACTS

-Certificate entitling subscriber to PHOTO-11 -FACT Volume Labels for Vols. 1-10.... 62

10—Replacement of Disc & Plate Type

Record Changer Cross Reference by

7-

Manufacturer and Model......118

9—"Let's Look at the Sync Pulses"..... 64

See next page for Photofact Folder Sets covering Record Changers and Recorders.

# **RECORD CHANGERS**

(CM-1) indicates service data also available in Howard W. Sams 1947 Record Changer Manual. (CM-2) indicates service data available in Howard W. Sams 1948 Record Changer Manual. (CM-3) indicates service data available in Howard W. Sams 1949, 1950 Record Changer Manual.

ADMIRAL	FARNSWORTH	OAK	THORENS	WERSTER Cont
RC-150(CM-1) 26-31	P-51, P56(CM-1) 13-36	6666	CD-40 (CM-1) 39_29	246 (CH 2) 74 11
RC-160, RC-160A, RC-161,	P-72, P73{CM-2} 75—8	9201 (CM-3) 111-10		256 (CM-2) 88 13
RC-161A (Supplement to	GARRAD		IRAV-LER	346
IC-200]	RC-60	PHILCO	A(OM-3) 72-13	356, 357 (CM-3) 106-16
PC-180 PC-181 (CM-2) 76 1		D10, D10A(CM-1) 14-21	UNIVERSAL CAMERA	
RC-182 Supplement (CM-2) 76-2	GENERAL ELECTRIC	M-7 (CM.1) 2330	100{CM-1} 36-30	WESTINGHOUSE
RC-200 (CM-1) 9	ro	M-8	UTAH	V4914 (CM-2) 47-26
RC210, RC211, RC212	GENERAL INDUSTRIES	M-9C(CM-2) 74-7	550	V4944(CM-2) 86-13
(CM-3) 72-1	RC130L{CM-1} 22-33	M-12C	650 (CM-1) 22-34	
RC220, RC221, RC222	CEMERAL INSTRUMENT		7000(CM-1) 27-31	ZENITH
Changes (CM-3) 108-2	204 (CM 1) 98 34	RCA	7001{CM-2 83—15	S11468
RC320, RC321, RC322 (See	205 (CM-1) 10	RP168(CM-3) 72-10	V-M	S14001 (CM-1) Z/32
(honos) (CM-3) 108	1000	RF-176	200-8	\$13675, \$14002.
RC400	ILEAR COULD TO THE	RP-178	400	\$14006, \$14008 (CM-2) 85-15
	PG-200A(UM-1) 18-J3		400 (LONe)	\$14004, \$14007 (CM-2) 79-18
AERO	MAGUIRE	SEEBURG	402D, 400D (CM-2) 87-14	514012, 514014 (CM-3) 110-14
46A (CM-1) 19-34	ARC-1{CM-1} 7	K	404 (See Model 405)	514022
4/A(CA-2) //2	MARKE	L	(CM-3) 73	514023
AVIOLA	70 71 /CH.21 84 8	S. SQ	406, 407 (CM-3) 102-16	Model 514022) (CM-3) 112
100	74, 75 (CM-3) 91-7		800(CM-1) 2138	S14026 (See Model
		SILVERTONE	800-D	S14023) (CM-3) 105
BELMONT	MRLWAUKEE ERWOOD	101.761-2,	910 - (CM-3) 77-12	S14027 (See Model S14022) (CM 2) 112
C-9(CM-2) 34-31	10/00	101.762-2{CM-2} 77-10	950 (CM-3) 107-13	014011)
	11600	101.762-3 (CM-2) 83-11	WERSTER	MISCELLANEOUS
CRESCENT		101.762,	50 (CH 1) 24 25	Series 700F (CM.2) 89_0
C-200(CM-1) 20-37	MOTOROLA	101.763{CM-2} 88-11	56	Series 700F 33/45 (CM-3) 75-11
0 301105 (CM-3) 89-4 250 Series (CM-2) 78-5	824RC, 825RC,	SPARTON	70(CM-1) 29-28	Series 700FLP (CM-2) 101-6
350 Series (CM-2) 80-3	RC30	C48 /CH 21 87 11	133	Series 700F5 (CM-2) 104-8
			140[CM-2] 80—12	Series /UUE (CM-2) 918

t

BRUSH SOUND MIRROR           BK-401 Tape Recorder           (CM-1) 42—25           BK-403	CRESCENT-Cowt. M-2000, M-3000 Series120-4 1000 Series(CM-2) 1000 Series Revised (CM-3) 77-4 CRESTWOOD CP-201(CM-3) 118-4 EICOR 1000(CM-3) 90-4 GENERAL INDUSTRIES R70, R90(CM-1) 35-28	INTERNATIONAL ELECTRONICS PT3(CM-2) 88—4 LEAR DYNAPORT WC-311-D(CM-2) 80—8 MAGNECORD AUDIAD AD-1R(CM-2) 84—7 MASCO 375	RCA MI-12875 (CM-2) 85—12 SRLVERTONE 771	WEBSTER-CHICAGO           79-80 Wire Recorder           (CM-1) 37—26           178(CM-3) 113—12           WEBSTER ELECTRIC           Ekolope(CM-3) 116—12           WIRE EBCORDING CORP.           WP
		EDAL		

RECORDERS



## 44

## TELEVISION TUNING UNITS

• • Continued from page 27 • •

strips are provided at the rear of the tuner for making the necessary connections to the receiver. The oscillator tube is shielded and a snap-on shield is provided which, when in place, completes the external shielding of the tuner.

Two tubes are employed. A 6AG5, 6CB6, or 6AK5 serves as the RF amplifier, and a 6J6 performs the oscillator and mixer functions.

Referring to the schematic of Figure 1-9B, it can be seen that the signal is connected to the input coil L1, which has a split primary. The other ends of these coils are grounded in the high channel positions by the rear switch section. On the low channels this ground is broken and the signal is connected across the primary of L4, which has a grounded center tap. In this manner, a balanced input is maintained with a minimum of switching.

In the high channel positions, the signal is coupled to the secondary of L1, which is the channel 13 antenna coil. The primary of L1 is wound on a wax-impregnated cardboard tube and the secondary is inside the tube. Adjustment is made by compressing or expanding the windings of the secondary. C1 couples the signal to the RF grid and R1 serves as the grid load, which is returned to the AGC line to control the gain of the stage. As the channel switch is rotated counterclockwise, the bar shown on the schematic moves down, adding a small inductance at each channel position, lowering the resonant frequency of the circuit. When the channel 6 position is reached, the incoming signal is connected across the primary of L4 and is inductively coupled to the secondary of L4.

The primary of L4 is wound on a wax-impregnated cardboard tube similar to L1, and the secondary is wound inside the tube. Adjustment is made by expanding or compressing the windings of the secondary. R2 shunts the low-channel coils providing greater bandpass characteristics on the low channels. As the channel switch is rotated from channel 6 to channel 2, small incremental inductances are added, which lowers the resonant frequency. The low-



## Fig. 1-9A. Alignment Points.

# ALIGNMENT INSTRUCTIONS SARKES TARZIAN MODEL TT-3 TV TUNER

# READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The incremental loops on the high band channels and the incremental coils on the low band channels should not normally need adjusting. However in the event of damage to the coils, or if part replacement changes the original L/C ratio of the coils, it will be necessary to adjust the coils. Adjustment is accomplished by spreading or squeezing the turns, using as an indicator the same equipment used for adjusting Al and A2. If the coils are adjusted it is essential that the adjusting be started with channel 12 and progress towards channel 2 (except for channel 6 which is adjusted with A2).

OSCILLATOR ALIGNMENT

In the receivers which employ a separate sound channel, the oscillator can most conveniently be aligned by feeding the channel sound carrier frequency into the antenna terminals and adjusting the oscillator for zero voltage reading on a VTVM connected across the sound detector output. The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.

			SEF	PARATE SO	UND IF RECEIVER OS	CILLATOR	ALIGNMENT
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT	ADJUST	REMARKS
1.	Two 1200 carbon res.	Across antenna terminals with $120\Omega$ in each lead.	215.75MC (Unmod.)	13	Across sound detector output.	Al	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
2.	**		209.75MC 203.75MC 197.75MC 191.75MC 185.75MC	12 11 10 9 8			Check all high band channels to see that zero voltage indication can be obtained within 30% rotation of the fine tuning control. If not, compromise adjustment of Al may be required.
			179.75MC	7			
3.		**	87.75MC	6	**	A2	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
4.	**		81. 75MC 71. 75MC 65. 75MC 59. 75MC	5 4 3 2			Check all low band channels to see that zero voltage indication can be obtained within 30% rotation of the fine tuning control. If not,compromise adjustment of A2 may be required.

45

### INTERCARRIER RECEIVER OSCILLATOR ALIGNMENT

The most convenient method of oscillator alignment to use with this type of receiver is the beat frequency method. To employ this method it becomes is therefore used in the following example, although the sound IF frequency could be used in a similar manner. After the video IF frequency is determined it is necessary to add this frequency to the channel video carrier frequency to determine at what frequency the oscillator operates on each channel.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 120Ω carbon res.	Across antenna termin- als with 1200 in each lead.	211.25MC plus video IF freq. (see para- graph above)	13	Vert. Amp. to tuner output (1st video IF amp. grid)	Al	Adjust for zero beat indication on scope. This will be indicated by a narrow trace between two wide ones.
2.	17		(see para- graph above)	12 thru 7	U		Check all high band channels to see that zero beat indication can be obtained within 30% rotation of fine tuning control. If not, compromise adjustment of Al may be required.
3.	"	"	83.25MC plus video IF freq.	6		A2	Adjust for zero beat indication on scope.
4.	**		See para- graph above	5 thru 2			Check all low band channels to see that zero beat indication can be obtained within $30\%$ rotation of the fine tuning control. If not, compromise adjustment of A2 may be required.
				RF. MD	XER AND ANTENNA		AENT

If the AGC terminal is not grounded, connect the negative lead of a 1 1/2 volt battery to the AGC terminal, positive to chassis or to the common negative line in transformerless receivers

Connect the vertical amplifier of the scope to point A through a 10K ohm decoupling resistor.

The signal generator is coupled to the antenna terminals through the same matching network as used in oscillator alignment above. The bandpass of this tuner is achieved through overcoupling instead of stagger tuning. The adjustment of the coils is accomplished by compressing or expanding the coils. The object of the alignment is to adjust the coils in the plate of the RF amp and the mixer grid to the same frequency at the center of the band. The overcoupling is accomplished by the close spacing of the RF plate and mixer grid coils and by the capacitors C4, C5 and C8. The RF grid circuit is also adjusted to the center frequency which fills in the valley at the center of the response curve. Each coil should be checked by using a tuning wand to see if adjustment is required before the coil is disturbed.

Wand to see it adjustment is required before the coil is disturbed. The oscillator alignment should have been checked before the following alignment is attempted as the mixer loading varies with the oscillator injection voltage. Channel 13 must be aligned first. Set sweep generator to center frequency of channel 13 and check the position of the sound and video markers. If Li, L2 and L3 are properly aligned the response curve will be similar to figure 1-9C. If it is not place the tuning wand near the coils to determine which coil or coils require adjustment. If the powdered iron end of wand improves response, the coil must be compressed. If the brass end improves response, the coil must be expanded. The following table may be used as a guide to determine in most cases which coil requires adjustment.

RESPONSE CURVE	DEFICIENCY	ADJUSTMENT
A. VIDEO SOUND	Insufficient bandwidth at high end.	Decrease inductance of RF plate coil.
B. VIDEO SOUND	Insufficient bandwidth at low end.	Increase inductance of RF plate coil.
C. SOUND	Galn too high at high end.	Decrease inductance of mixer grid coil. (On low channels it may be necessary to decrease RF grid coil inductance).
D. VIDEO SOUND	Gain too high at low end.	Increase inductance of mixer grid coil. (On low channels it may be necessary to increase RF grid coil inductance).

The last two cases show two adjustments. Only one is correct. In every case, use the tuning wand to determine what adjustment is required. The antenna coil is adjusted to the center of the band which tends to fill in the "valley" of the overcoupled response curve resulting in a flat top response curve.

Leurve. In order to check the overall response, check the adjustment of the proper coils. In the case of channel 13, it would be L3, L2 and L1. The proximity of either end of the tuning wand to L2 or L3 makes the response wider, not narrower, when the coils are properly adjusted. The proximity of the powderect iron end of the wand to L1 will cause the gain at the high end to decrease and the low end to increase if the coil is properly adjusted. The brass end will cause the gain at the high end to increase and the low end to decrease. If such is not the case the antenna coil is not adjusted at the center frequency. Follow the same procedure for channels 12 through 7 adjusting the proper incremental coils on the switch sections. The inductance of the small loops is decreased by pushing them in . Normally these incremental inductances need not be adjusted. Channel 6 is aligned following the same procedure as given for channel 3 except L9, L8 and L4 are adjusted. Check channels 5 through 2. In the event full handwidth cannot be reached on any channel place the picture carrier on too of the remonse curve fulling the grant end of the remonse curve fulling the grant end of the the place the picture carrier on too of the remonse curve fulting the sourd end to grant end of the the remonse curve fulling the grant end of the case the picture carrier on too of the remonse curve fulling the grant end of the case the picture of the remonse curve fulling the grant end of the remonse curve fulling the carrier on the of the remonse curve fulling the sourd end to the case the picture carrier on the of the remonse curve fulling the grant end of the picture carrier on the of the remonse curve fulling the sourd end to the carrier on the of the remonse curve fulling the sourd end the picture of the picture carrier on the of the remonse curve fulling the sourd end to the carrier on the of the remonse curve fulling the sourd end the picture of the picture carrier of the picture carrier on the picture carrier of the picture of the pict

In the event full bandwidth cannot be reached on any channel, place the picture carrier on top of the response curve letting the sound carrier go down on the side slightly

channel incremental coils are shorted out when the tuner is operating on a high channel since there is a possibility that these coils may have a natural resonant frequency that might fall within one of the high channels. By shorting them out, the possibility of interference being caused by parasitic oscillations in these coils is eliminated.

Proper bandpass is obtained in the RF to mixer coupling circuit by overcoupling instead of the more frequently used method of stagger tuning. L2, the channel 13 RF plate coil, is wound on a ceramic form, which is a part of the ceramic spacers for the switch sections. L3, the channel 13 mixer grid coil, is self supported, being soldered to pin 5 of V2 and the switch terminal. In addition to the inductive coupling existing between these coils, capacitive coupling is provided by C4. As the channel switch is rotated counterclockwise, or down on the schematic, small inductances are added, as was done in the antenna circuit.

In order to maintain proper bandpass on all channels, additional capacity must be added in the coupling circuit as the operating frequency is decreased. Between channels 11 and 6, additional coupling is provided by C5, while C8 provides coupling on channels 5 through 2. Inductive coupling for the low band channels is achieved by the relative positions of L8 and L9. Adjustment of these coils is made by compressing or expanding the turns.

The low channel incremental coils are shorted out when the tuner is operated on any high channel



Fig. 1-9B. Schematic of Sarkes Tarzian Model TT-3 TV Tuner.

MILLIONS OF "SAFE CENTER" SELETRON RECTIFIERS IN USE IN RADIO AND TV



When you specify SELETRON "Safe Center" Selenium Rectifiers you eliminate arc-over danger, short circuits and heating at the center contact point. Assembly pressure, or pressure applied in mounting the rectifier cannot affect its performance-a SELETRON feature accomplished by deactivating the area of the plate under the contact washer.

The millions of SELETRON Selenium Rectifiers in satisfactory service as original equipment in the products of leading manufacturers are millions of reasons why you can specify SELETRON and be safe!

Consult your local jobber!

MODEL NO.	PLATE SIZE	STACK THICKNESS	MAX. INPUT Voltage R.M.S.	MAX. PEAK INVERSE VOLTAGE	MAX. D.C OUTPUT CURRENT
1M1	1" sg.	3/8."	25	75	100 M/
8Y1	1/2" sq.	A"	130	380	20 MA
16Y1	1/2" sq.	HI"	260	760	20 MA
8,11	18" sq.	<u> </u>	130	380	65 MA
5M4	1" sq.	Ĥ"	130	380	75 MA
5M1	1" sq.	7/8″	130	380	100 MA
5P1	1 Å" sq.	7⁄a″	130	380	150 MA
6P2	1금" sq.	1 🚠 "	156	456	150 MA
5R1	11/2" x 11/4"	7⁄8″	130	380	200 MA
501	11/2" sq.	11/8"	130	380	250 MA
601	11/2" sq.	11/6"	156	456	250 MA
602	11/2" sq.	136"	156	456	250 MA
6Q4 (†)	11/2" sq.		130	380	300 MA
5951	11/2" x 2"	11/6"	130	380	350 MA
6052	11/2" x 2"	11/4"	156	456	350 MA
551	2" sq.	11/8"	130	380	500 MA
6S2	2" sq.	136"	156	456	500 MA
* This recti †) Stud ma	fier is rated a sunted—avera	at 25 MA wh	en used with	a 47 ohm se	ries resisto

RADIO RECEPTOR COMPANY, INC. Sales Department: 251 West 19th St., New York 11, N. Y. Factory: 84 North 9th St., Brooklyn 11, N. Y.

)



ERIE CERAMICONS are small fixed capacitors consisting essentially of a ceramic dielectric with silver electrodes which are fired on at a very high temperature. Erie Ceramicons are outstanding because of their excellent high frequency characteristics, small size, rugged construction and availability in a wide range of capacity values.

Physical dimensions of styles illustrated are:

- Style K length .562" diameter .250" Style L length .812" diameter .250" Style M length 1.328" diameter .340" Style 331 length .460" diameter .240" Style 334 length 1.213" diameter .415"
- Style 338 length .550" diameter .312"

"GP" general purpose Ceramicons are ideally suited for such applications as coupling and by passing, in circuits where temperature coefficient is not important -in other words for all receiver applications except in frequency determining circuits. Working voltage-500 volts D.C. <u>Use Erie "GP" Ceramicons as re-</u> placements for molded mica and paper tubular capacitors.

# **NPO Zero Temperature Coefficient CERAMICONS**

NPO zero temperature coefficient Ceramicons are highly recommended for frequency applications where no capacity change with change in temperature is desired. "Q" for NPO Ceramicons above 30 mmf is 1000 or higher. Below 30 mmf "Q" decreases slightly as capacity decreases. Working voltage 500 volts D.C. Can be used as replacements for silver mica condensers.

![](_page_47_Picture_15.jpeg)

LONDON, ENGLAND . TORONTO, CANADA

for the reason previously mentioned. R3 and C3 form a decoupling network for the RF amplifier, while C9 and C10 terminate the tuned circuits in the RF plate and mixer grids, respectively. R4 serves as the grid return for the triode mixer employing 1/2 of a 6J6.

Point A is brought out to the top of the tuner in a novel way. C<sub>10</sub> is a tubular ceramic and is so mounted that it acts as an insulating shield for the wire terminating point A. The wire is threaded through C<sub>10</sub> and extends above the tuner chassis.

When properly aligned, the RF to mixer coupling circuit has a double-humped response curve with the sound and video signals at the peaks. The antenna circuit is adjusted at the center of the band, which fills in the "valley" and flattens the response.

The other section of the 6J6 is connected in a modified Colpitts oscillator circuit. Coarse tuning is accomplished by adding or subtracting small inductances in the tank circuit as the channel switch is rotated. Both L5 and L6 are wound on ceramic forms, which are a part of the channel switch spacers, and have brass slugs which can be adjusted from the front panel. C12 is connected between the oscillator plate and grid to lessen the effect of interelectrode capacity change during tube warmup or when a tube replacement is made. The fine-tuning capacitor is connected from the plate circuit to ground, which also has plenty of range to overcome any variation of interelectrode capacity in a replacement tube. R6 serves as a plate load for the oscillator. If, after the oscillator tube is replaced, alignment of the oscillator circuit is required, A1 and A2 may be adjusted on channels 13 and 6, respectively. All other channels should fall within range since the inductance of the incremental coils is very small compared to the inductance of L5 and L6. C13 and R7 comprise the grid leak network, and C14 and L7 decouple the filament from the rest of the receiver.

In the event that the tuner is dead on only one channel, it is probable that the switch is not making proper contact. With the channel switch set to receive the channel which is inoperative, apply a slight pressure to the contacts that are in the circuit. If the faulty contact is located, it is probable that it can be adjusted to make proper contact. Since all the coils of each circuit are in series, a poor connection between two of the coils will cause the tuner to be erratic at all channels below this point. It is unlikely that any of the coils should become "open," so trouble of this type is usually caused by a poor solder connection. Resoldering the coils to the terminal will usually restore normal operation, but care must be taken not to add solder to the high-frequency incremental coils, as their inductance will be changed. After a repair of this type, the alignment should be checked.

We wish to acknowledge the cooperation of Sarkes Tarzian, Inc., in supplying us with technical data and samples which were used in this presentation.

![](_page_48_Picture_8.jpeg)

Fig. 1-10A. Standard Coil TV Tuner.

The standard coil tuner employs separate, switched inductances for channel selection. The coils are mounted on bakelite moldings which are clipped into a turret drum. Two coil strips are used for each channel. One strip (L1) contains the input coils, and the other (L3) has the RF plate, mixer grid and oscillator coils. (See Figure 1-10C.) A spring-loaded arm with a roller engages the detent

# STANDARD COIL TV TUNER

plate to lock the turret into position on the desired channel. The detent plate also acts as a shield between L1 and L3. Electrical connection in each position of the turret is made to coils L1 and L3 by eleven spring contacts. These contacts are mounted on an insulated strip and positioned so that contact is made to the coil terminal contact buttons.

The fine tuning mechanism is controlled by a shaft which is concentric with the channel selector shaft.

Two tubes are employed. A 6AG5, 6BC5, or a similar RF pentode is used as an RF amplifier, while a 6J6 serves as the mixer and local oscillator. Both tubes are provided with shields. Operating voltages are supplied through color-coded leads which extend from the tuner.

The entire turret drum, with the coils in place, may be removed from the tuner frame by moving the spring clips at each end of the unit. This gives access to the components and tube sockets which are not accessible from the side of the tuner.

The tuner is normally supplied with the coils mounted for progressive tuning from channels 2 to 13 in a clockwise direction. If desired, the coils can be repositioned for any desired sequence of tuning. If this is done, care must be taken that the proper coil strips are paired in the turret.

# TELEVISION TUNING UNITS

![](_page_49_Figure_1.jpeg)

Fig. 1-10C. Schematic of Standard Coil TV Tuner.

The input circuit is designed for 300 ohm balanced line. The center tap of the input coil is grounded. The RF grid coil is positioned near the input coil to give inductive coupling of the signal to the grid-driven pentode RF stage (V1). The grid coil is series-tuned by the input capacity of the RF amplifier and A1. R2 is the DC grid return, and its connection to the AGC line enables the gain of the stage to be controlled.

The plate circuit is shunt-tuned by A2 and the capacitance of the tube. Proper bandpass characteristics are achieved by stagger-tuning the input and output circuits of the RF stage. Shunt resistors R1 and R3 on the RF grid and plate coils, respectively, further broaden the bandpass. The plate and screen voltages are supplied through the decoupling network R4 and C2. The filament is also decoupled by L2 and C1.

![](_page_49_Picture_5.jpeg)

Fig. 1-10B. Alignment Points

Both the RF and oscillator signals are inductively coupled to the mixer grid coil, which is shunttuned by A3 and the input capacity of the triode mixer tube (V2). C3 serves as the grid leak capacitor, and the series network, R5 and R6, as the grid return. The junction of R5 and R6, Point A, is terminated on top of the tuner for scope connection during alignment. R5 serves as an isolation between the scope and mixer grid. )

The oscillator is a modified Colpitts type. The tank circuit consists of the oscillator coil portion of L3, the fine-tuning capacitor, trimmer A4, C5, and the interelectrode capacitances of the tube. C5 and the parallel combination of trimmer A4 and the fine-tuning capacitor, form the feedback network. C4 and R7 comprise the grid leak network. R8 is the oscillator plate load and C7 bypasses the B+ supply to the tuner, which is usually between 120 and 150 volts. The filament of the 6J6 is decoupled by L4 and C6. The filaments of both tubes are wired in parallel for 6.3-volt operation. Each oscillator coil is tuned by a brass screw accessible through a hole in the front of the tuner frame. The hole is so positioned that only the coil in use can be adjusted. The adjustments are A5 through A16 and permit adjustment or "touch up" of the oscillator on all twelve channels. These adjustments are usually made with the chassis in place in the cabinet. A4 serves as an overall oscillator adjustment, and is to be used only when the oscillator frequency of one or more channels will not fall within the range of the individual oscillator adjustment screw and fine-tuning capacitor. Normally A4 does not require adjustment unless tubes or components have been replaced.

# ALIGNMENT INSTRUCTIONS STANDARD COIL TV TUNER

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. The complete response curve will not be seen unless the sweep in the generator exceeds 12MC, however the entire response curve is not necessary

Adjust the sweep generator frequency to center the response curve on the scope such that the curve is symmetrical.

If the AGC terminal on the tuner is not connected to ground connect the negative lead of a 1 1/2 volt battery to the AGC terminal, positive to B-.

RF AND MIXER ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 1200 carbon res.	Across antenna termin- als with 1200 in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to Point +A Low side to chassis.	A1, A2, A3	Adjust for response curve similar to figure 1-10D with markers at 90%.
2.	"		213MC (10MC SWP)	211.25MC 215.75MC	13	13		Check all channels for response curve similar to figure 1-10D. If markers fall
			201MC (10MC SWP)	199.25MC 203.75MC	11			below 70% on any channel, make slight adjustment of Al, A2 and A3 with channel switch set for that channel. Recheck all channels to see that they have not been seriously affected.
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
		ĺ	177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
		ĺ	69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

a

# OSCILLATOR ALIGNMENT

Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A4. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A4 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

## SEPARATE SOUND IF RECEIVER OSCILLATOR ALIGNMENT

On receivers which employ a separate sound IF channel the oscillator can be most conveniently aligned on each channel by feeding the channel sound carrier frequency into the antenna terminals and adjusting the oscillator for zero voltage on a VTVM connected to the sound detector output.

		Y			-	
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
Two 1200	Across antenna termin-	215.75MC	13	Across sound detector	A5	Adjust for zero reading. A positive and negative
carbon	als with 1200 in each	(Unmod.)		output	1	reading will be obtained on either side of the
res.	lead.	209.75MC	12		A6	correct setting.
		203.75MC	11		A7	$\frown$
		197.75MC	10		A8	SOUND VIDEO
						MARKER MARKER
		191.75MC	9		A9	
		185.75MC	8		A10	
!		179.75MC	7		A11	
1 1		0.0.05.140				
1 1		87.75MC	0		AIZ	
		01 75340				
[ ]		01. (DMC	э		AIS	
		71 75MC			A14	
		11. 15 810	*		A17	
		65.75MC	3		A15	FIG I-IOD
			-			
		59.75MC	2		A16	

# INTERCARRIER RECEIVER OSCILLATOR ALIGNMENT

The most convenient method of oscillator alignment to use in this type of receiver is the beat frequency method. To employ this method it becomes necessary to determine exactly, one of the IF frequencies used in the receiver. The video IF frequency is usually given in the receiver alignment instructions and is therefore used in the following example, although the sound IF frequency could be used in a similar manner. After the video IF frequency is determined it is necessary to add this frequency to the channel video carrier frequency to determine at what frequency the oscillator operates on each channel.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Two 1200 carbon res.	Across antenna termin- als with 1200 in each lead.	211.25MC plus video IF freq. (see para- graph above)	13	Vert. Amp. to IF output terminal of tuner (lat video IF amp. grid)	Α5	Adjust for zero beat indication on scope. This will be indicated by a narrow trace between two wide ones. Repeat this procedure for each channel using the video carrier frequency of that channel, plus the video IF frequency of the receiver, as the signal generator frequency.

![](_page_51_Picture_0.jpeg)

![](_page_51_Picture_1.jpeg)

![](_page_51_Picture_2.jpeg)

accepted and approved as standard by the Radio Industry, Government and Testing Laboratories. They are manufactured of finest raw materials available under strict production and laboratory control. All G-C Dial Cords are made of finest Nylon Braid, braided over a Spun Fibre Class Core. They are prestretched and are chemically treated after braiding to prevent stretching, insure long life and prevent slipping. G-C Cords are the best on the market. All G-C Cords are available at leading Radio Parts Jobbers in 25, 50, 100, 500 and 1,000-ft spools.

![](_page_51_Picture_4.jpeg)

WANTED! by Service Technicians

TELEVISION •	RADIO · AUDIO
Servicing	New Circuits
• Testing	Engineering
• Trouble Shooting	New Developments
<ul> <li>Construction</li> </ul>	<ul> <li>Service Clinics</li> </ul>

# SUBSCRIPTION RATES

1 Year \$3.50 2 Years \$6.00 3 Years \$8.00 Also on Sale at Parts Distributors and Newsstands

# RADIO - ELECTRONICS

25 West Broadway New York 7, N. Y.

In the event the drum is removed from the unit, care must be taken when it is replaced, so that the fine-tuning cam is properly positioned between the fine-tuning capacitor plates. If the fine-tuning shaft binds, or is rough in operation, it should be thoroughly cleaned and lubricated. The concentric tuning shaft may be pulled off the selector shaft after the drum is removed from the unit. When reassembling the unit, make sure that all springs or spacers are properly positioned on the shaft.

If the tuner is erratic in operation on any channel, the coils for that channel should be carefully inspected and the windings checked for continuity. The contact buttons should also be clean and secure. If the coil strip is in good condition, the fault may be in one or more of the contact springs. Reinsert the coil strip in the drum and turn to the erratic channels. The coil spring contact can be checked by a slight pressure applied with a probe of insulated

"SHOP TALK" (Continued from page 21)

5

13

ium rectifier rated at 100 ma. DC were put on this test, and the current reading were 10 ma. AC or less at 117 volts AC input, the unit would be good. A reading of 11-12 ma. would indicate poor reverse quality, while higher readings would point out the stack as bad.

Forward Voltage Drop: Grading of the voltage drop across a selenium rectifier due to internal forward resistance at approximate load current may be accomplished with the circuit of Figure 2.

The common 6.3-volt filament transformer is most convenient for supplying this circuit with power. In all cases, the transformer of highest current rating available should be used, since it is important that the internal resistance of the secondary be as low as possible. Input voltage should be made variable by a variac.

Input test voltage for this forward grading circuit is 6 volts AC. Good forward quality in a selenium rectifier is indicated by a DC milliammeter reading of 90% rated selenium rectifier load current or greater. Current readings below the proper value for each particular size rectifier indicate that the stack has aged or that the alloy area has been seriously reduced by excessive blowout patches.

Rated selenium rectifier load currents for specific units under test should be obtained from the

![](_page_52_Figure_9.jpeg)

Fig. 2. A Forward Voltage-drop Test Circuit.

material such as an alignment tool. If by this procedure the tuner can be made to operate properly, additional contact pressure is required. This can be achieved by removing one of the coil strips and rotating the drum so that the blank position is under the terminal board. Slight bending of the defective contact spring can now be accomplished.

The tuned circuits are very stable and normally do not require adjustment, unless a tube or component part has been replaced. In the event that alignment is required, a complete alighment is given in this section. Adjustments A1 through A4, inclusive, are accessible from the top of the tuner.

We wish to acknowledge the cooperation of the Standard Coil Products Co., Inc., in supplying us with technical data and samples which were used in this presentation.

service literature material covering the equipment in which the rectifier circuit is employed, or from catalog ratings and characteristics published by the rectifier manufacturers.

The foregoing tests will serve to indicate which rectifiers are not suitable for further use. When a rectifier has passed the foregoing tests, it should be tried out in the receiver circuit in which it is to be used. If you find that the rectifier does not produce the required output voltage, try a new unit. Normally, selenium rectifiers should last the life of the set; continued replacement of these units indicates a faulty component other than the rectifier.

SERVICE OF SELENIUM RECTIFIERS. Servicing procedure for selenium rectifier power supplies is very similar to that for circuits using rectifier tubes. Analysis and procedure is based upon a normal AC or DC line input to the receiver, and upon normal temperature surrounding the rectifier. The general continuity, forward, and reverse tests which have been described may be used where testing is necessary in service applications.

CARE AND REPLACEMENT TECHNIQUES. Although the selenium rectifier is quite rugged, there are a number of precautions which should be considered in insuring long life and satisfactory operation of the unit in a radio or TV set:

> (a) During the process of soldering the rectifier terminals to circuit wires, the heated soldering iron and solder should not be brought in contact with the plates, nor should the iron be applied to the terminals for long periods of time. Extreme heat may melt the alloy or damage the stack.

> (b) In mounting the unit under a chassis, the plates should be kept in a vertical plane, and provision made for adequate ventilation.

(c) Under no condition should the selenium rectifier be painted in the field without consultation with the manufacturer, since certain paints have adverse effects on the selenium stack characteristics.

THE PICTURE! Bright...Clear and Without Interference

BRINGS IN

![](_page_53_Picture_1.jpeg)

WARD YAGIs are producing amazing results! In many cases, acceptable pictures now enthuse set owners, where no image could be obtained by other antennas.

Increased sensitivity and exceptionally high gain is developed through Ward's exclusive built-in impedance transformer. Having perfect match to a 300 ohm line, full signal strength is transmitted to the set. Designed with high front to back ratio, a clear, sharp signal is picked up, without co-channel interference. Being closely tuned to each channel, this highly directive antenna has a narrow, angular pattern cutting foreign interference and noise to the minimum.

Ward's Yagi is a highly specialized antenna, designed without compromise specifically for long distance TV reception. In distant areas, and areas intermediate between transmitting centers, where weak signals and co-channel interference obstruct reception, stacking of Ward Yagis enables the selection and maximum energy reception of the desired station.

Order a supply of Ward Yagis today. Satisfied customers make WARD your most profitable antenna.

# THE WARD PRODUCTS CORP.

Subsidiary of the Gabriel Co. 1523 EAST 45th ST., CLEVELAND 3. OHIO

![](_page_53_Picture_8.jpeg)

![](_page_53_Picture_9.jpeg)

# Introducing the "Thing

The technical personnel of the Sams' Company has many characteristics in common with electronic technicians throughout the country. They have genuine interest in the work they do, the equipment which they process, and in attaining an understanding of equipment purpose. Above all, they have an insatiable curiosity - - - to see, to know, and to demonstrate, if possible, the operation of electronic circuits.

We have always felt that this is a healthy attitude and that it is productive not only of more complete information on the subject, but more accurate and helpful instructive material as well, due to the greater understanding of construction or circuit purpose.

Some time ago, we decided to actively aid and abet these characteristics. Since we feel that many of you have the same interests, the desire to see and to know - possibly without the same opportunity for pursuing these objectives - we are presenting an account of our experience in this uncharted field. The illustration heading this writeup shows the most immediate results.

The rack layout you see, more or less affectionately termed "The Thing" by our technical staff, really consists of individual circuit or system chassis plugged into the power supply interconnection service of the rack. The input and output terminals for the individual chassis are available for connection to those of adjacent units. Plug-in and holding features of the chassis provide secure mounting. Combined with the design and strength of the racks, it makes possible operation of the rack in two positions - for maximum accessibility to parts and measurement points and for general observation.

With respect to purpose of "The Thing," let's just say at this time that we wanted to provide the most flexible system which we could devise for general experimentation and proving - - - in the fields of radio, television, and allied electronic applications.

We believe that the potential of this activity is really large. From time to time, we intend to publish findings accuring from it. In fact, we suspect that in terming it "The Thing," some of the personnel may have had the thought of comparing its creation to that of a Frankenstein-like creature and that we might find ourselves in the same relative position. We will have to take that chance.

We want to extend our sincere thanks to the following component manufacturers for their contribution in terms of information, parts, and general helpfulness in making this project possible:

Aerovox Corporation; Centralab, Div. of Globe Union Inc.; Chicago Transformer Div., Essex Wire Corporation; Clarostat Mfg. Co., Inc.; Cornell-Dubilier Electric Corp.; Erie Resistor Corporation; International Resistance Company; Jensen Manufacturing Company; Littlefuse, Inc.; Meissner Mfg. Div., Maguire Industries, Inc.; Merit Coil & Transformer Corp.; Quam-Nichols Company; Sprague Products Co.; Standard Transformer Corp.; Sylvania Electric Products Inc.

As always any suggestions or comments you may have with respect to this project will be more than welcome.

k amerk Editor

# A BETTER DEAL

You demand TV Shap On Holders Ten to a Box

Here they are in Plastic And it doesn't cost a penny more Plastic box is free Servicemen want to buy 'em by the box And everyone wants the box with 100 uses

# TV SNAP ON FUSE HOLDER

# No. 094025

Time saver for pigtail replacement. Snap on blown pigtail, then use regular fuse in other side. No soldering. Demand item with servicemen. Bigger TV profits.

\$3.00 per box, list

LITTELFUSE 4757 N. RAVENSWOOD AVE., CHICAGO 40, ILLINOIS

If undeliverable far any reason, notify sender, stating reason, on Form 3547, postage for which is guaranteed. **POSTMASTER:** 

From:

TO:

![](_page_55_Picture_2.jpeg)

VIBRATORS

PHONO-NEEDLES

TRANSFORMERS

DEFLECTION YOKES

FOCUS COILS