

# DEPARTMENT OF COMMERCE

# RADIO SERVICE BULLETIN

ISSUED MONTHLY BY RADIO DIVISION

Washington, May 31, 1927—No. 122

## CONTENTS

	Page		Page
Abbreviations.....	1	Miscellaneous—Continued.	
New stations.....	2	Lost commercial radio operators' licenses.....	16
Alterations and corrections.....	4	Regulations governing the operation of broadcasting stations promulgated by the Federal Radio Commission.....	17
Miscellaneous:		Radio act of 1927 applicable to the Virgin Islands.....	19
Broadcasting stations alphabetically by States and cities.....	5	Calibration of frequency standards for broadcasting stations.....	19
Broadcasting stations by wave lengths.....	10	Notes on the standard frequency transmission standards.....	19
Vessels equipped with a radiocompass.....	14	Standard frequency stations.....	20
Changes in location of naval radiocompass station receivers.....	15	References to current radio literature.....	20
Changes in radiobeacons.....	15		
Bahama Islands, station reopened.....	16		
Radiobeacon established at Scilly Isles.....	16		
Time signals transmitted by Cape d'Aguilar, China Sea, station.....	16		

## ABBREVIATIONS

The necessary corrections to the List of Radio Stations of the United States and to the International List of Radiotelegraph Stations, appearing in this bulletin under the heading "Alterations and corrections," are published after the stations affected in the following order:

Name	= Name of station.
Loc.	= Geographical location. O = west longitude. N = north latitude. S = south latitude.
Call	= Call letters assigned.
System	= Radio system used and sparks per second.
Range	= Normal range in nautical miles.
W. l.	= Wave lengths assigned: Normal wave lengths in italics.
Service	= Nature of service maintained:
	FX = Point-to-point (fixed service):
	PG = General public.
	PR = Limited public.
	RC = Radiocompass.
	AB = Aviation beacon.
	B = Beacon.
	P = Private.
	O = Government business exclusively.
Hours	= Hours of operation:
	N = Continuous service.
	X = No regular hours.
F. T. Co.	= Federal Telegraph Co.
I. R. T. Co.	= Intercity Radio Telegraph Co.
I. W. T. Co.	= Independent Wireless Telegraph Co.
K. & C.	= Kilbourne & Clark Manufacturing Co.
R. C. A.	= Radio Corporation of America.
T. R. T. Co.	= Tropical Radio Telegraph Co.
U. R. Corp.	= Universal Radio Corp.
W. S. A. Co.	= Wireless Specialty Apparatus Co.
C. w.	= Continuous wave.
I. c. w.	= Interrupted continuous wave.
Kc.	= Kilocycles.
Fy.	= Frequency.
A. c.	= Alternating current.
V. t.	= Vacuum tube.
U. S. L.	= Applies only to the list of Commercial and Government Radio

RADIO SERVICE BULLETIN

NEW STATIONS

Commercial land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926, and to the International List of Radiotelegraph Stations published by the Bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
A. & P. Nakeen No. 7 (moored scow in Alaska)	KGFQ	.....	FX	X	Nakat Packing Corporation.
Boca de Quadra, Alaska	KZE	.....	FX	X	A. A. McCue.
Breckenridge, Tex. <sup>1</sup>	KSU	1775	FX	X	Phillips Petroleum Co.
Cumberland, Md. <sup>2</sup>	WEZ	97.60	FX	X	Potomac Edison Co.
Lake Bay, Alaska <sup>3</sup>	KZC	600, 650, 700, 900	FX	X	F. C. Barnes Co.
Nyac, Alaska	KUY	82	FX	X	New York-Alaska Gold Dredging Co.
Portable <sup>4</sup>	KOET	133.62	FX	.....	The Tutus Co.
Do	KGEV	133.62	FX	.....	Do.
Do	KGFB	133.62	FX	.....	Do.
Do	KGFS	133.62	FX	.....	Do.
Do	KGFT	60, 133.62	FX	.....	Do.
San Juan, P. R. <sup>5</sup>	WQT	21.75	FX	N	Radio Corporation of America.
Santa Barbara, Calif. <sup>6</sup>	KGFY	69.73	FX	X	Arthur J. Grker.
Santa Cruz Island, Calif. <sup>6</sup>	KGFU	69.73	FX	X	Do.
Williamsport, Md. <sup>6</sup>	WBF	87.41	FX	X	Potomac Edison Co.

- <sup>1</sup> System, composite v. t. telegraph.
- <sup>2</sup> System, Westinghouse v. t. telephone and telegraph.
- <sup>3</sup> Range, 150; system, E. & C., 1,000.
- <sup>4</sup> System, composite v. t. telegraph; hours, 9 a. m. to 5 p. m.
- <sup>5</sup> Range, 4,000; system, R. C. A. v. t. telegraph.
- <sup>6</sup> System, composite v. t. telephone.

Commercial ship stations, alphabetically, by names of vessels

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926, and to the International List of Radiotelegraph Stations published by the Bureau]

Name of vessel	Call signal	Rate	Service	Hours	Owner of vessel	Station controlled by—
Astoria	KGEP	8	PG	X	Haramond Lumber Co.	F. T. Co.
Berkshire	KUVG	8	PG	X	Berkshire S. S. Co.	
Blanche	WNBP	.....	P	X	North American Fisheries.	
Katherine	WNBH	.....	.....	.....	Peter H. McCine.	
Papoose	WNBS	8	PG	X	Petroleum Navigation Co.	Do.
Point Montara	KOCN	8	PG	X	Swayze & Hoyt.	
Theodore Roosevelt <sup>1</sup>	KGFV	.....	PG	X	Cleveland-Erie S. S. Co.	
Wabash <sup>1</sup>	WNBU	.....	PG	X	Wabash Railway Co.	
West Cape	WXEO	8	PG	X	McCormick S. S. Co.	
Xarifa	WNBV	.....	.....	.....	Franklin M. Singer.	

<sup>1</sup> Rates, Great Lakes service, 4 cents per word.

Commercial land and ship stations, alphabetically, by call signals

[b, ship station; c, land station]

Call signal	Name of station	Call signal	Name of station
KGEP	Astoria..... b	KUVG	Berkshire..... b
KOET	Portable..... c	KUY	Nyac, Alaska..... c
KGEV	Do..... c	KZE	Boca de Quadra, Alaska..... c
KGFQ	A. & P. Nakeen No. 7 (moored scow in Alaska)..... c	KZC	Lake Bay, Alaska..... c
KGFB	Portable..... c	WQT	San Juan, P. R..... c
KGFS	Do..... c	WBF	Williamsport, Md..... c
KGFT	Do..... c	WNKZ	Cumberland, Md..... c
KGFU	Santa Cruz Island, Calif..... c	WNBH	Katherine..... h
KGEV	Theodore Roosevelt..... b	WNBP	Blanche..... b
KGFY	Santa Barbara, Calif..... c	WNBS	Papoose..... b
KOCN	Point Montara..... b	WNBU	Wabash..... b
		WNBV	Xarifa..... b

## RADIO SERVICE BULLETIN

3

*Broadcasting stations, alphabetically, by names of States and cities*

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926]

State and city	Call signal	State and city	Call signal
California: Los Angeles (portable).....	KGFO	New Jersey: Cliffside.....	WCDA

*Broadcasting stations, alphabetically, by call signals*

Call signal	Location of station (address)	Owner of station	Power (watts)	Wave length	Frequency (kilocycles)
KGFO	Los Angeles, Calif. (portable), (2055 North Thirteenth St., Terre Haute, Ind.).	Brant Radio Power Co....	100	294	1,470
WCDA	Cliffside, N. J.....	Italian Educational Broadcast Corporation.	250	211.1	1,420

*Government ship stations, alphabetically, by names of stations*

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Guam.....	NHP		0	X	U. S. Navy.
Luzon.....	NHT		0	X	Do.
Mindanao.....	NHU		0	X	Do.
Oahu.....	NHS		0	X	Do.
Panay.....	NHR		0	X	Do.
Tutulla.....	NHQ		0	X	Do.

*Government land and ship stations, alphabetically, by call signals*

[b. Ship station; c. land station]

Call signal	Name of station	Call signal	Name of station
NHP	Guam..... b	NHS	Oahu..... b
NHQ	Tutulla..... b	NHT	Luzon..... b
NHR	Panay..... b	NHU	Mindanao..... b

*Special land stations, alphabetically, by names of stations*

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926]

Station	Call signal	Station controlled by—
Cleveland, Ohio.....	8XP	Radio Air Service Corporation, 1220 Huron Road, Experimenter Publishing Co., Roosevelt Hotel, New York, N. Y.
Coteyville, N. J.....	2XAL	
Houston, Tex.....	5XJ	Anderson, Clayton & Co., Cotton Exchange Building, Radio Corporation of America, Northwest Radio Service Co., 614 Terminal Sales Building.
Rocky Point, N. Y.....	2XR	
Seattle, Wash.....	7XO	

*Special land stations, grouped by districts*

Call signal	District and station	Call signal	District and station
2XAL	Second district: Coteyville, N. J.,	5XJ 7XO	Fifth district: Houston, Tex. Seventh district: Seattle, Wash.

4

## RADIO SERVICE BULLETIN

## ALTERATIONS AND CORRECTIONS

## COMMERCIAL LAND STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

CARAMOAN (CAMARINES SUR), P. I.—Loc. 123° 51' 30" E., 12° 46' 07" N.  
 POTTSVILLE, PA.—Strike out all particulars.

## COMMERCIAL SHIP STATIONS, ALPHABETICALLY, BY NAMES OF VESSELS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1924, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

ARRAROKA.—Owner of vessel, McCormick S. S. Co.  
 AGWIMOON.—Name changed to Altair.  
 A. M. BYERS.—Equipped with radiocompass.  
 ANIO.—Equipped with radiocompass.  
 BERKSHIRE (KFIE).—Owner of vessel, Merchants & Miners Transportation Co.  
 BULKO.—Owner of vessel, Sabine Towing Co.  
 CAROLINAH.—Name changed to Maltran.  
 CHARLES C. WEST.—Equipped with radiocompass.  
 CITY OF RAYVILLE.—Station controlled by R. C. A.  
 COLUSA.—Name changed to Santa Cecelia.  
 CRAIGSMERE.—Station controlled by I. W. T. Co.  
 DONNA LANE.—Owner of vessel, Utopian Fisheries (Inc.).  
 GLADYSBE.—Owner of vessel, United States Shipping Board; station controlled by I. W. T. Co.  
 IPSWICH.—Owner of vessel, Columbia River S. S. Corporation.  
 KERMIT.—Name changed to Nebraskan.  
 LAKE CHELAN.—Owner of vessel, Lake Chelan S. S. Co.  
 LYNFORD E. GEER.—Equipped with radiocompass.  
 MONTPELIER.—Name changed to Nevadan.  
 MYSTIC.—Owner of vessel, Munson S. S. Lines.  
 NEBRASKAN.—Owner of vessel, C. H. Sprague.  
 NORTHERN LIGHT.—Equipped with radiocompass.  
 NOURMAHAL.—Station controlled by owner of vessel.  
 PITTSBURGH BRIDGE.—Name changed to Mala; station controlled by F. T. Co.  
 RUSHVILLE.—Owner of vessel, Rushville S. S. Corporation.  
 SAGAMI.—Station controlled by R. C. A.  
 SEABORN.—Station controlled by Marconi International Marine Co.  
 STANDARD ARROW.—Equipped with radiocompass.  
 TUXPANOIL.—Owner of vessel, Oil Transport Co.  
 WEST IMBODEN.—Station controlled by I. W. T. Co.  
 WILLIAM McLAUGHLIN.—Correct orthography, William McLaughlan; equipped with radiocompass.  
 W. M. TUPPER.—Station controlled by R. C. A.  
 Strike out all particulars of the following-named vessels: Avalon (KIZL), Cretan, Dorchester (KQD), Kroonland, Quantico.

## COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY, BY CALL SIGNALS

KDBC, read Altair; KUKL, read Mala; KULB, read Maltran; WIN, read Santa Cecelia; WLZ, read Nevadan; WMV, read Nebraskan; WPBB, read William McLaughlan; strike out all particulars following the call signals, KIZL, KQC, KQD, KQQ, KSH, WDS.

## GOVERNMENT SHIP STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1926, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

KUKUL.—Equipped with radiocompass.  
 WINONA.—Name changed to Kimball.

## GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

RADIO SERVICE BULLETIN

BROADCASTING STATIONS, BY CALL SIGNALS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1926]

WCAC (Storrs, Conn.)—Read Mansfield, Conn.  
 WCGU (Lakewood, N. J.)—Changed to Coney Island (Brooklyn), N. Y.  
 WGL (New York, N. Y.)—Changed to Secaucus, N. J.  
 Strike out all particulars of the following-named stations, WPAK (Fargo, N. Dak.)  
 WGBX (Orono, Me.)  
 Note.—For further changes see new complete list of stations in this Bulletin.

MISCELLANEOUS

BROADCASTING STATIONS ALPHABETICALLY BY STATES AND CITIES

[Effective June 15, 1927]

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)	State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
Alabama:					California—Contd.				
Auburn.....	WAPI	401.5	610	1,000	Pasadena.....	KPPC	223.9	1,310	50
Birmingham.....	WBRC	243.8	1,230	250	Do.....	KPSN	315.6	950	1,000
Do.....	WKBC	218.8	1,370	10	Sacramento.....	KPBK	333.4	560	100
Opaladen.....	WJBY	234.2	1,280	50	San Bernardino.....	KFWC	222.1	1,250	100
Montgomery.....	WIBZ	230.6	1,300	15	San Diego.....	KFBC	247.5	1,210	100
Alaska:					Do.....	KFSD	440.9	580	500
Anchorage.....	KPQD	344.6	870	100	San Francisco.....	KFRD	454.5	600	500
Juneau.....	KPIU	223.4	1,330	10	Do.....	KFWI	257.7	1,220	500
Ketchikan.....	KGBU	228.9	1,310	500	Do.....	KGTT	205.8	1,450	50
Arizona:					Do.....	KJBS	220.4	1,360	50
Flagstaff.....	KPKY	205.4	1,420	25	Do.....	KPO	422.3	710	1,000
Phoenix.....	KPAD	272.6	1,100	500	Do.....	KYA	309.1	970	500
Do.....	KFCB	243.8	1,230	125	San Jose.....	KQW	296.9	1,010	500
Prescott.....	KPJM	214.2	1,400	15	Santa Ana.....	KWTC	340.7	880	5
Tucson.....	KOAR	234.2	1,280	100	Santa Barbara.....	KPCR	211.1	1,420	50
Arkansas:					Santa Maria.....	KSMR	272.6	1,100	100
Fayetteville.....	KUOA	296.9	1,010	500	Santa Monica.....	KNRC	374.8	800	500
Hot Springs.....	KTHS	340.7	880	750	Stockton.....	KGDM	217.3	1,380	10
Newark.....	KGCG	223.7	1,340	100	Do.....	KWG	344.6	870	50
California:					Venice.....	KFVD	208.2	1,440	250
Alma (Holy City).....	KFQU	249.9	1,200	100	Yuba City.....	KJPM	211.1	1,420	15
Avdon.....	KFWO	218.8	1,370	250	Colorado:				
Berkeley.....	KBE	256.3	1,170	100	Colorado Springs.....	KPUM	230.1	1,270	100
Burbank.....	KELW	228.9	1,310	250	Do.....	KPEL	247.8	1,210	250
El Centro.....	KGEN	223.4	1,330	15	Denver.....	KPUP	227.1	1,320	100
Eureka.....	KFWH	254.1	1,160	100	Do.....	KPVR	227.1	1,320	250
Fresno.....	KMJ	345.6	820	50	Do.....	KPVE	475.9	630	250
Hollywood.....	KFQZ	232.4	1,290	100	Do.....	KPXF	232.8	1,090	500
Do.....	KPWB	361.2	830	500	Do.....	KGEY	201.2	1,420	15
Inglewood.....	KMIC	223.7	1,340	250	Do.....	KLZ	237.7	1,220	250
La Cresenta.....	KOPH	223.7	1,340	100	Do.....	KOA	325.9	920	5,000
Long Beach.....	KFON	241.8	1,240	500	Durango.....	KOLO	199.9	1,500	6
Do.....	KOER	215.7	1,350	100	Edgewater (near).....	KPNJ	215.7	1,390	15
Los Angeles.....	KFI	458.5	640	5,000	Fort Morgan.....	KGEW	215.8	1,370	10
Do.....	KFPR	232.4	1,290	250	Orsley.....	KPKA	399.8	750	200
Do.....	KFSO	273.1	1,090	500	Gunnison.....	KPHA	354.1	1,180	50
Do.....	KFXB	252	1,190	500	Pueblo.....	KGDP	223.7	1,340	10
Do.....	KGEF	263	1,140	500	Trinidad.....	KPBR	238	1,260	15
Do.....	KOFJ	208.2	1,440	100	Do.....	KOFL	232.1	1,360	50
Do.....	KHJ	405.2	740	500	Yuma.....	KGKK	204	1,470	10
Do.....	KMTR	326	870	500	Connecticut:				
Do.....	KNX	335.9	890	500	Bridgport.....	WICC	214.2	1,400	250
Do.....	KRLO	215.7	1,350	250	Danbury.....	WCWS	201.2	1,400	100
Do.....	KTBI	285.3	1,040	500	Hartford.....	WTIC	451.3	600	500
Lower Lake.....	KGEU	227.1	1,320	50	Mansfield.....	WCAC	275.1	1,000	500
Oakland.....	KFUS	256.3	1,170	50	New Haven.....	WDRC	275.1	1,000	250
Do.....	KPWM	236.1	1,270	1,500	Delaware: Wilmington	WDEL	253.3	1,130	100
Do.....	KGO	384.4	780	5,000	Dist. of Columbia:				
Do.....	KLS	245.8	1,220	250	Washington.....	WMAL	223.9	1,310	100
Do.....	KLX	508.2	590	500	Do.....	WRC	458.5	640	500
Do.....	KTAB	230.2	1,070	500	Do.....	WRHF	319	940	50
Do.....	KZM	245.8	1,220	100	Florida:				
Oxnard.....	KFYF	238	1,290	25	Boca Raton.....	WFLA	212.6	1,410	1,000
					Clearwater.....	WFHH	365.6	820	500
					Jacksonville.....	WJAX	336.9	890	1,000

BROADCASTING STATIONS ALPHABETICALLY BY STATES AND CITIES—continued

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)	State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
<b>Florida—Continued.</b>					<b>Illinois—Continued.</b>				
Lakeland	WMBL	228.9	1,310	50	Peoria Heights	WMBD	261.4	1,480	250
Miami	WQAM	222.4	930	750	Quincy	WTAD	216.1	1,270	250
Miami Beach	WIOD	247.8	1,210	1,000	Rockford	KFLV	267.7	1,130	100
Do	WMBF	251.4	780	500	Rock Island	WHBF	222.1	1,350	100
Pensacola	WCOA	249.0	1,200	500	Springfield	WCBS	209.7	1,430	250
St. Petersburg	WJBN	266.6	1,010	10	Streator	WTAX	222.4	600	50
Do	WJBB	244.6	670	250	Troisrivières	WDZ	227.0	1,080	100
Tampa	WDAE	267.7	1,120	500	Urbana	WRM	272.6	1,100	500
Do	WMBR	232	1,180	100	Waukegan	WPEP	215.7	1,300	250
Winter Park	WDBO	239.6	1,250	500	Zion	WCBD	344.6	570	3,000
<b>Georgia:</b>					<b>Indiana:</b>				
Atlanta	WGST	270.1	1,110	150	Anderson	WHRU	220.4	1,260	15
Do	WSB	475.9	630	1,000	Brookville	WKBY	217.3	1,350	100
Macon	WMAZ	270.1	1,110	500	Crown Point	WLBT	222.4	930	50
Hawaii: Honolulu	KGU	270.1	1,110	500	Culver	WCMA	222.5	1,100	250
<b>Idaho:</b>					<b>Evansville</b>				
Boise	KFAU	245.5	1,050	2,000	Fort Wayne	WCWK	229.0	1,310	500
					<b>Do</b>				
					<b>Indianapolis</b>				
Kellogg	KPEY	222.4	1,290	10	Do	WFRM	225.7	1,850	250
Pocatello	KSEI	334.1	900	250	Do	WHRP	212	1,180	250
<b>Illinois:</b>					<b>Kokomo</b>				
Atwood	WLBO	222.6	1,480	25	Laporte	WRAF	268.2	1,440	100
Belleville (Chicago)	WORD	275.1	1,000	5,000	Muncie	WJHC	209.7	1,430	50
Do	WTAR	275.1	1,000	3,500	South Bend	WGBT	222.1	1,350	250
Helvidere	WLDR	322.4	630	15	Terre Haute	WRPT	208.2	1,440	100
Bloomington	WMBY	199.9	1,500	15	Valparaiso	WRBC	225	1,300	250
Do	WNBL	192.2	1,500	15	West Lafayette	WBAA	272.6	1,100	500
Carthage	WCAZ	340.7	850	50	<b>Iowa:</b>				
Chicago	KYW	325	870	2,500	Ames	WOI	261.5	1,120	25,000
Do	WAAP	369.4	770	500	Anita	KICK	451.3	650	100
Do	WBRM	369.4	770	1,000	Boone	KFGQ	259.7	1,450	10
Do	WBCN	293.3	1,040	250	Harrington	WTAS	474.9	650	100
Do	WCFL	483.2	620	1,500	Cedar Rapids	KWCR	194.4	780	250
Do	WCRW	313.7	1,340	500	Do	WJAM	154.4	780	100
Do	WEBH	303.2	830	2,000	Clarinda	KBO	227.1	1,200	500
Do	WEDC	241.5	1,240	500	Council Bluffs	KOIL	277.0	1,080	1,500
Do	WENR	268.3	1,040	500	Cresco	KODJ	202.6	1,480	10
Do	WFKB	221.1	1,340	500	Davenport	WOC	312.7	850	5,000
Do	WGES	241.5	1,240	500	Decorah	KGCA	202.6	1,480	10
Do	WHFO	215.7	1,300	200	Do	KWLC	247.8	2,200	50
Do	WIBO	418.4	720	500	Des Moines	WHO	525.4	500	5,000
Do	WJBT	330.4	770	100	Fort Dodge	KFJY	239.0	2,350	100
Do	WKBI	322.4	650	50	Iowa City	KGFB	221.7	1,340	10
Do	WLTS	483.2	620	100	Do	WBUI	265.3	1,120	500
Do	WMAQ	447.3	670	1,000	Le Mars	KWUC	241.5	1,250	1,500
Do	WMBB	232	1,190	500	Marshalltown	KFJB	247.8	1,240	15
Do	WMFI	263	1,140	500	Moscow	KPNP	211.1	1,420	100
Do	WPCC	222.7	1,240	500	Do	KTNT	256.3	1,170	2,500
Do	WQJ	447.3	670	500	Oskaloosa	KFHL	212.6	1,810	10
Do	WSAX	204	1,470	100	Shamondon	KFNF	271.1	1,110	1,000
Do	WSBC	222.4	1,240	500	Do	KMA	220.1	1,310	500
Do	WWAE	222.4	1,240	500	Stour City	KFMR	440.2	500	100
Chicago Heights	WJZ	204.2	1,450	100	Do	KBCJ	263.5	1,250	500
Crest (Chicago)	WLS	344.5	670	5,000	<b>Kansas:</b>				
Decatur	WBAO	267.7	1,120	100	Concordia	KGCN	208.2	1,440	50
Do	WJBL	212.6	1,410	250	Independence	KFVG	225.4	1,230	50
Deerfield (Chicago)	WBT	410.4	720	5,000	Lawrence	KPKU	254.1	1,180	500
East Wagona	WLRI	219	1,200	250	Do	WHEN	254.1	1,180	750
Elgin—near (Chicago)	WON	203.9	980	15,000	Manhattan	KBAC	333.1	900	500
Do	WLIB	205.0	980	500	Millard	KFEB	241.5	1,240	1,000
Evanson	WEHE	215.7	1,200	100	Wichita	KFH	245.5	1,220	500
Forest Park	WNBK	238.3	1,440	200	<b>Kentucky:</b>				
Galesburg	WFBE	247.8	1,210	50	Hopkinsville	WFTW	245.5	1,220	500
Do	WKBS	217.3	1,380	100	Louisville	WHAS	451.3	650	500
Do	WLBO	217.3	1,380	100	Do	WLAP	267.7	1,120	50
Do	WRAM	247.8	1,210	50	<b>Louisiana:</b>				
Harrisburg	WERQ	222.7	1,340	15	New Orleans	WABZ	247.8	1,210	50
Homewood (Chicago)	WOK	232	1,190	5,000	Do	WDBE	227.1	1,220	5
Juliet	WCLS	215.7	1,200	150	Do	WIBO	253	1,180	100
Do	WJBA	322.4	650	50	Do	WJBY	228	1,200	30
Do	WKBB	215.7	1,200	150	Do	WKBT	252	1,150	50
La Salle	WJBC	227.1	1,220	100	Do	WMBB	222.4	930	500
Meacham	WJJD	365.0	820	1,000	Do	WWL	275.1	1,080	100
Mount Prospect					Shreveport	KFDX	225.1	1,220	250
					Do	KGDY	212.6	1,410	250

## RADIO SERVICE BULLETIN

7

## BROADCASTING STATIONS ALPHABETICALLY BY STATES AND CITIES—continued

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)	State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
Louisiana—Contd.					Mississippi:				
Shreveport—Con.	KSBA	267.7	1,120	1,000	Columbus.....	WCOC	230.6	1,300	100
Do.....	KWEH	394.5	760	1,000	Oxford.....	WCBH	241.8	1,240	100
Maine:					Missouri:				
Bangor.....	WABI	389.4	770	100	Cape Girardeau...	KFPV	223.7	1,340	50
Dover-Foxcroft.....	WLBZ	208.2	1,440	250	Carterville.....	KFPW	263	1,140	50
Portland.....	WOSH	361.2	820	500	Columbia.....	KFRU	249.9	1,200	500
Maryland:					Independence.....	KLDS	238	1,200	1,500
Baltimore.....	WCAO	384.4	780	250	Jefferson City.....	WOB	394.5	780	500
Do.....	WOBM	384.4	780	100	Kansas City.....	KWKC	222.1	1,380	100
Do.....	WPBR	225.4	1,330	100	Do.....	WDAF	370.2	810	1,000
Glen Morris (Baltimore).	WBAL	285.8	1,050	3,000	Do.....	WHB	336.9	860	500
Takoma Park.....	WBES	296.6	1,010	100	Do.....	WLBK	259.7	1,430	50
Massachusetts:					Do.....	WQQ	225.9	890	250
Boston.....	WASN	302.8	990	100	Kirkville.....	KFRZ	233.4	1,330	15
Do.....	WBET	241.8	1,240	500	Kirkwood (St. Louis).	KMOX	299.8	1,000	5,000
Do.....	WBZA	333.1	900	500	St. Joseph.....	KFEQ	230.6	1,300	1,000
Do.....	WEI	447.5	670	500	Do.....	KOBX	288.3	1,040	100
Do.....	WLBM	211.1	1,420	50	St. Louis.....	KFQA	322.4	930	50
Do.....	WNAC	362.7	850	500	Do.....	KFUO	543.1	550	500
Do.....	WSBH	230.0	1,300	100	Do.....	KFVE	234.2	1,280	1,000
Chelsea.....	WRSC	265.6	1,460	15	Do.....	KFWF	214.2	1,400	250
Dartmouth.....	WMAF	428.3	700	500	Do.....	KRD	545.1	550	500
Fall River.....	WSAR	252	1,190	100	Do.....	WEW	352.7	850	1,000
Glocester.....	WEPB	296.9	1,010	100	Do.....	WIL	258.5	1,100	250
New Bedford.....	WNBH	293.7	1,150	250	Do.....	WMAY	247.8	1,210	100
Quincy.....	WRBS	217.8	1,380	50	Montana:				
Somerville.....	WAGB	218.7	1,390	5	Avra.....	KFBB	275.1	1,000	50
Springfield.....	WBZ	333.1	900	5,000	Kalspell.....	KOZ	203.4	1,460	100
Taunton.....	WAIT	214.2	1,400	10	Missoula.....	KUOM	374.8	500	500
Webster.....	WRBE	228.9	1,310	100	Vida.....	KGCX	243.8	1,230	10
Wellesley Hills.....	WBBO	384.4	780	100	Nebraska:				
Worcester.....	WTAG	288.3	1,040	500	Central City.....	KGBS	204	1,470	10
Michigan:					Clay Center.....	KMMJ	228.9	1,310	500
Battle Creek.....	WKBP	212.6	1,410	50	Grand Island.....	KGO	205.4	1,400	100
Bay City.....	WSEK	491.6	610	250	Hastings.....	KFKX	529	570	2,500
Berrien Springs.....	WEMC	238	1,260	1,000	Humboldt.....	KGDW	206.8	1,450	100
Detroit.....	WAFD	218.8	1,370	250	Lincoln.....	KFAB	309.1	970	2,000, 25,000
Do.....	WBMH	211.1	1,420	100	Do.....	KFOR	217.3	1,380	100
Do.....	WBMC	211.1	1,420	100	Lincoln (University Place).	WCAJ	348.6	800	500
Do.....	WTHO	218.8	1,370	250	Norfolk.....	WJAG	222.1	1,350	250
Do.....	WWJ	374.8	800	1,000	Omaha.....	KFOX	258.5	1,160	100
East Lansing.....	WKAR	230.6	1,300	1,000	Do.....	KOCH	258.5	1,160	250
Escanaba.....	WRAK	282.8	1,060	50	Do.....	WAAW	374.8	800	500
Flint.....	WFDF	348.6	800	100	Do.....	WNAL	218.5	1,400	250
Furnwood.....	WOOD	290.7	1,150	500	Do.....	WOW	508.2	690	1,000
Grand Rapids.....	WASH	256.3	1,170	250	Shelby.....	KGBY	292.6	1,450	50
Iron Mountain.....	WLBY	209.7	1,430	50	Wayne.....	KGBH	293.0	1,020	250
Lansing.....	WRBO	230.6	1,300	500	York.....	KGBZ	212.6	1,410	100
Lapeer.....	WMPC	234.2	1,280	50	New Hampshire:				
Leighton.....	WBHZ	199.9	1,500	15	Larona.....	WKAU	223.7	1,340	50
Monroe.....	WBBL	206.4	1,460	15	Manchester.....	WCOM	238	1,260	100
Mount Clemens.....	WQHP	243.8	1,250	1,500	Tilton.....	WBRL	232.4	1,260	500
Petoskey.....	WBBP	230.6	1,300	100	New Jersey:				
Pontiac.....	WCX	440.6	680	5,000	Atlantic City.....	WHAR	272.6	1,100	2,500
Royal Oak.....	WJW	440.6	680	5,000	Do.....	WPG	272.6	1,100	2,500
Ypsilanti.....	WAGM	225.4	1,330	50	Bound Brook.....	WJZ	454.2	660	30,000
Minnesota:	WJBE	230.6	1,300	15	Camden.....	WCAM	223.7	1,340	500
Barrett.....	KGDE	205.6	1,480	50	Cliffside.....	WCDA	211.1	1,420	250
Collegeville.....	WFBJ	272.6	1,100	100	Do.....	WPAP	394.5	780	500
Hallock.....	KGFE	223.7	1,340	50	Do.....	WQAO	394.5	780	500
Minneapolis.....	KFDZ	215.7	1,390	10	Coteysville.....	WRNY	309.1	970	500
Do.....	KGEQ	202.6	1,480	50	Elizabeth.....	WIBS	204	1,470	150
Do.....	WAMD	225.4	1,330	500	Hoboken.....	WMCA	370.2	810	500
Do.....	WDGY	260.7	1,150	500	Jersey City.....	WAAT	245.8	1,220	500
Do.....	WHD	245.8	1,220	500	Do.....	WRBO	218.5	1,370	500
Do.....	WLB	245.8	1,220	500	Lambertville.....	WTAZ	223.4	1,300	15
Do.....	WGMS	260.7	1,150	1,000	Midland Park.....	WTRL	206.8	1,450	15
Northfield.....	KFMX	236.1	1,270	500	Newark.....	WAAM	348.6	800	500
Do.....	WCAL	236.1	1,270	100	Do.....	WDWM	236.1	1,270	500
St. Cloud.....	WPAM	252	1,100	10	Do.....	WGCP	260.2	1,070	500
St. Paul.....	KFOY	285.8	1,050	250	Do.....	WNI	280.2	1,070	500
Do.....	WMBE	208.2	1,440	10	Do.....	WGR	422.9	710	500
St. Paul-Minnea-	WCCO	405.2	740	5,000					



RADIO SERVICE BULLETIN

BROADCASTING STATIONS ALPHABETICALLY BY STATES AND CITIES—continued

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)	State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
<b>Pennsylvania—Con.</b>					<b>Texas—Continued.</b>				
Lewistown.....	WJBU	214.2	1,400	100	Austin.....	KUT	232.4	1,200	500
Monessen.....	WMBJ	232.4	1,220	50	Beaumont.....	KFDM	374.8	800	500
Oil City.....	WHBA	290.7	1,150	10	Brownsville.....	KWVG	277.6	1,080	500
Do.....	WLBW	293.9	1,020	500	College Station.....	WTAW	309.1	970	500
Parkersburg.....	WQAA	215.7	1,390	500	Dallas.....	KRLD	461.2	650	500
Philadelphia.....	WABQ	277.6	1,080	500	Do.....	WPA	499.7	600	500
Do.....	WABY	247.8	1,210	50	Do.....	WRA	352.7	850	500
Do.....	WCAU	290.7	1,150	500	Dublin.....	KFPL	278.1	1,090	15
Do.....	WPI	405.2	740	500	El Paso.....	KFXH	241.8	1,240	100
Do.....	WPKD	205.4	1,400	10	Do.....	WDAH	214.2	1,280	100
Do.....	WHBW	220.4	1,350	50	Fort Stockton.....	KGFI	220.4	1,580	15
Do.....	WIAD	220.4	1,350	50	Fort Worth.....	KFJZ	249.9	1,200	50
Do.....	WIP	508.2	590	500	Do.....	KFQB	250.7	1,150	1,000
Do.....	WLIT	405.2	740	500	Do.....	WBAP	499.7	600	1,500
Do.....	WNAT	263.8	1,040	100	Galveston.....	KFLX	270.1	1,110	100
Do.....	WOO	508.2	590	500	Do.....	KFUL	258.5	1,160	500
Do.....	WPSW	202.6	1,430	50	Greenville.....	KPFM	230.6	1,200	10
Do.....	WRAX	288.3	1,040	250	Houston.....	KFVI	238	2,200	50
Pittsburgh.....	KQV	270.1	1,110	500	Do.....	KPRC	263.9	2,020	500
Do.....	WCAE	510.2	580	500	Do.....	KTUE	212.0	1,410	5
Do.....	WJAS	270.1	1,110	500	San Antonio.....	KGCI	202.6	1,450	15
Do.....	WMBC	217.3	1,350	50	Do.....	KGDH	202.6	1,450	15
Pringleboro (Kingston).....	WABF	205.4	1,400	250	Do.....	KORC	220.4	1,350	50
Reading.....	WRAW	238	1,260	50	Do.....	KTAP	228.9	1,310	10
Scranton.....	WGBI	220.6	1,300	100	Do.....	KTSA	265.3	1,130	2,000
Do.....	WQAN	230.6	1,300	100	Do.....	WOAI	302.8	950	2,000
State College.....	WFSC	202.8	1,000	500	San Benito.....	KFLU	225.1	1,270	15
Washington.....	WNHO	211.1	1,420	15	Waco.....	WJAD	447.5	670	500
Wilkes-Barre.....	WBAX	242.9	1,200	100	<b>Utah:</b>				
Do.....	WBHK	242.9	1,200	100	Ogden.....	KFUR	225.4	1,330	50
Philippine Islands:					Salt Lake City.....	KDYL	258.5	1,160	100
Manila.....	KZIB	249.9	1,200	20	Do.....	KFUT	499.7	600	50
Do.....	KZKE	270.1	1,110	100	Do.....	RSL	302.8	950	1,000
Do.....	KZRQ	399.8	710	600	<b>Vermont:</b>				
Porto Rico: San Juan	WEAQ	340.7	880	500	Burlington.....	WCAX	254.1	1,180	100
Rhode Island:					Springfield.....	WQAE	249.9	1,200	50
Cranston.....	WDWF	384.4	780	500	<b>Virginia:</b>				
Olneyville.....	WLBI	225.4	1,350	50	Arlington.....	NAA	434.5	600	1,000
Pawtucket.....	WFOI	225.4	1,350	50	Norfolk.....	WBBW	228.1	1,270	50
Providence.....	WJAN	319	940	500	Do.....	WPAB	209.7	1,450	100
Do.....	WJAR	483.6	620	500	Do.....	WFAH	275.1	1,090	500
Do.....	WRAH	160.9	1,500	250	Petersburg.....	WLBU	214.2	1,400	100
South Carolina:					Richmond.....	WBBL	247.8	1,210	100
Charleston.....	WBBY	460.7	600	75	Do.....	WBBL	206.8	1,450	15
South Dakota:					Do.....	WRVA	254.1	1,180	1,000
Brookings.....	KFDY	394.5	760	500	Roanoke.....	WDBJ	230.6	1,300	250
Do.....	KGCR	208.2	1,440	15	Virginia Beach.....	WBEA	218.8	1,370	250
Dell Rapids.....	KGDA	234.2	1,280	15	<b>Washington:</b>				
Mitchell.....	KGFP	212.6	1,410	10	Everett.....	KFBL	221.7	1,540	50
Oldham.....	KGDY	206.8	1,450	15	Lacey.....	KGY	243.8	1,250	50
Rapid City.....	WCAT	347.8	1,210	100	Pullman.....	KWSC	394.5	700	500
Siox Falls.....	KSOO	209.7	1,430	250	Seattle.....	KFOA	447.5	670	1,000
Vermillion.....	KUSD	483.6	620	250	Do.....	KFQW	217.3	1,380	100
Yankton.....	WNAX	302.8	950	250	Do.....	KGBS	202.6	1,480	100
<b>Tennessee:</b>					Do.....	KOCL	230.6	1,300	50
Chattanooga.....	WDOD	234.1	1,180	500	Do.....	KJR	348.6	850	2,500
Knoxville.....	WFBC	234.2	1,280	50	Do.....	KKP	255.5	1,130	15
Do.....	WNBJ	200.8	1,450	50	Do.....	KOMO	305.9	980	1,000
Do.....	WNOX	265.3	1,130	1,000	Do.....	KPCB	230.6	1,300	50
Lawrenceburg.....	WOAN	255.5	1,050	250	Do.....	KROX	211.1	1,420	50
Memphis.....	WGBC	277.6	1,080	15	Do.....	KRSC	211.1	1,420	50
Do.....	WHBQ	232.4	1,200	100	Do.....	KTCL	277.6	1,080	500
Do.....	WMBM	200.7	1,430	10	Do.....	KTW	504.6	780	1,000
Do.....	WMC	510.2	580	500	Do.....	KUF	199.0	1,500	10
Do.....	WNBR	228.9	1,210	20	Do.....	KVOS	209.7	1,430	50
Nashville.....	WBAW	247.8	1,210	100	Spokane.....	KFIO	245.8	1,220	100
Do.....	WDAD	225.4	1,330	500	Do.....	KFPY	245.8	1,220	250
Do.....	WLAC	319	940	2,000	Do.....	KGA	260.7	1,120	2,000
Springfield.....	WBIX	212.6	1,410	150	Do.....	KHQ	370.2	810	1,000
Whitehaven (Memphis).....	WREC	254.1	1,180	50	Tacoma.....	KMO	254.1	1,180	250
<b>Texas:</b>					Do.....	KVI	234.2	1,250	50
Amarillo.....	KGBS	243.8	1,210	150	Walla Walla.....	KOWW	299.8	1,000	500
					Yakima.....	KFIQ	208.2	1,440	100
					<b>West Virginia:</b>				
					Huntington.....	WBAZ	241.8	1,240	100

BROADCASTING STATIONS ALPHABETICALLY BY STATES AND CITIES—continued

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)	State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
Wisconsin:					Portable—Continued				
Beloit.....	WEBW	258.5	1,160	500	Illinois:				
Camp Lake.....	WCLO	227.1	1,320	100	Chicago.....	WBBZ	204	1,470	100
Eau Claire.....	WTAQ	254.1	1,180	500	Do.....	WHBL	204	1,470	100
Fond du Lac.....	KPIZ	267.7	1,120	100	Do.....	WHBM	201.2	1,490	100
Kenosha.....	WEDR	222.4	1,350	15	Do.....	WIBJ	201.2	1,490	100
La Crosse.....	WKBH	220.4	1,350	500	Do.....	WIBM	201.2	1,490	100
Madison.....	WHA	319	940	750	Do.....	WIBW	204	1,470	100
Do.....	WIBA	228.9	1,350	100	Do.....	WLBG	201.2	1,470	100
Mantowoc.....	WOMT	222.1	1,350	50	Do.....	WLBQ	204	1,470	50
Milwaukee.....	WOWB	218.8	1,370	500	Do.....	WMBH	204	1,470	100
Do.....	WHAD	203.9	1,520	500	Massachusetts: Boston				
Do.....	WBOE	270.1	1,110	500	New York:				
Do.....	WTMJ	251.9	1,220	500	Farmingdale.....	WLBH	201.2	1,490	30
Omnia.....	WJBB	227.1	1,320	100	MC-1 (yacht).....	WRMU	201.2	1,490	100
Poynton.....	WIBU	217.3	1,380	20	Richmond Hill.....	WGMU	201.2	1,490	100
Racine.....	WRRB	222.4	1,350	50	Pennsylvania:				
Stevens Point.....	WLRL	319	940	1,000	Bethayres.....	WALK	201.2	1,490	50
Superior.....	WEBU	241.8	1,240	250	Newcastle.....	WKBU	204	1,470	50
West De Pere.....	WHBY	240.9	1,220	50	Rhode Island:				
Wyoming: Laramie.....	KFBU	425.3	700	500	Newport.....	WMBA	204	1,470	100
					Providence.....	WCBR	201.2	1,490	100
Portable									
California: Los Angeles.....	KQFO	204	1,470	100					

BROADCASTING STATIONS BY WAVE LENGTHS

(Effective June 15, 1927)

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
545.1	550	500	KFUO	St. Louis, Mo.	491.3	650	100	KICK	Anita, Iowa.
		500	KBD	Do.			500	KRLD	Dallas, Tex.
		750	WMAK	Lockport, N. Y.			500	WHAS	Louisville, Ky.
535.4	600	100	KFBK	Sacramento, Calif.			500	WTIC	Hartford, Conn.
		250	WCAH	Columbus, Ohio.	454.3	660	500	KFRC	San Francisco, Calif.
		5,000	WIO	Des Moines, Iowa.			30,000	WJZ	Bozard Brook, N. J.
		500	WNYC	New York, N. Y.	447.5	670	1,000	KFOA	Seattle, Wash.
525	670	2,500	KFKX	Harling, Nebr.			500	WEKI	Boston, Mass.
		500	KMTR	Los Angeles, Calif.			500	WJAD	Waco, Tex.
		2,500	KYW	Chicago, Ill.			1,000	WMAQ	Chicago, Ill.
516.9	580	500	WCAE	Pittsburgh, Pa.			500	WQJ	Do.
		500	WMC	Memphis, Tenn.	440.9	680	100	KPMR	Sioux City, Iowa.
508.2	590	500	KLX	Oakland, Calif.			500	KFSD	San Diego, Calif.
		500	WIP	Philadelphia, Pa.			50	WIBG	Elkins Park, Pa.
		500	WOO	Do.			5,000	WCX	Pantlan, Mich.
		1,000	WOW	Omaha, Nebr.			1,000	NAA	Arlington, Va.
499.7	600	50	KPUT	Salt Lake City, Utah.	421.5	690	700	KPBU	Laramie, Wyo.
		1,500	WBAP	Fort Worth, Tex.	423.3	700	500	WMAF	Dartmouth, Mass.
		75	WBLY	Charleston, S. C.			500	WLW	Harrison (Cincinnati), Ohio.
		500	WFAA	Dallas, Tex.			1,000	KPO	San Francisco, Calif.
491.6	610	1,000	KGW	Portland, Oreg.			500	WOR	Newark, N. J.
		1,000	WAPI	Auburn, Ala.			100	KFLB	Albuquerque, N. Mex.
		6,000	WEAF	New York, N. Y.	415.4	720	5,000	WHT	Deerfield, Ill. (Chicago).
		250	WBKC	Bay City, Mich.			500	WIHO	Chicago, Ill.
481.0	620	250	KUSD	Vermilion, S. Dak.			500	KHJ	Los Angeles, Calif.
		1,500	WCFL	Chicago, Ill.			500	WPI	Philadelphia, Pa.
		250	WEAI	Ithaca, N. Y.			5,000	WCCO	Anoka (St. Paul-Minneapolis), Minn.
		500	WJAR	Providence, R. I.	405.2	740			
		100	WLTS	Chicago, Ill.					
475.9	630	250	KFVR	Denver, Colo.					
		100	WLAS	Burlington, Iowa.					
		1,000	WSB	Atlanta, Ga.					
468.5	640	5,000	KFTT	Los Angeles, Calif.					

## RADIO SERVICE BULLETIN

11

## BROADCASTING STATIONS BY WAVE LENGTHS—continued.

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
299.5	750	250	KFKA	Greeley, Colo.	333.1	900	100	KFJM	Grand Forks, N. Dak.
		500	KZRU	Manila, P. I.			500	KBAC	Manhattan, Kans.
		1,000	WEAR	Cleveland, Ohio.			250	KBEI	Paicelli, Idaho.
		2,500	WTAM	Do.		15,000	WBZ	Springfield, Mass.	
394.5	760	500	KFDY	Brookings, S. Dak.			500	WBZA	Boston, Mass.
		5,000	KOB	State College, N. Mex.			500	WKRC	Cincinnati, Ohio.
		1,000	KTW	Seattle, Wash.	325.9	920	5,000	KOA	Denver, Colo.
		1,000	KWKH	Shreveport, La.			2,500	WABC	Richmond Hill (New York City), N. Y.
		500	KWSC	Pullman, Wash.			500	WBOQ	Do.
		500	WHN	New York, N. Y.	322.4	930	50	KFQA	St. Louis, Mo.
		500	WOB	Jefferson City, Mo.			50	WJBA	Joliet, Ill.
		500	WPAP	Cliffside, N. J.			50	WKHI	Chicago, Ill.
		500	WQAO	Chicago, Ill.			15	WKDB	Kenosha, Wis.
380.4	770	100	WAAF	Bangor, Me.			15	WLBR	Belvidere, Ill.
		1,000	WABJ	Chicago, Ill.			50	WLBT	Crown Point, Ind.
		100	WBBM	Do.			50	WRBS	Racine, Wis.
		100	WBT	Do.			750	WQAM	Miami, Fla.
		100	WWVA	Wheeling, W. Va.			500	WBMD	New Orleans, La.
384.4	780	5,000	KGO	Oakland, Calif.			50	WTAX	Streator, Ill.
		250	KWCR	Cedar Rapids, Iowa.			1,000	KOIN	Sylvan (Portland), Oreg.
		100	WJAM	Do.	319	940	500	WEAN	Providence, R. I.
		100	WBSO	Wellesley Hills, Mass.			750	WHA	Madison, Wis.
		250	WCAO	Baltimore, Md.			1,000	WLHI	Stevens Point, Wis.
		100	WCBM	Do.			50	WRHF	Washington, D. C.
		500	WDWF	Cranston, R. I.			2,000	WSM	Nashville, Tenn.
		500	WLSI	Do.			30,000	EDKA	East Pittsburgh, Pa.
		500	WMBF	Miami Beach, Fla.	315.6	950	1,000	KPSN	Pasadena, Calif.
		100	WSRO	Hamilton, Ohio.			12,000	KFAB	Lincoln, Nebr.
379.5	790	30,000	WGY	Schenectady, N. Y.			500	KYA	San Francisco, Calif.
		500	WHAZ	Troy, N. Y.	309.3	970	5,000	WPCH	New York, N. Y.
374.6	800	500	KFDM	Beaumont, Tex.			500	WPNY	Catsville, N. J.
		500	KNRC	Santa Monica, Calif.			500	WTAW	College Station, Tex.
		500	KUCM	Minonka, Mont.			1,000	KOMO	Seattle, Wash.
		500	WAAW	Omaha, Nebr.			15,000	WGN	Elgin, Ill., near (Chicago).
		1,000	WJF	Detroit, Mich.			500	WLR	Do.
370.9	810	1,000	KHQ	Spokane, Wash.	305.9	980	1,000	KSL	Salt Lake City, Utah.
		1,000	WDAP	Kansas City, Mo.			100	WASN	Boston, Mass.
		500	WEBH	New York, N. Y.			750	WNY	Buffalo, N. Y.
		500	WMCA	Hoboken, N. J.			250	WQAX	Yankton, S. Dak.
365.6	820	50	KMJ	Fresno, Calif.			2,000	WOAI	San Antonio, Tex.
		500	WCAD	Canton, N. Y.			5,000	KMOX	Kirkwood (St. Louis), Mo.
		2,000	WEHH	Chicago, Ill.			500	KOWW	Walla Walla, Wash.
		500	WFHH	Clearwater, Fla.			500	WBAC	Harrisburg, Pa.
		1,000	WJHD	Mooseheart, Ill.			500	WPSC	State College, Pa.
361.2	830	500	KFWB	Hollywood, Calif.	299.8	1,000	5,000	KQW	San Jose, Calif.
		500	WCSH	Portland, Me.			500	KQOA	Fayetteville, Ark.
		250	WDAY	Fargo, N. Dak.			100	WBES	Takoma Park, Md.
		5,000	WBAI	Mason (Cincinnati), Ohio.			100	WEPE	Goutchester, Mass.
352.7	850	1,000	WEW	St. Louis, Mo.	294.9	1,010	500	WIBN	St. Petersburg, Fla.
		500	WNAC	Boston, Mass.			500	WSMK	Dayton, Ohio.
		5,000	WOP	Davenport, Iowa.			1,000	WWNC	Asheville, N. C.
		500	WRB	Dallas, Tex.			250	EGCH	Wayne, Nebr.
348.6	860	2,500	KJR	Seattle, Wash.			500	KPRC	Houston, Tex.
		1,000	KVOO	Hristow, Okla.			500	WHAD	Milwaukee, Wis.
		500	WAAM	Newark, N. J.			500	WLBW	Oil City, Pa.
		500	WCAJ	University Place (Lincoln), Nebr.	293.9	1,020	1,000	WLWL	New York, N. Y.
		100	WFDF	Flint, Mich.			1,000	WODA	Peterboro, N. J.
		500	WQBS	Astoria, N. Y.			500	WTMJ	Milwaukee, Wis.
344.6	870	100	KFQD	Anchorage, Alaska.			100	KGBX	St. Joseph, Mo.
		50	KWG	Stockton, Calif.			500	KTBI	Los Angeles, Calif.
		5,000	WCND	Zion, Ill.			250	WBCN	Chicago, Ill.
		250	WJBB	St. Petersburg, Fla.			500	WENR	Do.
		5,000	WLS	Crete (Chicago), Ill.			150	WKY	Oklahoma, Okla.
340.7	880	750	KTHS	Hot Springs, Ark.			100	WNAT	Philadelphia, Pa.
		5	KWTC	Santa Ana, Calif.			250	WRAX	Do.
		50	WQAZ	Caribago, Ill.			500	WTAC	Worcester, Mass.
		500	WRAQ	San Juan, P. R.			2,000	KFAU	Boise, Idaho.
		100	WRAV	Yellow Springs, Ohio.			1,000		
338.9	890	500	KNX	Los Angeles, Calif.			2,000		
		500	WJH	Kansas City Mo.	285.5	1,050	4,000		
		1,000	WJAX	Jacksonville, Fla.					

## BROADCASTING STATIONS BY WAVE LENGTHS—continued

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
285.5	1,050	3,000	WBAL	Glen Morda (Baltimore), Md.	263	1,140	50	KFPW	Cartersville, Mo.
		250	WOAN	Lawrenceburg, Tenn.			500	KGEP	Los Angeles, Calif.
282.8	1,060	100	KFJR	Portland, Oreg.			250	WDAO	Amarillo, Tex.
		500	KPNF	Denver, Colo.			5,000	WIAZ	Mt. Prospect (Chicago), Ill.
		50	KTHR	Portland, Oreg.					
		5,000	WAIU	Columbus, Ohio.					
		750	WBAO	Do.	260.7	1,150	100	WJBO	New Orleans, La.
		50	WBAK	Escanaba, Mich.			500	WMBI	Chicago, Ill.
280.2	1,075	500	KTAH	Oakland, Calif.			1,000	KFQB	Fort Worth, Tex.
		50	WABR	Toledo, Ohio.			2,000	KGA	Spokane, Wash.
		100	WFBO	Altoona, Pa.			500	WCAU	Philadelphia, Pa.
		500	WDCP	Newark, N. J.			500	WDGY	Minneapolis, Minn.
		500	WNJ	Do.			10	WHBA	Oil City, Pa.
		150	WTAL	Toledo, Ohio.			250	WNBH	New Bedford, Mass.
277.6	1,080	1,000	KOIL	Council Bluffs, Iowa.			500	WOOD	Farmwood, Mich.
		500	KTCL	Seattle, Wash.	255.5	1,160	1,000	WRHM	Minneapolis, Minn.
		500	KWWG	Brownsville, Tex.			100	KDYI	Salt Lake City, Utah.
		500	WABQ	Philadelphia, Pa.			100	KFOY	Omaha, Nebr.
		100	WDE	Tuscola, Ill.			500	KFUL	Galveston, Tex.
		15	WDEB	Memphis, Tenn.			250	KOCH	Omaha, Nebr.
		500	WILAM	Rochester, N. Y.			500	WBT	Charlotte, N. C.
274.1	1,090	50	KFHH	Havre, Mont.			250	WOMA	Culver, Ind.
		15	KFPL	Dublin, Tex.			500	WBBW	Beloit, Wis.
		500	KFSO	Los Angeles, Calif.			750	WBLL	Syracuse, N. Y.
		500	WCAO	Mansfield, Conn.	256.3	1,175	250	WIL	St. Louis, Mo.
		250	WDHC	New Haven, Conn.			250	WNAL	Omaha, Nebr.
		5,000	WORD	Chicago (Chicago), Ill.			50	KFUS	Oakland, Calif.
		500	WTAB	Norfolk, Va.			100	KRE	Berkeley, Calif.
		3,500	WTAS	Batavia (Chicago), Ill.			3,500	KTNT	Muscatine, Iowa.
272.6	1,100	100	WWT	New Orleans, La.			250	WASH	Grand Rapids, Mich.
		500	KFAD	Phoenix, Ariz.	251.1	1,180	1,000	WBDR	Roselle, N. Y.
		750	KFJP	Oklahoma, Okla.			500	WCSO	Springfield, Ohio.
		100	KEMR	Santa Maria, Calif.			500	WGL	Secaucus, N. J.
		500	WRAA	West Lafayette, Ind.			50	KPHA	Channahon, Colo.
		100	WFBJ	Collegeville, Minn.			500	KPKU	Lawrence, Kans.
		750	WILAR	Atlantic City, N. J.			100	KPWH	Bureka, Calif.
		2,500	WPG	Do.			250	KNO	Topeka, Wash.
		500	WRM	Urbana, Ill.			100	WCAX	Burlington, Vt.
270.1	1,110	100	KFLX	Galveston, Tex.			500	WDOD	Chattanooga, Tenn.
		1,000	KFNK	Shamodush, Iowa.			50	WHEC	Whitehaven (Memphis), Tenn.
		600	KOU	Honolulu, Hawaii.			750	WHEN	Lawrence, Kans.
		500	KOAC	Corvallis, Oreg.	252	1,100	1,000	WRVA	Richmond, Va.
		500	KMA	Shenandoah, Iowa.			500	WTAQ	San Diego, Wis.
		500	KOV	Pittsburgh, Pa.			500	KFKB	Los Angeles, Calif.
		100	KZKZ	Atlanta, P. I.			250	KOCW	Chickasha, Okla.
		500	WOST	Atlanta, Ga.			10	WPAM	St. Cloud, Minn.
		500	WJAS	Pittsburgh, Pa.			15	WGAL	Lancaster, Pa.
		500	WMAZ	Macon, Ga.			250	WKFT	Indianapolis, Ind.
		500	WDOE	Milwaukee, Wis.			50	WRTF	New Orleans, La.
267.7	1,120	100	KFIZ	Fond du Lac, Wis.			50	WJCO	Lancaster, Pa.
		100	KFLV	Rockford, Ill.			500	WMBR	Chicago, Ill.
		500	KFWI	San Francisco, Calif.			100	WMBR	Tampa, Fla.
		250	KLZ	Denver, Colo.	249.5	1,200	5,000	WOK	Homewood (Chicago), Ill.
		50	KMFD	Medford, Oreg.			100	WBAR	Full River, Mass.
		1,000	KBBA	Shreveport, La.			15	KFJI	Astoria, Oreg.
		25	WAAD	Cincinnati, Ohio			50	KFJZ	Fort Worth, Tex.
		100	WBAO	Decatur, Ill.			100	KFQU	Alma (Holy City), Calif.
		100	WBEN	Brooklyn, N. Y.			600	KFRU	Columbia, Mo.
		100	WDMG	Union City, N. J.			25	KZIB	Manila, P. I.
		500	WDAE	Tampa, Fla.			100	WBAX	Wilkes-Barre, Pa.
		100	WJHI	Flushing, N. Y.			100	WBRE	Do.
		150	WJHI	Red Bank, N. J.			500	WGOA	Pensacola, Fla.
		30	WLAP	Louisville, Ky.			50	WIDY	West de Pere, Wis.
		100	WWRK	Woodside, N. Y.			15	WIBR	Steubenville, Ohio.
265.3	1,130	15	KKPA	Seattle, Wash.	247.8	1,215	50	WQAE	Springfield, Vt.
		2,000	KTPA	San Antonio, Tex.			100	KPBC	San Diego, Calif.
		100	WDEL	Wilmington, Del.			250	KFEL	Denver, Colo.
		500	WJLK	Cleveland, Ohio.			15	KFJB	Marshalltown, Iowa.
		500	WJAY	Do.			50	KWLC	Decorah, Iowa.
		1,000	WNOX	Knoxville, Tenn.			50	WABW	Waco, Ohio.
		2,500	WOL	Ames, Iowa.			50	WABY	Philadelphia, Pa.
							100	WABZ	New Orleans, La.
								WBAW	Nashville, Tenn.

## RADIO SERVICE BULLETIN

13

## BROADCASTING STATIONS BY WAVE LENGTHS—continued

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
247.5	1,210	100	WCAT	Rapid City, S. Dak.	244.2	1,250	1,000	KFVE	St. Louis, Mo.
		10	WEBE	Cambridge, Ohio.			100	KGAR	Tucson, Ariz.
		50	WFRZ	Galesburg, Ill.			15	KODA	Dell Rapids, S. Dak.
		1,000	WIOD	Miami Beach, Fla.			50	KVI	Tacoma, Wash.
		20	WLCT	Ithaca, N. Y.			100	WDAH	El Paso, Tex.
		100	WMAY	St. Louis, Mo.			50	WFBC	Knoxville, Tenn.
		50	WRAM	Galesburg, Ill.			50	WJAK	Kokomo, Ind.
		500	KPH	Wichita, Kans.			50	WJBY	Gadsden, Ala.
		100	KPIO	Spokane, Wash.			50	WMAN	Columbus, Ohio.
		250	KPFY	Do.			250	WMBS	Harrisburg, Pa.
245.5	1,230	250	KLJ	Oakland, Calif.	242.4	1,260	35	WMPO	Lapeer, Mich.
		100	KZM	Do.			10	KFBY	Kalioga, Idaho.
		300	WAAT	Jersey City, N. J.			250	KFPD	Los Angeles, Calif.
		200	WFBE	Cincinnati, Ohio.			100	KFQZ	Hollywood, Calif.
		500	WFIW	Hopkinsville, Ky.			500	KUT	Austin, Tex.
		400	WGBB	Freeport, N. Y.			100	WABD	Rochester, N. Y.
		500	WHDI	Minneapolis, Minn.			500	WHRL	Tilton, N. H.
		100	WLB	Do.			100	WHBQ	Memphis, Tenn.
		500	WOMB	Do.			100	WHEC	Rochester, N. Y.
		500	WSOM	Woodhaven, N. Y.			50	WMBJ	Monaca, Pa.
243.8	1,250	125	KFCR	Phoenix, Ariz.	240.0	1,400	500	WBBC	Chicago, Ill.
		10	EGCX	Vida, Mont.			500	WWAE	Do.
		150	KGRS	Amarillo, Tex.			15	EDLR	Devils Lake, N. Dak.
		50	EGY	Lacey, Wash.			1,000	KYEG	St. Joseph, Mo.
		500	KSCJ	Sioux City, Iowa.			15	KPPM	Greenville, Tex.
		1,500	KWUC	Le Mars, Iowa.			50	KQCL	Gentle, Wash.
		250	WBRC	Birmingham, Ala.			50	KPCB	Do.
		1,500	WGHF	Mount Pleasant, Mich.			100	WCOC	Columbus, Miss.
		1,000	KPKB	Millard, Kans.			250	WDBJ	Roanoke, Va.
		500	KPON	Long Beach, Calif.			100	WDBI	Scranton, Pa.
241.6	1,240	100	KPXH	El Paso, Tex.	238.9	1,310	15	WDBZ	Montgomery, Ala.
		500	WBET	Boston, Mass.			1,000	WKAR	East Lansing, Mich.
		100	WBDH	Oxford, Miss.			100	WQAN	Scranton, Pa.
		250	WBOB	Superior, Wis.			500	WHBO	Lansing, Mich.
		500	WEDC	Chicago, Ill.			100	WSSH	Boston, Mass.
		200	WEHR	Budala, N. Y.			250	KELW	Burbank, Calif.
		500	WQES	Chicago, Ill.			50	KFWV	Portland, Oreg.
		100	WBAZ	Huntington, W. Va.			500	KGRU	Ketchikan, Alaska.
		100	KFJY	Fort Dodge, Iowa.			500	KMMJ	Clay Center, Nebr.
		250	KFYR	Blismark, N. Dak.			50	KPPC	Pasadena, Calif.
239.9	1,250	2,500	KEX	Portland, Oreg.	237.1	1,330	10	KTAP	San Antonio, Tex.
		1,000	WADC	Akron, Ohio.			500	WCWK	Fort Wayne, Ind.
		100	WBHP	Potoskey, Mich.			250	WHBF	Johnstown, Pa.
		500	WBBO	Winter Park, Fla.			100	WBEE	Webster, Mass.
		250	WEAM	North Plainfield, N. J.			100	WNAL	Washington, D. C.
		100	WIBA	Madison, Wis.			50	WMBL	Lakeland, Fla.
		500	WNAD	Norman, Okla.			20	WNBR	Memphis, Tenn.
		500	WOAK	Trenton, N. J.			1,000	WOWO	Fort Wayne, Ind.
		15	KFDB	Trinidad, Colo.			100	KFUP	Denver, Colo.
		50	KFVI	Houston, Tex.			50	KGEU	Lower Lake, Calif.
239	1,260	25	KFYF	Oxnard, Calif.	235.4	1,320	500	KBO	Clerinda, Iowa.
		1,500	KLDS	Independence, Mo.			500	WARH	Brooklyn, N. Y.
		100	WCOM	Manchester, N. H.			500	WBHC	Do.
		1,000	WEMC	Barrien Springs, Mich.			5	WBCE	New Orleans, La.
		100	WIBX	Ulton, N. Y.			100	WCLO	Camp Lake, Wis.
		50	WJBW	New Orleans, La.			250	WDBK	Cleveland, Ohio.
		250	WLBH	East Wauona, Ill.			100	WJBC	La Salle, Ill.
		50	WRAW	Reading, Pa.			150	WJBR	Omaha, Wis.
		250	WRBC	Valparaiso, Ind.			250	WSDA	New York, N. Y.
		250	KPDX	Shreveport, La.			10	KFIU	Juneau, Alaska.
238.1	1,270	15	KFLU	San Bonito, Tex.	233.7	1,340	13	KFKZ	Kirkville, Mo.
		500	KFMX	Northfield, Minn.			50	KFUR	Ogden, Utah.
		100	KFUM	Colorado Springs, Colo.			50	KFVG	Independence, Kan.
		500	KPWM	Oakland, Calif.			10	KOEN	El Centro, Calif.
		1,000	WBBW	Norfolk, Va.			50	WAGM	Royal Oak, Mich.
		500	WCAL	Northfield, Minn.			500	WAMD	Minneapolis, Minn.
		500	WDWM	Newark, N. J.			50	WCOT	Gloucester, R. I.
		250	WGBF	Evansville, Ind.			500	WDAD	Nashville, Tenn.
		1,000	WHAF	New York, N. Y.			250	WLAC	Nashville, Tenn.
		10	WHBC	Canton, Ohio.			250	WFBB	Indianapolis, Ind.
500	WMSC	New York, N. Y.	100	WFBR	Baltimore, Md.				
			50	WFOI	Pawtucket, R. I.				
			500	WMAC	Carysville, N. Y.				
			500	WYAC	Byram, N. Y.				
			50	KFHL	Everett, Wash.				

## BROADCASTING STATIONS BY WAVE LENGTHS—continued

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
221.7	1,340	100	KCCG	Newark, Ark.	214.2	1,400	50	KFEC	Portland, Oreg.
		10	KGDP	Pueblo, Colo.			50	KPIP	Do.
		10	KQFB	Iowa City, Iowa.			250	KFWF	St. Louis, Mo.
		100	KGFH	La Crescenta, Calif.			15	KFXR	Oklahoma, Okla.
		50	KGYK	Hollock, Minn.			15	KFJM	Prescott, Ariz.
		250	KMIG	Ingleswood, Calif.			10	WATT	Taunton, Mass.
		500	WCAM	Camden, N. J.			250	WICG	Bridgeport, Conn.
		500	WCRW	Chicago, Ill.			100	WIBU	Lewisburg, Pa.
		15	WEBQ	Harrisburg, Ill.			50	WRBN	Youngstown, Ohio.
		500	WFKB	Chicago, Ill.			100	WLBO	Petersburg, Va.
		50	WEAV	Laconia, N. H.			50	WMBW	Youngstown, Ohio.
		500	WNRO	Greensboro, N. C.			10	KFHL	Oskaloosa, Iowa.
		25	WOCL	Jamestown, N. Y.			100	KGBZ	York, Neb.
		500	WPCG	Chicago, Ill.			250	KGDY	Shreveport, La.
		250	WRAJ	Grove City, Pa.			10	KGFP	Mitchell, S. Dak.
222.1	1,350	100	KFWC	San Bernardino, Calif.	211.1	1,420	5	KTUE	Houston, Tex.
		50	KGFL	Trinidad, Colo.			1,000	WFLA	Boca Raton, Fla.
		100	KWKC	Kansas City, Mo.			250	WJBL	Decatur, Ill.
		100	WCHA	Allentown, Pa.			50	WBBF	Battle Creek, Mich.
		100	WHHD	Bellefontaine, Ohio.			150	WBLX	Springfield, Tenn.
		100	WIIF	Rock Island, Ill.			50	KPCR	Santa Barbara, Calif.
		250	WJAG	Norfolk, Nebr.			15	KGFM	Yuba City, Calif.
		50	WOMT	Mantlewood, Wis.			100	KPNP	Muscatine, Iowa.
		100	WSAN	Allentown, Pa.			50	KROX	Seattle, Wash.
		250	WBTT	South Bend, Ind.			50	KRSC	Do.
		15	KGFI	Fort Stockton, Tex.			100	WRMH	Detroit, Mich.
		50	KGRG	San Antonio, Tex.			100	WBES	Brooklyn, N. Y.
		50	KJBS	San Francisco, Calif.			250	WCDA	Cliffside, N. J.
		50	KRAC	Freeport, La.			500	WCGU	Coney Island, N. Y.
		50	KXL	Portland, Oreg.					(Brooklyn).
220.4	1,360	15	WHBU	Anderson, Ind.	50	WLBM	Boston, Mass.		
		50	WHBW	Philadelphia, Pa.	100	WMBC	Detroit, Mich.		
		50	WLAD	Do.	15	WNBO	Washington, Pa.		
		15	WJBK	Ypsilanti, Mich.	250	WRST	Bay Shore, N. Y.		
		500	WKBH	La Crosse, Wis.	10	KFOQ	Boone, Iowa.		
		100	WMBO	Auburn, N. Y.	250	KBOO	Sioux Falls, S. Dak.		
		15	WTAZ	Lambertville, N. J.	50	KVOS	Seattle, Wash.		
		10	KGRW	Fort Morgan, Colo.	50	WLHC	Muncie, Ind.		
		250	KFWO	Avon, Calif.	50	WLBF	Kansas City, Mo.		
		250	WAFD	Detroit, Mich.	50	WLBY	Iron Mountain, Mich.		
		500	WBNY	New York, N. Y.	250	WCHS	Springfield, Ill.		
		250	WFRL	Brooklyn, N. Y.	10	WMBM	Memphis, Tenn.		
		500	WGWB	Milwaukee, Wis.	500	WORT	Rochester, N. Y.		
		10	WKBC	Birmingham, Ala.	100	WPAB	Norfolk, Va.		
		500	WKBO	Jersey City, N. J.	100	WPRC	Harrisburg, Pa.		
500	WEBQ	New York, N. Y.	100	KFIQ	Yakima, Wash.				
250	WBEA	Virginia Beach, Va.	250	KFVD	Venice, Calif.				
218.8	1,370	250	WTHO	Detroit, Mich.	50	KGCN	Coeur d'Alene, Kans.		
		100	KFOR	Lincoln, Nebr.	15	KGCR	Brookings, S. Dak.		
		100	KFQW	Seattle, Wash.	100	KGCU	Mandan, N. Dak.		
		10	KGDM	Stockton, Calif.	100	KGFI	Los Angeles, Calif.		
		20	WIBU	Poynton, Wis.	50	WOM	Jeanette, Pa.		
		100	WKBS	Galesburg, Ill.	100	WJHZ	Chicago Heights, Ill.		
		100	WKBV	Brookville, Ind.	30	JPW	Ashland, Ohio.		
		500	WKBW	Ruffalo, N. Y.	100	WKBM	Newburgh, N. Y.		
		100	WLBO	Galesburg, Ill.	250	WLBE	Dover-Foxcroft, Me.		
		50	WMBU	Pittsburgh, Pa.	10	WMBE	St. Paul, Minn.		
		250	WRCO	Raleigh, N. C.	500	WNBA	Forest Park, Ill.		
		50	WRES	Quincy, Mass.	100	WRAF	Laporte, Ind.		
		217.3	1,380	10	KFDE	Minneapolis, Minn.	100	WRPI	Terre Haute, Ind.
				15	KFXJ	Edgewater, Colo.	100	KGDY	Humboldt, Nebr.
				50	KGCB	Oklahoma, Okla.	15	KDDY	Odham, S. Dak.
100	KGER			Long Beach, Calif.	50	KOTY	San Francisco, Calif.		
50	KGFG			Oklahoma, Okla.	10	ELPT	Portland, Oreg.		
250	KRLO			Los Angeles, Calif.	10	WHPP	New York, N. Y.		
5	WAGS			Somerville, Mass.	50	WLBY	Mansfield, Ohio.		
150	WCLJ			Joliet, Ill.	10	WMBJ	Jamaica, N. Y.		
50	WDBZ			R Kingston, N. Y.	50	WMBF	Endicott, N. Y.		
100	WEHS			Evansville, Ill.	50	WNBH	Knoxville, Tenn.		
200	WHFC			Chicago, Ill.	15	WMBG	Richmond, Va.		
100	WKBH			Joliet, Ill.	15	WTRL	Midland Park, N. J.		
250	WPEP			Waukegan, Ill.	25	KFXV	Flagstaff, Ariz.		
250	WOKO			Peekskill, N. Y.	50	KGDE	Darrett, Minn.		
500	WOL			Philadelphia, Pa.	100	KGRG	Grand Island, Nebr.		



*Cape Lookout Shoals Lightship, N. C.*—Beacon established to operate only on request. Vessels desiring to obtain bearings on this station should call WWBA on 600 meters. The beacon will transmit on 1,000 meters, groups of 1 dot, 1 dash, 1 dot, 1 dash, repeated for 60 seconds, silent 120 seconds, thus:

— — — — — etc.	Silent.
60 seconds.	120 seconds.

Location, 34° 18' 30" N., 76° 24' 30" W.

#### BAHAMA ISLANDS STATION REOPENED

The station at Bimini has been reopened and messages for this station will be accepted without restriction.

#### RADIOBEACON ESTABLISHED AT SCILLY ISLES

A radiobeacon, call signal GGG, will be established in the near future at Round Island Light Station, Scilly Isles, southwest coast of England, in 49° 59' N., 6° 19' W. The station will emit one transmission of 60 seconds' duration every 4 minutes during thick weather, as follows: The call signal emitted continuously at the rate of 15 words per minute for 48 seconds, followed by a continuous dash of 10 seconds' duration, followed by the call signal made once in 2 seconds, total 60 seconds, followed by a silent interval of 180 seconds. During clear weather three emissions of the complete signal as described above will be made every half hour, approximately. The wave length is 1,000 meters. Although this signal is to be permanent, it may be found necessary to make some adjustment after establishment, and the station should be considered as under test for a period of three months, during which time the signals may be subject to temporary interruptions.—*Notice to Mariners No. 24, Admiralty, London, 1927*

#### TIME SIGNALS TRANSMITTED BY CAPE D'AGUILAR, CHINA SEA, STATION

Radio time signals transmitted by Stonecutters Island station are also transmitted by Cape d'Aguilar station at the same times and on the same wave length, 2,000 meters, l. c. w. Particulars are as follows: Call signal, VPS; location, latitude 22° 12' 39" N., longitude 114° 15' 11" E.; time signal:

H. M. (G. M. T.)	H. M. (S. T.)
1 56- 2 00	9 56-10 00
12 55-13 00	20 55-21 00

Time signals from the Royal Observatory, Hong Kong, are relayed from Cape d'Aguilar station at the times mentioned above. The time signals consist of dots (..... etc.) each of about 0.2 second's duration, sent every second, the 28th, 29th, 54th, 55th, 56th, 57th, 58th, and 59th seconds being omitted for the purpose of identifying the signals. Preliminary warning signals are transmitted between 1<sup>h</sup> 54<sup>m</sup> 00<sup>s</sup> and 1<sup>h</sup> 55<sup>m</sup> 00<sup>s</sup>, and between 12<sup>h</sup> 53<sup>m</sup> 00<sup>s</sup> and 12<sup>h</sup> 54<sup>m</sup> 00<sup>s</sup>, G. M. T., as follows: CQ. De VPS. TIME. WAIT.

#### LOST COMMERCIAL RADIO OPERATORS' LICENSES

Hereunder is a list of radio operators' licenses which have been reported as having been lost. Should any of them be found, they should be returned to the Department of Commerce, Radio Division, Washington, D. C., for cancellation. Supervisors and others concerned should see that lost licenses are not being used

## RADIO SERVICE BULLETIN

17

Name	Class	Number	Date issued	Port issued
Delghan, E. I.	First	6804	Oct. 10, 1925	Detroit.
Dunnell, John A.	do	5257	Oct. 2, 1926	Do.
Egerton, Willie G.	Second	6019	Feb. 23, 1926	New Orleans.
Fowler, Roger N.	First	16227	Apr. 30, 1926	New York.
Grege, Leslie D.	Second	4467	Sept. 17, 1926	Chicago.
Halloran, Raymond	First	12212	Oct. 16, 1924	New York.
Hannah, Edward L.	do	11896	Mar. 17, 1925	San Francisco.
Hilscher, John F.	do	8508	Dec. 24, 1925	Chicago.
Harisch, Tomozada	do	16207	Aug. 7, 1926	New York.
Jacobson, Jesse J.	Second	3281	Feb. 7, 1927	Do.
Kleist, Alfred H.	First	6877	Apr. 10, 1925	Chicago.
Lehmann, Herman	do	14657	Sept. 23, 1925	New York.
Lyons, Michele D.	do	8314	Jan. 6, 1927	St. Louis.
Martin, William G., Jr.	do	16436	Nov. 17, 1926	New York.
Montis, Aldo	do	5608	May 1, 1925	Detroit.
Muntous, Edwin G.	do	8123	Apr. 27, 1925	Chicago.
Munselden, Henry	do	11768	May 12, 1925	San Francisco.
Pepper, T. B.	do	8255	Nov. 1, 1926	Chicago.
Pfau, John A.	Second	4243	May 12, 1924	Do.
Powers, Harold W.	First	16118	June 7, 1926	New York.
Rhalla, Carl	do	17602	Feb. 9, 1927	Do.
Swearingen, Ed C.	Second	4392	Apr. 9, 1925	Chicago.
Swart, H. L.	First	1246	Nov. 7, 1925	Washington.
Thompson, Kenneth	do	16214	July 16, 1926	New York.
Tammis, Louis	do	16228	July 21, 1926	Do.
Varetoni, William J.	do	12985	Dec. 24, 1924	Do.
Wagner, Fred.	do	14666	Feb. 2, 1927	Do.
Wall, George A.	do	12585	May 25, 1925	Do.

**REGULATIONS GOVERNING THE OPERATION OF BROADCASTING STATIONS PROMULGATED BY THE FEDERAL RADIO COMMISSION**

*Announcing call letters frequently—General Order No. 8, May 6, 1927.*—For the purpose of facilitating a more accurate check on station frequencies both by the Federal radio supervisors of the Department of Commerce and by the public, each radio broadcasting station licensed under the radio act of 1927 is hereby directed to announce its call letters and location as frequently as may be practicable while it is broadcasting, and in any event not less than once during each 15 minutes of transmission.

It is understood, however, that this requirement is waived when such announcement would interrupt a single consecutive speech or musical number, and in such cases the announcement of the call letters and location shall be made at the beginning and end of such number. This order becomes effective at 12.01 a. m., Wednesday, May 11, 1927, and will remain in force until further notice.

*Stations not to be sold or purchased without consent of the commission—General Order No. 9, May 13, 1927.*—Section 12 of the Federal radio act provides that no station license shall be transferred or assigned either voluntarily or involuntarily without the consent in writing of the licensing authorities.

It is hereby ordered that any person desiring to purchase a broadcasting station shall make application for a new license to the commission on the application blank forms. In addition thereto the proposed seller or assignor of the station must also write a letter to the commission to the effect that he desires to sell or transfer this station to the applicant for the above-named license and wishes a license issued to this applicant in place and instead of himself. The commission may either grant or refuse the license or grant with modification as to frequency and power.

*Applications for increase of power between 6 a. m. and 6 p. m. will be given consideration—General Order No. 10, May 18, 1927.*—For the purpose of facilitating wider and better reception of daytime service programs, such as those of educational and religious institutions, civic organizations, and distributors of market and other news, the Federal Radio Commission will consider applications from holders of broadcasting station licenses, for the use, between the hours of 6 a. m. and 6 p. m., local time, only of a larger power output than is authorized by such licenses. Applications for this daytime privilege must be made to the commission in writing and shall specify the maximum daytime power to be used, the approximate daytime broadcasting schedule, and the reasons why, in the applicant's estimation, the granting of such privilege would be in the interest, convenience, or necessity of the public. In each case where such privilege is granted the

check carefully the use of power by such station, both day and night. Any failure to revert to the power specified in the license between 6 p. m. and 6 a. m. will be held cause not only for immediate withdrawal of the daytime power privilege but for reduction of the maximum power authorized for use at night.

*Temporary permits terminated June 1, 1927—New licenses issued as of June 1, 1927, for sixty days—General Order No. 11, May 21, 1927.*—The Federal Radio Commission hereby orders that all temporary permits to operate radio broadcasting stations under the terms of the radio act of 1927 shall terminate at 3 o'clock, local standard time, on the morning of Wednesday, June 1, 1927, and that thereafter all radio broadcasting stations subject to the provisions of the radio act of 1927 shall be operated solely in accordance with the provisions of the licenses issued as of June 1, 1927, by the Federal Radio Commission.

The new licenses are all for 60 days, during which period the new allocations can be tested by actual practice. The law provides that any broadcaster who is dissatisfied with his allocation may have a public hearing before the commission, and at such a hearing his claim for a specific frequency or power will be considered in all its relations.

The commission recognizes that no scheme of reallocation which does not at the very outset eliminate at least 400 broadcasting stations can possibly put an end to interference. Accordingly, it regards the new allocations, not as creating in any sense an ideal broadcasting situation, but as providing for the first time a sound basis for radio service to the listener. With the cooperation of the public and the broadcasters, the commission believes that it will be possible to improve conditions progressively by an orderly process of actual experience.

Until such experience has been gained both the listeners and the broadcasters are urged to exercise patience. The listener will, of necessity, have to "relog" his receiving set and may find considerable difficulty in locating all the stations he desires to hear. The broadcasters will doubtless find that many of their listeners are at first somewhat bewildered by the changes in frequencies. It is the belief of the commission, however, that within a very few weeks the material reduction of local or regional interference, the redistribution of frequencies so as to clear most of the broadcasting channels, and the decrease of power for stations in residential districts will combine to render radio reception in general very much better than it has been in a long time.

Special attention is called to the fact that the commission has no unused frequencies to allocate. Every broadcasting channel is filled to its apparent capacity, and in some cases possibly overcrowded. Accordingly, any listener who wants a different allocation of frequency or power for his favorite station, or any broadcaster who seeks increased facilities for service, must be prepared to show specifically what other station should be required to give up its frequency, or have its power reduced, in order to make possible the desired reallocation.

*Rules for hearings before Federal Radio Commission—General Order No. 12, May 27, 1927.*—In all cases in which the 60-day license, effective June 1, offered the licensee is not in accord with the application, the applicant is hereby notified that the commission has not determined that public interest, convenience, or necessity would be served by the granting of such application.

Any applicant for license who is dissatisfied with the allocation as to frequency, power, or time division granted him in the 60-day license issued by the commission, which is effective June 1, and who desires a hearing upon his application, may notify the commission in writing of such desire by June 15, 1927.

The commission will thereupon fix a time and place for such hearing. Pending the hearing and the decision thereon by the commission, the applicant will be permitted to broadcast only under the terms and conditions and in accordance with his 60-day license issued by the commission.

The applicant for license may introduce, at the hearing before the Federal Radio Commission, any witnesses he may desire. In addition thereto, he may introduce any affidavits relating to relevant facts.

The fact in issue is whether or not public interest, convenience, or necessity will be served by granting to the applicant a license upon the wave length or frequency requested in the application, or in the application as amended in the request for hearing, and with the power therein requested and the place for said station therein designated.

All persons interested in the granting or refusal of the application and the frequency therein applied for, including other licensees authorized to use the frequency requested, licensees upon frequencies where interference is claimed, other applicants for the same frequency, and representatives of the public in

## RADIO SERVICE BULLETIN

19

The commission may likewise introduce witnesses or affidavits.

All applications for licenses or copies thereof on file with the commission may be introduced in evidence at the hearing. All temporary permits, temporary licenses or copies thereof, and other records on file with either the Federal Radio Commission or the Department of Commerce, may be introduced in evidence at the hearing without any further verification.

The witnesses introduced at the hearing before testifying will be sworn by a member of the commission. The commission will pass upon the relevancy and competency of the testimony offered to be introduced before it. After the conclusion of the hearing and within a reasonable time the commission will render its decision in writing.

The testimony and proceedings at these hearings will be taken down by shorthand reporters designated by the commission, so that the entire record of the proceedings and hearings may be preserved in case of appeal as provided by section 16 of the radio act of 1927. All hearings provided for by this order will be public and will be held at the offices of the Federal Radio Commission in Washington, D. C.

*Provisions of General Order No. 11 amended to take effect June 15, 1927, in lieu of June 1, 1927.—General Order No. 15, May 28, 1927.*—In consideration of the fact that a certain amount of time is required in many cases for making the changes of equipment required by changes of station frequency and for securing suitable control equipment to maintain frequency without serious variation, the Federal Radio Commission hereby amends General Order No. 11, dated May 21, 1927, to read as follows: "The Federal Radio Commission hereby orders that all temporary permits to operate radio broadcasting stations under the terms of the radio act of 1927 shall terminate at 3 o'clock, local standard time, on the morning of Wednesday, June 15, 1927, and that thereafter all radio broadcasting stations subject to the provisions of the radio act of 1927 shall be operated solely in accordance with the provisions of the licenses issued as of June 1, 1927, by the Federal Radio Commission."

The Federal Radio Commission hereby orders that all licenses for the period of 60 days, issued as of June 1, 1927, shall not become effective until 3 o'clock, local standard time, on the morning of Wednesday, June 15, 1927, and shall continue in effect, unless previously revoked or modified by order of the commission, for a period of 60 days after June 15, 1927.

## RADIO ACT OF 1927 APPLICABLE TO THE VIRGIN ISLANDS

Jurisdiction over this territory in the same manner and to the same extent as Porto Rico is governed is provided in section 2 of the radio act of 1927.

## CALIBRATION OF FREQUENCY STANDARDS FOR BROADCASTING STATIONS

The Bureau of Standards will calibrate a piezo oscillator, frequency indicator, or frequency meter for use in maintaining a radio broadcasting station on its assigned frequency, upon request of the owner of the station. A nominal fee is charged. Instruments should not be sent to the bureau for calibration without first writing and giving the call letters of the station and its assigned frequency and the type, make, and description of the device to be calibrated. Information as to the type and make of the device will assist in deciding whether the instrument can be accepted for test and may save returning the device to the maker for changes in construction. The bureau can accept for calibration only instruments which are properly constructed and likely to maintain their calibration.

Specifications for a piezo oscillator and for a frequency indicator can be obtained by addressing the Bureau of Standards. A more sensitive resonance indicator has recently been devised for the Bureau of Standards type B frequency indicator. The radio-frequency thermogalvanometer has been replaced by a crystal detector and direct-current milliammeter. The latter combination shows smaller changes in frequency than the thermogalvanometer.

## NOTE ON THE STANDARD FREQUENCY TRANSMISSIONS

On the evening of May 20 the usual standard frequency signals were transmitted from station WWV of the Bureau of Standards. Through a mistake the fourth frequency sent out was 2,016 kilocycles instead of 2,025 kilocycles, as previously announced in the Radio Service Bulletin for March 31, 1927, and

## STANDARD FREQUENCY STATIONS

As a result of measurements by the Bureau of Standards upon the transmitted waves of a limited number of radio transmitting stations, data are given in each month's Radio Service Bulletin on such of these stations as have been found to maintain a sufficiently constant frequency to be useful as standards.

As shown by the list of "Constant frequency stations," there may be many other stations not measured in the bureau's laboratory which maintain their frequencies just as constant as the stations listed below. There is, of course, no actual guaranty that these stations will maintain the constancy shown, but the data indicate the high degree of confidence that can be placed in them. The transmitted frequencies from the standard frequency stations can be utilized for calibrating frequency meters and other apparatus by the procedure given in Bureau of Standards Letter Circular No. 171, which may be obtained by a person having actual use for it upon application to the Bureau of Standards, Department of Commerce, Washington, D. C.

Station	Owner	Location	Assigned frequency	Period covered by measurements	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since Apr. 25, 1927
NSS	United States Navy	Annapolis, Md.	Kilocycles 17.60	Months 12	60	Per cent 0.2	Per cent 0.1
WCI	Radio Corporation of America	Tuckerton, N. J.	17.95	26	116	.1	.4
WBB	Do.	Rocky Point, N. Y.	18.60	8	32	.1	.2
WGG <sup>1</sup>	Do.	Tuckerton (No. 1), N. J.	18.85	44	283	.2	-----
WII	Do.	New Brunswick, N. J.	21.80	25	140	.1	.2
WVA	United States Army	Annapolis, Md.	100	26	197	.2	.3
NAA	United States Navy	Arlington, Va.	112	19	99	.1	.2
WEAF	National Broadcasting Co.	New York, N. Y.	610	29	164	0	0
WRC	Radio Corporation of America	Washington, D. C.	640	41	205	.1	0
WJZ	Do.	Bound Brook, N. J.	660	12	48	.2	.3
NAA	United States Navy	Washington, D. C.	690	3	12	.1	.3
WGY	General Electric Co.	Schenectady, N. Y.	790	47	209	.1	.3
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.	900	35	96	.1	.1
KDKA	Do.	East Pittsburgh, Pa.	970	12	52	.1	.1
WBAL	Consolidated Gas, Electric Light & Power Co.	Olen Morris, Md.	1,220	3	11	0	.1

<sup>1</sup> Not measured since Mar. 25.

## REFERENCES TO CURRENT RADIO LITERATURE

This is a monthly list of references prepared by the radio laboratory of the Bureau of Standards and is intended to cover the more important papers of interest to professional radio engineers which have recently appeared in periodicals, books, etc. The number at the left of each reference classifies the reference by subject, in accordance with the scheme presented in A Decimal Classification of Radio Subjects—An Extension of the Dewey System, Bureau of Standards Circular No. 135, a copy of which may be obtained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. The various articles listed below are not obtainable from the Bureau of Standards. The various periodicals can be consulted at large public libraries.

## R100.—Radio principles

- R100 R. W. King. What do we know about radio waves in transit? *Radio Broadcast*, 11, pp. 75-77; June, 1927.
- R112 Howe, G. W. O. Phase and group velocities in an ionized medium. *Experimental Wireless* (London), 4, pp. 289-300; May, 1927.

- R113 Exposés et discussions relatifs à la propagation des ondes électromagnétiques dans l'atmosphère. QST Français et Radioléctricité Reunis, 8, pp. 53-57; May, 1927.
- R113.4 Lason, H. Die täglichen Schwankungen des Ionisationszustandes der Heaviside-Schicht. Elektrische Nachrichten Technik, 4, pp. 174-179; April, 1927.
- R113.5 Dellinger, J. H. Discussion on "The correlation of radio reception with solar activity and terrestrial magnetism" by G. W. Pickard. Proc. Inst. of Radio Engrs., 15, pp. 326-329; April, 1927.
- R113.6 La refraction ionique et la propagation des ondes courtes. QST Français et Radioléctricité Reunis, 8, pp. 43-47; May, 1927.
- R113.7 Short wave echo effect (editorial). Experimental Wireless (London), 4, pp. 257-258; May, 1927.
- R113.7 Beuthliën, L. Inclinaison des ondes et systèmes dirigés. Comptes Rendus, 184, pp. 190-192; January 24, 1927. Abstract in Experimental Wireless (London), p. 305; May, 1927.
- R113.7 Quick, E. Propagation of short waves around the earth. Zeits. für Hochfrequenztechnik, 1926. Abstract in Proc. Inst. Radio Engrs., 15, pp. 341-345; April, 1927.
- R113.8 Drosthorpe, H. de A. The solar eclipses and its effect on radio (some suggestions for research during this year's total eclipse of the sun). Experimental Wireless (London), 4, pp. 293-300; May, 1927.
- R114 Cooper, S. C. Static's new job as life-saver. Popular Radio, 11, pp. 427-430; May, 1927.
- R124 Davis, H. S. How to design a loop antenna. Radio Broadcast, 11, pp. 104-106; June, 1927.
- R131 A tube characteristic chart. QST, 11, pp. 48-49; May, 1927.
- R131 Barclay, W. A. The alignment method in linear valve characteristic fields. Experimental Wireless (London), 4, pp. 261-270; May, 1927.
- R134.75 Turner, P. K. Design and construction of a superheterodyne receiver. Experimental Wireless (London), 4, pp. 291-292; May, 1927.
- R134.75 Armstrong, H. W. A compact portable superheterodyne (5 tubes). Radio (San Francisco), 6, pp. 10-17; May, 1927.

## R200.—Radio measurements and standardization

- R214 Mueller, P. A method of grinding quartz plates. QST, 11, pp. 24-26; May, 1927.
- R214 Meisner, A. Piezoelectric crystals at radio-frequencies. Proc. Inst. of Radio Engrs., 15, pp. 291-296; April, 1927.
- R270 Anders, G. Quantitative measurements on reception in radiotelegraphy. Proc. Inst. Radio Engrs., 15, pp. 297-311; April, 1927.
- R275 Moore, C. R., and Curtis, A. S. An analyzer for the voice frequency range. Bell System Technical Journal, 6, pp. 217-223, April, 1927.

## R300.—Radio apparatus and equipment

- R329 Bethenod, J. Radiotelegraphic station. United States Patent No. 1628648, issued May 17, 1927.
- R330 Kruse, R. S. The UX-462 transmitting tube. QST, 11, pp. 20-23; May, 1927.
- R342 Green, E. Discussion on the "Output characteristics of amplifier tubes." Proc. Inst. Radio Engrs., 15, p. 319; April, 1927.
- R343 Crosby, W. F. Efficient and practical portable sets. Popular Radio, 11, pp. 431-434; May, 1927.
- R343 Calcaterra, J. How to assemble the Hammarlund-Roberts HI-Q receiver. Popular Radio, 11, pp. 456-58; May, 1927.
- R343 Preco, R. Short-wave loop receiver. QST, 11, p. 43; May, 1927.
- R343.7 Courtney, P. R., and Andrewes, H. Battery eliminators or appliances for the operation of radio receiving circuits by energy derived from electric supply mains. Experimental Wireless (London), 4, pp. 271-78; May, 1927.
- R343.7 Beers, E. F. Problems of alternating-current filament supply. Radio Broadcast, 11, pp. 101-103; June, 1927.
- R344 Schelleng, J. C. Oscillation generator. United States Patent No. 1629001, issued May 17, 1927.
- R344.3 Westman, H. P. A complete inexpensive transmitter. QST, 11, pp. 9-14; May, 1927.
- R351 Henney, K. An instrument for the home laboratory-modulated oscillator. Radio Broadcast, 11, pp. 62-66; June, 1927.
- R373.3 Hall, S. E. Successful electrolytic rectifiers. QST, 11, pp. 33-37; May, 1927.
- R377 Taylor, A. H. Apparatus for recording electrical signals. United States Patent No. 1630227, issued May 24, 1927.
- R381 Haynes, F. H. The logarithmic condenser. Wireless World and Radio Review, 28, pp. 621-625; May 18, 1927.
- R381 Sowerly, A. L. M. Coupling condensers and leaks. Wireless World and Radio Review, 28, pp. 481-483; April 23, 1927.
- R382 Kolmann, C. A. Inductance of flat square loops. Radio (San Francisco), 9, pp. 18-19; May 1927.
- R387.1 Fellz, E. H. Why shielding? Radio Broadcast, 11, pp. 83-85; June, 1927.

## R400.—Radio communication systems

- R400 Luschen, F., and Kupfmüller, K. Über die Wahl der Trägerfrequenzen für die Tonfrequenz-telegraphie. Elektrische Nachrichten Technik, 4, pp. 153-174; April, 1927.
- R412 Bown, H. Transatlantic radiotelephony. Bell System Technical Journal 6, pp. 243-257; April, 1927.
- R413 Nyman, A. Wireless telephone system. United States Patent No. 1628505, issued May 17, 1927.
- R460 Breckel, H. F. Guiding the battle fleet by multiplex radio signaling. Radio News, 8, pp. 1420-1421; June, 1927.

## R500.—Applications of radio

- R520 Walker, P. Radiobeam directs aircraft. Science and Invention, 15, p. 151; June, 1927.
- R521.1 Vivie, J. Radiogéométrie et aviation. QST Français et Radioléctricité Reunis, 8, pp. 77-84; May, 1927.
- R582 Dinsdale, A. Commercial picture transmission. Wireless World and Radio Review, 28, pp. 510-516; April 27, 1927.
- R582 Dinsdale, A. Television sees in darkness and records its impressions. Radio News, 8, pp. 1422-23; June, 1927.

## R600.—Nonradio subjects

- 534.83 Mills, J. System for location of a source of sound vibrations. United States Patent No. 1628902, issued May 17, 1927.

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