

**U. S. DEPARTMENT OF COMMERCE
RADIO DIVISION**

RADIO SERVICE BULLETIN

ISSUED MONTHLY

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ABBREVIATIONS AND SYMBOLS

The necessary corrections to the List of Commercial and Government Radio Stations of the United States and to the International Lists of Radio 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: W=west longitude, N=north latitude, S=south latitude, E=east longitude.
Call	=Call signal (letters) assigned.
Type	=Type of wave classified as follows: A1=continuous wave (tube), A arc=continuous wave, A2=interrupted continuous wave, A3=phone, B=spark.
Fy.	=Frequency in kilocycles; normal frequency in italics; wave length in meters in parentheses.
Power	=Height (meters) of antenna and intensity of current (meter-amperes) at its base (sample of manner in which published—100/100) or the normal radiated power expressed in meter-amperes (sample of manner in which published—100 m. amp.).
Service	=Nature of service maintained: PG=general public (ship to shore), PR=limited public (limited to public, correspondence between fixed stations), P=private (limited commercial and special), O=Government business exclusively.
Class	=FX=fixed station (point-to-point service), RG=radio-compass station, FA=aeronautical station, AB=aviation beacon, RF=circular radiobeacon, B=ship station, FC=coast station, A=aircraft.
Hours	=Hours of operation: N=continuous service, X=no regular hour, Y=sunrise to sunset.
Accts.	=Message accounts settled by.
M. R. T. Co.	=Mackay Radio & Telegraph Co.
R. C. A.	=Radio Corporation of America.
R. M. C. A.	=Radiomarine Corporation of America.
T. R. T. Co.	=Tropical Radio Telegraph Co.
C. w.	=Continuous wave.
I. c. w.	=Interrupted continuous wave.
A. C.	=Alternating current.
V. t.	=Vacuum tube.
M. a.	=Meter-amperes.
U. S. L.	=Applies only to the List of Commercial and Government Radio Stations of the United States.
Δ	=Equipped with a radio compass (direction finder).

This Edition is the Last Supplement to the Annual List of Commercial and Government Radio Stations of the United States, Edition June 30, 1930

NEW STATIONS

Commercial land stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Station	Class	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Licensee
Atlanta, Ga. ¹ -----	FA, FX	WEEA	3,070 (97.71), 3,076 (97.5), 4,164 (72.04), 5,690 (52.72), 6,320 (47.46).	P	X	Aeronautical Radio (Inc.).
Carlstadt, N. J. ² ---	FX	WEEW	7,625 (39.34), 7,640 (39.27), 9,230 (32.5), 9,390 (31.95), 10,090 (29.73).	P	X	American Radio News Corporation.
Chicago, Ill., (municipal airport). ³	FA, FX	WSDG	2,326 (128.97), 2,344 (127.98), 3,452 (86.9), 3,460 (86.7), 3,468 (86.5), 3,484 (86.1), 4,140 (72.46), 5,630 (53.28), 6,260 (47.92), 6,275 (47.8).	P	X	Aeronautical Radio (Inc.).
Cincinnati, Ohio (Lunken Field). ⁴	FA, FX	WSDI	-----do-----	P	X	Do.
Dallas, Tex. ⁵ -----	FA	KNAT	3,160 (94.9), 3,166 (94.75), 3,172 (94.57), 3,178 (94.39), 5,570 (53.86), 5,660 (53).	P	X	Do.
Grand Rapids, Mich. ⁶	FX	WPEB	2,440 (123)	P	N	City of Grand Rapids.
Jacksonville, Fla. ⁷ ---	FA, FX	WEEJ	3,070 (97.71), 3,076 (97.5), 4,164 (72.04), 5,690 (52.72), 6,320 (47.46).	P	X	Aeronautical Radio (Inc.).
Kansas City, Mo. ⁸	FA	KNAS	3,160 (94.9), 3,166 (94.75), 3,172 (94.57), 3,178 (94.39), 5,570 (53.86), 5,660 (53).	P	X	Do.
Los Angeles, Calif. ⁹	FA	KGYZ	278 (1,080)	P	X	Cycloplane Co. (Ltd.).
Louisville, Ky. ¹⁰ ---	FA, FX	WSDF	2,326 (128.97), 2,344 (127.98), 3,452 (86.9), 3,460 (86.7), 3,468 (86.5), 3,484 (86.1), 4,140 (72.46), 5,630 (53.28), 6,260 (47.92), 6,275 (47.8).	P	X	Aeronautical Radio(Inc.).
McCrae, Ga. (air- port). ¹¹	FA, FX	WEEH	3,070 (97.71), 3,076 (97.5), 4,164 (72.04), 5,690 (52.72), 6,320 (47.46).	P	X	Do.
Memphis, Tenn. ¹²	FX	WPEC	2,470 (121.5)	P	N	City of Memphis Police Department.
Mills Field, Calif. (near). ¹³	FX	KGXQ	9,230 (32.5), 9,390 (31.95), 10,090 (29.73).	P	X	American Radio News Corporation.
Nashville, Tenn. ¹⁴ ---	FA FX	WSDH	2,326 (128.97), 2,344 (127.98), 3,452 (86.9), 3,460 (86.7), 3,468 (86.5), 3,484 (86.1), 4,140 (72.46), 5,630 (53.28), 6,260 (47.92), 6,275 (47.8).	P	X	Aeronautical Radio (Inc.).
Oklahoma City, Okla. ¹⁵	FX	KGPH	2,452 (122.34)	P	N	County of Oklahoma.
Sand Point, Alaska (permanently moored vessel "In- ternational"). ¹⁶	FX	KGXR	-----	P	X	International Packing Co.
San Francisco, Calif., radiotele- phone. ¹⁷	FC	KLH	2,542 (118.01)	PG	N	Pacific Telephone & Tel- egraph Co.
Seattle, Wash., radiotelephone. ¹⁷	FC	KOW	2,530 (118.57)	PG	N	Do.
Syracuse, N. Y. ¹⁸ ---	FX	WPEA	1,712 (175.23)	P	N	City of Syracuse Police Department.

¹ Loc. (approximate) 84° 26' 00" W., 33° 40' 00" N.; type, A1, A3.² Loc. (approximate) 74° 05' 00" W., 40° 45' 10" N.; type, A1, A2.³ Loc. (approximate) 87° 46' 30" W., 41° 48' 00" N.; type, A1, A2, A3.⁴ Loc. (approximate) 84° 25' 00" W., 39° 06' 00" N.; type, A1, A2, A3.⁵ Loc. 96° 51' 48" W., 32° 51' 49" N.; type, A1, A2, A3.⁶ Type, A3.⁷ Loc. (approximate) 81° 39' 00" W., 30° 24' 45" N.; type, A1, A3.⁸ Loc. (approximate) 94° 27' 00" W., 39° 06' 00" N.; type, A1, A2, A3.⁹ Loc. (approximate) 118° 17' 35" W., 34° 21' 15" N.; type, A3.¹⁰ Loc. (approximate) 85° 40' 00" W., 38° 14' 00" N.; type, A1, A2, A3.¹¹ Loc. 82° 52' 12" W., 32° 02' 24" N.; type, A1, A3.¹² Loc. 90° 03' 02" W., 35° 09' 01" N.; type, A3.¹³ Loc. (approximate) 122° 30' 00" W., 30° 30' 00" N.; type, A1, A2.¹⁴ Loc. 86° 28' 24" W., 35° 55' 18" N.; type, A1, A2, A3.¹⁵ Loc. (approximate) 97° 31' 20" W., 35° 28' 00" N.; type, A3.¹⁶ Loc. (approximate) 160° 00' 00" W., 55° 00' 00" N.¹⁷ Type, A2, A3.¹⁸ Loc. 76° 09' 15" W., 43° 03' 07" N.; type, A3.

Commercial land stations, alphabetically, by names of stations—Continued

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Station	Class	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Licensee
Tinley Park, Ill. ¹⁰	FX	WEEEX	7,625 (39.34), 7,640 (39.27), 9,230 (32.5), 9,390 (31.95), 10,090 (29.73)	P	X	American Radio News Corporation.
Wayne, Mich. ¹⁰	FA	WFEB	278 (1,080)	P	X	Wayne County Airport.
Wilmington, Calif., radiotelephone. ¹⁷	FC	KOU	2,590 (115.83)	PG	N	Southern California Telephone Co.
<i>Portable</i>						
California ¹¹	FX	KGUV	1,552 (193.3), 1,554 (193.05), 1,556 (192.8)	P	X	Electrical Research Products (Inc.).

¹⁰ Loc. (approximate) 87° 50' 00" W., 41° 05' 10" N.; type, A1, A2.

¹⁰ Loc. 83° 19' 30" W., 42° 14' 38" N.; type, A3.

¹¹ Type, A1, A2, A3.

Commercial ship stations, alphabetically, by names of vessels

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Ship Stations, published by the Berne bureau]

Name of vessel	Call signal	Rates, all services (cents)	Service	Hours	Owner	Message account settled by—
Asama	WDEZ	8	PG	X	J. Shioji	R. M. C. A.
Boonie	WEEV			X	C. Crawford Hollidge	
Cipango	WEES	8	PG	X	Y. Nakasuji	Do.
Edis ¹	WDEX	4	PG	X	J. D. Disbrow and S. E. Leonard.	Owner.
Edouard Jeramec (RC) ²	WDET		P	X	All America Cables (Inc.)	M. R. T. Co.
Elsie ³	WFEC		P	X	Boy Scouts of America	
E. P. No. 6 ⁴	WDEU	8	PG	X	Farwest Fisheries (Inc.)	Owner.
Excambion	WEEY	8	PG	N	Export S. S. Corporation	
Melodie ⁵	WEET		PG	X	Don Lee	Do.
Olympic	WEEZ	8	PG	X	John Zusanich and Anton Zankich.	Do.
Onwego ⁶	WDEY	8	PG	X	George L. Bourne	Do.
Velero III (RC) ⁷	WDES	8	PG	X	G. Allan Hancock	R. M. C. A.

¹ Type, A1; fy., 375 (800), 410 (730), 425 (705); power, 4/5.

² Type, A1, A2; fy., 375 (800), 400 (750), 425 (705), 468 (640), 500 (600), 5,525 (54.3), 5,555 (54), 6,590 (45.52), 8,290 (36.19), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 22,100 (13.575), 22,220 (13.501); power, 32/5.

³ Type, A1; fy., 3,112 (96.4), 5,525 (54.3), 5,555 (54), 8,290 (36.19), 11,050 (27.15), 13,240 (22.66).

⁴ Type, A1; fy., 2,320 (129.3).

⁵ Type, A1, A2; fy., 375 (800), 400 (750), 410 (730), 425 (705), 500 (600), 5,525 (54.3), 5,555 (54), 6,590 (45.52), 8,290 (36.19), 11,050 (27.15), 11,110 (27), 16,580 (18.094), 16,660 (18.007), 22,100 (13.575), 22,220 (13.501); power, 12/2.

⁶ Type, A1, A2; fy., 375 (800), 425 (705), 500 (600); power, 10.77/4.

⁷ Type, A1, A2; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 400 (750), 410 (730), 425 (705), 454 (660), 468 (640), 500 (600), 5,525 (54.3), 8,290 (36.19), 8,330 (36.01), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 11,230 (26.71), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 16,860 (17.794).

Commercial aircraft stations, alphabetically, by names of craft

[Additions to the List of Radio Stations of the United States, edition of June 30, 1930, and to the International List of Aircraft Stations published by the Berne bureau]

Station	Call signal	Frequency, in kilocycles; meters in parentheses	Service	Hours	License
NC-11Y (NAT 97) ¹	KHSSH	3,106 (96.59), 3,160 (94.9), 3,166 (94.75), 3,172 (94.57), 3,178 (94.39), 5,570 (53.86), 5,660 (53).	P	X	National Air Transport (Inc.).
NC-436H (NAT 98) ¹	KHSTG	do	P	X	Do.
NC-841M ¹	KHRGT	3,106 (96.59)	P	X	National Park Airways (Inc.).
NC-982Y ¹	KRVBY	do	P	X	Crosley Radio Corporation.
NC-985V ¹	KHRFU	3,070 (97.71), 3,076 (97.5), 5,690 (52.72).	P	X	Eastern Air Transport (Inc.).
NC-4616 ¹	KHVAZ	3,106 (96.59)	P	X	Alexander Forbes, 304 Adams Street, Milton, Mass.
NC-9662 ¹	KHRKP	3,106 (96.58), 3,238 (92.64), 3,244 (92.47), 3,452 (86.9), 3,460 (86.7), 3,484 (86.1), 5,600 (53.57), 5,630 (53.28).	P	X	American Airways (Inc.).
NC-9667 ¹	KHRNM	do	P	X	Do.
NC-9682 ¹	KHRJQ	do	P	X	Do.
NC-9687 ¹	KHRMN	do	P	X	Do.
NC-9690 ¹	KHRIR	do	P	X	Do.
NR-199E ¹	KHRHS	5,525 (54.3), 5,555 (54)	P	X	MacMillan Arctic Exploration Co. (Ltd.), 724 South Spring Street, Los Angeles, Calif.
NR-211 ¹	KHCAL	333 (900), 500 (600), 3,130 (95.8), 5,615 (53.42), 8,450 (35.5), 13,240 (22.66).	P	X	Charles A. Lindbergh.

¹ Type, A3.² Type, A1, A3.³ Type, A1.

Government land stations, alphabetically, by names of stations

[Addition to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations published by the Berne bureau]

Station	Class	Call signal	Frequency, in kilocycles; meters in parentheses	Service	Hours	Owner
Birmingham, Ala. ¹	FA, FX	WWAT	190 (1,580), 284 (1,055), 3370 (89), 3,385 (88.62), 5,920 (50.68), 5,940 (50.51).	O	N	Department of Commerce, Bureau of Lighthouses.
Boston, Mass. ²	FX	WLE	6,990 (42.92)	O	Y	U. S. Army.
Chicago, Ill. ³	FX	WLT	do	O	Y	Do.
Cincinnati, Ohio ⁴	FA, FX	WWAS	214 (1,400), 344 (870), 3,370 (89), 3,380 (88.8), 5,940 (50.51), 5,960 (50.34).	O	N	Department of Commerce, Bureau of Lighthouses.
Fort De Russy, Hawaii ⁵	FX	WTP	185 (1,625)	O	Y	U. S. Army.
Fort Hayes (Columbus), Ohio ⁶	FX	WLH	6,990 (42.92)	O	Y	Do.
Fort Howard, Md. ⁷	FX	WLQ	do	O	Y	Do.
Fort McPherson (Atlanta), Ga. ⁸	FX	WLR	do	O	Y	Do.
Fort Omaha (Omaha), Nebr. ⁹	FX	WLU	do	O	Y	Do.
Fort Sam Houston (San Antonio), Tex. ¹⁰	FX	WLJ	do	O	Y	Do.
Governors Island, N. Y. ¹¹	FX	WLN	do	O	Y	Do.
Hansley Field, Tex. ¹²	FA, FX	WYO	200 (1,500), 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.5).	O	Y	Do.
Huron Island Light-house, Mich. ¹³	FX	WWAO	3,410 (88)	O	X	Department of Commerce, Bureau of Lighthouses.
Key West, Fla. Light-house Depot. ¹⁴	FX	WWZ	do	O	X	Do.
Memphis (West Memphis), Tenn.	FC, FX	WYCJ	396 (760), 428 (700), 500 (600).	O	Y	U. S. Army.
San Francisco, Calif. ¹⁵	FX	WLW	6,990 (42.92)	O	Y	Do.
Wright Field (Fairfield), Ohio, S. C. Aircraft Laboratory ¹⁶	FX	WZAJ	Variable	O	X	Do.

- ¹ Loc. (approximate) 86° 45' 00" W., 33° 33' 00" N.; type, A1, A3; power, 450 M/amp.
- ² Loc. (approximate) 71° 04' 00" W., 42° 21' 00" N.; type, A1.
- ³ Loc. (approximate) 87° 37' 00" W., 41° 53' 00" N.; type, A1.
- ⁴ Loc. (approximate) 84° 25' 00" W., 39° 03' 00" N.; type, A1, A3; power, 450 M/amp.
- ⁵ Loc. 157° 50' 12" W., 21° 16' 55" N.; type, A1, A2, A3; power, 6/6.
- ⁶ Loc. (approximate) 83° 00' 00" W., 39° 58' 00" N.; type, A1.
- ⁷ Loc. (approximate) 78° 27' 00" W., 39° 12' 00" N.; type, A1.
- ⁸ Loc. (approximate) 84° 23' 00" W., 35° 45' 00" N.; type, A1.
- ⁹ Loc. (approximate) 95° 56' 00" W., 41° 16' 00" N.; type, A1.
- ¹⁰ Loc. (approximate) 98° 28' 00" W., 29° 27' 00" N.; type, A1.
- ¹¹ Loc. (approximate) 74° 00' 00" W., 40° 43' 00" N.; type, A1.
- ¹² Loc. (approximate) 96° 47' 00" W., 32° 54' 00" N.; type, A1, A2, A3; power, 20/9.
- ¹³ Loc. 87° 59' 55" W., 46° 57' 48" N.; type, A3.
- ¹⁴ Type, A3.
- ¹⁵ Loc. (approximate) 122° 26' 00" W., 37° 48' 00" N.; type, A1.
- ¹⁶ Loc. (approximate) 84° 02' 00" W., 39° 49' 00" N.; type, A1, A2, A3.

Government ship stations, alphabetically, by name of station

[Addition to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations published by the Berne bureau]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Owner
Aurora (RC) 1.....	NRGA	375 (800), 425 (705), 500 (600)	PG	N	U. S. Coast Guard.
Calypso (RC) 1.....	NRGC	do	PG	N	Do.
Cayuga (RC) 1.....	NRUW	do	PG	N	Do.
Daphne (RC) 1.....	NRGD	do	PG	N	Do.
Gen. J. McE. Hyde.....	WZAF	396 (760), 428 (700), 500 (600)	PG	N	U. S. Army.
Hermes (RC) 1.....	NRGH	375 (800), 425 (705), 500 (600)	PG	N	U. S. Coast Guard.
Icarus (RC) 1.....	NRGJ	do	PG	N	Do.
Perseus (RC) 1.....	NRGP	do	PG	N	Do.
Selma 1.....	WYDJ	396 (760), 428 (700), 500 (600)	O	Y	U. S. Army.
Thebes 1.....	WYDI	do	O	Y	Do.
Thetis (RC) 1.....	NRGS	375 (800), 425 (705), 500 (600)	PG	N	U. S. Coast Guard.

¹ Rates, 8 cents per word. ² Type, A1; power, 19/7.5 m/amp. ³ Type, A1; power, 18/6.5 m/amp.

Government aircraft stations, alphabetically, by names of craft

[Additions to the List of Radio Stations of the United States, edition of June 30, 1930, and to the International List of Aircraft Stations published by the Berne bureau]

Station	Call signal	Frequency, in kilocycles, meters in parentheses	Hours	Owner
NS-4E	KHRWD	3,106 (96.59), 3,160 (94.9), 5,940 (50.47), 3,370 (88.97).		Department of Commerce, Bureau of Lighthouses, Airways Division.
NS-7	KHRXC	do		Do.

Commercial and Government land, ship, aircraft, radiobeacon, and radio-compass stations, alphabetically by call signals

Call signal	Name of station	Call signal	Name of station
KGPH	Oklahoma City, Okla.	WEEA	Atlanta, Ga.
KGVY	California (portable)	WEEJ	Jacksonville, Fla.
KGVZ	Los Angeles, Calif.	WEEH	McCrae, Ga. (airport)
KGXQ	Mills Field, Calif. (near)	WEEI	Cipango
KGXR	Sand Point, Alaska (permanently moored vessel "International")	WEEK	Melodie
KHCAL	NR-211	WEEV	Boonie
KHRFU	NC-985V	WEEW	Carlstadt, N. J.
KHRGT	NC-841M	WEEY	Tinley Park, Ill.
KHRHS	NR-199E	WEEZ	Excambion
KHRIR	NC-9690	WEEB	Olympic
KHRJQ	NC-9682	WFEB	Wayne, Mich.
KHRKP	NC-9662	WFEC	Elsie
KHRMN	NC-9687	WLE	Boston, Mass.
KHRNM	NC-9687	WLH	Fort Hayes (Columbus), Ohio
KHRWD	NS-4E	WLJ	Fort Sam Houston (San Antonio), Tex.
KHRXC	NS-7	WLN	Governors Island, N. Y.
KHSSH	NC-11Y (NAT 97)	WLQ	Fort Howard, Md.
KHSTG	NC-436H (NAT 98)	WLR	Fort McPherson (Atlanta), Ga.
KHVAZ	NC-4616	WLT	Chicago, Ill.
KHVBV	NC-982Y	WLU	Fort Omaha (Omaha), Nebr.
KLH	San Francisco, Calif., radiotelephone	WLV	San Francisco, Calif.
KNAS	Kansas City, Mo.	WPEA	Syracuse, N. Y.
KNAT	Dallas, Tex.	WPEB	Grand Rapids, Mich.
KOU	Wilmington, Calif., radiotelephone	WPEC	Memphis, Tenn.
KOW	Seattle, Wash., radiotelephone	WSDF	Louisville, Ky.
NRGA	Aurora	WSDG	Chicago, Ill. (municipal airport)
NRGC	Calypso	WSDH	Nashville, Tenn.
NRGD	Daphne	WSDI	Cincinnati, Ohio (Lunken Field)
NRGH	Hermes	WTP	Fort De Russy, Hawaii
NRGJ	Icarus	WWAO	Huron Island Lighthouse, Mich.
NRGP	Perseus	WWAS	Cincinnati, Ohio
NRGS	Thetis	WWAT	Birmingham, Ala.
NRUW	Cayuga	WWZ	Key West, Fla., Lighthouse depot
WDER	Aphra	WYCY	Memphis (West Memphis), Tenn.
WDES	Velerio III	WYDI	Thebes
WDET	Edouard Jeramec	WYDJ	Selma
WDEU	E. P. No. 6	WYO	Hansley Field, Tex.
WDEX	Edis	WZAF	Gen. J. McE. Hyde
WDEY	Onwego	WZAJ	Wright Field (Fairfield), Ohio, S. C. Aircraft Laboratory
WDEZ	Asama		

Broadcasting stations, by name of State and city

[Addition to the List of Radio Stations of the United States, edition of June 30, 1930]

State and city (Transmitter location; studio location in parentheses)	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)
Maine: Mars Hill (Presque Isle)	WAGM	1,420 (211.3)	100
New Hampshire: Manchester	WFEA	1,430 (209.8)	1,500
Pennsylvania: Spring Township (Reading)	WEEU	930 (361)	1,000
Vermont: Waterbury	WDEV	1,420 (211.3)	150

¹ Experimentally.

² Daytime only.

Broadcasting stations, by call signals

Call signal	Location of transmitter, studio location in parentheses (mail address)	Licensee	Frequency in kilocycles, meters in parentheses	Power (watts)
WAGM	Mars Hill, Me. (Presque Isle).....	Aroostook Broadcasting Corp.	1,420 (211.3).....	100
WDEV	Waterbury, Vt., 8 Stowe Street ¹	Harry C. Whitehill.....	1,420 (211.3).....	250
WEEU	Spring Township, Pa. (Reading), 536 Washington Street, Reading, Pa. ²	Berks Broadcasting Co..	830 (361).....	1,000
WFEA	Manchester, N. H., Carpenter Hotel..	Rines Hotel Co.....	1,480 (209.8).....	500

¹ Loc. (approximate) 72° 45' 00" W., 44° 25' 00" N.

² Daytime.

³ Loc. 75° 59' 16" W., 40° 20' 45" N.

⁴ Experimentally.

Experimental stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	License and post-office address
Maryland: Baltimore...	W3XAG	2,410 (124.5).....	50	Baltimore City Police Department.
New York: Hicksville.....	W2XAC	11,640 (25.77), 12,850 (23.35), 17,300 (17.341), 19,340 (15.512).	5,000	Press Wireless (Inc.).
Do.....	W2KAJ	do.....	5,000	Do.
<i>Portable</i>				
Sixth radio district.....	W6XAC	1,604 (187.03), 2,398 (125.1), 3,256 (92.5), 4,795 (62.57), 6,425 (46.7), 8,650 (34.68), 12,850 (23.35), 17,300 (17.341).	1,000	Fred W. Christian, jr., 216 West Third Street, Los Angeles, Calif.
Texas: Bexar County...	W5XB	1,420 (211.3).....	100	Alamo Broadcasting Co. (Inc.), Majestic Theater Building, San Antonio, Tex.
Utah: Davis County.....	W6XA	1,400 (214.3).....	100	Peery Building Co., 405 Twenty-fifth St., Ogden, Utah.
United States—throughout.	W10XAY	60,000 (5) to 400,000 (0.75), 401,000 (0.74).	250	Polin (Inc.), 2 East Fifty-fourth St., New York, N. Y.
Do.....	W10XJ			Bell Telephone Laboratories (Inc.).
West Virginia (State of).	W8XAE	1,160 (258.6).....	500	West Virginia Broadcasting Corporation, Hawley Building, Wheeling, W. Va.
<i>Aircraft</i>				
NC-305N.....	K6XC	2,398 (125.1), 3,256 (92.5), 4,795 (62.57), 6,425 (46.7).	100	Inter-Island Airways (Ltd.), P. O. Box 2720, Honolulu, Hawaii.
<i>Vessels</i>				
Navigator.....	W10XAZ	516 (580).....	2	Airplane & Marine Direction Finder Corporation, Lindenhurst, N. Y.
Standard.....	W10XAW	do.....	2	Standard Shipping Co., 26 Broadway, New York, N. Y.
William C. Atwater.....	W10XAX	484 (620).....	2	Wilson Transit Co.

Relay broadcasting stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	Owner
<i>Vessel</i> Malolo.....	W10XAI	6,020 (49.83), 9,570 (31.35).....	200	National Broadcasting Co. (Inc.).

Visual broadcasting stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	Owner
California: Gardena (near).....	W6XS	2,100 (142.9) to 2,200 (136.4).	500	Don Lee (Inc.), 1076 West Seventh Street, Los Angeles, Calif.
<i>Portable</i> United States—throughout....	W10XG	-----	-----	De Forest Radio Co.

Experimental, relay broadcasting, and visual broadcasting stations grouped by districts, alphabetically, by call signals

Call signal	District and station	Call signal	District and station
W2XAC W2XAJ W3XAJ W5XB	Second district: Hicksville, N. Y. Do. Third district: Baltimore, Md. Fifth district: Bexar County, Tex. ¹ Sixth district: NC-305N. ² Davis County, Utah. ¹ Sixth radio district. ¹ Gardena, Calif. (near).	W8XAE W10XAI W10XAW W10XAX W10XAY W10XAZ W10XG W10XJ	Eighth district: West Virginia—State of. ¹ Aircraft, vessels and portable: Malolo. ¹ Standard. ¹ William C. Atwater. ³ United States—throughout. ¹ Navigator. ³ United States—throughout. ¹ Do. ¹

¹ Portable.² Aircraft.³ Vessel.**ALTERATIONS AND CORRECTIONS****COMMERCIAL LAND STATIONS**

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of The United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations, published by the Berne bureau.]

- ALAMEDA, CALIF.—Fy., strike out 278 (1,080), 12,180 (24.63).
 ALITAK, ALASKA, radio (Kodiak Island).—Fy., strike out 246 (1,220), add 227 (1,320), 272 (1,105); power, 26/6.
 AMARILLO, TEX.—Fy., strike out 278 (1,080), 12,180 (24.63).
 ATLANTA (CANDLER FIELD), GA.—Fy., strike out 12,210 (24.57).
 AURORA, ILL.—Fy., strike out 5,770 (53.86), add 5,570 (53.86).
 BEVERLY HILLS, CALIF.—Loc. (approximate) 118° 25' 00" W., 34° 03' 00" N.; power, 10/2.
 BIG PORT WALTER, ALASKA.—*Read* Big Port Walter, Alaska radio; class, add FC; fy., strike out 410 (730), 5,010 (59.88), add 178 (1,685), 227 (1,320), 262 (1,145), 425 (705), 2,320 (129.3), 3,172 (94.57); power, 39.62/200; service, add PG.
 BIG SPRINGS (MUNICIPAL AIRPORT), TEX.—Fy., strike out 12,210 (24.57).
 BLYTHE, CALIF.—Power 18/3.

- BOLINAS, CALIF., KEB.—Fy., strike out 6,852.5 (43.778), add 7,370 (40.71).
 BOLINAS, CALIF., KKW.—Fy., strike out 13,705 (21.89), add 13,780 (21.77).
 BROWNSVILLE, TEX. (MUNICIPAL AIRPORT).—Power, 15/1.25.
 BURBANK, CALIF. (LOS ANGELES), KGUR.—Fy., strike out 3,452 (86.90), 3,460 (86.7), 3,468 (86.5), 5,600 (53.57), 12,210 (24.57).
 BUTUAN, P. I.—Class, FX only; service, strike out PG; rates, strike out.
 CAMDEN, N. J.—Fy., strike out 12,180 (24.63).
 CHICAGO, ILL., WJC.—Fy., strike out 7,625 (39.34), 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97).
 CHIGNIK, ALASKA, radio, KHC.—Power, 26/6.
 CHIGNIK, ALASKA, radio, KNP.—Power, 30/4; hours, 7 to 12 a. m., 8 p. m. to 12 p. m. midnight.
 CRESSON, PA.—Fy., strike out 12,180 (24.63).
 DALLAS (LOVE FIELD), TEX., KGUF.—Fy., strike out 278 (1,080), 12,210 (24.57).
 DENVER, COLO., KGSP.—Fy., strike out 278 (1,080), 3,460 (86.7), 12,180 (24.63), add 2,722 (110.21), 2,734 (109.72), 3,076 (97.5), 4,108 (73.02), 5,540 (54.15).
 DOUGLAS, ARIZ.—Disregard notice of deletion promulgated in the April edition of this BULLETIN. Replace all particulars previously promulgated with the exception of the fy. 12,210 (24.57).
 DRIER BAY, ALASKA.—Read Drier Bay, Alaska radio; class, add FC; loc. (approximate) 145° 33' 30" W., 60° 20' 10" N.; type, add A3; fy., strike out 3,466 (86.55), add 212 (1,415), 219 (1,370), 274 (1,095), 425 (705), 500 (600), 2,320 (129.3), 3,160 (94.9); power, 30/2.5; service, add PG; licensee, Alaska Pacific Salmon Corporation.
 EL PASO (WESTERN AIR EXPRESS AIRPORT), TEX.—Fy., strike out 12,210 (24.57).
 FALSE PASS, ALASKA, radio.—Loc., 163° 23' 34" W., 54° 51' 19" N.
 FRIJOLE, TEX.—Fy., strike out 12,210 (24.57).
 FUNTER, ALASKA.—Read Funter, Alaska radio; class, add FC; loc. (approximate) 134° 54' 10" W., 58° 13' 15" N.; type, strike out B, add A1, A3; fy., strike out 180 (1,665), 480 (625), add 246 (1,220), 460 (650), 2,320 (129.3), 3,166 (94.75); power, 30/3; service, strike out P, add PG and PR; licensee, Alaska Pacific Salmon Corporation.
 GREENSBORO, N. C.—Class, add FX; fy., add 4,164 (72.04), 6,320 (47.46).
 HARRISBURG, Pa., WAED.—Fy., strike out 12,180 (24.63).
 HICKSVILLE, N. Y., WJO.—Fy., strike out 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97).
 HICKSVILLE, N. Y., WJQ.—Fy., strike out 7,640 (39.29), add 8,810 (34.05), 10,010 (29.97).
 HICKSVILLE, N. Y., WJS.—Fy., strike out 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97); power, 20/2.
 HIDDEN INLET, ALASKA.—Read Hidden Inlet, Alaska radio; type, strike out B, add A1; fy., strike out 162 (1,850), 182 (1,650), 188 (1,665), 414 (725), add 252 (1,190), 274 (1,095), 460 (650); power, 33/3.1; service, strike out P, add PG.
 HONOLULU, HAWAII, KDG.—Fy., strike out 7,625 (39.34), 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97).
 HOUSTON (MUNICIPAL AIRPORT), TEX.—Loc., 95° 16' 52" W., 29° 39' 22" N.; fy., strike out 12,210 (24.57).
 INDIANAPOLIS, IND., WAEA.—Class, strike out FX; fy., strike out 2,722 (110.21), 2,734 (109.72), 4,108 (73.02), 6,365 (47.13), 8,015 (37.43), 12,180 (24.63).
 INDIANAPOLIS, IND., WMDZ.—Loc. 86° 10' 32" W., 39° 47' 52" N.; fy., strike out 1,712 (175.23), add 2,440 (123).
 INDIO, CALIF., KGUQ.—Fy., strike out 12,210 (24.57).
 ISABELLA DE BASILAN, P. I., radio (Zamboanga).—Read Isabella de Basilan, P. I. (Zamboanga); class, FX only; service, PR only; rates, strike out.
 JACKSON, MISS.—Fy., strike out 12,210 (24.57).
 KAKE, ALASKA.—Read Kake, Alaska, radio; loc., 133° 54' 32" W., 56° 58' 17" N.; type, strike out B, add A1, A2, A3; fy., strike out 180 (1,665), 480 (625), add 262 (1,145), 274 (1,095), 460 (650), 2,320 (129.3), 3,166 (94.75); power, 30/3; service, strike out P, add PG, PR; licensee, Alaska Pacific Salmon Corporation.
 KANSAS CITY, MO., KGPE.—Power, 40/2.2.
 KANSAS CITY, MO., KST.—Fy., strike out 278 (1,080), 12,180 (24.63), add 3,088 (97.15).
 KARLUK, ALASKA, radio (Kodiak Island).—Fy., strike out 246 (1,220), add 227 (1,320), 272 (1,105); power, 13.8/5.

- KENAI, ALASKA, radio, KYZ.—Type, add A2, A3; fy., add 3,184 (94.22).
- KETCHIKAN, ALASKA, radio.—Loc. 131° 38' 12" W., 55° 52' 30" N.; type, A1; fy., add 3,160 (94.9).
- KINGMAN, ARIZ.—Fy., strike out 12,180 (24.63).
- KVICHAK, ALASKA, KYM.—Read Kvichak, Alaska, radio; fy., strike out 3,160 (94.9), add 262 (1,145), 272 (1,105), 425 (705), 500 (600); service, add PG.
- LAS VEGAS, NEV.—Fy., strike out 278 (1,080), 12,180 (24.63).
- LIBBYVILLE, ALASKA, radio.—Type, strike out A3, add A arc; fy., strike out 3,184 (94.22), add 178 (1,685), 219 (1,370), 272 (1,105), 425 (705), 500 (600); power, 38/12.
- LOS ANGELES (ALHAMBRA AIRPORT), CALIF.—Fy., strike out 278 (1,080), 3,460 (86.70), 5,540 (54.15), 12,180 (24.63), add 2,734 (109.72), 4,108 (73.02).
- LOS ANGELES, CALIF., KOS.—Fy., strike out 4,715 (63.64), 4,725 (63.49), 4,735 (63.35), 4,745 (63.22), 4,925 (60.91), 4,935 (60.79), 4,945 (60.66), 4,955 (60.54), 4,965 (60.42), 4,975 (60.3), 4,985 (60.18), 4,995 (60.06), 5,285 (56.76), 5,295 (56.66), 5,304 (56.55), 5,315 (56.44), 5,325 (56.338), 5,335 (56.23), 5,345 (56.13), 5,355 (56.022), 7,625 (39.34), 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97), 15,880 (18.892); power 30/2 and 4.
- LOS ANGELES, CALIF., KPG.—Fy., strike out 7,625 (39.34), add 8,810 (34.05), 10,010 (29.97).
- MAMBAJAO, P. I., radio.—Hours, 8 to 12 a. m., 2 to 5 p. m. daily, 9 to 11 a. m. Sundays and holidays; ship schedule, 20 to 30 minutes of each hour.
- MAZAMA (permanently moored vessel at Herendeen Village, Alaska).—Fy., strike out 429 (700), 500 (600), add 178 (1,685), 252 (1,190).
- NAKEEN, ALASKA (Bristol Bay).—Read Nakeen, Alaska, radio (Bristol Bay); class, add FX; type, add A1; fy., add 178 (1,685), 272 (1,105), 425 (705), 500 (600); power, 31/3; service, add PG; rates.
- NEEDHAM, MASS., WJK.—Fy., strike out 7,625 (39.34), add 8,810 (34.05), 10,010 (29.97).
- NEWARK, N. J., WAEF.—Fy., add 2,722 (110.21), 2,734 (109.72), 4,108 (73.02), 6,365 (47.13), 8,015 (37.43).
- NEW BRUNSWICK, N. J., WEG.—Loc., changed to Rocky Point, N. Y.
- NEW BRUNSWICK, N. J., WIK.—Fy., strike out 6,965 (43.07); type, add A2.
- NEW BRUNSWICK, N. J., WQT.—Type, add A2; fy., strike out 6,942.5 (43.25).
- NEW ORLEANS (MENESEE AIRPORT), LA.—Loc. 89° 59' 28" W., 29° 57' 08" N.; fy., strike out 12,210 (24.57).
- NUSHAGAK, ALASKA, KZV.—Read Nushagak, Alaska, radio; fy., strike out 3,160 (94.9), add 262 (1,145), 272 (1,105), 425 (705), 500 (600); service, add PG.
- OKLAHOMA CITY, OKLA.—Loc., 97° 34' 48" W., 35° 26' 36" N.; fy., strike out 278 (1,080), 12,180 (24.63), add 2,722 (110.21), 2,734 (109.72), 4,108 (73.02).
- PHILADELPHIA, PA., WJG.—Fy., strike out 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97).
- PHILADELPHIA, PA., WPDP.—Power, 30/3.
- PHILADELPHIA, PA., WRDI.—Fy., strike out 4,725 (63.22), add 4,725 (63.49).
- PHOENIX, ARIZ.—Disregard notice of deletion promulgated in the April edition of this BULLETIN. Replace all particulars previously promulgated with the exception of the frequency 12,210 (24.57).
- PILLAR BAY, ALASKA.—Read Pillar Bay, Alaska, radio; class, add FC; type, strike out B, add A1, A2; fy., add 222 (1,350), 262 (1,145), 274 (1,095), 425 (705); service, add PG; rates, 6 cents per word.
- PITTSBURGH, PA., WAEC.—Loc. 79° 53' 48" W., 40° 21' 24" N.; fy., strike out 278 (1,080), 393 (765), 400 (750), 414 (725), 420 (715), 12,180, (24.63), add 3,088 (97.15).
- PORT ALEXANDER, ALASKA.—Read Port Alexander, Alaska, radio; type, add A1; fy., strike out 180 (1,665), 246 (1,220), 410 (730), add 222 (1,350), 227 (1,320), 274 (1,095), 460 (650); power, 30/3; service, add PG; hours, 8 a. m. to 10 p. m.; rates, 6 cents per word.
- PORT ALTHORP, ALASKA.—Read Port Althorp, Alaska, radio; type, strike out B, add A1, A3; fy., strike out 180 (1,665), 445 (675), add 246 (1,220), 460 (650), 2,320 (129.3), 3,166 (94.75); power, 30/3; service, strike out P, add PG and PR.
- PUEBLO, COLO.—Fy., strike out 278 (1,080), 3,460 (86.7), 12,180 (24.63), add 2,722 (110.21), 2,734 (109.72), 3,076 (97.5), 4,108 (73.02), 5,540 (54.15).
- QUADRA, ALASKA, radio.—Power, 30.48/5.
- REDDING (MUNICIPAL AIRPORT), CALIF.—Fy., strike out 5,570 (53.86).
- ROBERTSON, Mo. (St. Louis), KGTR.—Fy., strike out 12,180 (24.63).

- ROBERTSON, Mo. (St. Louis), KGUT.—Fy., strike out 2,722 (110.21), 2,734 (109.73), 3,082 (97.34), 3,088 (97.15), 4,108 (73.03), 5,510 (54.45), 6,365 (47.13), 8,015 (37.43), 12,180 (24.63), add 2,344 (127.98), 3,238 (92.64), 3,452 (86.9), 3,460 (86.7), 3,468 (86.5), 3,484 (86.1), 4,140 (72.46), 5,600 (53.57), 5,630 (53.28).
- ROCKY POINT, N. Y., WEN.—Loc. changed to New Brunswick, N. J., 74° 29' 15'' W., 40° 30' 10'' N.
- ROSE INLET, ALASKA.—Read Rose Inlet, Alaska, radio; class, add FC; type, add A3; fy., strike out 180 (1,665), 190.11 (1,578), add 274 (1,095), 460 (650), 2,320 (129.3), 3,166 (94.75); power, 30/3; service, strike out P, add PG and PR; hours, X.
- SALT LAKE CITY, UTAH, KGTH.—Fy., strike out 278 (1,080), 12,180 (24.63).
- SAN ANTONIO, (WINBURN FIELD), TEX.—Loc. (approximate) 98° 28' 30'' W., 29° 20' 30'' N.; fy., strike out 12,210 (24.57).
- SAN JUAN, P. R., WGT.—Fy., strike out 13,780 (21.771), add 13,705 (21.89).
- SAN JUAN, P. R., WQZ.—Fy., strike out 15,985 (18.768), 15,460 (19.405), add 15,445 (19.423). Type, add A2.
- SEATTLE, WASH., KGPA.—Power, 162/2.3.
- SIPACO, P. I.—Loc. (approximate) 123° 29' 30'' E., 13° 23' 00'' N.
- SPARTANBURG, S. C.—Class, add FX; fy., add 4,164 (72.04), 6,320 (47.46).
- SPRINGFIELD, Mo.—Fy., stike out 278 (1,080), 393 (765), 400 (750), 414 (725), 420 (715), 3,468 (86.5), 5,540 (54.15), 12,180 (24.63).
- STEAMBOAT BAY, ALASKA (Noyes Island).—Read Steamboat Bay, Alaska, radio (Noyes Island) power, 31/4.
- TAMBANG, P. I. (Camarines Sur).—Loc. (approximate) 123° 25' 00'' E., 13° 54' 00'' N.
- TORRANCE, CALIF., radio (Los Angeles).—Fy., strike out 6,485 (46.26), 8,430 (35.59), add 6,440 (46.58), 8,570 (35.01).
- TUSCALOOSA, ALA.—Loc., changed to Birmingham, Ala.
- UGANIK, ALASKA.—Read Uganik, Alaska radio; fy., strike out 219 (1,370), 227 (1,320), 252 (1,190).
- UNION BAY, ALASKA, radio.—Type, strike out B, add A1, A3; fy., strike out 171 (1,750), 180 (1,665), 186 (1,610), 480 (625), add 252 (1,190), 274 (1,095), 460 (650); power, 25/3.2.
- UYAK, ALASKA, radio, KHA.—Fy., strike out 246 (1,220), add 227 (1,320), 272 (1,105), 2,428 (123.55); power, 22.9/6.
- UYAK, ALASKA, radio KHV.—Power, 35/4.
- VIEW COVE, ALASKA, radio.—Power, 31/4.
- WACO (MUNICIPAL AIRPORT), TEX.—Loc. (approximate) 97° 10' 00'' W., 31° 50' 00'' N.; fy., strike out 12,210 (24.57).
- WASHINGTON, D. C., WJM.—Fy., strike out 7,625 (39.34), 7,640 (39.27), add 8,810 (34.05), 10,010 (29.97).
- WATERFALL, ALASKA, radio.—Type, strike out B, add A1, A3; fy., strike out 180 (1,665), 182 (1,650), 414 (725), 2,801 (107.1), 6,100 (49.15), add 178 (1,685), 268 (1,120), 274 (1,095), 425 (705), 3,172 (94.57); power, 32/4.
- WICHITA FALLS, TEX.—Fy., strike out 278 (1,080), 3,460 (86.7), 12,180 (24.63), add 2,722 (110.21), 2,734 (109.72), 3,076 (97.5), 4,108 (73.02), 5,540 (54.15).
- WINSLOW, ARIZ.—Fy., strike out 5,510 (54.45), 12,180 (24.63).
- ZAMBOANGA, P. I. (Zamboanga).—Fy., strike out 8,950 (31.84), add 8,950 (33.52).
- Strike out all particulars of the following-named stations: Altoona, Pa.; Bolinas, Calif., KET; California, KGVV (portable); Cebu, P. I., KTL; Cebu, P. I., KUI; Davao, P. I., KUK; Dearborn, Mich., WAV; Dearborn, Mich., WBO; Garden City, Kans.; Highland Park, Ill.; Hollywood, Calif.; Hook Bay, P. I. (Tayabas); Iloilo, P. I., KTI; L'Anse, Mich.; Manila, P. I., KBO; Manila, P. I., KTN; Modesto, Calif., KGVM; Point Reyes, Calif. (Bolinas); St. Petersburg, Fla.; Santa Barbara, Calif., KHR; Santa Cruz Island, Calif.; sixth radio district (portable).

COMMERCIAL SHIP STATIONS, ALPHABETICALLY, BY NAMES OF VESSELS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Ship Stations, published by the Berne bureau]

- ALABAMA (WHDN).—Power, 13/15.
- ALEUTIAN.—Fy., add 400 (750), 5,555 (54), 11,050 (27.15).
- ALICE COOKE.—Fy., strike out 460 (650).
- ANCHA.—Name changed to Point Ancha; fy., add 454 (660).

- ARCADIAN.—Type, A3; fy., 2,320 (129.3); service, P; hours, X; accts., Arcady (Inc.).
- ARCHER.—Name changed to City of Newport News.
- BAYPORT.—Name changed to H. T. De Bardeleben; type, A1, A2; fy., 375 (800), 400 (750), 425 (705), 468 (640), 500 (600); power, 12/5.
- BROOKDALE.—Owner, McCormick S. S. Co.
- CADILLAC.—Type, strike out B, add A1, A2; fy., add 143 (2,100), 157 (1,910); power, 13/6.
- CITY OF PHILADELPHIA.—Service, strike out P, add PG; rates, 8 cents per word.
- COMMERCIAL GUIDE.—Owner, Honolulu S. S. Co.
- COSTA.—Hours, add N.
- COSTA RICA.—Type, B; fy., 375 (800), 425 (705), 500 (600); power, 60/2; service, PG; hours, N; rates, 8 cents per word.
- ECLIPSE.—Name changed to City of Hamburg.
- ELWYN C. HALE.—Fy., strike out 410 (730), 454 (660), 460 (650).
- E. P. No. 5.—Type, A1; fy., 2,320 (129.3); power, 6.4/2; service, PG; hours, X; rates, 8 cents per word.
- ERNEST H. MEYER.—Owner, Portland S. S. Co. (Inc.).
- EUROPA.—Power, 14/2; service, PG; hours, X; rates, 8 cents per word; accts., Mario Crivello.
- EXETER.—Fy., add 6,605 (45.42); power, 25/5; accts., M. R. T. Co.
- EXMOUTH.—Hours, strike out N.
- FOUR WINDS.—Fy., strike out 11,110 (27), add 6,590 (45.52), 6,605 (45.42).
- GRAMPUS.—Type, A1, A2; fy., 5,525 (54.3), 5,555 (54), 6,605 (45.42); power, 20/1.5; service, P; hours, X; accts., C. T. Ludington.
- GULF OF VENEZUELA.—Fy., strike out 410 (730), 454 (660), add 400 (750), 468 (640).
- HALONIA.—Type, A1, A2; fy., 143 (2,100), 151 (1,985), 153 (1,960), 157 (1,910), 160 (1,875), 375 (800), 400 (750), 425 (705), 454 (660), 468 (640), 500 (600).
- HI-ESMARO.—Accts., R. M. C. A.
- HUMACONNA.—Power, 15.38/10.
- HUMRICK.—Fy., strike out 500 (600); accts., Ford Motor Co.
- IDALIA.—Type, strike out A1; fy., strike out 3,436 (87.3), 4,148 (72.3), 6,275 (47.81), 12,820 (23.4), add 375 (800), 410 (730), 425 (705), 454 (660).
- INDEPENDENCE.—Name changed to City of Norfolk.
- ISAAC T. MANN.—Type, strike out B, add A1, A2; fy., add 400 (750), 468 (640).
- KISHACOQUILLAS.—Accts., M. R. T. Co.
- LAKE FAIRPORT.—Name changed to Fairport.
- LA SALLE.—Fy., strike out 151 (1,985); power, 15/5.
- MAINE (WCER).—Power, 15/5.
- MAKIKI.—Fy., add 454 (660), 468 (640).
- MALLEMAK.—Power, 23/5 and 2.5.
- MARIE II.—Type, A1; fy., 5,525 (54.3), 5,555 (54), 6,620 (45.32), 11,050 (27.15), 11,110 (27), 13,240 (22.66); power, 6/4; service, PG; hours, X; rates, 8 cents per word.
- MAYAN.—Owner, Petroleum Navigation Co. (Inc.).
- MAZAM.—Fy., strike out 454 (660); accts., Mazama S. S. Co.
- MEANTICUT.—Fy., strike out 159 (1,885).
- MEMORY III.—Owner, Sherburn M. Becker; accts., R. M. C. A.
- MIDDLESEX.—Power, 25/5.
- MIGRANT.—Fy., add 8,290 (36.19), 8,330 (36.01), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 11,230 (26.71), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 16,860 (17.794).
- MINNEKAHA.—Fy., strike out 157 (1,910), 159 (1,885), add 151 (1,985), 400 (750).
- MOSELLA.—Fy., add 155 (1,935), 157 (1,910), 159 (1,885).
- NELWOOD II.—Type, A1, A2; fy., 375 (800), 400 (750), 410 (730), 425 (705), 468 (640), 500 (600).
- NEW YORK (WECF).—Fy., add 143 (2,100), 151 (1,985), 160 (1,875).
- PACIFIC OAK.—Fy., strike out 410 (730), 454 (660).
- PAN BOLIVAR.—Type, A2; fy., 375 (800), 425 (705), 468 (640), 500 (600); power, 20/2.5.
- PRESIDENT COOLIDGE.—Fy., add 5,615 (53.42), 6,605 (45.42), 6,620 (45.32), 6,635 (45.215), 8,290 (36.19), 8,450 (35.5), 11,110 (27), 13,240 (22.66), 16,860 (17.794), 22,220 (13.501), 22,460 (13.357).

- PRESIDENT GRANT.**—Fy., add 5,525, (54.3), 5,555 (54), 5,615 (53.42), 6,590 (45.52), 6,605 (45.42), 6,620 (45.32), 6,635 (45.21), 8,290 (36.19), 8,330 (36.01), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 11,230 (26.71), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 22,100 (13.575), 22,220 (13.501), 22,460 (13.357).
- PRESIDENT HOOVER.**—Fy., add 5,615 (53.42), 6,605 (45.42), 6,620 (45.32), 6,635 (45.215), 8,290 (36.19), 8,450 (35.5), 11,110 (27), 13,240 (22.66), 16,860 (17.794), 22,220 (13.501), 22,460 (13.357).
- PRUSA.**—Accts., R. M. C. A.
- QUINCY.**—Owner, North American S. S. Co.
- RAMAH.**—Type, A1; fy., 2,320 (129.3), 5,525 (54.3), 5,555 (54), 8,290 (36.19), 11,050 (27.15), 11,110 (27), 16,500 (18.182), 16,660 (18.007); power, 25/2; service, P; hours, X.
- RAMONA.**—Accts., R. M. C. A.
- RICHARD S.**—Type, A1; fy., 2,320 (129.3); power, 10/2; service, PG; hours, X; rates, 8 cents per word.
- RUJETA.**—Type, A1, A2; fy., 375 (800), 425 (705), 500 (600), 5,525 (54.3), 5,555 (54), 6,590 (45.52), 6,605 (45.42), 8,290 (36.19), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 11,230 (26.71), 13,240 (22.66).
- SAGAPORACK.**—Hours, add N.
- SANDCRAFT.**—Accts., Construction Materials Co.
- SEA GULL.**—Fy., strike out 468 (640).
- SHOOTERS ISLAND.**—Owner, Delta S. S. Corporation.
- SIDNEY M. HAUPTMAN.**—Fy., strike out 454 (660).
- S. O. Co. No. 3.**—Power, 15/1.
- STEADFAST.**—Name changed to City of Baltimore; type, strike out B, add A1, A2; fy., add 400 (750), 468 (640), 5,525 (54.3), 5,555 (54), 6,590 (45.52), 8,290 (36.19), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 22,100 (13.575), 22,220 (13.501); hours, strike out X, add N; accts., M. R. T. Co.
- STEPHEN M. CLEMENT.**—Name changed to United States Gypsum.
- TATOOSH.**—Fy., add 2,320 (129.3).
- THALIA.**—Fy., add 153 (1,960), 159 (1,885), 160 (1,875), 400 (750), 468 (640), 500 (600).
- TRUJILLO.**—Accts., Atlantic & Caribbean Steam Navigation Co.
- VICTORIOUS.**—Name changed to City of Havre.
- WAPAMA.**—Owner, Albert E. Gillespie.
- WARRIOR, WHDO.**—Power, 13/15.
- WEST CAWTHON.**—Hours, add N.
- WESTERN ENTERPRISE.**—Type, A1, A2; fy., 8,290 (36.19), 8,330 (36.01), 8,450 (35.5), 11,050 (27.15), 11,110 (27), 11,230 (26.71), 13,240 (22.66), 16,580 (18.094), 16,660 (18.007), 16,860 (17.794); service, PG; hours, X; rates, 8 cents per word.
- WESTERN OCEAN.**—Accts., R. M. C. A.
- WILLIAM C. ATWATER.**—Accts., M. R. T. Co.
- WILLIAM ISOM.**—Name changed to Edwin B. DeGolia; owner, Edwin B. DeGolia.
- WILLIAM T. MUIR.**—Type, A3; fy., 2,320 (129.3); power, 14/1.5; service, P; hours, X.
- Strike out all particulars of the following-named stations: Antilla, Bethlehem Shipbuilding Corporation, Comoco, Harvard WSCR, Huron WADQ, Inter-city Radio Telegraph Co.—general call for any or all vessels, John A. Topping, Monterey, Naushon, Navigator, Surf WHDG, Vesta.

COMMERCIAL AIRCRAFT STATIONS, ALPHABETICALLY, BY NAMES OF CRAFT

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1930, and to the International List of Aircraft Stations, published by the Berne bureau]

- C-226M.**—Name changed to NC-226M.
- CITY OF ALBUQUERQUE.**—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF COLUMBUS.**—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).

- CITY OF INDIANAPOLIS.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF LOS ANGELES.—Fy., strike out 375 (800), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF PHILADELPHIA.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF ST. LOUIS.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF WASHINGTON.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CITY OF WICHITA.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- CUBA.—Licensee, Pan American Airways (Inc.).
- F-104.—Read NC-8048 (F-104).
- F-105.—Read NC-8047 (F-105).
- F-106.—Read NC-9716 (F-106).
- F-109.—Read NC-392E (F-109).
- F-110.—Read NC-455E (F-110).
- F-111.—Read NC-456E (F-111).
- F-112.—Read NC-489E (F-112).
- F-114.—Read NC-582K (F-114).
- HAITI.—Licensee, Pan American Airways (Inc.).
- HAVANA.—Licensee, Pan American Airways (Inc.).
- NC-933Y.—Type, A3; fy., 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 3,106 (96.59), 5,510 (54.44), 5,540 (54.15).
- NC-942Y.—Type, A3; fy., 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 3,106 (96.59), 5,510 (54.44), 5,540 (54.15).
- NC-947Y.—Type, A3; fy., 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 3,106 (96.59), 5,510 (54.44), 5,540 (54.15).
- NC-961Y.—Type, A3; fy., 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 3,106 (96.59), 5,510 (54.44), 5,540 (54.15).
- NC-999Y.—Type, A3; fy., 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 3,106 (96.59), 5,510 (54.44), 5,540 (54.15).
- NC-8411.—Fy., strike out 393 (765), 414 (725), 457 (655), 2,344 (128), 3,468 (86.5), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental Western & Air (Inc.).
- NC-8413.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- NC-9686.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- NC-9638.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- NC-9639.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- NC-9640.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).
- NC-9641.—Fy., strike out 375 (800), 393 (765), 414 (725), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).

NC-10339.—Type, A3; fy., 3,106 (96.59), 3,160 (94.9), 3,166 (94.75), 3,172 (94.57), 3,178 (94.39), 5,570 (53.86), 5,660 (53).

No. 51-W. A. E.—Read NC-420E (No. 51 W. A. E.).

NR-115W.—Read NR-115W (Sirius).

PORT OF SPAIN.—Licensee, Pan American Airways (Inc.).

PORTO RICO.—Licensee, Pan American Airways (Inc.).

SAN JUAN.—Licensee, Pan American Airways (Inc.).

THE CITY OF NEW YORK.—Fy., strike out 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 1,624 (185), 2,344 (128), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).

THE KANSAS CITY.—Fy., strike out 333 (900), 375 (800), 393 (765), 400 (750), 414 (725), 420 (715), 457 (655), 2,344 (128), 1,624 (185), add 3,070 (97.71), 3,076 (97.5), 3,082 (97.33), 3,088 (97.15), 5,510 (54.44), 5,540 (54.15); licensee, Transcontinental & Western Air (Inc.).

TRINIDAD.—Licensee, Pan American Airways (Inc.).

Strike out all particulars of the following-named stations: Argentine, F-107, NC-309N, NC-5192, NC-7120, New York, Porto Rico, Santos, The Blue Streak, Uruguay.

GOVERNMENT LAND STATIONS, ALPHABETICALLY, BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Fixed and Land Stations, published by the Berne bureau]

NOTE.—Change all "Light Stations" to read "Lighthouse."

ALBANY, N. Y.—Power, 450 m/amp.

ALBUQUERQUE, N. MEX.—Loc., 106° 37' 30" W., 35° 04' 16" N.; type, A1, A3; fy., strike out 204 (1,470), add 209 (1,435), 3,370 (89), 3,395 (88.35), 5,940 (50.51), 5,960 (50.34); power, 450 m/amp.

ANCHORAGE, ALASKA.—Fy., strike out 4,310 (69.61), add 86 (3,490), 4,020 (74.63), 4,085 (73.44), 8,170 (36.72), 8,860 (33.86), 12,255 (24.48), 13,140 (22.83), 16,340 (18.36), 17,720 (16.930).

BARNEGAT LIGHTSHIP, N. J.—Hours, first 15 minutes each hour from 8 a. m. to 9.15 p. m.

BELLEFOUNTE, PA.—Fy., strike out 214 (1,400), add 196 (1,530).

BELLEVUE (OMAHA), NEBR.—Fy., strike out 206 (1,455), add 190 (1,580).

BETHEL, ALASKA.—Fy., strike out 659 (455), add 207 (1,450), 618 (485).

BOISE, IDAHO.—Fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.

BOLLING FIELD, D. C. (Anacostia).—Fy., add 153 (1,960).

BOSTON LIGHTSHIP, MASS.—Hours, strike out all particulars.

BOSTON, MASS., WSX.—Power, 450 m/amp.

BOSTON, MASS., WVO.—Fy., strike out 4,445 (67.49), 8,890 (33.75), add 4,365 (68.73), 8,730 (34.36).

BUTTE, MONT.—Loc. (approximate) 112° 31' 00" W., 45° 54' 00" N.; type, A1, A3; fy., strike out 240 (1,250), 3,380 (88.8), 5,930 (50.59), add 218 (1,375), 3,405 (88.1), 5,955 (50.37); power, 450 m/amp.

CAMP JOHN HAY, P. I. (Baguio Mountain, Luzon).—Fy., add 232 (1,280).

CAMP McCLELLAN, ALA. (Anniston).—Fy., change 445 kcs. to 444 kcs.

CAMP NICHOLS, P. I. (Rizal).—Fy., add 4,305 (69.69).

CAMP STOTSENBERG, P. I. (Pampanga, Luzon).—Fy., add 8,610 (34.84), 4,305 (69.69).

CANDLE, ALASKA.—Fy., strike out 500 (600), 566 (530), add 223 (1,345), 666 (450).

CAPE ST. ELIAS LIGHTHOUSE, ALASKA.—Fy., strike out 375 (800), 410 (730).

CAPE SARICHEF LIGHTHOUSE, ALASKA.—Fy., strike out 750 (400), 870 (345), 1,010 (297), 1,172 (256).

CAPE SPENCER LIGHTHOUSE, ALASKA.—Fy., strike out 375 (800), 410 (730).

CHANUTE FIELD, ILL. (Rantoul).—Fy., add 153 (1,960).

CHEYENNE, WYO.—Fy., strike out 240 (1,250), 12,165 (24.66), add 190 (1,580).

CHICAGO, ILL.—Fy., strike out 13,140 (22.83).

CIRCLE, ALASKA.—Fy., strike out 343 (875), add 666 (450).

CLARK FIELD, P. I. (Camp Stotsenberg).—Fy., add 4,305 (69.69).

CLEVELAND, OHIO.—Power, 450 m/amp.

CORDOVA, ALASKA.—Fy., strike out 220 (1,365), add 470 (640).

CRAIG, ALASKA.—Fy., strike out 618 (485), 666 (450), add 236 (1,270).

DAWSON (TULSA), OKLA.—Fy., strike out 240 (1,250), add 224 (1,340); power, 450 m/amp.

DENVER, COLO. (Fitzsimons General Hospital).—Fy., strike out 315 (950).

- DIAMOND SHOALS LIGHTSHIP, N. C.—Fy., strike out 500 (600).
- DRYDEN, TEX.—Fy., add 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.50).
- DRY TORTUGAS LIGHTHOUSE, FLA.—Fy., strike out 425 (705), 500 (600), add 3,410 (88).
- ELKO, NEV.—Fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.
- FAIRBANKS, ALASKA.—Fy., strike out 81 (3,705), add 133 (2,255).
- FORT BLISS, TEX. (El Paso).—Fy., strike out 78 (3,845), add 120 (2,500), 4,445 (67.42), 8,890 (33.75), 13,335 (22.5).
- FORT CROCKETT, TEX. (Galveston).—Fy., add 5,995 (50.04).
- FORT D. A. RUSSELL (MARFA), TEX.—Fy., add 4,445 (67.42), 8,890 (33.75), 5,995 (50.04), 13,335 (22.5).
- FORT DES MOINES (DES MOINES), IOWA.—Fy., strike out 445 (675), add 444 (675)
- FORT DOUGLAS (SALT LAKE CITY), UTAH.—Fy., strike out 4,030 (74.45), 8,060 (37.22), add 4,440 (67.57), 8,880 (33.78).
- FORT DRUM, P. I. (Rizal).—Fy., strike out 471 (638), add 470 (640).
- FORT FRANCIS E. WARREN, WYO.—Fy., strike out 192 (1,565).
- FORT GEORGE WRIGHT (SPOKANE), WASH.—Fy., strike out 4,030 (74.44), 8,860 (37.22), add 4,440 (67.57), 8,880 (33.78).
- FORT GIBBON, ALASKA (Tanana).—Fy., strike out 525 (570).
- FORT HAYES (COLUMBUS), OHIO.—Fy., strike out 209 (1,435), 12,240 (24.51), add 212 (1,415).
- FORT HOWARD (BALTIMORE), MD.—Fy., strike out 6,990 (42.92), add 229 (1,310).
- FORT LAUDERDALE, FLA.—Fy., 500 (600).
- FORT LEAVENWORTH (LEAVENWORTH), KANS. WVC.—Fy., strike out 72 (4,165), add 4,440 (67.57), 4,445 (67.42), 13,140 (22.83), 13,290 (22.57), 13,335 (22.5).
- FORT LEWIS (TACOMA), WASH.—Fy., strike out 220 (1,365), 4,030 (74.44), 8,060 (37.22), add 4,440 (67.57), 8,880 (33.78).
- FORT MACARTHUR (SAN PEDRO), CALIF.—Fy., strike out 227 (1,320).
- FORT MCINTOSH (LAREDO), TEX.—Fy., add 5,995 (50.04).
- FORT MILLS, P. I. (Corregidor Island).—Fy., add 343 (875).
- FORT MONMOUTH (OCEANPORT), N. J.—Fy., strike out 6,990 (42.92).
- FORT OMAHA (OMAHA), NEBR.—Fy., strike out 4,440 (67.57), 8,880 (33.78), add 166 (1,805), 4,305 (69.69), 8,610 (34.84).
- FORT RILEY, KANS.—Fy., strike out 200 (1,500), 4,430 (67.72), 8,860 (33.86).
- FORT RINGGOLD (RIO GRANDE), TEX.—Fy., add 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.5).
- FORT SAM HOUSTON (SAN ANTONIO), TEX.—Fy., strike out 51 (5,880), 4,430 (67.72), 8,860 (33.86), 13,290 (22.57), add 120 (2,500), 185 (1,625), 197 (1,525), 5,995 (50.04), 13,320 (22.52).
- FORT SANTIAGO (MANILA), P. I. (Luzon).—Fy., strike out 4,305 (69.69), 8,610 (34.84), 20,150 (14.888), add 159 (1,885), 4,255 (70.51), 8,510 (35.25), 12,765 (23.5), 17,020 (17.626).
- FORT SHAFTER (HONOLULU), HAWAII.—Fy., strike out 20,425 (14.687), add 159 (1,885), 4,255 (70.51), 8,510 (35.25), 12,765 (23.5), 17,020 (17.626).
- FORT SILL (LAWTON), OKLA.—Fy., add 5,995 (50.04).
- FORT SNELLING, (ST. PAUL), MINN.—Fy., add 210 (1,430).
- FORT STORY (VIRGINIA BEACH), VA.—Fy., strike out 229 (1,310), add 444 (675).
- FORT WINFIELD SCOTT (PRESIDIO OF CALIFORNIA) CALIF.—Fy., strike out 250 (1,200), add 173 (1,735).
- FORT WINT, P. I. (Subic Bay).—Fy., strike out 445 (675), add 272 (1,105), 444 (675).
- FORT WORTH, TEX.—Type, add A3; fy., strike out 240 (1,250), add 224 (1,340); power, 450, m/amp.
- FORT YUKON, ALASKA.—Fy., strike out 476 (630), add 638 (470).
- FRESNO, CALIF.—Fy., strike out 201 (1,495), add 196 (1,530); power, 450 m/amp.
- GLENDALE (LOS ANGELES), CALIF.—Fy., strike out 201 (1,495), add 196 (1,530); power, 450, m/amp.
- GOVERNORS ISLAND, N. Y.—Class, add FC; fy., 159 (1,885), 4,255 (70.51), 8,510 (35.25), 12,765 (23.5), 17,020 (17.626).
- GUILFORD (GREENSBORO), N. C.—Fy., strike out 235 (1,275), add 190 (1,580); power, 450 m/amp.
- HAINES, ALASKA.—Fy., add 470 (640).
- HAPEVILLE (ATLANTA), GA.—Type, add A3; fy., strike out 235 (1,275), add 190 (1,580); power, 450 m/amp.
- HATBOX FIELD (MUSKOGEE), OKLA.—Fy., add 4,090 (73.35), 4,445 (67.42), 5,995 (50.04), 8,180 (36.67), 8,890 (33.75), 13,335 (22.2).

- HONOLULU, HAWAII (Heeia Point).—Fy., add 38 (7.8 5).
- HOT SPRINGS, ALASKA.—Fy., strike out 550 (545), add 659 (455).
- IDAHO FALLS, IDAHO.—Loc. (approximate), $112^{\circ} 03' 00''$ W., $43^{\circ} 28' 00''$ N.; type, A1, A3; fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.
- IDITAROD, ALASKA.—Fy., strike out 54 (5,555), 86 (3,490), add 645 (465).
- IOWA CITY, IOWA.—Fy., strike out 206 (1,456), add 224 (1,340).
- JACKSON, MICH.—Loc., $84^{\circ} 24' 45''$ W., $42^{\circ} 14' 40''$ N.; type, A1, A3; fy., strike out 218 (1,375), 326 (920), 3,350 (89.6), 5,960 (50.34), add 214 (1,400), 320 (940), 3,380 (88.8), 5,930 (50.59); power, 450 m/amp.
- JUNEAU, ALASKA.—Fy., add 100 (3,000), 207 (1,450), 454 (660).
- KANAKANAK, ALASKA.—Fy., strike out 223 (1,345), add 166 (1,805), 210 (1,430), 343 (875), 555 (54.54).
- KELLY FIELD (SAN ANTONIO), TEX.—Fy., add 207 (1,450), 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.5).
- KETCHIKAN, ALASKA, radio.—Fy., strike out 66 (4,550), 550 (545), 4,025 (74.54), 8,050 (37.27) 12,075 (24.85), 16,100 (18.634), 20,125 (14.92), add 75 (4,000), 470 (640), 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,320 (22.52).
- KEY WEST, FLA.—Fy., strike out 235 (1,275), add 190 (1,580); power, 450 m/amp.
- KINGMAN, ARIZ.—Loc., $114^{\circ} 02' 32''$ W., $35^{\circ} 09' 18''$ N.; type, A1, A3; fy., strike out 228 (1,315), add 209 (1,435), 3,370 (89), 3,395 (88.3), 5,940 (50.51), 5,960 (50.31); power, 450 m/amp.
- KODIAK, ALASKA, radio.—Fy., strike out 192 (1,565), 447 (670), 500 (600), add 187 (1,605).
- LA CROSSE, WIS.—Type A1, A3; fy., strike out 206 (1,455), add 224 (1,340); power, 450 m/amp.
- LORDBURG, N. MEX.—Fy., add 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.5).
- MANITOU ISLAND, MICH.—*Read* Manitou Island Lighthouse, Mich.
- MARCH FIELD (RIVERSIDE), CALIF.—Fy., add 207 (1,450), 4,445 (67.42), 8,890 (33.75), 13,335 (22.5).
- MAXWELL FIELD (MONTGOMERY), ALA.—Fy., add 207 (1,450).
- MAYWOOD (CHICAGO), ILL.—Fy., strike out 214 (1,400), add 224 (1,340).
- MEDFORD, OREG.—Fy., strike out 201 (1,495), add 224 (1,340); power, 450 m/amp.
- MEMPHIS, TENN.—Loc., $89^{\circ} 58' 21''$ W., $35^{\circ} 02' 50''$ N.; type, A1, A3; fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.
- MIDLAND, TEX.—Fy., add 4,090 (73.35), 5,995 (50.04), 8,180 (36.67).
- MITCHELL FIELD, N. Y. (MINCOLA, L. I.).—Fy., add 220 (1,365).
- MOBILE, ALA.—Fy., 500 (600).
- NANTUCKET SHOALS LIGHTSHIP, MASS.—Hours, operates first 15 minutes of each hour between 8 a. m. and 9.15 p. m.
- NASHVILLE, TENN.—Loc. (approximate) $86^{\circ} 37' 00''$ W., $36^{\circ} 09' 00''$ N.; type, A1, A3; fy., strike out 235 (1,275), add 190 (1,580); power, 450 m/amp.
- NOME, ALASKA, radio.—Fy., strike out 75 (4,000), 83 (3,615), add 81 (3,705), 618 (485).
- NORTH PLATTE, NEBR.—Fy., strike out 206 (1,456), add 190 (1,580).
- NULATO, ALASKA.—Fy., strike out 93.7 (3,200), 167 (1,800), 471 (635), add 94 (3,190), 225 (1,335), 681 (440).
- OAKLAND, CALIF.—Fy., strike out 201 (1,495), add 196 (1,530); power 450 m/amp.
- OKLAHOMA CITY, OKLA., KQK.—Fy., strike out 3,340 (89.8), add 3,370 (89); power, 50 m/amp.
- PARKVILLE (KANSAS CITY), Mo.—Fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.
- PASCO, WASH.—Fy., strike out 201 (1,495), add 224 (1,340); power, 450 m/amp.
- PASSAGE ISLAND, MICH.—*Read* Passage Island Lighthouse, Mich.
- PETERSBURG, ALASKA.—Fy., strike out 207 (1,450), add 476 (630).
- PETTIT BARRACKS (ZAMBOANGA), P. I.—Fy., strike out 187 (1,605), 4,030 (74.45), 8,060 (37.22), add 4,305 (69.69), 8,610 (34.84), 12,090 (24.81).
- PITTSBURGH, PA.—Loc., $79^{\circ} 58' 39''$ W., $40^{\circ} 21' 29''$ M.; type A1, A3; fy., add 3,370 (89), 3,380 (88.8), 5,930 (50.59), 5,940 (50.51); power, 450 m/amp.
- POINT BARROW, ALASKA.—Fy., strike out 447 (670), 4,365 (68.73), 8,730 (34.36), add 220 (1,365), 446 (675), 659 (455), 4,305 (69.69), 8,050 (37.27).
- POLLOCK RIP LIGHTSHIP, MASS.—*Read* Pollock Rip Blue Lightship, Mass.; hours, operates first 15 minutes of each hour between 8 a. m. and 9.15 p. m.
- POPE FIELD (FORT BRAGG), N. C.—Fy., add 207 (1,450).
- PORTLAND LIGHTSHIP, ME.—Hours, strike out all particulars.

- PORTLAND, OREG., KCY.—Fy., strike out 201 (1,495), add 224 (1,340); power, 450 m/amp.
- PRESIDIO OF MONTEREY (MONTEREY), CALIF.—Fy., strike out 220 (1,365), add 4,440 (67.57), 8,880 (33.78).
- QUARRY HEIGHTS (BALBOA), CANAL ZONE.—Fy., add 159 (1,885), 4,255 (70.51), 8,510 (35.25), 12,765 (23.5), 17,020 (17.66).
- RELIEF LIGHTSHIP No. 90.—Name changed to Relief Lightship No. 106.
- RENO, NEV.—Fy., strike out 240 (1,250), add 218 (1,375).
- ROBERTSON (St. Louis), Mo.—Fy., strike out 240 (1,250), add 218 (1,375); power, 450 m/amp.
- ROCK OF AGES, MICH.—*Read* Rock of Ages Lighthouse, Mich.
- ROCK SPRINGS, WYO.—Fy., strike out 240 (1,250), add 190 (1,580).
- ST. LOUIS, MO.—Fy., change 2,605 kcs. to 2,604 kcs.
- SALT LAKE CITY, UTAH.—Fy., strike out 240 (1,250), 8,110 (36.99), 12,165 (24.66), add 218 (1,375), 5,940 (50.51).
- SANDSTON (RICHMOND), VA.—Fy., strike out 230 (1,305), add 190 (1,580); power, 450 m/amp.
- SAN FRANCISCO, CALIF. (Mare Island—NPG).—Aviation weather is now transmitted 0200, 1400 G. C. T. in lieu of 0218 and 1400.
- SAN FRANCISCO (PRESIDIO OF SAN FRANCISCO), CALIF.—Fy., add 159 (1,885), 4,255 (70.51), 4,440 (67.57), 8,510 (35.25), 8,880 (33.78), 12,900 (23.26), 17,020 (17.626).
- SAN JOSE FIELD, P. I. (MINDORO).—Fy., strike out 5,850 (51.28), add 4,305 (69.69).
- SAN JUAN, P. R. (CAYEY—NAU).—Fy., strike out 33.8 (8.875).
- SAVANNAH, GA., WWAN.—Name changed to Savannah, Ga. Lightship No. 94; loc., 80° 39' 50" W., 31° 56' 40" N.
- SCOTT FIELD (BELLEVILLE), ILL.—Fy., add 153 (1,960).
- SEATTLE, WASH., KCZ.—Fy., strike out 201 (1,495), add 224 (1,340); power, 450 m/amp.
- SEATTLE, WASH., WVD.—Fy., strike out 4,085 (73.45), 8,170 (36.72), 12,255 (24.48), 16,340 (18.360), 20,400 (14.706), add 83 (3,615), 4,310 (69.61), 4,365 (68.73), 4,370 (68.65), 4,375 (68.57), 8,620 (34.8), 8,730 (34.36), 8,740 (34.32), 8,750 (34.29), 13,095 (22.91), 13,110 (22.88), 17,480 (17.162), 17,500 (17.143).
- SEWARD, ALASKA, radio.—Fy., strike out 100 (3,000), 200 (1,500), 17,460 (17.182), add 566 (530).
- SILVER HILL, MD. (WASHINGTON, D. C.).—Fy., strike out 8,110 (36.99), 12,165 (24.66); power, 450 m/amp.
- SITKA, ALASKA.—Fy., strike out 250 (1,200), add 203 (1,475), 480 (625).
- SKAGWAY, ALASKA.—Fy., strike out 4,310 (69.61), 8,620 (34.8), add 4,380 (68.49), 8,760 (34.27).
- SPARTANBURG, S. C.—Fy., strike out 235 (1,275), 254 (1,180), add 190 (1,580), 248 (1,210); power, 100 m/amp.
- SQUAW HARBOR, ALASKA, radio (UNGA ISLAND).—Fy., strike out 4,365 (68.743), 8,730 (34.36), add 172 (1,745), 236 (1,270), 446 (67.26), 4,305 (69.69), 8,050 (37.27).
- STREVELL, IDAHO.—Type, add A3; fy., strike out 240 (1,250); power, 40 m/amp.
- TACOTNA, ALASKA.—Fy., strike out 536 (560), 558 (540), add 625 (480).
- TELLER, ALASKA.—Fy., add 558 (540).
- TIENTSIN, CHINA.—Fy., strike out 4,430 (67.72), 17,720 (16.93), add 5,995 (50.04).
- TUCSON, ARIZ.—Fy., add 4,090 (73.35), 4,445 (67.42), 8,180 (36.67), 8,890 (33.75), 13,335 (22.5).
- VALDEZ, ALASKA, radio.—Fy., strike out 666 (450), add 236 (1,270), 558 (540).
- VANCOUVER BARRACKS, WASH.—Fy., strike out 4,030 (74.44), 8,060 (37.22), add 4,440 (67.57), 8,880 (33.78).
- WASHINGTON, D. C. (ANNAPOLIS, MD.—NSS).—Fy., strike out 12,045 (24.9); beginning October 1, 1931, time signals will be sent as follows: 17.8 (16,840 m.), 0255-0300, 0455-0500, 0755-0800, 1655-1700, 2055-2100; 8,030 (37.34 m.) 2355-2400, all G. C. T.
- WASHINGTON, D. C. (ARLINGTON, VA.—NAA).—Fy., add 4,205 (71.34), 8,410 (35.65), 12,615 (23.78), 16,820 (17.8); beginning October 1, 1931, transmits time signals as follows: 113 (2,653) 0255-0300, 0755-0800, 1655-1700; 690 (435) 0255-0300, 1655-1700; 4,015 (74.72) 0455-0500, 0755-0800; 4,205 (71.34) 0255-0300, 1655-1700; 8,410 (35.65) 0255-0300, 0755-0800, 1655-1700; 12,615 (23.78) 0255-0300, 1655-1700; 16,820 (17.8) 1655-1700, 2055-2100 all G. C. T.

WASHINGTON, D. C., WAR.—Fy., strike out 86 (3,490), 20,125 (14,907), add 159 (1,885), 173 (1,735), 4,365 (68.73), 8,730 (34.36), 12,765 (23.5), 17,460 (17.182).

WAYNOKA, OKLA.—Loc. (approximate) 98° 49' 00" W., 36° 22' 00" N.; type, A1, A3; fy., strike out 204 (1,470), add 209 (1,435), 3,370 (89), 3,395 (88.3) 5,940 (50.51), 5,960 (50.34); power, 450 m/amp.

WICHITA, KANS.—Fy., strike out 240 (1,250), add 209 (1,435); power, 450 m/amp.

WILLIAMSVILLE (BUFFALO), N. Y.—Fy., strike out 214 (1,400), 350 (850), add 230 (1,305), 266 (1,130); power 450 m/amp.

WINNEMUCCA (PLEASANT VALLEY), NEV.—Type, add A3; fy., strike out 240 (1,250); power, 40 m/amp.

WINSLOW, ARIZ.—Loc. (approximate) 110° 42' 00" W., 35° 02' 00" N.; type, A1, A3; fy., strike out 228 (1,315), add 209 (1,435), 3,370 (89), 3,395 (88.3), 5,940 (50.51), 5,960 (50.34); power, 450 m/amp.

WISEMAN, ALASKA.—Fy., strike out 545 (550), add 555 (540).

WRANGELL, ALASKA.—Fy., strike out 197 (1,525), 207 (1,450), 258 (1,165), add 446 (675).

WRIGHT FIELD (FAIRFIELD), OHIO.—Fy., add 153 (1,960), 4,080 (73.53), 8,160 (36.76).

Strike out all particulars of the following-named stations: Fort Brady (Sault Ste. Marie), Mich.; Fort Riley, Kans., WYV; Fort Rodman, Mass.; Kanatak, Alaska; Kindley Field, P. I. (Corregidor Island); Lansing Shoal Lightship, Mich.; Los Angeles, Calif., WZH; Love Field (Dallas), Tex.; Managua, Nicaragua.

GOVERNMENT SHIP STATIONS, ALPHABETICALLY, BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Ship Stations published by the Berne bureau]

Strike out all particulars of the following-named vessel: West Memphis.

AIRWAY RADIOBEACON STATIONS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Stations Performing Special Services, published by the Berne bureau]

ERIE, PA. (Port Erie airport).—Loc. 80° 10' 24" W., 42° 05' 00" N.

MARINE RADIOBEACON STATIONS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Stations Performing Special Services, published by the Berne bureau]

NOTE.—Change all "Light Stations" to read "Lighthouse."

CAPE COD CANAL LIGHTHOUSE, MASS.—Fy., strike out 284 (1,056), add 300 (1,000); power, 15.

VINEYARD SOUND LIGHTSHIP, MASS.—Hours, operates third 15 minutes of each hour.

BARNEGAT LIGHTSHIP, N. J.—Hours, operates second 15 minutes each hour. Operator stands watch first 15 minutes each hour from 8 a. m. to 9.15 p. m. in clear weather.

OVERFALLS LIGHTSHIP, DEL.—Power, 10.

SANDY POINT LIGHTHOUSE, MD.—Power, 10.

CHESAPEAKE LIGHTSHIP, VA.—Hours, clear weather operating period fourth 15 minutes each hour.

WOLF TRAP LIGHTHOUSE, VA.—Hours, operates from 2 to 2.30 and 8 to 8.30 a. m. and p. m. daily; power, 10.

CAPE LOOKOUT SHOALS LIGHTSHIP, N. C.—Hours, clear weather operating period fourth 15 minutes each hour.

DIAMOND SHOALS LIGHTSHIP, N. C.—Hours, clear weather operating period fourth 15 minutes each hour.

SAVANNAH LIGHTSHIP, GA.—Hours, operator stands watch first 15 minutes each hour from 8 a. m. to 9.15 p. m. in clear weather; power, 40.

DRY TORTUGAS LIGHTHOUSE, FLA.—Fy., 306 (980); hours, operates continuously during thick or foggy weather and daily in clear weather second 15 minutes of each hour.

EGMONT KEY LIGHTHOUSE, FLA.—Fy., 306 (980); hours, continuously during thick or foggy weather and daily in clear weather second 15 minutes of each hour.

- SAND ISLAND LIGHTHOUSE, ALA.—Fy., strike out 300 (1,000), add 286 (1,049); hours, operates third 15 minutes of each hour.
- SOUTHWEST PASS EAST JETTY LIGHTHOUSE, LA.—Fy., strike out 295 (1,017), add 286 (1,050); hours, clear weather operating period third 15 minutes of each hour.
- SOUTH PASS WEST JETTY RANGE FRONT LIGHTHOUSE, LA.—Fy., strike out 310 (968), add 286 (1,050); hours, clear weather operating period third 15 minutes of each hour.
- ARANSAS PASS LIGHTHOUSE, TEX.—Fy., strike out 300 (1,000), add 314 (955); hours, fourth 15 minutes of each hour.
- GALVESTON JETTY LIGHTHOUSE, TEX.—Fy., strike out 290 (1,034), add 314 (955); hours, clear weather operating period fourth 15 minutes of each hour.
- SABINE PASS LIGHTHOUSE, TEX.—Fy., strike out 305 (984), add 314 (955); hours, operates fourth 15 minutes of each hour.
- DETOUR LIGHTHOUSE, POINT BETSIE LIGHTHOUSE AND WHITEFISH POINT LIGHTHOUSE, MICH.—New method of distance finding: Whenever both the radiobeacon and the sound fog signal are in operation at these stations, the radiobeacon transmits a long distinctive dash (3 seconds), the termination of which is coincident with the beginning of a long blast (5 seconds) of the sound signal. This long blast is followed by a 1-second silence and a 1-second blast, to indicate definitely to the observer the particular long blast which is sounded at the termination of the long dash. The number of seconds elapsing between hearing the termination of the long radio dash and the beginning of this long blast of the sound signal divided by five will give the approximate distance of the observer from the lighthouse in statute miles. The distance thus derived should be correct within a limit of error of 10 per cent. During the operating minute of the radiobeacon the sound signal characteristic will be as follows: Silent 53 seconds, blast 5 seconds, silent 1 second, blast 1 second. During the two minutes between operating minutes of the radiobeacon, the regular station characteristic of the sound fog signal will be maintained, except that the silent period will in each case precede the blast or group of blasts, as the case may be. Hearing the long dash in the radiobeacon code of a station will indicate to the mariner the presence of fog conditions at that station.
- EAGLE HARBOR LIGHTHOUSE, MICH.—Fy., strike out 314 (955), add 302 (993).
- MANISTIQUE LIGHTHOUSE, MICH.—Loc. 86° 14' 51" W., 45° 56' 42" N.; power, 10.
- STURGEON BAY CANAL LIGHTHOUSE, MICH.—Power, 15.
- ST. MARTIN ISLAND LIGHTHOUSE, MICH.—Loc. 86° 45' 30" W., 45° 30' 13" N.; power, 10.
- CHICAGO HARBOR LIGHTHOUSE, ILL.—New method of distance finding: Same as Detour Lighthouse, Mich., et al., given above.
- MANITOWOC BREAKWATER LIGHTHOUSE, WIS.—New method of distance finding: Same as Detour Lighthouse, Mich., et al., given above.
- KEWAUNEE PIERHEAD LIGHTHOUSE, WIS.—Fy., strike out 294 (1,020), add 286 (1,049); power, 15.
- LOS ANGELES HARBOR LIGHTHOUSE, CALIF.—Characteristic: . — for five minutes; hours, daily in clear weather continuously from 0 to 5 and from 30 to 35 minutes of each hour. In foggy or thick weather transmits from 15 to 20 and 45 to 50 minutes of each hour.
- POINT ARGUELLO LIGHTHOUSE, CALIF.—Fy., strike out 290 (1,034), add 304 (987); characteristic: — — — for five minutes; transmits daily in clear weather continuously from 5 to 10 and from 35 to 40 minutes of each hour. In foggy or thick weather transmits from 20 to 25 and from 50 to 55 minutes of each hour.
- POINT SUR LIGHTHOUSE, CALIF.—Fy., strike out 304 (987), add 300 (1,000); characteristic: . — . — for five minutes; hours, transmits daily in clear weather continuously from 10 to 15 and from 40 to 45 minutes of each hour. In foggy or thick weather transmits from 25 to 30 and 55 to 60 of each hour.
- POINT WILSON LIGHTHOUSE, WASH.—Power, 10.
- SMITH ISLAND LIGHTHOUSE, WASH.—Power, 10.
- CAPE ST. ELIAS LIGHTHOUSE, ALASKA.—Power, 65; hours, operates third 15 minutes of each hour.
- CAPE SPENCER LIGHTHOUSE, ALASKA.—Power, 100; hours, daily in clear weather from 9 to 9.30 a. m. and 3 to 3.30 p. m. and for the first 15 minutes of each even hour from 10 p. m. to 6.15 a. m.

- MARY ISLAND LIGHTHOUSE, ALASKA.—Power, 50; fy., strike out 200 (1,500), add 295 (1,017); hours, operates continuously during thick or foggy weather and daily in clear weather from 5.30 to 6 and 11.30 to 12 a. m. and p. m. (one hundred and thirty-fifth meridian time).
- SCOTCH CAP LIGHTHOUSE, ALASKA (Unimak Island).—Power, 100.
- KILAUEA POINT LIGHTHOUSE, HAWAII.—Power, 60; hours, operates fourth 15 minutes of each hour.
- MAKAPUU POINT LIGHTHOUSE, HAWAII (Oahu Island).—Hours, daily in clear weather from 10.30 to 11 a. m., 3.30 to 4 p. m., and the first 15 minutes of each hour from 7.30 p. m. to 6.45 a. m.

RADIO-COMPASS STATIONS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and to the International List of Stations Performing Special Services, published by the Berne bureau]

- CAPE HATTERAS, N. C. (Cape Hatteras R/C Group).—Arc of calibration, 30°–229°.
- CAPE HINCHINBROOK, ALASKA.—Arc of calibration, 114°–324°.
- CAPE LOOKOUT, N. C.—Arc of calibration, 40°–231°.
- EUREKA, CALIF.—Arc of calibration, 214.5°–17°.
- FARALLON ISLAND, CALIF.—Receiver loc., 123° 00' 02" W., 37° 41' 50" N.
- JUPITER, FLA.—Transmitter loc., 80° 04' 56" W., 26° 56' 53" N.
- KLIPSAN BEACH, WASH.—Transmitter loc., 124° 03' 16" W., 46° 27' 53" N.
- LAKEHURST, N. J.—Transmitter loc., longitude 74° 19' 14" W.
- NEW DUNGENESS, WASH. (Juan de Fuca Strait).—Read New Dungeness, Wash.; transmitter loc., 123° 07' 57" W., 48° 10' 33" N.; strike out will transmit call signal on request on 375 (8000).
- PENSACOLA, FLA. (aircraft only).—Arc of calibration, 70°–250°.
- POINT ST. GEORGE, CALIF.—Arc of calibration, 178°–10°.
- POYNER'S HILL, N. C. (Single Group).—Receiver loc., NDX 75° 48' 13" W., 36° 17' 12" N.; transmitter loc., NCZ 76° 18' 12" W., 36° 49' 05" N.
- ST. PAUL, ALASKA.—Transmitter loc., longitude 170° 16' 37" W.
- SOUTH PASS, LA.—Arc of calibration, 81°–237°.
- VIRGINIA BEACH, VA. (Chesapeake Bay R/C Group).—Arc of calibration, 167°–155°.

COMMERCIAL AND GOVERNMENT LAND, SHIP, AIRCRAFT, RADIOBEACON, AND RADIO-COMPASS STATIONS, ALPHABETICALLY BY CALL SIGNALS

KEGF, read City of Hamburg; KFBX, read United States Gypsum; KGP, read Kake, Alaska radio; KGUN and KGUP, disregard notice of deletion promulgated in the April edition of this Bulletin; KHCAZ, read NC-8048 (F-104); KHCBY, read NC-8047 (F-105); KHCCX, read NC-9716 (F-106); KHCFU, read NC-392E (F-109); KHCGT, read NC-455E (F-110); KHCHS, read NC-456E (F-111); KHCIR, read NC-489E (F-112); KHCJQ, read NC-582K (F-114); KHCSH, read NC-420E (No. 51 W. A. E.); KHJSH, read NC-226M; KHNZA, read NR-115W (Sirius); KJC, read Rose Inlet, Alaska radio; KJI, read Nakeen, Alaska radio (Bristol Bay); LKP, read Uganik, Alaska radio; KLW, read Port Althorp, Alaska radio; KOGR, read Fairport; KPN, read Isabella de Basilan, P. I. (Zamboanga); KPR, read Port Alexander, Alaska radio; PKV, read Big Port Walter, Alaska radio; KQL, read Hidden Inlet, Alaska radio; KQOE, read Point Ancha; KTT, read Drier Bay, Alaska radio; KUU, read Steamboat Bay, Alaska radio (Noyes Island); KXX, read Funter, Alaska radio; KYM, read Kvichak, Alaska radio; KYV, read Pillar Bay, Alaska radio; KZV, read Nushagak, Alaska radio; NFT, read New Dungeness, Wash.; WDEO, read City of Baltimore; WEG, read Rocky Point, N. Y.; WEN, read New Brunswick, N. J.; WJIO, read City of Norfolk; WLCN, read Edwin B. De Golia; WLCQ, read City of Newport News; WPQ, read Pollock Rip Blue Lightship, Mass.; WPW, read Relief Lightship No. 106; WSDE, read Birmingham, Ala.; WWAJ, read Manitou Island Lighthouse, Mich.; WWAL, read Passage Island Lighthouse, Mich.; WWAM, read Rock of Ages Light-house, Mich.; WWAN, read Savannah, Ga., Lightship No. 94; WXIA, read City of Havre; strike out all particulars following the call signals KBO, KDU, KDZZ, KET, KFXG, KGJ, KGKQ, KGMZ, KGVL, KGVN, KGWY, KGWZ, KHCDW, KHEHS, KHFCX, KHFEV, KHKLO, KHKMN, KHKOL, KHKQJ, KHKUF, KHNHS, KHR, KTJ, KTL, KTN, KUPF, KUI, KUK,

KZGB, NAZ, WADQ, WAV, WBO, WCT, WDEF, WECS, WECW, WHDG, WHL, WHW, WODS, WPDM, WSCR, WSCZ, WTH, WTR, WWZ, WY CJ, WYO, WYR, WYV, WZAC, WZH.

BROADCASTING STATIONS, BY CALL SIGNALS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1930, and the International List of Broadcasting Stations, published by the Berne bureau]

- KELW (Burbank, Calif.).—Licensee, Magnolia Park (Ltd.).
 KFI (Los Angeles, Calif.).—Loc., transmitter changed to Buena Park, Calif. (approximate) $118^{\circ} 01' 00''$ W., $33^{\circ} 53' 00''$ N.; power, 25,000 normally, 50,000 experimentally.
 KFJZ (Fort Worth, Tex.).—Studio changed to Texas Hotel.
 KFUM (Colorado Springs, Colo.).—Call changed to KVOR.
 KGER (Long Beach, Calif.).—Licensee, Consolidated Broadcasting Corporation (Ltd.).
 KGFF (Alva, Okla.).—Loc., transmitter and studio changed to Shawnee, Okla. (approximate) $96^{\circ} 52' 00''$ W., $35^{\circ} 25' 00''$ N.; mail address Ninth and Bell Streets.
 KGIZ (Grant City, Mo.).—Power, 100.
 KGMB (Honolulu, Hawaii).—Mail address, 119 Merchant Street; power, 250.
 KMED (Medford, Oreg.).—Power, 100.
 KOIN (Portland, Oreg.).—Loc., transmitter changed to Sylvan, Oreg.; studio, Portland, Oreg.
 KSO (Clarinda, Iowa).—Licensee, Iowa Broadcasting Co.
 KTAP (San Antonio, Tex.).—Call changed to KABC.
 KTBS (Shreveport, La.).—Loc., $93^{\circ} 42' 09''$ W., $32^{\circ} 26' 38''$ N.
 KTW (Seattle, Wash.).—Fy., 1,220 (245.9).
 KUJ (Walla Walla, Wash.).—Licensee, KUJ (Inc.).
 KXRO (Aberdeen, Wash.).—Loc., transmitter, studio and mail address changed to Morek Hotel; power, 100.
 KZRC (Cebu, P. I.).—Loc. (approximate) $123^{\circ} 52' 00''$ E., $10^{\circ} 30' 00''$ N.
 WBAA (West Lafayette, Ind.).—Loc. (approximate) $86^{\circ} 54' 00''$ W., $40^{\circ} 26' 00''$ N.
 WBEO (Marquette, Mich.).—Mail address, 146 West Washington Street; licensee, Lake Superior Broadcasting Co.
 WBZA (Boston, Mass.).—Loc., transmitter changed to East Springfield, Mass. (approximate) $72^{\circ} 33' 00''$ W., $42^{\circ} 08' 00''$ N.; power, 1,000.
 WCAE (Pittsburgh, Pa.).—Licensee, WCAE (Inc.).
 WCAO (Baltimore, Md.).—Licensee, Monumental Radio Co.
 WCAX (Burlington, Vt.).—Licensee, Burlington Daily News (Inc.).
 WCCO (Anoka, Minn.).—Power, 5,000.
 WCLS (Joliet, Ill.).—Loc. (approximate) $88^{\circ} 05' 00''$ W., $41^{\circ} 31' 00''$ N.
 WEVD (Forest Hills, N. Y.).—Loc., studio and mail address changed to Broadway Central Hotel, 673 Broadway, New York, N. Y.
 WFAM (La Porte, Ind.).—Loc., transmitter, studio and mail address changed to South Bend, Ind., $86^{\circ} 14' 00''$ W., $41^{\circ} 38' 58''$ N.
 WFBE (Cincinnati, Ohio).—Licensee, Post Publishing Co.
 WFDV (Rome, Ga.).—Fy., 1,310 (229).
 WFDW (Talladega, Ala.).—Loc., transmitter and studio changed to Anniston; Ala.; mail address 1200 Noble Street.
 WHDI (Minneapolis, Minn.).—Licensee, Dr. George W. Young.
 WHIS (Bluefield, W. Va.).—Fy., 1,410 (212.8); power, 250.
 WIBG (Elkins Park, Pa.).—Power, 25.
 WISJ (South Madison, Wis.).—Consolidated with WIBA (Madison, Wis.); fy., 1,280 (234.4); power, 500 night, 1,000 day; licensee, Badger Broadcasting Co.; strike out all particulars following WISJ.
 WJAY (Cleveland, Ohio).—Mail address, 1224 Huron Road.
 WJTL (Tifton, Ga.).—Loc., transmitter, studio and mail address changed to Oglethorpe University, Ga. (approximate) $84^{\circ} 30' 00''$ W., $33^{\circ} 45' 00''$ N.; fy., 1,370 (219).
 WKAQ (San Juan, P. R.).—Power, 250.
 WKBI (Chicago, Ill.).—Loc., transmitter and studio, Cicero, Ill., $87^{\circ} 46' 42''$ W., $41^{\circ} 51' 03''$ N.; mail address, 6138 West Twenty-Second Street.
 WKBV (Connersville, Ind.).—Power, 100

WKZO (Berrien Springs, Mich.).—Loc., transmitter and studio changed to Kalamazoo, Mich.; mail address, 124 West Michigan Street, Kalamazoo, Mich.
 WLAP (Louisville, Ky.).—Fy., 1,010 (297); power, 250.
 WLBG (Ettrick, Va.).—Licensee, WLBG (Inc.).
 WLTH (Brooklyn, N. Y.).—Loc., 73° 55' 13'' W., 40° 36' 16'' N.
 WMBD (Peoria Heights, Ill.).—Licensee, Peoria Broadcasting Co.
 WMIL (Long Beach, N. Y.).—Loc., transmitter, studio, and mail address changed to 1,525 Pitkin Avenue, Brooklyn, N. Y.
 WNBR-WGBC (Memphis, Tenn.).—Loc. (approximate) 90° 02' 30'' W., 35° 02' 40'' N.
 WNOX (Knoxville, Tenn.).—Licensee, WNOX (Inc.).
 WOBT (Union City, Tenn.).—Licensee, Sun Publishing Co. (Inc.).
 WOBU (Charleston, W. Va.).—Power, 250 night, 500 day.
 WSPD (Toledo, Ohio).—Power, 1,000.
 WSYB (Rutland, Vt.).—Licensee, Philip Weiss Music Co.
 WTAR-WPOR (Norfolk, Va.).—Loc. 76° 10' 41'' W., 36° 51' 19'' N.
 Strike out all particulars of the following-named stations: KPSN (Pasadena, Calif.); KPWF (Westminster, Calif.); KTNT (Muscatine, Iowa); KZIB (Manila, P. I.); KZKZ (Manila, P. I.); KZM (Hayward, Calif.); WBBS (Boston, Mass.); WMAF (South Dartmouth, Mass.); WMAY (St. Louis, Mo.); WSSH (Boston, Mass.).

EXPERIMENTAL 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, 1930]

CALIFORNIA: Palo Alto (W6XV).—Fy., strike out 99 (3,030).
 ILLINOIS: Chicago (W9XM).—Strike out all particulars.
 NEW JERSEY: Camden (W3XAJ).—Fy., add 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.07), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83), 60,000 (5) to 400,000 (0.75) and above 401,000 (0.74).
 NEW YORK:
 Buffalo (W8XH).—Strike out all particulars.
 New Dorp (W2XCC).—Strike out all particulars.
 Schenectady (W2XAE).—Strike out all particulars.
 OREGON: Portland (W7XG).—Strike out all particulars.

Portable

VIRGINIA: Princess Anne County (W3XAC).—Strike out all particulars.

Aircraft

C-2614 (W10XO).—Strike out all particulars.
 C-3002 (W10XP).—Strike out all particulars.
 NC-9746 (W10XI).—Fy., add 4,795 (62.57), 8,650 (34.6), 12,850 (23.35), 17,300 (17.341), 60,000 (5), 400,000 (0.75).
 THE BLUE STREAK (W10XF).—Strike out all particulars.

RELAY BROADCASTING 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, 1930]

NEW JERSEY: Kearny (W2XCX).—Strike out all particulars.
 NEW YORK: Cross Hassock Bay (W2XE).—Loc., changed to Jamaica, N. Y. (Long Island).
 New York (W2XDA).—Read New York, N. Y. (portable).

VISUAL BROADCASTING STATIONS BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1930]

IOWA: Iowa city (W9XAZ).—Strike out all particulars.
 NEW YORK: Ossining (W2XX).—Strike out all particulars.
 WISCONSIN: Milwaukee (W9XD).—Fy., strike out 43,000 (6.97), to 44,000 (6.81), add 43,000 (6.97) to 46,000 (6.52), 48,500 (6.18) to 50,300 (5.96), 60,000 (5) to 80,000 (3.75).

MISCELLANEOUS

CHANGES IN THE LIST OF VESSELS EQUIPPED WITH A RADIO COMPASS

The following-named vessels are additions to the lists published in Commercial and Government Radio Stations of the United States, edition June 30, 1930, and the International List of Ships Stations published by the Berne bureau:

Name	Call signal	Owner	Name	Call signal	Owner
COMMERCIAL			COMMERCIAL—con.		
Beaconhill.....	KEXV	Standard Shipping Co.	Stephen R. Jones.	WJCX	Mystic S. S. Co.
Daylight.....	WDEJ	Standard Transportation Co.	Thomas P. Beal..	KDFO	Do.
Edward Peirce...	KMOU	Mystic S. S. Co.	William N. Page..	WFOO	Do.
Exeter.....	WCEZ	Exeter S. S. Corporation.	Winding Gulf....	WFEE	Do.
Halongia.....	WDEP	Charles H. Thorne.			

NEW LISTS OF RADIO STATIONS OF THE UNITED STATES

The division has in course of preparation for printing the June 30, 1931, editions of the annual lists of Commercial and Government Radio Stations of the United States and Amateur Radio Stations of the United States. A few months will have elapsed before they are available for distribution by the Superintendent of Documents, Government Printing Office, Washington, D. C. When the prices and the time of availability are known notice will be published in a future edition of the RADIO SERVICE BULLETIN.

GENERAL ORDERS OF THE FEDERAL RADIO COMMISSION

Broadcasting stations required to operate within 50 cycles of assigned frequency, General Order 116, June 22, 1931.—It is ordered—

1. On and after the effective date of this order and until one year from said date all radio broadcasting stations operating between 550 and 1,500 kilocycles shall maintain the assigned frequency between the limits of 500 cycles per second above to 500 cycles per second below the assigned frequency.

2. On and after one year from the effective date of this order all radio broadcasting stations operating between 550 and 1,500 kilocycles shall maintain the assigned frequency between the limits of 50 cycles per second above to 50 cycles per second below the assigned frequency and said stations are hereby required to make provision for the checking of the frequency of the emitted wave by means independent of the frequency control of the transmitter, said independent means having capability of the accuracy above mentioned.

3. On and after the effective date of this order the commission will authorize the installation of new transmitting equipment in broadcasting stations or changes in the frequency control equipment at present licensed for operation only if such equipment is so designed that there is reasonable assurance that the transmitter is capable of maintaining the assigned frequency to the accuracy set forth in paragraph 2 above.

4. Each broadcasting station is hereby required to announce twice each day, at the beginning and end of its program that it is broadcasting on a frequency of _____ kilocycles by authority of the Federal Radio Commission.

5. General Order 7 is hereby repealed.

6. This order shall be effective on the date first above written.

Regulations governing visual broadcasting, telephone, and relay broadcasting frequencies and station licenses canceled, General Order 117, June 24, 1931.—It is ordered—

That General Orders 62, 88, and 88 as amended be and the same are hereby repealed. This order shall be effective as of the date of this order.

Change in frequency allocation to aeronautical service, General Order 118, June 24, 1931.—It is ordered—

That General Order 99 be and it is hereby amended in the following particulars: The frequency hereinafter mentioned is hereby added to those already assigned the Southern Transcontinental Chain and Feeders (Brown): *Mobile service*

available for aircraft and aeronautical stations: 4,915 kc., day only for use only between Chicago, Ill., Peoria, Ill., Springfield, Ill., and St. Louis, Mo.

BROADCASTING STATION FREQUENCY MEASUREMENTS DURING MAY

A steady increase in the number of broadcasting stations maintaining their transmissions on their assigned frequencies is indicated in the May records of the Radio Division.

During May 5,455 measurements made of 326 broadcasting stations showed that 78 at no time deviated as much as 50 cycles, 89 at some time or other deviated more than 50 cycles but not as much as 100 cycles, and 68 deviated over 100 cycles but under 200 cycles. The remaining 91 stations deviated over 200 cycles which shows remarkable improvement in this category in comparison with the figures for December, 1930, January and February, 1931, when 238, 207, and 213 stations, respectively, went over this mark.

As not all of the 613 broadcasting stations of the United States were measured it must be borne in mind that many of those not measured undoubtedly are as efficient in maintaining their frequency as those measured and mentioned in the following lists:

UNDER 50 CYCLES

Call signal	Transmitter location, studio location in parentheses	Call signal	Transmitter location, studio location in parentheses
KFAB	Lincoln, Nebr.	WEEI	Weymouth, Mass. (Boston).
KFDM	Beaumont, Tex.	WENR	Downers Grove, Ill. (Chicago).
KFEQ	St. Joseph, Mo.	WFAA	Grapevine, Tex. (Dallas).
KFLV	Rockford, Ill.	WFI	Philadelphia, Pa.
KFQU	Alma-Holy City, Calif.	WGES	Chicago, Ill.
KFRG	San Francisco, Calif.	WGH	Newport News, Va.
KFRU	Columbia, Mo.	WGN	Elgin, Ill. (Chicago).
KFSD	San Diego, Calif.	WGST	Atlanta, Ga.
KFVD	Culver City, Calif.	WHAP	New York, N. Y.
KFXF	Denver, Colo.	WHBL	Sheboygan, Wis.
KGBX	St. Joseph, Mo.	WHO	Des Moines, Iowa.
KGER	Long Beach, Calif.	WIBW	Topeka, Kans.
KGW	Portland, Ore.	WILL	Urbana, Ill.
KHQ	Spokane, Wash.	WIP	Philadelphia, Pa.
KJR	Seattle, Wash.	WFAN	Mount Prospect, Ill. (Chicago).
KLZ	Denver, Colo.	WJAZ	Jackson, Miss.
KMBC	Independence, Mo. (Kansas City, Mo.).	WJDX	Oglethorpe University, Georgia.
KMJ	Fresno, Calif.	WJTL	Bound Brook, N. J. (New York, N. Y.).
KMO	Tacoma, Wash.	WJZ	Chicago, Ill.
KMPC	Beverly Hills, Calif.	WKBI	Youngstown, Ohio.
KPO	San Francisco, Calif.	WKBN	Downers Grove, Ill. (Chicago).
KRSC	Seattle, Wash.	WLS	Detroit, Mich.
KSD	St. Louis, Mo.	WKBC	Addison, Ill. (Chicago).
KTAR	Phoenix, Ariz.	WMBI	Hoboken, N. J. (New York, N. Y.).
KTW	Seattle, Wash.	WMCA	Waterloo, Iowa.
KVI	Des Moines, Wash. (Tacoma).	WMT	New York, N. Y.
KWJJ	Portland, Ore.	WNYO	Davenport, Iowa.
KYW	Bloomington, Ill. (Chicago).	WOC	Ames, Iowa.
KFKX	New York, N. Y.	WOI	Washington, D. C.
WABC	Rossville, N. Y. (Brooklyn).	WOL	Kearney, N. J. (Newark).
WBBR	Needham, Mass.	WOR	Omaha, Neb.
WBSS	Baltimore, Md.	WOW	Raleigh, N. C.
WCAO	Allentown, Pa.	WPTF	Whitehaven, Tenn. (Memphis).
WCBA	Anoka, Minn. (Minneapolis).	WREC	Gainesville, Fla.
WCCO	Chicago, Ill.	WRUF	Atlanta, Ga.
WCFL	Do.	WSB	Chicago, Ill.
WCRW	Scarboro, Me. (Portland).	WSBC	Cumberland, Md.
WCSS	Kansas City, Mo.	WTBO	Woodside, N. Y.
WDAF	Bellmore, N. Y. (New York, N. Y.).	WRRL	Wheeling, W. Va.
WEAF		WWVA	

UNDER 100 CYCLES

KDKA	East Pittsburgh, Pa.	KFXM	San Bernadino, Calif.
KECA	Los Angeles, Calif.	KGA	Spokane, Wash.
KEX	Portland, Ore.	KGFEF	Los Angeles, Calif.
KFAC	Los Angeles, Calif.	KGFFJ	Do.
KFBB	Great Falls, Mont.	KGNF	North Platte, Nebr.
KFI	Los Angeles, Calif.	KGO	Oakland, Calif. (San Francisco).
KFNF	Shenandoah, Iowa.	KGRS	Amarillo, Tex.
KFOX	Long Beach, Calif.	KHJ	Los Angeles, Calif.
KFWB	Hollywood, Calif.	KMMJ	Clay Center, Nebr.

UNDER 100 CYCLES—Continued

Call signal	Transmitter location, studio location in parentheses	Call signal	Transmitter location, studio location in parentheses
KMOX	St. Louis, Mo.	WGR	Amherst, N. Y. (Buffalo).
KNX	Los Angeles, Calif. (Hollywood).	WGY	Schenectady, N. Y.
KOA	Denver, Colo.	WHAD	Milwaukee, Wis.
KOL	Seattle, Wash.	WHAM	Rochester, N. Y.
KOMO	Harbor Island, Wash. (Seattle).	WHB	Kansas City, Mo.
KPCB	Seattle, Wash.	WHDH	Gloucester, Mass. (Boston).
KROW	Richmond, Calif. (Oakland).	WHP	Lemoynne, Pa. (Harrisburg).
KSTP	Radio Center, Minn. (St. Paul).	WIBA	Madison, Wis.
KTAB	Oakland, Calif. (San Francisco).	WIBO	Desplaines, Ill. (Chicago).
KTBR	Portland, Oreg.	WIMM	Edgemoor-Carrcroft, Del. (Wilmington).
KVOO	Tulsa, Okla.		
KWKH	Kennonwood, La. (Shreveport).	WISJ	South Madison, Wis.
KYA	San Francisco, Calif.	WISN	Milwaukee, Wis.
WAAB	Lexington, Mass. (Boston).	WJAR	Providence, R. I.
WAIU	Columbus, Ohio.	WJAX	Jacksonville, Fla.
WBAK	Harrisburg, Pa.	WJR	Sylvan Lake Village, Mich. (Detroit).
WBAL	Glen Morris, Md. (Baltimore).	WJSV	Mount Vernon Hills, Va. (Alexandria).
WBAP	Grapevine, Tex. (Fort Worth).	WJW	Mansfield, Ohio.
WBBM	Glenview, Ill. (Chicago).	WKRC	Cincinnati, Ohio.
WBEN	Martinsville, N. Y. (Buffalo).	WLBZ	Bangor, Me.
WBT	Charlotte, N. C.	WLEY	Lexington, Mass.
WBZ	Millis Township, Mass. (Boston).	WLOE	Chelsea, Mass. (Boston).
WBZA		WLTH	Brooklyn, N. Y.
WCAM	Camden, N. J.	WMAQ	Yankton, Ill. (Chicago).
WCBD	Zion, Ill.	WNAX	Yankton, S. Dak.
WCBM	Baltimore, Md.	WPG	Atlantic City, N. J.
WDBJ	Roanoke, Va.	WRAX	Philadelphia, Pa.
WDEL	Wilmington, Del.	WRHM	Fridley, Minn. (Minneapolis).
WDWF		WRNY	Coytesville, N. J. (New York, N. Y.).
WLSI	Cranston, R. I. (Providence).	WSBT	South Bend, Ind.
WEAN	Providence, R. I.	WSEN	Columbus, Ohio.
WEHS	Cicero, Ill.	WSM	Nashville, Tenn.
WFBL	Collamer, N. Y. (Syracuse).	WSMB	New Orleans, La.
WFIW	Hopkinsville, Ky.	WTAM	Brecksville Village, Ohio (Cleveland).
WFLA	Clearwater, Fla.	WTIC	Mount Avon, Conn. (Hartford).
WSUN		WTMJ	Brookfield, Wis. (Milwaukee).
WFOX	Brooklyn, N. Y.	WWL	New Orleans, La.
WGAR	Akron, Ohio.		

UNDER 200 CYCLES

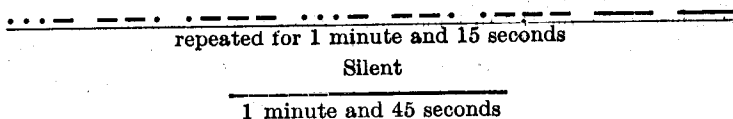
KBFS	Portland, Oreg.	WCOA	Pensacola, Fla.
KFH	Wichita, Kans.	WDAG	Amarillo, Tex.
KFKB	Millford, Kans.	WELE	Philadelphia, Pa.
KFKU	Lawrence, Kans.	WEXL	Royal Oak, Mich.
KFOR	Lincoln, Nebr.	WFBB	Indianapolis, Ind.
KFSG	Los Angeles, Calif.	WFBR	Baltimore, Md.
KFVS	Cape Girardeau, Mo.	WGCM	Mississippi City, Miss. (Gulfport).
KGBZ	York, Nebr.	WBHY	West de Pere, Wis. (Green Bay).
KGDA	Mitchell, S. Dak.	WHFC	Cicero, Ill.
KGDM	Stockton, Calif.	WJAS	Pittsburgh, Pa.
KGIZ	Grant City, Mo.	WJAY	Cleveland, Ohio.
KICK	Red Oak, Iowa.	WJBW	New Orleans, La.
KLRA	Little Rock, Ark.	WJJD	Mooseheart, Ill.
KMA	Shenandoah, Iowa.	WJKS	Gary, Ind.
KOIL	Council Bluffs, Iowa.	WKAR	Lansing, Mich.
KOIN	Portland, Oreg.	WKJO	Lancaster, Pa.
KBEG	Santa Ana, Calif.	WKY	Oklahoma City, Okla.
KRLD	Dallas, Tex.	WLAC	Nashville, Tenn.
KSCJ	Sioux City, Iowa.	WLIT	Philadelphia, Pa.
KTHS	Hot Springs, Ark.	WMAK	Grand Island, N. Y. (Buffalo).
KTM	Santa Monica, Calif. (Los Angeles).	WMAL	Washington, D. C.
KTRH	Houston, Tex.	WMBD	Peoria Heights, Ill.
KWK	Kirkwood, Mo. (St. Louis).	WNAO	Quincy, Mass. (Boston).
KXL	Portland, Oreg.	WOAI	Selma, Tex. (San Antonio).
WADC	Tallmadge, Ohio (Akron).	WODX	Springhill, Ala. (Mobile).
WAPI	Birmingham, Ala.	WOKO	Albany, N. Y.
WASH	Grand Rapids, Mich.	WOQ	Kansas City, Mo.
WAWZ	Zarepath, N. J.	WOWO	Fort Wayne, Ind.
WBCM	Hampton Township, Mich. (Bay City).	WPAP	Cliffside, N. J. (New York, N. Y.).
WHNX	New York, N. Y.	WPAQ	Hoboken, N. J. (New York, N. Y.).
WCAU	Byberry, Pa. (Philadelphia).	WPCH	Washington, D. C.
WCHI	Deerfield, Ill. (Chicago).	WRC	Toledo, Ohio
WCKY	Crescent Springs, Ky. (Covington).	WSPD	Worcester, Mass.
WCLO	Janesville, Wis.	WTAG	Detroit, Mich.
		WXYZ	

The following table offers a comparison of measurements made during the past recent months beginning with December, 1930:

	Number measured	Under 50	Under 100	Under 200	Over 200
December.....	339		35 (13.5%)-----	66 (16.5%)-----	238 (70%).
January.....	363		54 (15%)-----	102 (27%)-----	207 (58%).
February.....	367		99 (27%)-----	55 (15%)-----	213 (58%).
March.....	337	65 (19.3%)-----	63 (18.8%)-----	77 (22.8%)-----	132 (39.1%).
April.....	314	72 (22.9%)-----	54 (17.2%)-----	92 (29.3%)-----	96 (30.6%).
May.....	326	78 (23.9%)-----	89 (27.3%)-----	68 (20.9%)-----	91 (27.9%).

AUTOMATIC RADIOBEACON ESTABLISHED AT FERROQUET ISLAND, GULF OF ST. LAWRENCE

Location, 64° 12' 27" W., 50° 13' 15" N.; call signal, VGJ; fy., 295 (1,017), type, A2 (1,000 cycle note). Transmission characteristic: Call signal VGJ twice followed by two dashes, the duration of the two dashes being approximately equal to that of the call signal repeated twice; the transmission period consists of the repetition of the above characteristic for 1 minute and 15 seconds followed by a silent interval of 1 minute and 45 seconds, thus:



Schedule of operation.—In clear weather: Hourly commencing at 7 minutes and 30 seconds past the hour; transmission period as described, i. e., 1 minute and 15 seconds, followed by a silent interval of 1 minute and 45 seconds, followed by a further transmission period of 1 minute and 15 seconds, ending at 11 minutes and 45 seconds past the hour; foggy weather: Whenever the atmosphere in the vicinity of the station is obscured so as to impede navigation, the transmission period of 1 minute and 15 seconds, with the silent interval of 1 minute and 45 seconds will be repeated every 3 minutes.

Masters of vessels are requested to listen in when in the vicinity of this station and report the results of such reception to the director of radio, Department of Marine, Ottawa, Canada.

RADIOBEACON ESTABLISHED AT NORTH FORELAND, ENGLAND

Location (approximately), 1° 27' E., 51° 22' N.; fy., 294 (1,020). During thick weather, whenever the atmosphere in the vicinity of the lighthouse is obscured so as to impede navigation, the fog signal will be transmitted continuously for 1 minute and 54 seconds, every 6 minutes as follows: A, the Morse letters MMF (— — — —) will be emitted continuously at the rate of about 15 words per minute for 45½ seconds, approximately; B, a continuous dash (—) for 9½ seconds, approximately; C, a repetition of A for 47½ seconds approximately; D, a repetition of B for 9½ seconds, approximately; E, the Morse letters MMF made once of 2 seconds approximately (the whole transmission of A, B, C, D, and E will occupy 1 minute and 54 seconds); F, a silent interval of 4 minutes and 5 seconds. During clear weather, in order to afford facilities for obtaining bearings, two emissions of the complete signal described above will be made consecutively at half-hourly intervals, viz, at 22 and 52 minutes past the hour.

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.

WEATHER REPORTS TRANSMITTED BY CHINESE STATIONS

Pratas Island, call signal XPI, transmits a daily weather report, based on 2200 and 0600 observations from about 90 stations in the Far East as issued by Pratas meteorological station at 0400 and 1000, respectively. The report and forecast are broadcast in plain English, first on 500 kilocycles, B, at 0500 and 1100, and repeated subsequently on 207 kilocycles, A1. The bulletins are again repeated on 6,520 kilocycles, A1, at 0530 and 1130. The message, which is preceded by CQ CQ CQ de XPI XPI XPI, is sent twice, and contains the following information: Part I, the location of high and low pressure areas; Part II, location and expected

direction of movement of depression, or typhoon, affecting the China Sea, Eastern Sea, Yellow Sea, Japan Sea (including the Pacific Ocean to the eastward), or southeast of the Philippine Islands, extending northward from Guam and adjacent islands to northern Japan; Part III, wind and weather forecast for south-eastern coast of China and northern portion of the China Sea; Part IV, wind direction and force, visibility, state of the sea, and state of the weather at Pratas Island during the previous six hours. Weather reports are also transmitted on request, free of charge.

Kamen, call signal XPN, transmits at 0740 and 2300 weather bulletin containing observations at 0600 and 2200, respectively, first on 500 kilocycles and then on 6,250 kilocycles, A1. The transmission is of five minutes duration and commences thus: CQ CQ CQ de XPN XPN XPN (sent 3 times) here 6 a. m. local observation. The weather bulletin in plain English is as follows: Barometer in millimeters, wind direction and force (Beaufort), state of the sea, visibility, state of the weather, temperature (centigrade), and humidity.

East Saddle, call signal XPZ, also transmits weather. The same information as given above for Kamen applies to East Saddle.

TIME SIGNALS TRANSMITTED BY VALPARAISO-LAS SALINAS, CHILE STATION

This station, call signal, CCL, transmits time signals daily, except Sundays, from the Hydrographic and Navigation Office at 0100, G. M. T. corresponding to 2000, standard time, on 162.16 kilocycles. The signals commence at 0055 and terminate at 0100, G. M. T. and consists of a series of dots which represent each second, except that the dots at the 29th, 51st, 52d, 53d, 54th, 55th, 56th, 57th, 58th, and 59th seconds of each of the five minutes are omitted. The dot at the 60th second of each minute is the time signal. In the event of failure or irregularities in the signal the words "señal nula" (signal annulled) will be made three times in succession one minute after 0100, G. M. T.

Ship stations are requested to suspend operations during the transmission of the signals.

TIME SIGNALS TRANSMITTED BY NORDDEICH, GERMANY, STATION

This station, call signal DAN, transmits time signals on 11,340 kilocycles (26.455 meters), type, A1; at 0000 and 1200, G. M. T., corresponding to 0100 and 1300, standard time.

The signals are transmitted in accordance with the International System, the procedure being as follows:

G. M. T.			Signal						Signification	
H. m.	s.	H. m. s. &c.						Warning signal V V, etc.	
23 11}	55	00— 23 11}	56	00					Attention	
56	16—	56	40					(CT).		
57	00—	57	47					DAN (call signal).		
57	55—	58	00	55	56	57	58	59	60	MGZ (G. M. T.).
58	08—	58	10							5-sec. dash, followed by XXX
58	18—	58	20							XXX.
58	28—	58	30							Letter O.
58	38—	58	40							
58	48—	58	50							
58	55—	59	00	55	56	57	58	59	60	Letter O.
59	06—	59	10							
59	16—	59	20							
59	26—	59	30							
59	36—	59	40							
59	46—	59	50							Letter G.

TIME SIGNALS TRANSMITTED BY NORDDEICH, GERMANY, STATION—continued

G. M. T.			Signal						Signification				
H.	m.	s.	H.	m.	s.	55	56	57	58	59	60		
23)	59	55— ⁰ / ₁₂	00	00		55	56	57	58	59	60	Letter O.	
11)	00	04— ⁰ / ₁₂	00	10		04	05	06	07	08	09	10	Final signal (AR).
01)	00	04— ⁰ / ₁₂	00	10		.	—	.	—	.	.	.	

The dots of the letters N (—.) and G (— —.) represent the time signals. Masters of vessels receiving the above-mentioned short-wave time signals are requested to inform the Deutsche Seewarte, Hamburg, as regards their audibility and range.

RHYTHMIC TIME SIGNALS

Wave.—183.5 kc/s (1,635 m.).

Type.—A2.

Time signal.—

			h.	m.	s.		h.	m.	s.
G. M. T.	0	01	00			S. T.	1	01	00
			to					to	
	0	06	00				1	06	00

Details.—Rhythmic time signals are transmitted in accordance with the New International System of radiotelegraph rhythmic time signals, the procedure being as follows:

G. M. T.			Signal.
h	m	s	
0	01	00	1st dash (—) followed by 60 dots (. . . . etc.).
02	00	00	62d dash (—) followed by 60 dots (. . . . etc.).
03	00	00	123d dash (—) followed by 60 dots (. . . . etc.).
04	00	00	184th dash (—) followed by 60 dots (. . . . etc.).
05	00	00	245th dash (—) followed by 60 dots (. . . . etc.).
0	06	00	306th dash (—).

Each dash is 0.4 sec. duration, and its commencement coincides with the beginning of each minute. Each dot is of 0.1 sec. duration. The interval between each signal is $\frac{3}{4}$ sec.

NEW INTERNATIONAL LISTS OF AIRCRAFT AND BROADCASTING STATIONS

The International Bureau of the Telegraph Union, Radiotelegraph Service, Berne, Switzerland, proposes to issue during next December, a new edition (third) of the list of aircraft stations and a new edition (third) of the list of broadcasting stations. The prices when available will be published in the RADIO SERVICE BULLETIN.

BIBLIOGRAPHY ON RADIO WAVE PHENOMENA AND MEASUREMENT OF RADIO FIELD INTENSITY

A paper prepared by the Bureau of Standards with the above title was published in the June, 1931, issue of the Proceedings of the Institute of Radio Engineers. This bibliography contains a fairly complete list of articles which have appeared in this field. The bibliography also contains an author index. The references are classified as follows: Radiation; radio-wave phenomena; fading; daily variations; seasonal variations; direction variations; meteorological, geophysical, and cosmical effects; eclipses; reflection, refraction, diffraction, absorption, polarization; Kennelly-Heaviside layer; wave-front angle; transmission formulas; atmospheric disturbances; strays; directional properties; intensity (field intensity, signal intensity, noise, etc.). A copy of this bibliography may be obtained from the Institute of Radio Engineers, 33 West Thirty-ninth Street, New York, N. Y.