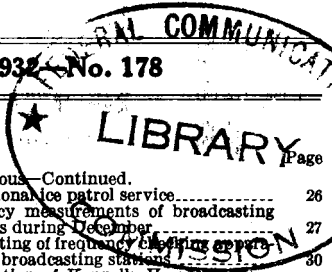


**U. S. DEPARTMENT OF COMMERCE
RADIO DIVISION**

RADIO SERVICE BULLETIN

ISSUED MONTHLY

Washington, January 30, 1934—No. 178



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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 Type = Call signal (letters) assigned.
- = 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 Accts. = Hours of operation: N=continuous service, X=no regular hour, Y=sunrise to sunset.
- = 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. e. 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.
- = Equipped with a radio compass (direction finder).

Beginning with this edition of the BULLETIN, the frequencies for which ship stations may be licensed to use will be indicated as follows:

For telegraph communication primarily with coastal telegraph stations: Class L (kilocycles-meters in parentheses, followed by symbol designating type of emission) =

- | | |
|--|--|
| 143 (2,100), A-1, primarily for calling. | 400 (750), A-1, A-2, working (other than Great Lakes). |
| 152 (1,975), A-1, A-2, working (other than Great Lakes). | 410 (730), A-1, A-2, B, working (other than Great Lakes). |
| 153 (1,960), A-1, A-2, working. | 410 (730), A-1, A-2, B, calling and distress (Great Lakes only). |
| 154 (1,950), A-1, A-2, working. | 425 (705), A-1, A-2, B, working. |
| 155 (1,935), A-1, A-2, working. | 454 (660), A-1, A-2, B, working (other than Great Lakes). |
| 156 (1,925), A-1, A-2, working. | 468 (640), A-1, A-2, working (other than Great Lakes). |
| 157 (1,910), A-1, A-2, working. | 500 (600), A-1, A-2, B, calling and distress (other than Great Lakes). |
| 158 (1,900), A-1, A-2, working (other than Great Lakes). | |
| 160 (1,875), A-1, A-2, working (other than Great Lakes). | |
| 375 (800), A-1, A-2, B, direction finding only. | |
| 394 (760), A-1, A-2, working (Great Lakes only). | |

In addition to the frequencies designated hereinabove, this station may transmit on a frequency below 550 kc. (545) used by a coastal telegraph station when directed to do so by the coastal telegraph station to

which the frequency is assigned, provided that on frequencies below 150 kc. (2,000) the emission shall be A-1 only.

Class H (kilocycles-meters in parentheses, on the following frequencies above 3,000 kc. with A-1 or A-2 emission) =

3, 105 (96.62)	5, 530 (54.25)	8, 260 (36.32)	12, 360 (24.27)	16, 580 (18.094)
3, 115 (96.31)		*8, 280 (36.23)	12, 375 (24.24)	16, 600 (18.007)
	6, 170 (48.62)	8, 290 (36.19)	12, 390 (24.21)	16, 680 (17.986)
*4, 140 (72.46)	6, 180 (48.54)	8, 300 (36.14)	*12, 420 (24.15)	
4, 145 (72.38)	6, 190 (48.47)	8, 320 (36.06)	12, 435 (24.13)	22, 025 (13.621)
4, 150 (72.29)	6, 200 (48.39)	8, 330 (36.01)	12, 450 (24.11)	22, 050 (13.605)
4, 160 (72.12)	*6, 210 (48.31)			*22, 080 (13.587)
4, 165 (72.03)	6, 220 (48.23)	11, 025 (27.21)	16, 460 (18.226)	22, 100 (13.575)
	6, 230 (48.15)	*11, 040 (27.17)	16, 480 (18.204)	22, 125 (13.559)
5, 515 (54.40)		11, 055 (27.135)	16, 500 (18.182)	22, 150 (13.544)
*5, 520 (54.35)	8, 240 (36.41)	11, 070 (27.10)	16, 520 (18.160)	
5, 525 (54.30)	8, 250 (36.36)	11, 085 (27.065)	*16, 560 (18.116)	

In addition to the frequencies hereinabove designated this station may transmit on a frequency above 3,000 kc. (100) used by a coastal telegraph station when directed to do so by the coastal telegraph station to which the frequency is assigned.

For telephone communications primarily with coastal telephone stations, for telephone or telegraph communication with coastal harbor stations, and for telephone or telegraph communication primarily between ship-harbor stations, the specific frequency or frequencies for which a station is licensed to use will be indicated.

ADDITIONS

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, 1931, 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
Akron, Ohio ¹	FX	WPF	19,780 (15.167).....	PR	X	United States Liberia Radio Corporation.
Alltak, Alaska ²	FX	KGYX	PR	X	Alaska Packers Association.
Annette Island, Alaska. ²	FX	KIBL	256 (1,170), 274 (1,095)...	PR	X	R. M. C. A.
Becharof, Alaska ²	FX	KIAH	246 (1,220), 274 (1,095)...	PR	X	Alaska Packers Association.
Ceiba, P. R., radio ³	FC, FX	WKX	171 (1,755), 194 (1,545), 438 (685), 500 (600)...	PG, PR	X	Department of the Interior, Bureau of Insular Telegraph.
Chignik, Alaska ²	FX	KIAG	246 (1,220), 252 (1,190), 274 (1,095)...	PR	X	Alaska Packers Association.
Clarks Point, Alaska. ²	FX	KIAI	246 (1,220), 274 (1,095)...	PR	X	Do.
Cypress, Calif. ¹	FX	KRP	7,437.5 (40.34).....	PR	N	Globe Wireless (Ltd.).
Do.....	FX	KRQ	7,445 (40.29).....	PR	N	Do.
Do.....	FX	KRS	9,410 (31.88).....	PR	N	Do.
Do.....	FX	KRT	10,930 (27.45).....	PR	N	Do.
Do.....	FX	KRV	14,860 (20.19).....	PR	N	Do.
Do.....	FX	KRW	14,875 (20.175).....	PR	N	Do.
Do.....	FX	KRX	14,890 (20.15).....	PR	N	Do.
Do.....	FX	KRY	18,820 (15.94).....	PR	N	Do.
Do.....	FX	KRZ	22,700 (13.216).....	PR	N	Do.
Daly, Alaska ²	FX	KIBI	222 (1,350), 274 (1,095)...	PR	X	R. M. C. A.
Dixon, Calif. ⁴	FX	KWU	15,355 (19.536).....	PR	N	Trans-Pacific Communication Co. (Ltd.).
Do.....	FX	KWV	10,840 (27.68).....	PR	N	Do.
Do.....	FX	KWX	7,610 (39.42).....	PR	N	Do.
Do.....	FX	KWY	7,565 (39.65).....	PR	N	Do.
Drier Bay, Alaska ¹	FX	KIAR	212 (1,415), 219 (1,370), 274 (1,095), 3,092.5 (97.01).....	PR	X	Alaska Pacific Salmon Corporation.
Do. ⁴	FX	KIAS	3,092.5 (97.01).....	PR	X	Do.
Do. ⁵	FC	KIBG	2,512 (119.42).....	P	X	Do.
Dundas, Alaska ^{1,2}	FX	KGY Y	246 (1,220), 256 (1,170)...	PR	X	Northwestern Fisheries Co.
Edmonds, Wash. ¹	FX	KVN	7,437.5 (40.34).....	PR	N	Globe Wireless (Ltd.).
Do.....	FX	KVR	7,445 (40.29).....	PR	N	Do.
Do.....	FX	KVS	9,410 (31.88).....	PR	N	Do.
Do.....	FX	KVT	10,930 (27.45).....	PR	N	Do.
Do.....	FX	KVU	14,860 (20.19).....	PR	N	Do.
Do.....	FX	KVW	14,875 (20.175).....	PR	N	Do.
Do.....	FX	KVX	14,890 (20.15).....	PR	N	Do.
Do.....	FX	KVY	18,820 (15.94).....	PR	N	Do.
Do.....	FX	KVZ	22,660 (13.239).....	PR	N	Do.
False Pass, Alaska ¹	FX	KGYL	227 (1,320), 252 (1,190)...	PR	X	P. E. Harris & Co.

* Primarily for calling.

See footnotes at end of table.

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, 1931, 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
Funter Bay, Alaska ¹	FX	KIAT	246 (1,220), 3,092.5 (97.01)	PR	X	Alaska Pacific Salmon Corporation.
Do. ¹	FX	KIAU	3,092.5 (97.01)	PR	X	Do.
Do. ¹	FC	KIBE	2,512 (119.42)	P	X	Do.
Garden City, N. Y. ¹	FX	WGC	7,437.5 (40.34)	PR	N	Do.
Do.	FX	WGD	7,445 (40.29)	PR	N	Do.
Do.	FX	WGE	9,410 (31.88)	PR	N	Do.
Do.	FX	WGF	10,930 (27.45)	PR	N	Do.
Do.	FX	WGI	14,860 (20.19)	PR	N	Do.
Do.	FX	WGJ	14,875 (20.175)	PR	N	Do.
Do.	FX	WGM	14,890 (20.15)	PR	N	Do.
Do.	FX	WGP	18,820 (15.94)	PR	N	Do.
Do.	FX	WGQ	22,700 (13.216)	PR	N	Do.
Guam (Mariana Islands) ¹	FX	KFR	14,890 (20.15)	PR	N	Do.
Do.	FX	KFU	18,820 (15.940)	PR	N	Do.
Do.	FX	KFV	22,660 (13.239)	PR	N	Do.
Hawk Inlet, Alaska ¹	FX	KGYN	217 (1,380), 246 (1,220)	PR	X	P. E. Harris & Co.
Hialeah, Fla. ¹	FX	WAP	55 (5,450)	PR	N	T. R. T. Co.
Do.	FX	WAS	77 (3,900)	PR	N	Do.
Do.	FX	WAT	80.5 (3,725)	PR	N	Do.
Do.	FX	WAU	6,770 (44.31)	PR	N	Do.
Do.	FX	WAV	10,450 (28.71)	PR	N	Do.
Do.	FX	WAW	12,940 (23.18)	PR	N	Do.
Do. ¹	FX	WNC	15,055 (19.927)	PR	N	American Telephone & Telegraph Co.
Do.	FX	WND	4,097.5 (73.21)	PR	N	Do.
Hingham, Mass. ¹	FX	WBJ	6,770 (44.31)	PR	N	T. R. T. Co.
Do.	FX	WBQ	10,450 (28.71)	PR	N	Do.
Do.	FX	WBV	12,940 (23.18)	PR	N	Do.
Do.	FX	WBW	17,580 (17.065)	PR	N	Do.
Honolulu, Hawaii (Kaena Point-Oahu Island) ¹	FX	KIM	7,445 (40.29)	PR	N	Globe Wireless (Ltd.).
Do.	FX	KDO	9,410 (31.88)	PR	N	Do.
Do.	FX	KDQ	10,930 (27.45)	PR	N	Do.
Do.	FX	KDS	14,860 (20.19)	PR	N	Do.
Do.	FX	KDT	14,890 (20.15)	PR	N	Do.
Do.	FX	KDW	18,820 (15.94)	PR	N	Do.
Do.	FX	KDZ	22,700 (13.216)	PR	N	Do.
Honolulu, Hawaii, radio.	FC	KHX	2,596 (115.56)	PG		Libby, McNeill & Libby.
Hood Bay, Alaska ¹	FX	KGYP	212 (1,415), 246 (1,220)	PR	X	Hood Bay Canning Co.
Ikatan, Alaska ¹	FX	KIBO	222 (1,350), 252 (1,190)	PR	X	R. M. C. A.
Kailua, Hawaii ¹	FX	KQA	6,875 (43.64)	PR	N	M. R. T. Co.
Do.	FX	KQB	7,855 (39.09)	PR	N	Do.
Do.	FX	KQE	8,970 (33.44)	PR	N	Do.
Do.	FX	KQF	14,680 (20.44)	PR	N	Do.
Do.	FX	KQJ	14,755 (20.335)	PR	N	Do.
Do.	FX	KQN	14,770 (20.31)	PR	N	Do.
Do.	FX	KQU	19,560 (15.337)	PR	N	Do.
Do.	FX	KQY	19,600 (15.306)	PR	N	Do.
Kake, Alaska ¹	FX	KIAZ	262 (1,145), 274 (1,095), 3,092.5 (97.01)	PR	X	Alaska Pacific Salmon Corporation.
Do. ¹	FX	KIBA	3,092.5 (97.01)	PR	X	Do.
Do.	FX	KIBB	2,512 (119.42)	P	X	Do.
Karluk, Alaska ¹	FX	KIAJ	227 (1,320), 268 (1,220), 274 (1,095)	PR	X	Alaska Packers Association.
Katalla, Alaska ¹	FX	KGYQ	178 (1,685)	PR	X	Chilkat Oil Co.
Kenai, Alaska ¹	FX	KGYU	212 (1,415), 219 (1,370), 3,190 (94)	PR	X	Libby, McNeill & Libby.
Do. ¹	FC, FX	KGYV	3,190 (94)	P, PR	X	Do.
Do. ¹	FX	KIAA	219 (1,370), 256 (1,170)	PR	X	Northwestern Fisheries Co.
Ketchikan, Alaska ¹	FX	KIAX	3,092.5 (97.01)	PR	X	Alaska Pacific Salmon Corporation.
Do. ¹	FX	KIAY	do	PR	X	Do.
King Cove, Alaska ¹	FX	KIBM	222 (1,350), 252 (1,190)	PR	X	R. M. C. A.
Kvichak, Alaska ¹	FX	KIAF	246 (1,220), 274 (1,095)	PR	X	Alaska Packers Association.
Do.	FX	KIBT	262 (1,145), 274 (1,095)	PR	X	Bristol Bay Packing Co.
Latouche, Alaska ¹	FX	KGYM	187 (1,605), 219 (1,370)	PR	X	Kennecott Copper Corporation.

See footnotes at end of table.

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, 1931, 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
Lawrenceville, N. J. ⁴	FX	WKA	21,060 (14.245)	PR	X	American Telephone & Telegraph Co.
Do.....	FX	WKF	19,220 (15.61)	PR	N	Do.
Do.....	FX	WKK	21,420 (14.01)	PR	N	Do.
Do.....	FX	WKN	19,820 (15.136)	PR	N	Do.
Do.....	FX	WLA	18,340 (16.358)	PR	N	Do.
Do.....	FX	WLK	16,270 (18.44)	PR	N	Do.
Do.....	FX	WMA	13,390 (22.4)	PR	N	Do.
Do.....	FX	WMF	14,470 (20.73)	PR	N	Do.
Do.....	FX	WMN	14,590 (20.56)	PR	N	Do.
Do.....	FX	WNA	9,170 (32.72)	PR	N	Do.
Do.....	FX	WOA	6,755 (44.41)	PR	N	Do.
Do.....	FX	WOB	do	PR	N	Do.
Do.....	FX	WOF	9,750 (30.77)	PR	N	Do.
Do.....	FX	WOK	10,550 (28.44)	PR	N	Do.
Do.....	FX	WON	9,870 (30.4)	PR	N	Do.
Lazy Bay, Alaska ²	FX	KIBJ	222 (1,350), 262 (1,190), 268 (1,120).	PR	X	R. M. C. A.
Libbyville, Alaska ¹	FX	KIAL	178 (1,685), 219 (1,370), 256 (1,170), 272 (1,105), 3,184 (94.22).	PR	X	Libby, McNeill & Libby.
Do. ⁵	FX	KIAM	3,190 (94)	P, PR	X	Do.
Linden, N. J. ¹	FX	WMV	19,780 (15.167)	PR	X	Southern Radio Corporation.
Mackinac Island, Mich., radio. ⁷	FC	WHQ	410 (730), 425 (705), 454 (660).	PG	X	Mackinac Radio Service (E. M. Tellefson).
Mauna Loa, Hawaii radio. ¹	FC	KHY	2,596 (115.56)	PG		Libby, McNeill & Libby.
Mobile, Ala. ¹	FX	WFU	6,785 (44.22)	PR	N	T. R. T. Co.
Do.....	FX	WFW	10,470 (28.65)	PR	N	Do.
Do.....	FX	WFW	12,970 (23.13)	PR	N	Do.
Musselrock, Calif. ¹	FX	KGJ	7,430 (40.38)	PR	N	Globe Wireless (Ltd.).
Do.....	FX	GGG	7,445 (40.29)	PR	N	Do.
Do.....	FX	KGJ	9,410 (31.88)	PR	N	Do.
Do.....	FX	KGK	10,930 (27.45)	PR	N	Do.
Do.....	FX	KGL	14,860 (20.19)	PR	N	Do.
Do.....	FX	KGV	18,820 (15.94)	PR	N	Do.
Do.....	FX	KGZ	22,700 (13.216)	PR	N	Do.
Naknek, Alaska ²	FX	KIAD	246 (1,220), 268 (1,120), 274 (1,095).	PR	X	Alaska Packers Association.
New Orleans, La. ¹	FX	WFA	73 (4,110)	PR	N	T. R. T. Co.
Do.....	FX	WFB	90 (3,333)	PR	N	Do.
Do.....	FX	WFC	6,785 (44.22)	PR	N	Do.
Do.....	FX	WFD	10,470 (28.65)	PR	N	Do.
Do.....	FX	WFE	12,970 (23.13)	PR	N	Do.
Nushagak, Alaska ¹	FX	KIAC	256 (1,170), 274 (1,095)	PR	X	Northwestern Fisheries Co.
Do. ²	FX	KIBU	262 (1,145), 274 (1,095)	PR	X	Alaska Salmon Co.
Oceangate, N. J. ⁴	FX	WOG	16,270 (18.439)	PR	N	American Telephone & Telegraph Co.
Palo Alto, Calif. ¹	FX	KNA	39.39 (7,615), 51.68 (5,805), 63.18 (4,750), 68.92 (4,290), 83.86 (3,575), 97.5 (3,075), 4,396 (68.24), 4,400.5 (68.14), 5,975 (50.20), 5,982.5 (50.147).	PR	N	M. R. T. Co.
Do.....	FX	KWA	7,662.5 (39.15)	PR	N	Do.
Do.....	FX	KWB	7,737.5 (38.75)	PR	N	Do.
Do.....	FX	KWC	8,850 (33.9)	PR	N	Do.
Do.....	FX	KWD	8,990 (33.37)	PR	N	Do.
Do.....	FX	KWF	10,820 (27.73)	PR	N	Do.
Do.....	FX	KWI	10,890 (27.55)	PR	N	Do.
Do.....	FX	KWJ	13,000 (23.08)	PR	N	Do.
Do.....	FX	KWM	14,740 (20.35)	PR	N	Do.
Do.....	FX	KWP	17,680 (16.968)	PR	N	Do.
Do.....	FX	KWQ	18,260 (16.429)	PR	N	Do.
Do.....	FX	KWS	21,380 (14.032)	PR	N	Do.
Pillar Bay, Alaska ²	FX	KIBR	222 (1,350), 262 (1,145), 274 (1,095).	PR	X	R. M. C. A.
Pilot Point, Alaska ²	FX	KIAE	246 (1,220), 274 (1,095)	PR	X	Alaska Packers Association.
Port Althorp, Alaska. ⁵	FX	KIAV	246 (1,220), 3,092.5 (97.01).	PR	X	Alaska Pacific Salmon Corporation.
Do. ¹	FX	KIAW	3,092.5 (97.01)	PR	X	Do.
Do.....	FC	KIBC	2,512 (119.42)	P	X	Do.

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, 1931, 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
Port Moller, Alaska ¹	FX	KIBK	222 (1,350), 252 (1,190)---	PR	X	R. M. C. A.
Quadra, Alaska ¹	FX	KIAB	256 (1,170), 274 (1,095)---	PR	X	Northwestern Fisheries Co.
Rose Inlet, Alaska ¹	FX	KIAO	274 (1,095), 3,092.5 (97.01).	PR	X	Alaska Pacific Salmon Corporation.
Do. ⁵	FX	KIAP	3,092.5 (97.01)-----	PR	X	Do.
Do.	FC	KIAQ	2,512 (119.42)-----	P	X	Do.
Santa Flavia (moored vessel in Nushagak River, Alaska). ¹	FX	KIBS	256 (1,170), 274 (1,095)---	PR	X	R. M. C. A.
Sayville, N. Y. ¹	FX	WIB	6,815 (44.02)-----	PR	N	M. R. T. Co.
Do.	FX	WIC	7,870 (39.11)-----	PR	N	Do.
Do.	FX	WID	7,730 (38.81)-----	PR	N	Do.
Do.	FX	WIE	7,745 (38.74)-----	PR	N	Do.
Do.	FX	WIF	7,752.5 (38.7)-----	PR	N	Do.
Do.	FX	WIG	7,760 (38.66)-----	PR	N	Do.
Do.	FX	WIH	8,075 (37.15)-----	PR	N	Do.
Do.	FX	WIJ	8,710 (34.44)-----	PR	N	Do.
Do.	FX	WIN	8,980 (33.41)-----	PR	N	Do.
Do.	FX	WIQ	9,070 (33.08)-----	PR	N	Do.
Do.	FX	WIT	9,290 (32.29)-----	PR	N	Do.
Do.	FX	WIU	10,170 (29.5)-----	PR	N	Do.
Do.	FX	WIV	10,490 (28.6)-----	PR	N	Do.
Do.	FX	WIW	10,810 (27.75)-----	PR	N	Do.
Do.	FX	WIX	10,820 (27.73)-----	PR	N	Do.
Do.	FX	WJE	10,830 (27.7)-----	PR	N	Do.
Do.	FX	WJH	13,015 (23.05)-----	PR	N	Do.
Do.	FX	WJJ	13,030 (23.02)-----	PR	N	Do.
Do.	FX	WJV	13,960 (21.49)-----	PR	N	Do.
Do.	FX	WJX	14,680 (20.44)-----	PR	N	Do.
Do.	FX	WKB	14,695 (20.415)-----	PR	N	Do.
Do.	FX	WKE	14,725 (20.375)-----	PR	N	Do.
Do.	FX	WKH	14,755 (20.335)-----	PR	N	Do.
Do.	FX	WKR	17,140 (17.503)-----	PR	N	Do.
Do.	FX	WKS	17,660 (16.988)-----	PR	N	Do.
Do.	FX	WKT	17,700 (16.949)-----	PR	N	Do.
Do.	FX	WKV	8,990 (33.37)-----	PR	N	Do.
Do.	FX	WMD	18,780 (15.974)-----	PR	N	Do.
Do.	FX	WME	19,540 (15.253)-----	PR	N	Co.
Do.	FX	WMG	19,560 (15.337)-----	PR	N	Do.
Do.	FX	WMK	19,580 (15.322)-----	PR	N	Do.
Do.	FX	WMM	19,620 (15.291)-----	PR	N	Do.
Do.	FX	WMQ	19,740 (15.198)-----	PR	N	Do.
Do.	FX	WMS	20,300 (14.778)-----	PR	N	Do.
Do.	FX	WMY	20,980 (14.299)-----	PR	N	Do.
Do.	FX	WMZ	4,410 (68.02), 5,990 (50.083).	PR	N	Do.
Seldovia, Alaska ⁶	FX	KGYS	178 (1,685)-----	PR	X	Adam W. Lipke.
Somerville, Mass. ⁴ (police).	FX	WPEH	1,712 (175.23)-----	P	N	City of Somerville.
Taku Harbor, Alaska. ¹	FX	KGYW	220 (1,365), 246 (1,220)---	PR	X	Libby, McNeill & Libby.
Tyee, Alaska ¹	FX	KGYS	222 (1,350), 262 (1,145), 274 (1,095).	PR	X	Sebastian Stuart Fish Co.
Do. ⁵	FX	KGYT	2,538 (118.2)-----	P	X	Do.
Uganik, Alaska. ²	FX	KIBH	217 (1,380), 227 (1,320), 268 (1,120).	PR	X	R. M. C. A.
Uyak, Alaska ¹	FX	KGYZ	256 (1,170), 268 (1,120)---	PR	X	Northwestern Fisheries Co.
Do. ²	FX	KIAK	227 (1,320), 268 (1,120), 274 (1,095).	PR	X	Alaska Packers Association.
Vieques, P. R. radio. ³	FC,	WGW	171 (1,755), 194 (1,545), 438 (685.9), 500 (600).	PG,	X	Department of the Interior, Bureau of Insular Telegraph.
Warren, Alaska. ³	FX	KIBP	222 (1,350), 274 (1,095)---	PR	X	R. M. C. A.
Yakutat, Alaska ¹	FX	KIAN	220 (1,365), 227 (1,320)---	PR	X	Libby, McNeill & Libby.
Zachar Bay, Alaska. ²	FX	KIBN	222 (1,350), 268 (1,120)---	PR	X	R. M. C. A.
<i>Philippine Islands</i>						
Aparri (Cagayan) ¹	FX	KZRY	4,765 (62.95), 5,275 (56.88)---	PR	X	Philippine Insular Government.
Do.	FX	KZRR	6,905 (43.45)-----	PR	X	Do.
Catbalogan (Samar) ¹	FX	KZTG	5,005 (59.94)-----	PR	X	Do.
Cebu ¹	FX	KZCB	5,495 (54.59)-----	PR	X	Do.
Do.	FX	KZCC	6,950 (43.17)-----	PR	X	Do.
Do.	FX	KZCD	7,385 (40.62)-----	PR	X	Do.
Do.	FX	KZCF	4,775 (62.825), 5,475 (54.79)---	PR	X	Do.

See footnotes at end of table.

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, 1931, 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
<i>Philippine Islands—Continued</i>						
Davao (Mindanao) ¹	FX	KZDD	9,230 (32.5)	PR	X	Philippine Insular Government.
Do.....	FX	KZDV	5,065 (59.23), 5,085 (59.02)	PR	X	Do.
Iloilo ¹	FX	KZIL	5,325 (56.34)	PR	X	Do.
Do.....	FX	KZIM	4,705 (63.76)	PR	X	Do.
Legaspi (Albay) ¹	FX	KZSP	4,665 (54.31), 5,960 (50.34)	PR	X	Do.
Manila ¹	FX	KZCM	5,885 (50.98), 6,725 (44.61)	PR	X	Do.
Do.....	FX	KZML	4,935 (60.79), 5,870 (51.11)	PR	X	Do.
Do.....	FX	KZMM	7,775 (38.59)	PR	X	Do.
Do.....	FX	KZMN	9,630 (31.15)	PR	X	Do.
Do.....	FX	KZMP	6,995 (42.89)	PR	X	Do.
Surigao (Surigao) ¹	FX	KZSR	4,775 (62.825)	PR	X	Do.
Tacloban (Leyte) ¹	FX	KZTC	6,950 (43.17)	PR	X	Do.
Zamboanga (Zamboanga) ¹	FX	KZZB	9,330 (32.15)	PR	X	Do.
Do.....	FX	KZZG	6,180 (48.54), 6,860 (43.73)	PR	X	Do.

¹ Type, A1.

² Type, A1, A2.

³ Type, A1, A2, A3.

⁴ Type, A3.

⁵ Type, A1, A3.

⁶ Type, A2.

⁷ Type, B, A2.

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, 1931, 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—
Admiral Day ¹	KDDI	8	PG	X	Portland-California S. S. Co.....	Owner.
Admiral Gove ¹	KDDP	8	PG	X	do.....	Do.
Admiral Senn ¹	KDFI	8	PG	X	do.....	Do.
Admiral Wood ¹	KDLS	8	PG	X	do.....	Do.
Adventurer.....	WGEW	8	PG	X	August Felando and Paul Bogdanich.	Do.
Explorer.....	WJEX				Carl L. Justice.....	Do.
Invader.....	KDWR	8	PG	X	Joseph M. Schenck.....	R. M. C. A.
Lepus ²	KZLP	4	PG		Madrigal & Co.....	Owner.

¹ Type, B; fy., 375 (800), 410 (730), 425 (705), 454 (660), 500 (600).

² Type, B; fy., 375 (800), 425 (705), 500 (600).

³ Fy., 435 (690), 500 (600); hours, 8 to 11 a. m., 3 to 5 p. m., 9 to 11 p. m.

Commercial aircraft stations, alphabetically, by names of craft

[Additions to the List of Radio Stations of the United States, edition of June 30, 1931, and to the International List of Aircraft Stations, published by the Berne bureau]

Station	Call signal	Frequency, in kilocycles, meters in parentheses	Service	Hours	Licensee
NC-4V (Molokai).....	KHIMN		P	X	Inter-Island Airways (Ltd.).
NC-111-M (Hawaii).....	KHIRI		P	X	Do.
NC-112-M (Maui).....	KHISH		P	X	Do.
NC-422-H ¹	KHSIR	3,106 (96.59), 3,160 (94.9)	P	X	National Air Transport (Inc.).
NC-7523.....	KHIHS		P	X	Northwest Airways (Inc.).
NC-9673.....	KHARI		P	X	Pan American Airways (Inc.).

Type, A3.

Stations transmitting hydrographic reports

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Name	Call signal	Type	Frequency in kilocycles, wave length (meters) in parentheses	Time of emission (Greenwich civil time)
San Diego, Calif.	NPI	A1	102 (2,989)	0600, 1600, 2000.
Tatoosh, Wash.	NPD	A1	375 (800)	

Stations transmitting weather reports

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Name	Call signal	Type	Frequency in kilocycles, wave length (meters) in parentheses	Time of emission (Greenwich civil time)
Colon, Canal Zone	NAX	A1	500 (600)	1330.
St. Paul, Alaska	NPQ	A2	do	0800, 2000.
Tatoosh, Wash.	NPD	A1	375 (800)	0100, 0400, 1300, 1700, 2100.

Government ship stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, 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
Minneapolis	WYDS	396 (760)	O	X	U. S. Army.

Marine radiobeacon stations

[Addition to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, and to the International List of Stations Performing Special Services, published by the Berne bureau]

Mount Desert Light Station, Me.—Loc. 68° 07' 44" W., 43° 58' 08" N.; transmits every 180 seconds, groups of 1 dash and 3 dots, for 60 seconds, silent 120 seconds, thus:

— . . .
Silent
60 seconds
120 seconds

Fy., 305 (985); hours, transmits daily in clear weather during the third fifteen minutes of each hour, and continuously during thick or foggy weather.

Commercial and Government land, ship, aircraft, radiobeacon, and direction-finding stations, alphabetically by call signals

Call signal	Name of station	Call signal	Name of station
KDDI	Admiral Day	KDZ	Honolulu, Hawaii (Kaena Point-Oahu Island)
KDDP	Admiral Gove	KFR	Guam, Guam (Mariana Islands)
KDFI	Admiral Senn	KFU	do
KDLS	Admiral Wood	KFV	do
KDM	Honolulu, Hawaii (Kaena Point-Oahu Island)	KGF	Mussel rock, Calif.
KDO	do	KGG	do
KDQ	do	KGJ	do
KDS	do	KGK	do
KDT	do	KGL	do
KDW	do	KGV	do
KDWR	Invader	KGYL	False Pass, Alaska

Commercial and Government land, ship, aircraft, radiobeacon, and direction-finding stations, alphabetically by call signals—Continued

Call signal	Name of station	Call signal	Name of station		
KGYM	Latouche, Alaska	fx	KRW	Cypress, Calif.	fx
KGYN	Hawk Inlet, Alaska	fx	KRX	do	fx
KGYP	Hood Bay, Alaska	fx	KRY	do	fx
KGYQ	Katalla, Alaska	fx	KRZ	do	fx
KGYR	Tyee, Alaska	fx	KVN	Edmonds, Wash	fx
KOYS	Seldovia, Alaska	fx	KVR	do	fx
KGYT	Tyee, Alaska	fc	KVS	do	fx
KGYU	Kenai, Alaska	fx	KVT	do	fx
KGYV	do	fx	KVU	do	fx
KGYW	Taku Harbor, Alaska	fx	KVW	do	fx
KGYX	Allitak, Alaska	fx	KVX	do	fx
KGYZ	Dundas, Alaska	fx	KVY	do	x
KGZ	Uyak, Alaska	fx	KVZ	do	fx
KHARI	Musselrock, Calif.	fx	KWA	Palo Alto, Calif.	fx
KHIHS	NC-9673	a	KWB	do	fx
KHIMN	NC-7523	a	KWC	do	fx
KHIRI	NC-4V (Molokai)	a	KWD	do	fx
KHISH	NC-111-M (Hawaii)	a	KWF	do	fx
KHSIR	NC-112-M (Maui)	a	KWI	do	fx
KHX	NC-422-H	a	KWJ	do	fx
KHY	Honolulu, Hawaii radio	fc	KWM	do	fx
KIAA	Mauna Loa, Hawaii radio	fc	KWN	Dixon, Calif.	fx
KIAB	Kenai, Alaska	fx	KWP	Palo Alto, Calif.	fx
KIAC	Quadra, Alaska	fx	KWQ	do	fx
KIAD	Nushagak, Alaska	fx	KWS	do	fx
KIAE	Naknek, Alaska	fx	KWU	Dixon, Calif.	fx
KIAF	Pilot Point, Alaska	fx	KWV	do	fx
KIAG	Kvichak, Alaska	fx	KWX	do	fx
KIAH	Chignik, Alaska	fx	KWY	do	fx
KIAI	Becharof, Alaska	fx	KZCB	Cebu, P. I.	fx
KIAJ	Clarks Point, Alaska	fx	KZCC	do	fx
KIAK	Karluk, Alaska	fx	KZCD	do	fx
KIAL	Uyak, Alaska	fx	KZCF	do	fx
KIAM	Libbyville, Alaska	fc, fx	KZCM	Manila, P. I.	fx
KIAN	do	fx	KZDD	Davao, P. I. (Mindanao)	fx
KIAO	Yakutat, Alaska	fx	KZDV	do	fx
KIAP	Rose Inlet, Alaska	fx	KZIL	Iloilo, P. I.	fx
KIAQ	do	fx	KZIM	do	fx
KIAR	do	fx	KZLP	Lepus	b
KIAS	Drier Bay, Alaska	fx	KZML	Manila, P. I.	fx
KIAT	do	fx	KZMM	do	fx
KIAU	Funter Bay, Alaska	fx	KZMN	do	fx
KIAV	do	fx	KZMP	do	fx
KIAW	Port Althorp, Alaska	fx	KZRR	Aparri, P. I. (Cagayan)	fx
KIAX	do	fx	KZRY	do	fx
KIAY	Ketchikan, Alaska	fx	KZSP	Legaspi, P. I. (Albay)	fx
KIAZ	do	fx	KZSR	Surigao, P. I. (Surigao)	fx
KIBA	Kake, Alaska	fx	KZTC	Tacloban, P. I. (Leyte)	fx
KIBB	do	fc	KZTG	Catbalogan, P. I. (Samar)	fx
KIBC	do	fc	KZZB	Zamboanga, P. I. (Zamboanga)	fx
KIBE	Port Althorp, Alaska	fc	KZZG	do	fx
KIBG	Funter Bay, Alaska	fc	WAP	Hialeah, Fla.	fx
KIBH	Drier Bay, Alaska	fc	WAS	do	fx
KIBI	Uganik, Alaska	fx	WAT	do	fx
KIBJ	Daly, Alaska	fx	WAU	do	fx
KIBK	Lazy Bay, Alaska	fx	WAV	do	fx
KIBL	Port Moller, Alaska	fx	WAW	do	fx
KIBM	Annette Island, Alaska	fx	WBJ	Hingham, Mass.	fx
KIBN	King Cove, Alaska	fx	WBQ	do	fx
KIBO	Zachar Bay, Alaska	fx	WBV	do	fx
KIBP	Ikatan, Alaska	fx	WBW	do	fx
KIBR	Warren, Alaska	fx	WFA	New Orleans, La.	fx
KIBS	Pillar Bay, Alaska	fx	WFB	do	fx
KIBT	Santa Flavia (moored vessel in Nushagak River, Alaska)	fx	WFC	do	fx
KIBU	Kvichak, Alaska	fx	WFD	do	fx
KNA	Nushagak, Alaska	fx	WFE	do	fx
KQA	Palo Alto, Calif.	fx	WFU	Mobile, Ala.	fx
KQB	Kailua, Hawaii	fx	WFW	do	fx
KQC	do	fx	WGC	Garden City, N. Y.	fx
KQE	do	fx	WGD	do	fx
KQF	do	fx	WGE	do	fx
KQI	do	fx	WGEW	Adventurer	b
KQN	do	fx	WGF	Garden City, N. Y.	fx
KQU	do	fx	WGI	do	fx
KQY	do	fx	WGJ	do	fx
KRP	Cypress, Calif.	fx	WGM	do	fx
KRQ	do	fx	WGP	do	fx
KRS	do	fx	WGQ	do	fx
KRT	do	fx	WGW	Vieques, P. R., radio	fc, fx
KRV	do	fx	WHQ	Mackinac Island, Mich., radio	fc

Commercial and Government land, ship, aircraft, radiobeacon, and direction-finding stations, alphabetically by call signals—continued

Call signal	Name of station	Call signal	Name of station
WIB	Sayville, N. Y.fx	WKT	Sayville, N. Y.fx
WIC	dofx	WKV	dofx
WID	dofx	WKX	Ceiba, P. R., radio.....fc, fx
WIE	dofx	WLA	Lawrenceville, N. J.fx
WIF	dofx	WLK	dofx
WIG	dofx	WMA	dofx
WIH	dofx	WMD	Sayville, N. Y.fx
WIJ	dofx	WME	dofx
WIN	dofx	WMF	Lawrenceville, N. J.fx
WIQ	dofx	WMG	Sayville, N. Y.fx
WIT	dofx	WMK	dofx
WIU	dofx	WMM	dofx
WIV	dofx	WMN	Lawrenceville, N. J.fx
WIW	dofx	WMQ	Sayville, N. Y.fx
WIX	dofx	WMS	dofx
WJE	dofx	WMV	Linden, N. J.fx
WJEX	Explorer.....b	WMY	Sayville, N. Y.fx
WJH	Sayville, N. Y.fx	WMZ	dofx
WJJ	dofx	WNA	Lawrenceville, N. J.fx
WJV	dofx	WNC	Hialeah, Fla.fx
WJX	dofx	WND	dofx
WKA	Lawrenceville, N. J.fx	WOA	Lawrenceville, N. J.fx
WKB	Sayville, N. Y.fx	WOB	dofx
WKE	dofx	WOF	dofx
WKF	Lawrenceville, N. J.fx	WOG	Oceangate, N. J.fx
WKH	Sayville, N. Y.fx	WOK	Lawrenceville, N. J.fx
WKK	Lawrenceville, N. J.fx	WON	dofx
WKN	dofx	WPEH	Somerville, Mass. (police).....fx
WKR	Sayville, N. Y.fx	WPF	Akron, Ohiofx
WKS	dofx	WYDS	Minneapolis.....b

Broadcasting stations, by name of State and city

[Addition to the List of Radio Stations of the United States, edition of June 30, 1931]

State and city (Transmitter location; studio location in parentheses)	Call signal	Frequency, in kilocycles; meters in parentheses	Power (watts)
New Mexico: Clovis.....	KICA	1,370 (219).....	100

Broadcasting stations, by call signals

Call signal	Location of transmitter, studio loca- tion in parentheses (mail address)	Licensee	Frequency, in kilo- cycles; meters in parentheses	Power (watts)
KICA	Clovis, N. Mex., Main and Second Sts.	W. E. Whitmore.....	1,370 (219).....	100

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, 1931]

Station	Call signal	Frequency, in kilocycles; me- ters in parentheses	Power (watts)	Licensee and post-office address
Massachusetts: South Dartmouth.	W1XV.....	1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.69), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 26,000 (11.538).	500	Round Hills Radio Corporation.
Ohio: Dayton..... <i>Aircraft</i>	W8XM.....	4,795 (62.56).....	500	Master Electric Co., Davis Avenue.
NC-508-W.....	W10XB.....	60,000 (5) to 400,000 (.75).....	5	Joseph Lyman, 116 Old Orchard St., Boston, Mass.

Relay broadcasting and pick-up 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, 1931]

Station	Call signal	Frequency, in kilocycles; meters in parentheses	Power (watts)	Owner
<i>Portable</i>				
New York: New York.....	W2XBR..	2,342 (128.1).....	1	Knickerbocker Broadcast- ing Co. (Inc.), 1697 Broadway. Do.
Do.....	W2XBV..	1,518 (197.63).....	100	

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, 1931]

Station	Call signal	Frequency, in kilocycles; meters in parentheses	Power (watts)	Owner
Iowa: Iowa City.....	W9XX....	2,000 (150) to 2,100 (142.9)....	100	State University of Iowa.

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

Call signal	District and station	Call signal	District and station
W1XV	First district: South Dartmouth, Mass.	W8XM	Eighth district: Dayton, Ohio.
W2XBR	Second district:	W9XX	Ninth district: Iowa City, Iowa.
W2XBV	New York, N. Y. (portable). Do.	W10XB	Aircraft NC-508-W.

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, 1931, and to the International List of Fixed and Land Stations published by the Berne bureau]

AKRON, OHIO, WPDO.—Loc., 81° 30' 33'' W., 41° 04' 58'' N.

ALBANY, N. Y.—Fy., 2,316 (129.53), 2,356 (127.33), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).

ALBUQUERQUE, N. MEX.—Fy., strike out 278 (1,080), 2,722 (110.21), 3,070 (97.71), 3,076 (97.52), 4,108 (73.02), 6,350 (47.24), add 2,720 (110.3), 2,732 (109.8), 2,906 (103.23), 3,072.5 (97.63), 3,082.5 (97.32), 3,088 (97.15), 4,110 (72.99), 5,510 (54.45), 5,672.5 (52.88), 5,692.5 (52.7), 6,510 (46.08), 6,520 (46.01), 6,530 (45.94).

ALPENA, MICH., radio.—Hours, 8 a. m. to 5 p. m., daily, 8 to 12 a. m., Saturdays, 9 to 11 a. m., Sundays and holidays.

AMARILLO, TEX.—Fy., strike out 2,722 (110.21), 2,734 (109.72), 3,070 (97.71), 3,076 (97.52), 4,108 (73.02), 6,350 (47.24), add 2,720 (110.3), 2,732 (109.8), 2,906 (103.23), 3,072.5 (97.63), 3,082.5 (97.32), 3,088 (97.15), 4,110 (72.99), 5,540 (54.15), 5,672.5 (52.88), 5,692.5 (52.7), 6,510 (46.08), 6,520 (46.01), 6,530 (45.94).

- ATLANTA, GA. (Candler Field) WQDP.—Fy., strike out 2,326 (128.97), 2,344 (127.98), 3,484 (86.1), 4,140 (72.46), 5,630 (53.29), 6,260 (47.92), 6,275 (47.8), add 2,316 (129.53), 2,356 (127.33), 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).
- ATLANTA, GA., WEEA.—Fy., strike out 2,964 (101.21), 3,070 (97.71), 3,076 (97.5), 4,164 (72.04), 5,690 (52.72), 6,320 (47.46), add 2,380 (126.1), 2,922 (102.66), 2,946 (101.83), 6,590 (45.52), 6,600 (45.45).
- ATLANTA, GA., WPDY.—Fy., strike out 2,452 (122.35), add 2,414 (124.27).
- ATLANTIC CITY, N. J.—Fy., strike out 2,964 (101.21), 3,070 (97.71), 3,076 (97.5), 4,164 (72.04), 5,690 (52.72), 6,320 (47.46), add 2,380 (126.1), 2,922 (102.66), 2,946 (101.83), 2,986 (100.46), 4,130 (72.64), 5,652.5 (53.07), 6,590 (45.52), 6,600 (45.45); power, 18/2.
- BAKERSFIELD, CALIF., KGPS.—Fy., strike out 2,416 (124.17), add 2,414 (124.27).
- BALTIMORE, MD. (Logan Field).—Fy., strike out 2,964 (101.21), 3,070 (97.71), 3,076 (97.52), 4,164 (72.05), 5,690 (52.72), 6,320 (47.47), add 2,380 (126.1), 2,922 (102.66), 2,946 (101.83), 2,986 (100.46), 4,130 (72.64), 5,652.5 (53.07), 6,590 (45.52), 6,600 (45.45).
- BEAUMONT, TEX., radio.—Loc., 94° 04' 37" W., 30° 04' 07" N.; type, strike out B; hours, strike out N; add 8 a. m. to 5 p. m., daily.
- BEREA, OHIO (Cleveland municipal airport).—Fy., 2,316 (129.53), 2,356 (127.33), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).
- BERKELEY, CALIF.—Fy., strike out 2,410 (124.5), add 2,422 (123.86); hours, strike out X, add N.
- BIG SPRINGS, TEX. (municipal airport).—Fy., 2,316 (129.53), 2,356 (127.33), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).
- BOLINAS, CALIF., radio.—Fy., 126 (2,380), 136 (2,205), 143 (2,100), 436 (690), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,545 (54.1), 6,210 (48.31), 6,370 (47.1), 8,280 (36.23), 8,440 (35.55), 11,040 (27.17), 11,160 (26.88), 12,420 (24.15), 12,735 (23.56), 16,560 (18.116), 16,880 (17.773), 21,725 (13.809), 22,080 (13.587), 22,325 (13.438), 22,425 (13.378).
- BOSTON, MASS., radiotelephone WOU.—Loc., changed to Marshfield, Mass., radiotelephone (approximate), 70° 40' 00" W., 42° 04' 00" N.; type, add A1, A2; fy., strike out 2,566 (116.91), add 2,590 (115.8).
- BOSTON, MASS., WEY.—Fy., strike out 1,596 (187.97), add 1,558 (192.55).
- BRADENTON, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).
- BRAWLEY, CALIF.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- BUFFALO, N. Y. (municipal airport).—Fy., 2,316 (129.53), 2,356 (127.33), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.90), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).
- BUFFALO, N. Y., radio.—Fy., 143 (2,100), 161 (1,865), 410 (730), 425 (705), 454 (660), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,790 (62.63), 5,520 (54.35), 6,210 (48.31), 6,330 (47.39), 8,280 (36.23), 8,570 (35.01), 11,040 (27.17), 11,205 (26.775).
- BUFFALO, N. Y., WMJ.—Loc., 78° 52' 42" W., 42° 53' 08" N.; hours, strike out X, add N.
- BURBANK, CALIF., KSI.—Fy., strike out 2,722 (110.21), 2,734 (109.72), 3,070 (97.71), 3,076 (97.52), 4,108 (73.02), 6,350 (47.24), add 2,720 (110.3), 2,732 (109.8), 2,906 (103.23), 3,072.5 (97.63), 3,082.5 (97.32), 3,088 (97.15), 4,110 (72.99), 5,510 (54.45), 5,672.5 (52.88), 5,692.5 (52.7), 6,510 (46.08), 6,520 (46.01), 6,530 (45.96).
- BURBANK, CALIF. (Los Angeles) KGUR.—Fy., 2,316 (129.53), 2,356 (127.33), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).
- BUTLER, PA., WBR.—Hours, strike out X, add N.
- CARLSTADT, N. J., radio.—Read Carlstadt, N. J.; class, add FX; fy., 6,450 (46.51), 8,360 (35.89), 11,355 (26.42), 16,720 (17.943), 22,250 (13.483); service, strike out PG, add PR.

CHICAGO, ILL. (municipal airport).—Fy., 2,316 (129.53), 2,356 (127.33), 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).

CHICAGO, ILL., radio.—Fy., 143 (2,100), 167 (1,795), 410 (730), 425 (705), 454 (660), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,790 (62.63), 5,520 (54.35), 6,210 (48.31), 6,330 (47.39), 8,280 (36.23), 8,570 (35.01), 11,040 (27.17), 11,205 (26.775).

CHICAGO, ILL., WPDB.—Hours, strike out X, add N.

CHICAGO, ILL., WPDC.—Hours, strike out X, add N.

CHICAGO, ILL., WPDD.—Hours, strike out X, add N.

CINCINNATI, OHIO.—Loc., 84° 29' 28" W., 39° 06' 48" N.; hours, strike out X, add N.

CINCINNATI, OHIO (Lunken Field).—Fy., 2,316 (129.53), 2,356 (127.33), 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43).

CLEARWATER, CALIF. (Los Angeles) radio.—Fy., 418 (715), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 8,280 (36.23), 8,370 (35.84), 11,040 (27.17), 16,560 (18.116), 16,800 (17.857), 21,825 (13.746), 22,080 (13.587).

CLEVELAND, OHIO, WRDT.—Loc. (approximate), 81° 50' 45" W., 41° 24' 50" N.

COLUMBUS, OHIO, WPDI.—Loc., 82° 59' 57" W., 39° 57' 41" N.; fy., strike out 2,416 (124.17), add 2,430 (123.45).

CYPRESS, CALIF., radio.—Fy., 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,410 (46.8), 8,280 (36.23), 8,690 (34.52), 11,040 (27.17), 11,295 (26.56), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,975 (13.652), 22,080 (13.587).

DALLAS, TEX., KVP.—Hours, strike out X, add N.

DALLAS, TEX. (Love Field), KGUF.—Class, add FX; fy., 2,316 (129.53), 2,356 (127.33), 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,115 (72.9), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26), 6,540 (45.87), 6,550 (45.8), 6,560 (45.73), 8,015 (37.43); hours, X.

DAYTONA BEACH, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

DENVER, COLO.—Fy., strike out 2,440 (123), add 2,442 (122.85).

DES MOINES, IOWA.—Fy., strike out 1,662 (180.51), add 2,506 (119.71).

DETOUR, MICH., radio.—Fy., 143 (2,100), 161 (1,865), 410 (730), 425 (705), 454 (660), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,790 (62.63), 5,520 (54.35), 6,210 (48.31), 6,330 (47.39), 8,280 (36.23), 8,570 (35.01), 11,040 (27.17), 11,205 (26.775).

DETROIT MICH. (Belle Isle).—Fy., strike out 2,410 (124.5), add 2,414 (124.27).

DETROIT, MICH., WBM.—Fy., strike out 3,184 (94.2), add 3,190 (94).

DULUTH, MINN., radio.—Fy., 143 (2,100), 167 (1,795), 410 (730), 425 (705), 454 (660), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,790 (62.63), 5,520 (54.35), 6,210 (48.31), 6,330 (47.39), 8,280 (36.23), 8,570 (35.01), 11,040 (27.17), 11,205 (26.775).

EDMONDS, WASH., radio.—Fy., 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,410 (46.8), 8,280 (36.23), 8,690 (34.52), 11,040 (27.17), 11,295 (26.56), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,975 (13.652), 22,080 (13.587).

EVERETT, WASH., radio.—Class, strike out FX; type, add A1; fy., strike out 5,525 (54.3), 8,630 (34.76), 11,050 (27.15), add 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 8,280 (36.23), 8,640 (34.72), 11,040 (27.17).

FLINT, MICH.—Loc. (approximate), 83° 42' 00" W., 43° 01' 00" N.; fy., strike out 2,440 (123), add 2,442 (122.85); hours, strike out X, add N.

FORT LAUDERDALE, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

FORT MORGAN, ALA.—Disregard notice of deletion published in Radio Service Bulletin No. 167, February, 1931. Notice should have only read: class, strike out FX; fy., strike out 176 (1,705), 5,525 (54.3), 6,650 (45.11), 11,050 (27.15), 13,180 (22.76), 16,580 (18.094); service, strike out PR.

FORT MORGAN, ALA., radio.—Loc., 88° 03' 02" W., 30° 11' 15" N.; fy., strike out 4,172 (71.9), add 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,785 (62.69).

FORT PIERCE, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

FRACKVILLE, PA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

FRAMINGHAM, MASS.—Loc. (approximate), 71° 25' 20" W., 42° 18' 40" N.; fy., strike out 1,662 (180.51), add 1,574 (190.6).

FRANKFORT, MICH., radio.—Class, add FX; service, add PR.

FRESNO, CALIF. (Chandler Field), KGT.—Type, add A1, A2; fy., strike out 3,160 (94.9), 3,166 (94.75), 3,172 (94.57), 3,178 (94.39), 5,570 (53.86), 5,660 (53), add 3,162.5 (94.85), 3,172.5 (94.55), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).

FRESNO, CALIF., KGJI.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).

GARDEN CITY, N. Y., radio.—Fy., 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,410 (46.8), 8,280 (36.23), 8,690 (34.52), 11,040 (27.17), 11,295 (26.56), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,950 (13.667), 22,080 (13.587).

GRAND RAPIDS, MICH.—Fy., strike out 2,440 (123), add 2,442 (122.85).

GREENSBURG, PA.—Hours, strike out X, add N.

GROSSE POINTE VILLAGE, MICH.—Loc., 82° 54' 24" W., 42° 12' 30" N.; fy. strike out 2,410 (124.5), add 2,414 (124.27); hours, strike out X, add N.

GUAM, GUAM (Mariana Islands) radio KDC.—Fy., 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,400 (46.88), 8,280 (36.23), 8,680 (34.56), 11,040 (27.17), 11,280 (26.6), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,975 (13.652), 22,080 (13.587).

HARRISBURG, PA., WBA.—Hours, strike out X, add N.

HAZLETON, PA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

HIALEAH, FLA., radio.—Fy., 143 (2,100), 145 (2,070), 482 (620), 500 (600), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,785 (62.69), 6,210 (48.31), 6,310 (47.54), 8,280 (36.23), 8,490 (35.34), 11,040 (27.17), 11,250 (26.67), 16,560 (18.116), 16,980 (17.668), 21,675 (13.841), 22,080 (13.587).

HIGHLAND PARK, MICH.—Fy., strike out 2,410 (124.5), add 2,414 (124.27); hours, strike out X, add N.

HILLSBORO, OREG., radio.—Fy., 418 (715), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,260 (47.92), 11,040 (27.17), 11,130 (26.95), 16,560 (18.116), 21,775 (13.777), 22,080 (13.587).

HINGHAM, MASS., radio.—Fy., 143 (2,100), 147 (2,040), 436 (690), 500 (600), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,785 (62.69), 6,210 (48.31), 6,390 (46.95), 8,280 (36.23), 8,480 (35.38), 12,420 (24.15), 12,525 (23.95), 16,560 (18.116), 16,980 (17.668), 22,080 (13.587), 22,475 (13.348).

HONOLULU, HAWAII, radio (Kaena Point) KYG.—Fy., 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,400 (46.88), 8,280 (36.23), 8,680 (34.56), 11,040 (27.17), 11,280 (26.6), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 22,080 (13.587), 22,400 (13.393).

INDEPENDENCE, CALIF.—Fy., strike out 3,184 (94.2), add 3,190 (94).

INDIANAPOLIS, IND., WMDZ.—Fy., strike out 2,440 (123), add 2,422 (122.85); hours, strike out X, add N.

INDIO, CALIF., KGJB.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).

INGHAM, MICH.—Loc., changed to East Lansing, Mich.; fy., strike out 1,662 (180.51), add 1,574 (190.6).

LAKE CITY, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

LAKELAND, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

LANSING, MICH., WDDL.—Loc., (approximate) 84° 29' 00" W., 42° 24' 00" N.; fy., strike out 2,440 (123), add 2,442 (122.85).

LOS ANGELES, CALIF., KQT.—Fy., strike out 3,184 (94.2), add 3,190 (94).

LOS ANGELES, CALIF., KRM.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).

LOUISVILLE, KY., WPDE.—Fy., strike out 2,416 (184.17), 2,440 (123), add 2,442 (122.85); hours, strike out X, add N.

LUDINGTON, MICH., radio.—Fy., strike out 143 (2,100), 174 (1,725).

MANISTIQUE, MICH., radio.—Fy., strike out 174 (1,725); service, strike out P, add PR.

MANITOWOC, WIS., radio.—Class, add FX; service, add PR.

MARION, MASS., radio WCC.—Fy., 111 (2,705), 117 (2,565), 125 (2,400), 129 (2,325), 137 (2,190), 141 (2,130), 143 (2,100), 406 (740), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,545 (54.1), 6,210 (48.31), 6,320 (47.47), 6,360 (47.17), 8,280 (36.23), 8,450 (35.5), 11,040 (27.17), 11,145 (26.92), 11,220 (26.74), 12,420 (24.15), 12,645 (23.725), 16,560 (18.116), 16,900 (17.751), 21,750 (13.793), 21,875 (13.714), 22,080 (13.587), 22,300 (13.453).

MARION, MASS., radio WIM.—Loc., (approximate) 70° 46' 30" W., 41° 42' 45" N.

MARYSVILLE, MICH.—Fy., strike out 3,184 (94.2), add 3,190 (94).

MENOMINEE, MICH., radio.—Class, add FX; service, add PR.

MIAMI, FLA., WNH.—Fy., strike out 3,184 (94.2), add 3,190 (94).

MILLS FIELD, CALIF. (near).—Loc., changed to Redwood City, Calif. (near) (approximate) 122° 14' 00" W., 37° 30' 00" N.

- MILWAUKEE, WIS., WPKD.—Fy., strike out 2,452 (122.34), add 2,450 (122.44).
- MINNEAPOLIS, MINN., WLP.—Fy., strike out 3,184 (94.2), add 3,190 (94).
- MOBILE, ALA., radio.—Fy., 143 (2,100), 147 (2,040), 442 (680), 500 (600), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,785 (62.69), 6,210 (48.31), 6,280 (47.77), 11,040 (27.17), 11,265 (26.63), 16,560 (18.116), 16,980 (17.668), 22,080 (13.587), 22,500 (13.333).
- MODESTO, CALIF., KGJG.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- MUSSEL ROCK, CALIF., radio.—Loc., 122° 29' 36'' W., 37° 39' 12'' N.; fy., 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,400 (46.88), 8,280 (36.23), 8,680 (34.56), 11,040 (27.17), 11,280 (26.6), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,650 (13.857), 22,080 (13.587).
- NEW BRUNSWICK, N. J., WAD.—Loc., changed to Rocky Point, N. Y. (approximate) 72° 56' 30'' W., 40° 55' 45'' N.
- NEW BRUNSWICK, N. J., WAE.—Loc., changed to Rocky Point, N. Y. (approximate) 72° 56' 30'' W., 40° 55' 45'' N.
- NEW ORLEANS, LA., radio.—Fy., 143 (2,100), 149 (2,015), 448 (670), 500 (600), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,785 (62.69), 6,210 (48.31), 6,300 (47.62), 11,040 (27.17), 11,235 (26.7), 16,560 (18.116), 16,980 (17.668), 22,080 (13.587), 22,450 (13.363).
- NEW YORK, N. Y., radio WHD.—Read New York, N. Y.; class, add FX; fy., 6,450 (46.51), 8,360 (35.89), 11,355 (26.42), 16,720 (17.943), 22,250 (13.483); service, strike out PG, add PR; hours, strike out N, add X; rates, strike out 10 cents (52 centimes).
- OKLAHOMA CITY, OKLA., KGPH.—Fy., strike out 2,452 (122.34), add 2,450 (122.44).
- ORLANDO, FLA. (municipal airport).—Fy., 2,380 (126.1), 2,922 (102.66), 2,946 (101.83), 2,986 (100.46), 4,130 (72.64), 5,652.5 (53.07), 5,840 (51.37), 6,590 (45.52), 6,600 (45.45).
- PALATKA, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).
- PALO ALTO, CALIF., radio (near).—Fy., 107 (2,805), 123 (2,440), 143 (2,100), 418 (715), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,560 (53.96), 8,280 (36.23), 8,380 (35.8), 11,040 (27.17), 12,420 (24.15), 12,550 (23.9), 16,560 (18.116), 16,800 (17.857), 21,850 (13.73), 22,080 (13.587).
- PASADENA, CALIF.—Hours, strike out X, add N.
- PHILADELPHIA, PA., radio.—Fy., strike out all frequencies excepting 143 (2,100), 163 (1,840), 438 (685), 500 (600).
- PHILADELPHIA, PA. WPDG.—Loc. (approximate) 75° 13' 30'' W., 39° 59' 45'' N.; fy., strike out 2,440 (123), add 2,470 (121.5).
- PONCA CITY, OKLA., KSF.—Type, add A1, A2; fy., strike out 1,600 (187.5), 1,664 (180.29), 1,680 (178.6), 1,704 (176.06), add 1,602 (187.27), 1,628 (184.28), 1,676 (178.99), 1,700 (176.47).
- PORTLAND, OREG., KGPP.—Loc., 122° 40' 39'' W., 45° 31' 17'' N.; fy., strike out 2,416 (124.17), add 2,442 (122.85).
- PUNTA GORDA, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).
- RICHMOND, IND.—Fy., strike out 2,416 (124.17), add 2,442 (122.85).
- ROCHESTER, N. Y.—Fy., strike out 1,712 (175.23), add 2,458 (122.05); hours, strike out X, add N.
- ROCKLAND, ME., radio (near).—Fy., 109 (2,750), 121 (2,480), 143 (2,100), 418 (720), 500 (600).
- ROGERS CITY, MICH., radio.—Fy., strike out 177 (1,695).
- SACRAMENTO, CALIF., KRJ.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- SALINAS, CALIF.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- SANFORD, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).
- SAN FRANCISCO, CALIF., KGPD.—Fy., add 1,558 (192.55).
- SAN FRANCISCO, CALIF., KRG.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- SAN FRANCISCO, CALIF., KUP.—Class, add FX; fy., 6,440 (46.58), 8,350 (35.93), 11,340 (26.46), 16,700 (17.964), 22,225 (13.498); service, strike out P, add PR.
- SANTA MARIA, CALIF., KGJE.—Fy., strike out 4,244 (70.7), add 4,245 (70.67).
- SAYVILLE, N. Y., radio.—Fy., 109 (2,750), 120 (2,500), 143 (2,100), 392 (765), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,555 (54), 6,210 (48.31), 6,270 (47.85), 8,280 (36.23), 8,390 (35.76), 8,670 (34.6), 11,040 (27.17), 11,115 (26.99), 12,420 (24.15), 12,585 (23.84), 16,560 (18.116), 16,780 (17.878), 21,800 (13.761), 22,080 (13.587).
- SEATTLE, WASH., KGPA.—Fy., strike out 2,416 (124.7), add 2,414 (124.27); hours, strike out X, add N.

SEATTLE, WASH., radio.—Fy., 143 (2,100), 163 (1,840), 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,380 (47.02), 8,280 (36.23), 8,640 (34.72), 11,040 (27.17), 11,310 (26.53), 16,560 (18.116), 16,920 (17.73).

ST. AUGUSTINE, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

ST. CROIX FALLS, WIS.—Fy., strike out 3,184 (94.2), add 3,190 (94).

ST. LOUIS, MO., KGPC.—Loc., 90° 11' 58'' W., 38° 37' 30'' N.; hours, strike out X, add N.

SHERWOOD, OREG., radio.—Fy., 460 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 6,210 (48.31), 6,410 (46.8), 8,280 (36.23), 8,690 (34.52), 11,040 (27.17), 11,295 (26.56), 12,420 (24.15), 12,495 (24.01), 16,560 (18.116), 16,740 (17.921), 21,975 (13.652), 22,080 (13.587).

SOUTH SAN FRANCISCO, CALIF.—Loc., changed to Redwood City, Calif. (near approximate), 122° 14' 00'' W., 37° 30' 00'' N.

SUPERIOR, MICH.—Fy., strike out 3,184 (94.2), add 3,190 (94).

TAMPA, FLA., radio.—Fy., strike out 5,525 (54.3), 8,630 (34.76), add 3,105 (96.61), 3,120 (96.2), 5,520 (54.35), 8,280 (36.23), 8,640 (34.72).

TORRANCE, CALIF. (Los Angeles), radio.—Fy., 133 (2,255), 143 (2,100), 408 (735), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,550 (54.05), 8,280 (36.23), 8,420 (35.63), 11,040 (27.17), 11,190 (26.81), 12,420 (24.15), 13,080 (22.94), 16,560 (18.116), 22,080 (13.587), 22,275 (13.468).

TUCKERTON, N. J., radio.—Fy., 111 (2,705), 125 (2,400), 133 (2,255), 137 (2,190), 143 (2,100), 170 (1,765), 462 (650), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 5,550 (54.05), 6,210 (48.31), 6,340 (47.32), 6,350 (47.24), 8,280 (36.23), 8,430 (35.59), 11,040 (27.17), 11,175 (26.845), 11,205 (26.775), 12,420 (24.15), 12,675 (23.67), 13,050 (22.99), 16,560 (18.176), 16,860 (17.794), 21,700 (13.825), 21,900 (13.699), 22,080 (13.587), 22,350 (13.423).

TULARE, CALIF.—Fy., strike out 2,416 (124.17), add 2,414 (124.27); hours, strike out X, add N.

TULSA, OKLA., KGPO.—Fy., strike out 2,452 (122.35), add 2,450 (122.4).

VALLEJO, CALIF.—Fy., strike out 2,410 (124.5), add 2,422 (123.86).

WEST DOVER (CLEVELAND), OHIO, radio.—Fy., 143 (2,100), 161 (1,865), 410 (730), 425 (705), 454 (660), 3,105 (96.61), 3,120 (96.15), 4,140 (72.46), 4,790 (62.63), 5,520 (54.35), 6,210 (48.31), 6,330 (47.39), 8,280 (36.23), 8,570 (35.01), 11,040 (27.17), 11,205 (26.775).

WEST PALM BEACH, FLA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

WEST PALM BEACH, FLA., radio.—Fy., 121 (2,480), 143 (2,100), 392 (765), 500 (600), 3,105 (96.61), 3,120 (96.15), 5,520 (54.35), 8,280 (36.23), 8,380 (35.8), 8,670 (34.6), 11,040 (27.17), 11,130 (26.95), 16,560 (18.116), 22,080 (13.587).

WEST READING, PA.—Hours, strike out X, add N.

WICHITA, KANS., KGPZ.—Fy., strike out 2,452 (122.34), add 2,450 (122.4).

WILLIAMSPORT, PA.—Fy., strike out 3,184 (94.2), add 3,190 (94).

WYOMING, PA.—Hours, strike out X, add N.

YOUNGSTOWN, OHIO.—Loc. (approximate), 80° 39' 20'' W., 41° 04' 50'' N.; hours, strike out X, add N.

Portable

California KGKN, California KGKP.—Fy., strike out 4,116 (72.886), 8,630 (34.76), add 4,780 (62.76), 8,580 (34.97).

California KGWV.—Fy., strike out 1,552 (193.3), 1,554 (193.05), 1,556 (192.8), add 1,526 (196.59).

Fifth Radio Zone, read Fifth Radio Zone No. 22 (portable); Fifth Radio Zone, read Fifth Radio Zone No. 23 (portable); Fifth Radio Zone, read Fifth Radio Zone No. 24 (portable); Fifth Radio Zone, read Fifth Radio Zone No. 25 (portable); Louisiana, Mississippi, and Texas: No. 1; No. 2; No. 3; No. 4; No. 5; No. 6; No. 7; No. 8; No. 9; No. 10; No. 11; No. 12; No. 13; No. 14; No. 15; No. 16; No. 17; No. 18; No. 19. No. 1 KJZ; No. 3 KGVQ; No. 4 KGVV; No. 5 KGVV; No. 6 KGVV; Texas, and Louisiana: No. 1; No. 2; No. 3; No. 4; No. 5; No. 6; No. 7; No. 8; No. 9; No. 10; No. 11; No. 12; No. 13; No. 14; No. 15; No. 16; No. 17; No. 18. Third, Fourth, and Fifth Radio Zones: No. 29; No. 30; No. 31; No. 32; No. 33; No. 34; No. 35; No. 36; No. 37; No. 38; No. 39; No. 40; No. 41—Fy., for all, 1,602 (187.27), 1,628 (184.28), 1,676 (178.99), 1,700 (176.47).

Third Radio Zone: No. 1, No. 2, read No. 2 (portable) WCU; No. 2, No. 3, No. 4, No. 5, No. 6, No. 7, No. 8, No. 9, No. 10, No. 11, No. 12, No. 13, No. 14, No. 15, No. 16, No. 17, No. 18, No. 19, No. 20, No. 21, No. 26, No. 27, No. 28, No. 42, No. 43, No. 44, No. 45, No. 46, No. 47, No. 48, No. 49, No. 50, No. 51.—Fy., strike out 1,600 (187.5), 1,664 (180.29), 1,680 (178.6), 1,704 (176.06), add 1,602 (187.77), 1,628 (184.28), 1,676 (178.99), 1,700 (176.47).
 Western States.—Fy., strike out 1,600 (187.5), 1,664 (180.29), 1,680 (178.6), 1,704 (176.06), add 1,602 (187.27), 1,628 (184.28), 1,676 (178.99), 1,700 (176.47).

Philippine Islands

Aparri radio (Cagayan).—Class, strike out FX; fy., strike out 4,765 (62.95), 5,275 (56.88), 6,905 (43.45); service, strike out PR.
 Baganga radio.—Call changed to KAM.
 Batangas radio (Batangas).—Type, strike out B, add A2; fy., strike out 300 (1,000), 463 (650), add 193 (1,554).
 Cagayan (Misamis).—Call changed to KZCG.
 Cagayan radio (Sulu).—Type, strike out B, add A2; fy., strike out 400 (750), add 300 (1,000), 326 (920), 709.2 (425).
 Cebu (Cebu).—Licensee, International Harvester Co. of Philippines.
 Cebu radio.—Class, strike out FX; type, strike out B; fy., strike out 125 (2,400), 182.9 (1,642), 250 (1,200), 4,775 (62.825), 5,475 (54.75), 5,495 (54.59), 6,950 (43.17), 7,385 (40.62); service, strike out PR.
 Culion radio (Palawan).—Fy., strike out 333.3 (900), add 285.7 (1,050), 300 (1,000).
 Cuyo radio (Palawan).—Fy., strike out 267.9 (1,120), add 390 (770), 441 (680).
 Davao (Davao).—Licensee, International Harvester Co. of Philippines.
 Davao radio (Mindanao).—Class, strike out FX; fy., strike out 5,065 (59.23), 5,085 (59.02), 9,230 (32.50); service, strike out PR.
 Iloilo radio.—Class, strike out FX; type, strike out B; fy., strike out 125 (2,400), 153.8 (1,950), 187.5 (1,600), 250 (1,200), 316 (950), 4,705 (63.76), 5,325 (56.34); service, strike out PR.
 Laoag (Ilocos Norte).—Call changed to KZLG.
 Legaspi radio (Albay).—Class, strike out FX; fy., strike out 4,665 (64.31), 5,960 (50.34); service, strike out PR.
 Lucena.—Call changed to KZLN.
 Manila KZFM.—Licensee, International Harvester Co. of Philippines.
 Pasay (Rizal).—Loc., changed to Manila, P. I.; fy., strike out 4,935 (60.79), 5,870 (51.11), 5,885 (50.98), 6,725 (44.61), 6,995 (42.89), 7,775 (38.59), 9,630 (31.15).
 Sogod radio (Leyte).—Fy., strike out 414 (725), add 375 (800).
 Surigao radio (Surigao).—Class, strike out FX; fy., strike out 4,775 (62.825); service, strike out PR.
 Tacloban (Leyte).—Call changed to KZTB.
 Tolong (Oriental Negros).—Call changed to KZNG.
 Zamboanga radio (Zamboanga).—Class, strike out FX; fy., strike out 300 (1,000), 6,860 (43.73), 9,330 (32.15); service, strike out PR.
 Strike out all particulars of the following-named station: Lamit (Camarines Sur): Pasay.

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, 1931, and to the International List of Ship Stations, published by the Berne bureau]

A. D. MACBETH.—Type, strike out B, add A2; fy., class L.
 AGWIDALE.—Accts., Mallory S. S. Co.
 AGWIWORLD.—Fy., class L.
 ALGONQUIN KGDL.—Fy., class L; accts., M. R. T. Co.
 ALOHA.—Fy., class L.
 AMERICA KDOW.—Owner, U. S. S. B.
 AMERICAN TRAVELER.—Type, A1, A2; fy., class L and H; power, 26/15; hours, strike out X, add N.
 AVALON.—Type, strike out A3; fy., class L.
 BEACONLIGHT.—Fy., class L.
 BRAZOS.—Accts., M. R. T. Co.
 BREEZIN THRU.—Fy., class L.
 BRILLIANT.—Owner, Standard-Vacuum Transportation Co. (Inc.).

- CABRILLO.—Type, strike out A3; fy., class L.
CALAWAII.—Fy., class L.
CALIFORNIA KDRC.—Fy., class L.
CALIFORNIA WGDL.—Type, A3; fy., 2,322 (129.19), 2,738 (109.56); power, 20/10.
CAPITAN LUIS.—Owner, Pio V. Corpuz.
CATHERINE D.—Fy., class L.
CATALINA.—Type, strike out A1, A2, A3; fy., class L.
CHALENA.—Fy., class L; power, 20/11.
CHEROKEE.—Accts., M. R. T. Co.
CHINA ARROW.—Owner, Standard-Vacuum Transportation Co. (Inc.).
CHRISTY PAYNE.—Fy., class L.
COMAL.—Accts., M. R. T. Co.
COQUINA.—Owner, Los Angeles S. S. Co. (Inc.).
CORRALES.—Owner, Los Angeles S. S. Co. (Inc.).
CULBERSON.—Fy., class L.
DEPERE.—Accts., Alaska S. S. Co.
DIANA DOLLAR.—Accts., Dollar S. S. Lines (Inc.).
DIXIE.—Fy., class L.
EASTERN SWORD.—Type, B; fy., class L; power, 26/10.
ECUADOR.—Name changed to Santa Olivia.
EMIDIO.—Owner, Standard-Vacuum Transportation Co. (Inc.).
EMMA ALEXANDER.—Fy., class L.
EMPIRE ARROW.—Owner, Standard-Vacuum Transportation Co. (Inc.).
ESTRADA PALMA.—Hours, strike out N, add X.
EVANGELINE KGAZ.—Fy., class L.
FAIRFIELD.—Fy., class L.
FORTITUDE.—Fy., add 8,330 (36.01), 12,420 (24.15); power, 15.2/1.5; service, PG; hours, X; rates, 8 cents per word.
GEORGE WASHINGTON KDCL.—Owner, U. S. S. B.
GOLDEN DRAGON.—Fy., class L.
GOLDEN HIND.—Fy., class L.
GOLDEN STATE.—Fy., class L.
GULFWING.—Fy., class L.
HAVANA.—Fy., class L.
HENRY R. MALLORY.—Accts., M. R. T. Co.
H. F. DEBARDELEBEN.—Fy., class L.
ILLINOIS KDSZ.—Fy., class L.
IROQUOIS KGFD.—Accts., M. R. T. Co.
JUNIATA WMCW.—Fy., class L.
LAKE FRANCES.—Fy., class L.
LIDIV.—Correct call signal WGEX; accts., New York Telephone Co.
MAJOR JOHN W. MCKIE.—Correct call signal WGEQ.
MAUI.—Fy., class L.
MEDINA.—Accts., M. R. T. Co.
MOHAWK KFYU.—Accts., M. T. R. Co.
MONTANES.—Owner, Pio V. Corpuz.
NANTUCKET.—Hours, add X.
PECOS.—Accts., M. R. T. Co.
PETER WHITE.—Fy., class L.
POINT BONITA.—Owner, Swayne & Hoyt (Inc.); accts., M. R. T. Co.
POINT BRAVA.—Accts., M. R. T. Co.
POINT CALETA.—Accts., M. R. T. Co.
POINT FERMIN.—Owner, Gulf Pacific Mail Line, (Ltd.) (Inc.).
POINT GORDA.—Accts., M. R. T. Co.
POINT PALMAS.—Owner, Swayne & Hoyt (Inc.); accts., M. T. R. Co.
POLYBIUS.—Fy., class L.
PRESQUE ISLE.—Type, strike out B, add A1, A2.
SAN JUAN.—Fy., class L.
SEMINOLE WNCX.—Accts., M. R. T. Co.
SHAWNEE.—Accts., M. R. T. Co.
SHOGUN.—Fy., class L.
S. O. Co. No. 95.—Accts., Standard Oil Co. of Calif.
SONOMA.—Fy., class L.
STANDARD ARROW.—Owner, Standard-Vacuum Transportation Co. (Inc.).
STEEL SEAFARER.—Fy., class L.
TEJON.—Owner, Standard-Vacuum Transportation Co. (Inc.).
TIMBERMAN.—Owner, Los Angeles S. S. Co. (Inc.).

TOMALVA.—Hours, strike out N.

VELMA LYKES.—Type, strike out B, add A1, A2; fy., class L.

VENEZUELA.—Name changed to Santa Isabel.

WACOSTA.—Fy., class L; accts., M. R. T. Co.

WEST KYSKA.—Owner, Waterman S. S. Corporation.

WEST MAXIMUS.—Fy., class L; accts., M. R. T. Co.

WILHELMINA.—Fy., class L.

WILLIAM F. HUMPHREY.—Fy., class L.

WM. G. WARDEN.—Fy., class L.

YARMOUTH.—Fy., class L.

YLOILO.—Owner, The de la Rama S. S. Co. (Inc.).

Strike out all particulars of the following-named stations: Alice Cooke, Churruca, Consuelo, Davao, Ntr. Sra. Del Rosario, Union KZCJ.

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, 1931, and to the International List of Aircraft Stations, published by the Berne bureau]

- C-179-E, C-183-E, C-185-E, C-188-E, C-189-E, C-190-E, C-224-M, C-268, C-269, C-270, C-272, C-273, C-274, C-276, C-277, C-279, C-281, C-283, C-284, C-286, C-287, C-288, C-290, C-291, C-292, C-413-E, C-415-E, C-7135, C-7137, C-875-E, C-5389, C-7471.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-2-V (Creole); NC-23-V, NC-80-V, NC-81-V, NC-106-N, NC-142-M, NC-145-M, NC-146-M.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-153-H, NC-154-H, NC-174-H.—Fy., 3,190 (94.04), 5,602.5 (53.55).
- NC-226-M, NC-227-M, NC-228-M, NC-229-M, NC-230-M, NC-231.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-231-E.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-232-M, NC-234-M.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-304-N.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.71), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-311-N.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-395-E, NC-396-E.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-412-H.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-413-H (NAT No. 91), NC-414-E (NAT No. 72).—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-415-H.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-417-E (NAT No. 84), NC-420-H (NAT No. 92), NC-423-E (NAT No. 76), NC-424-E (NAT No. 77), NC-425-E (NAT No. 74), NC-426-H, NC-431-H, NC-434-H, NC-435-H, NC-436-H (NAT 98), NC-437-H, NC-439-H.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-454-E.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-489-E.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-539-V.—Fy., 3,190 (94.04), 5,602.5 (53.55).
- NC-585-K.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).

- NC-659-M (Havana), NC-660-M (Cuba), NC-663-M (Trinidad), NC-667-M, NC-668-M, NC-669-M, NC-670-M.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-725-W.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-747-N.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-793-K.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-708-Y, NC-709-Y, NC-710-Y, NC-711-Y, NC-712-Y, NC-732-N, NC-733-N, NC-734-N, NC-735-N, NC-737-N, NC-736-N, NC-738-N, NC-739-N, NC-740-N, NC-741-N, NC-742-N, NC-743-N, NC-744-N, NC-745-N, NC-746-N.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-811-H, NC-813-H, NC-814-H, NC-830-M.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-831-M, NC-832-M, NC-833-M, NC-842-M.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-943-M (Haiti), NC-944-M (San Juan), NC-946-M (Port of Spain).—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-968-V.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-985-H.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-3314, NC-8000, NC-8020, NC-8044.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-8414 (NAT No. 88), NC-8415 (NAT No. 89).—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-9107, NC-9137, NC-9151.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-9153.—Fy., 3,190 (94.04), 5,602.5 (53.55).
- NC-9637.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-9653, NC-9655.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-9664.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-9668 (NAT No. 86), NC-9669 (NAT No. 87).—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NC-9670.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-9671.—Fy., 3,222.5 (93.09), 3,232.5 (92.8), 3,242.5 (92.52), 3,257.5 (92.09), 3,447.5 (87.02), 3,457.5 (86.77), 3,467.5 (86.52), 3,485 (86.08), 4,917.5 (61), 5,602.5 (53.55), 5,612.5 (53.45), 5,632.5 (53.26).
- NC-9685, NC-9688, NC-9701, NC-9775, NC-9776.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).
- NC-10225-M, NC-10339, NC-10340, NC-10341, NC-10342, NC-10343, NC-10344, NC-10345, NC-10346 (No. 1427), NC-10347 (No. 1428), NC-10348, NC-10349, NC-10350, NC-10351, NC-10352, NC-10355.—Fy., 3,105 (96.62), 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.26), 5,572.5 (53.835), 5,582.5 (53.74), 5,662.5 (52.98).
- NR-41-V.—Fy., 333 (900), 500 (600), 1,708 (175.64), 2,870 (104.53), 3,082.5 (97.32), 5,405 (55.5), 5,692.5 (52.7), 8,220 (36.5), 12,330 (24.33), 16,440 (18.248).

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, 1931, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Strike out all particulars of the following-named stations: Great Lakes, Ill.; St. Augustine Fla. radio.

STATIONS TRANSMITTING TIME SIGNALS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, and to the International List of Stations Performing Special Service, published by the Berne bureau]

CAVITE, P. I.—Type, strike out A1, add A2; (U. S. L.).

Strike out all particulars of the following-named station: Great Lakes, Ill. (Chicago).

STATIONS TRANSMITTING HYDROGRAPHIC REPORTS

[Alterations and corrections to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1931, and to the International List of Ship Stations, published by the Berne bureau]

CAVITE, P. I.—Type, change A1 to A2 for 56 kcs. (5,354); type, fy., and hours, strike out A1, 17,744 (16.9), 1,230 G. C. T.; hours, strike out 1,230 G. C. T. for both 56 kcs. (5,354) and 8,872 kcs. (33.81).

HONOLULU, HAWAII.—Fy., strike out 54 (5,552), add 106 (2,828).

Strike out all particulars of the following-named stations: Colon, Canal Zone; Great Lakes, Ill. (Chicago).

STATIONS TRANSMITTING WEATHER REPORTS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1931, and to the International List of Aircraft Stations, published by the Berne bureau]

CAVITE, P. I.—Type, change A1 to A2 for 56 kcs. (5,354); hours, strike out 1230 G. C. T., for all frequencies.

DUTCH HARBOR, ALASKA.—Fy., strike out 185 (1,621), add 500 (600).

HONOLULU, HAWAII.—Fy., strike out 54 (5,552), add 106 (2,828).

JUPITER, FLA.—Type, strike out A2, add A1. (U. S. L.)

Strike out all particulars for the following-named stations: Great Lakes, Ill.; St. Augustine, Fla.

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, 1931, and to the International List of Ship Stations, published by the Berne bureau]

BARNETT.—Owner, U. S. Navy (U. S. L.).

BASS.—Owner, U. S. Navy. (U. S. L.)

HANNIVAL.—*Read Hannibal.* (U. S. L.).

POPE.—Owner, U. S. Navy. (U. S. L.).

RELIANCE.—Owner, U. S. Coast Guard. (U. S. L.).

WESTDAHL NIQF.—Correct call signal NIQF. (U. S. L.).

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, 1931, and to the International List of Stations Performing Special Services, published by the Berne bureau]

COLUMBIA RIVER LIGHTSHIP, OREG.—Characteristic signal changed to: transmits groups of two dashes and two dots, thus:

. . . etc.	Silent
60 seconds	120 seconds

SWIFTSURE BANK LIGHTSHIP, WASH.—Fy., strike out 290 (1,034), add 320 (938).

COMMERCIAL AND GOVERNMENT LAND, SHIP, AIRCRAFT, RADIOBEACON, AND
RADIOCOMPASS STATIONS, ALPHABETICALLY BY CALL SIGNALS

KAE, call changed to KZLN; KBB, call changed to KAM; KGXQ, read Redwood City, Calif. (near); KHP, read Fifth Radio Zone No. 25 (portable); KHS, read Fifth Radio Zone No. 24 (portable); KHW, read Fifth Radio Zone No. 23 (portable); KHZ, read Fifth Radio Zone No. 22 (portable); KIP, read Redwood City, Calif. (near); KTC, call changed to KZTB; KTE, call changed to KZLG; KTS, call changed to KZNG; KUX, call changed to KZCG; NIAV, correct call NIZV (U. S. L.); NMCT, correct call NZMCT (U. S. L.); WAD, read Rocky Point, N. Y.; WAE, read Rocky Point, N. Y.; WCU, read No. 2 (portable); WHD, read New York, N. Y.; WNCB, read Santa Isabel; WNCW, read Santa Olivia; WOU, read Marshfield, Mass., radiotelephone; WRDS, read East Lansing, Mich.; WRH, read Carlstadt, N. J.; strike out all particulars following the call signals KZAJ, KZBY, KZCJ, KZEC, KZFX, KZPC, NAJ, NAP, NAX, WJDO.

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, 1931, and the International List of Broadcasting Stations, published by the Berne bureau]

KCRC (Enid, Okla.).—Loc., 97° 52' 05" W., 36° 28' 20" N.
 KDKA (Saxonburg, Pa.).—Power, 50,000.
 KFI (Buena Park, Calif.).—Power, 50,000.
 KFJI (Astoria, Oreg.).—Loc., transmitter and studio changed to Klamath Falls, Oreg., (approximate) 121° 54' 00" W., 42° 15' 00" N.; post-office address, Willard Hotel; fy., 1,210 (247.9).
 KFJZ (Fort Worth, Tex.).—Licensee, Ralph S. Bishop.
 KGCU (Mandan, N. Dak.).—Post-office address, 404 West Main St.; fy., 1,240 (241.9); power, 250.
 KGEK (Yuma, Colo.).—Power, 100.
 KGEW (Ravenna, Nebr.).—Loc., transmitter and studio changed to Kearny, Nebr., (approximate) 99° 05' 00" W., 40° 41' 45" N.; post-office address 919 West Twenty-seventh Street, Kearny, Nebr.
 KGEZ (Kalispell, Mont.).—Licensee, Donald C. Treloar.
 KGY (Lacey, Wash.).—Licensee, KGY (Inc.).
 KIT (Yakima, Wash.).—Power, 100.
 KLO (Ogden, Utah).—Licensee, Interstate Broadcasting Corporation.
 KMCS (Inglewood, Calif.-Los Angeles).—Call changed to KRKD.
 KMLB (Monroe, La.).—Licensee, Liner's Broadcasting Station (Inc.).
 KMOX (St. Louis, Mo.).—Power, 50,000.
 KUT (Austin, Tex.).—Call changed to KNOW.
 KXRO (Aberdeen, Wash.).—Power, 100.
 KZRC (Cebu, P. I.).—Post-office address, Manila, P. I.; licensee, Erlanger & Galinger (Inc.).
 KZRM (Manila, P. I.).—Post-office address, Manila, P. I.; licensee, Erlanger & Galinger (Inc.).
 WAAW (Omaha, Nebr.).—Loc., 96° 00' 07" W., 41° 19' 31" N.
 WABC (Wayne, N. J.).—Power, 50,000.
 WABO (Rochester, N. Y.).—Licensee, WHEC (Inc.).
 WASH (Grand Rapids, Mich.).—Licensee, Kunsky-Trendle Broadcasting Corporation.
 WBOQ (Wayne, N. J.).—Power, 50,000.
 WBTM (Danville, Va.).—Licensee, Piedmont Broadcasting Corporation.
 WBZ (Millis Township, Mass.).—Power, 25,000.
 WKY (Crescent Springs-Covington, Ky.).—Loc., 84° 36' 20" W., 39° 04' 07" N.
 WCOA (Pensacola, Fla.).—Licensee, Pensacola Broadcasting Co.
 WDIX (Tupelo, Miss.).—Call changed to KCMC.
 WEDH (Erie, Pa.).—Call changed to WERE.
 WEFB (Bellmore, N. Y.).—Power, 50,000.
 WFDW (Anniston, Ala.).—Loc., 85° 49' 14" W., 35° 39' 47" N.
 WFIW (Hopkinsville, Ky.).—Loc. 87° 33' 58" W., 36° 51' 26" N.
 WHEC (Rochester, N. Y.).—Licensee, WHEC (Inc.).
 WIBG (Elkins Park, Pa.).—Licensee, WIBG (Inc.).
 WJAR (Providence, R. I.).—Power, 250 night, 500 day experimentally.
 WJSV (Mt. Vernon Hills, Va.).—Licensee, WJSV (Inc.).

WJZ (Bound Brook, N. J.).—Power, 30,000.
 WLW (Mason, Ohio).—Power, 50,000.
 WMAL (Washington, D. C.).—Licensee, M. A. Leese Radio Corporation.
 WOAI (Selma, Tex.).—Power, 50,000.
 WPFB (Hattiesburg, Miss.).—Post-office address, Hattiesburg Hotel; power, 100.
 WTAM (Brecksville Village, Ohio).—Power, 50,000.
 WTIC (Avon, Conn.).—Power, 50,000.
 WWSW (Wilkinsburg, Pa.).—Licensee, Walker & Downing Radio Corporation.
 Strike out all particulars of the following-named stations: KFQU (Alma-Holy City, Calif.); WPOE (Patchogue, N. Y.).

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, 1931]

CALIFORNIA:

Oakland W6XE.—Fy., 3,162.5 (94.86), 3,172.5 (94.56), 3,182.5 (94.268), 5,572.5 (53.835), 5,662.5 (52.98).

Palo Alto W6XV.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83).

CONNECTICUT: Middletown W1XN.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

FLORIDA: Hialeah W4XG.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

ILLINOIS: Elgin W9XAM.—Fy., 4,797.5 (62.53) only.

LOUISIANA: New Orleans W5XH.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

MARYLAND: Silver Spring W3XJ.—Fy., 1,550 (193.5) only.

MASSACHUSETTS:

Boston W1XAU.—Fy., 1,550 (193.5) only.

Cambridge W1XJ.—Fy., 1,594 (188.21), 2,398 (125.10), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325).

Cambridge W1XM.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538).

Chicopee Falls W1XAK.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 6,425 (46.7), 8,655 (34.65), 12,862.5 (23.325), 17,310 (17.331).

Dartmouth W1XAN—now portable.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.69).

Hingham W1XT; Marion W1XC; Medford W1XAW.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

South Dartmouth W1XP.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), and amateur bands.

Wianno W1XA.—Fy., 8,655 (34.65), 12,862.5 (23.325), 27,100 (11.070).

MONTANA: Bozeman W7XB.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

NEW JERSEY:

Boonton W3XW.—Fy., 3,492.5 (85.9), 6,425 (46.69).

Bound Brook W3XL.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

Camden W3XAB.—Fy., strike out 17,300 (17.341), add 17,310 (17.331).

Camden W3XAJ.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

Holmdel W2XM.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

Mendham W3XR.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 60,000 (5) to 400,000 (.75).

Newark W2XCU.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

NEW JERSEY—Continued.

Ocean Township W2XG.—Fy., 1,594 (188.21), 2,398 (125.1), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

Ocean Township W2XJ.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 60,000 (5) to 400,000 (.75).

Tuckerton W2XD.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 8,655 (34.66), 6,425 (46.7), 12,862.5 (23.325), 17,310 (17.331).

Whippany W3XN.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987).

NEW YORK:

Long Island City W2XAR.—Fy., 1,550 (193.5), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 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 (5.837), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

Long Island City W2XV.—Fy., 4,795 (62.57), 8,655 (34.66), 17,310 (17.331).

Riverhead W2XDC.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 34,600 (8.67), 51,400 (5.837), 60,000 (5) to 400,000 (.75).

Rocky Point W2XBL—now portable.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.69), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 25,700 (11.673), 34,600 (8.67), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

Rocky Point W2XBM, Rocky Point W2XAS.—Strike out all particulars.

Rocky Point W2XBP.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673).

Rocky Point W2XS.—Fy., add 25,700 (11.673), 51,400 (5.837).

Rocky Point W2XT.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987).

South Schenectady W2XAW.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83).

South Schenectady W2XO.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

NORTH DAKOTA: Grand Forks W9XJ.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

OHIO: Lakewood W8XB.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

PENNSYLVANIA: East Pittsburgh W8XS.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

WASHINGTON: Edmonds W7XC.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

WEST VIRGINIA: Morgantown W8XAW.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.32), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

Portable

CALIFORNIA:

California No. 1 W6XF; California No. 2 W6XJ.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83).

Cypress W6XAJ.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

San Francisco W6XBB.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 8,655 (34.66), 12,862.5 (23.325).

HAWAII: Honolulu K6XAK.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

ILLINOIS: Chicago W9XO.—Fy., 1,594 (188.21), 2,398 (125.1), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66).

MASSACHUSETTS: Medford W1XAI.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

NEW JERSEY:

New Jersey—throughout W2XAA.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

New Jersey—throughout W2XDD.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.69).

Ocean Township W2XAV.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987).

OHIO—throughout W8XG.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

OREGON: Portland W7XA.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.71), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331).

PENNSYLVANIA: East Pittsburgh W8XP.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 23,100 (12.987), 25,700 (11.673), 26,000 (11.538), 27,100 (11.070), 34,600 (8.67), 41,000 (7.31), 51,400 (5.83), 60,000 (5) to 400,000 (.75), 401,000 (.74) and above.

SIXTH AND SEVENTH RADIO DISTRICTS W10XAS.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53).

UNITED STATES—throughout W10XAN, United States—throughout W10XAP.—Fy., strike out 17,300 (17.341), add 17,310 (17.331).

Aircraft

NC-305N K6XC.—Fy., 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7).

NC-417H W10XAA, NC-952V W2XBX.—Fy., 1,594 (188.21), 2,398 (125.1), 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.7), 8,655 (34.66), 60,000 (5), to 400,000 (.75).

NC-11151 W10XAV.—Fy., 4,797.5 (62.53).

NC-5211 (No. 1928) W10XAQ.—Fy., 2,398 (125.1), 3,492.5 (85.9), 6,425 (46.7), 12,862.5 (23.325).

NC-9746 (W10XI.—Fy., 3,492.5 (85.9), 4,797.5 (62.53), 6,425 (46.69), 8,655 (34.66), 12,862.5 (23.325), 17,310 (17.331), 60,000 (5) to 400,000 (.75).

RELAY BROADCASTING AND PICK-UP 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, 1931]

Portable

NEW YORK: New York W2XDW, New York W2XDX, New York W2XDY, New York W2XDZ.—Fy., 1,542 (194.55), 2,478 (121.07).

UNITED STATES—throughout W10XAL, United States—throughout W10XAO.—Fy., 1,566 (191.57), 2,390 (125.52).

Vessels

Malolo W10XAI.—Strike out all particulars.

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, 1931, and the International List of Ships Stations published by the Berne bureau.

Name	Call signal	Owner
COMMERCIAL		
City of St. Louis.....	WFPC	Oceanic S. S. Co. (Inc.)
City of Savannah.....	WFCQ	Do.
Pecos.....	WHCH	Mallory S. S. Co.

NEW AMATEUR STATIONS IN THE PHILIPPINE ISLANDS

The call, location, and name of licensee of five new stations have been reported to this office as follows: KA1HR, Fort William McKinley, Rizal, P. I., George L. Richon; KA1LY, Manila, P. I., A. R. Lusey; KA1UP, Manila, P. I., Radio Society, University of the Philippines; KA1AF, Olongapo, Zambales, P. I. T. C. Lusk; KA1LG, Santa Cruz, Laguna, P. I., Leon C. Grove.

AERONAUTICAL RADIOTELEPHONE OPERATORS' LICENSE ESTABLISHED

The regulations governing the issuance of radio operators' licenses dated January 2, 1931, are amended (effective Jan. 25, 1932), to include a new class of license to be known as radiotelephone operator, aeronautical class.

An applicant for this class of license will be required to pass an examination dealing not only with radiotelephone apparatus such as used at aeronautical ground stations and on airplanes, but also on the subject of meteorology, laws governing the operation of aeronautical stations, both mobile and land, the general subject of airplane dispatching, air traffic laws, teletype operating procedure, and aids to aerial navigation.

No code test is required for this class of license.

A percentage of 75 will constitute a passing mark. No credit allowance will be made for experience in this examination.

Holders of other classes of operators' licenses, except amateur and radiotelephone, may qualify to operate aeronautical stations by passing this examination and having their present license endorsed to include this authority.

This class of license will be valid only for the operation of mobile or fixed aeronautical stations licensed for radiotelephone operation exclusively.

REGULATIONS RELATIVE TO DISTRESS MESSAGES

Paragraphs 210, 211, 212 of the rules and regulations promulgated by the Federal Radio Commission are given hereafter for the guidance of all concerned:

Paragraph 210. Radio communications or signals relating to ships or aircraft in distress shall be given absolute priority. Upon notice from any station, Government or commercial, all other transmission shall cease on such frequencies and for such time as may, in any way, interfere with the reception of distress signals or related traffic.

Paragraph 211. No station shall resume operation until the need for distress no longer exists, or it is determined that said station will not interfere with distress traffic as it is then being routed and said station shall again discontinue if the routing of distress traffic is so changed that said station will interfere. The status of distress traffic may be ascertained by communication with Government and commercial stations.

Paragraph 212. The commission may require at certain stations an effective, continuous watch on the distress frequency, 500 kilocycles (410 kilocycles in the Great Lakes area).

Copies of the publication Federal Radio Commission Rules and Regulations, which contains the above-cited regulations as well as all others, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 45 cents a copy, payable in advance, preferably by money order.

INTERNATIONAL ICE-PATROL SERVICE

The Coast Guard cutters *Pontchartrain* and *Tampa* have been detailed for the season of 1932 to carry on the International Ice-Observation and Ice-Patrol Service provided for by the International Convention for the Safety of Life at Sea at London in 1913 and 1914.

The object of the ice-patrol service is to locate the icebergs and field ice nearest to the trans-Atlantic steamship lane. It will be the duty of the patrol vessels to determine the southerly, easterly, and westerly limits of the ice and to keep in touch with these fields as they move to the southward in order that radio messages may be sent out daily, giving the whereabouts of the ice, particularly the ice that may be in the immediate vicinity of the regular trans-Atlantic steamship lanes.

During the months of March, April, May, and June, and as much longer as necessary, these two vessels will base at Halifax, Nova Scotia. The patrol will be continuous, and the vessel on patrol will not leave her station until relieved by the other vessel unless it is absolutely necessary to do so.

Having located the ice, the vessel on patrol will transmit four daily radio broadcasts, giving ice information for the benefit of shipping, each broadcast being transmitted twice with an interval of two minutes. Each broadcast will be preceded by the general call CQ on 500 kilocycles (600 meters) from the vessel on patrol (NIDK) immediately followed by the ice broadcast on the frequency specified as follows:

Time		Frequency in kilocycles (meters in parenthesis)
G. C. T.	Seventy-fifth meridian	
0000	1900	175 (1,715)
1100	0600	425 (705)
1200	0700	175 (1,715)
2300	1800	425 (705)

The radio procedure will be in accordance with the provisions of the International Radiotelegraph Convention of Washington, 1927, which went into effect January 1, 1929.

Ice information will be given by radio at any time to any ship with which the patrol vessel can communicate. Such information will be furnished as regular radio traffic (without charge) on commercial traffic frequencies.

Ice information broadcasts will be given in as plain, concise English as practicable and will state in the following order: (a) Position of patrol vessel, (b) location and description of ice, and (c) other data.

The ice-patrol vessels' general radio call letters are NIDK. This is a special call for the vessel actually on patrol and should not be confused with the regular radio call letters assigned to the individual vessels.

The radio messages from the ice-patrol vessel and from other sources will be given publicity by the Hydrographic Office, as follows:

Station	Call signal	Time		Frequency in kilocycles (meters in parentheses)	Type of wave
		G. C. T.	Seventy-fifth meridian standard		
Washington, D. C.	NAA	1700	1200	113 (2,655)	A2
		0200	2100	113 (2,655)	A2
Boston, Mass.....	NAD	1600	1100	102 (2,940)	A1
		2200	1700	102 (2,940)	A1
New York, N. Y..	NAH	1530	1030	102 (2,940)	A1
		2130	1630	102 (2,940)	A1
Norfolk, Va.....	NAM	0900	0400	122 (2,460)	A1
		1600	1100	122 (2,460)	A1
		2100	1600	122 (2,460)	A1

FREQUENCY MEASUREMENTS OF BROADCASTING STATIONS DURING DECEMBER

During last month the frequency monitoring stations of the Radio Division of the Department of Commerce measured 422 broadcasting stations representing a larger number measured than during any previous month. Of the 422, 190 or 45 per cent deviated less than 50 cycles either way (higher or lower than the assigned frequency), 98 or 23.2 per cent deviated less than 100 cycles, 64 or 15.2 less than 200 and the remaining 70 or 16.6 per cent went over the 200-cycle mark.

In view of the fact that 45 per cent of those measured deviated less than 50 cycles, a greater percentage than shown heretofore, it indicates considerable improvement in the frequency stability.

The following table gives the figures for the months December, 1930, to December, 1931, inclusive:

Month	Number stations measured	Less than 50 cycles	Less than 100 cycles	Less than 200 cycles	Over 200 cycles
December 1930	339		35 (13.5%)	66 (16.5%)	238 (70%)
January 1931	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%)
June	330	97 (29.4%)	71 (21.5%)	69 (20.9%)	93 (28.2%)
July	294	94 (32%)	70 (23.8%)	60 (20.4%)	70 (23.8%)
August	304	117 (38.5%)	64 (21%)	67 (22%)	56 (18.5%)
September	328	115 (35%)	72 (22%)	68 (21%)	73 (22%)
October	381	136 (35.7%)	97 (25.4%)	72 (18.9%)	76 (20%)
November	383	153 (40%)	86 (22.5%)	76 (20%)	68 (17.6%)
December	422	190 (45%)	98 (23.2%)	64 (15.2%)	70 (16.6%)

LESS THAN 50 CYCLES

Call signal	Transmitter location, studio location in parentheses	Call signal	Transmitter location, studio location in parentheses
KCRC	Enid, Okla.	KLX	Oakland, Calif.
KELW	Burbank, Calif.	KLZ	Denver, Colo.
KEX	Portland, Oreg.	KMAC	San Antonio, Tex.
KFAB	Lincoln, Nebr.	KMED	Medford, Oreg.
KFAC	Los Angeles, Calif.	KMLB	Monroe, La.
KFBK	Sacramento, Calif.	KMO	Tacoma, Wash.
KFDM	Beaumont, Tex.	KMOC	St. Louis, Mo.
KFEQ	St. Joseph, Mo.	KMPC	Beverly Hills, Calif.
KFJF	Oklahoma City, Okla.	KOAC	Corvallis, Oreg.
KFJR	Portland, Oreg.	KOH	Reno, Nev.
KFKU	Lawrence, Kans.	KOIL	Council Bluffs, Iowa.
KFLV	Rockford, Ill.	KOMO	Harbor Island, Wash. (Seattle).
KFOR	Lincoln, Nebr.	KPO	San Francisco, Calif.
KFPM	Greenville, Tex.	KPPC	Pasadena, Calif.
KFQU	Alma-Holy City, Calif.	KRE	Berkeley, Calif.
KFSD	San Diego, Calif.	KRLD	Dallas, Tex.
KFUL	Galveston, Tex.	KRMD	Shreveport, La.
KFVS	Cape Girardeau, Mo.	KRSC	Seattle, Wash.
KFWI	San Francisco, Calif.	KSAC	Manhattan, Kans.
KFXF	Denver, Colo.	KSD	St. Louis, Mo.
KFYR	Bismarck, N. Dak.	KSL	Salt Lake City, Utah.
KGB	San Diego, Calif.	KSO	Clarinda, Iowa.
KGBZ	York, Nebr.	KSOO	Sioux Falls, S. Dak.
KGDM	Stockton, Calif.	KSTP	Radio Center, Minn. (St. Paul).
KGER	Long Beach, Calif.	KTAB	Oakland, Calif. (San Francisco).
KGFJ	Los Angeles, Calif.	KTAR	Phoenix, Ariz.
KGGC	San Francisco, Calif.	KTAT	Birdville, Tex. (Fort Worth).
KGHI	Little Rock, Ark.	KTBS	Shreveport, La.
KGKB	Tyler, Tex.	KTFI	Twin Falls, Idaho.
KGNF	North Platte, Nebr.	KTHS	Hot Springs, Ark.
KGNO	Dodge City, Iowa.	KTM	Santa Monica, Calif. (Los Angeles).
KGO	Oakland, Calif. (San Francisco).	KTRH	Houston, Tex.
KGW	Faloma, Oreg. (Portland).	KTSM	El Paso, Tex.
KHQ	Spokane, Wash.	KVOO	Tulsa, Okla.
KJBS	San Francisco, Calif.	KWJJ	Portland, Oreg.
KJR	Seattle, Wash.	KWK	Kirkwood, Mo. (St. Louis).

LESS THAN 50 CYCLES—Continued

Call signal	Transmitter location, studio location in parentheses	Call signal	Transmitter location, studio location in parentheses
KXA	Seattle, Wash.	WHN	New York, N. Y.
KXL	Portland, Oreg.	WHO	Des Moines, Iowa.
KYA	San Francisco, Calif.	WHP	Lemoynne, Pa. (Harrisburg).
WAAF	Chicago, Ill.	WIBO	Desplaines, Ill. (Chicago).
WADC	Tallmadge, Ohio.	WIIM	Carrcroft-Edge Moor, Del. (Wilmington).
WAWZ	Zarepath, N. J.	WIP	Philadelphia, Pa.
WBAA	West Lafayette, Ind.	WFAN	
WBAK	Harrisburg, Pa.	WISN	Milwaukee, Wis.
WBAL	Glen Morris, Md. (Baltimore).	WJAC	Johnstown, Pa.
WBAP	Grapevine, Tex. (Fort Worth).	WJAG	Norfolk, Nebr.
WBBL	Richmond, Va.	WJAX	Jacksonville, Fla.
WBBZ	Ponca City, Okla.	WJBO	New Orleans, La.
WBEN	Martinsville, N. Y. (Buffalo).	WJJD	Mooseheart, Ill.
WBNX	New York, N. Y.	WJSV	Mount Vernon Hills, Va. (Alexandria).
WBRE	Wilkes-Barre, Pa.	WJZ	Bound Brook, N. J. (New York, N. Y.).
WBSO	Needham, Mass.	WKBH	La Crosse, Wis.
WBT	Charlotte, N. C.	WKRC	Cincinnati, Ohio.
WBTM	Danville, Va.	WLBC	Muncie, Ind.
WBZ	} Millis Township, Mass. (Boston).	WLBZ	Bangor, Me.
WBZA			WLIT
WCAH	Columbus, Ohio.	WLS	Downers Grove, Ill. (Chicago).
WCAJ	Lincoln, Nebr.	WLW	Mason, Ohio. (Cincinnati).
WCAL	Northfield, Minn.	WMAL	Washington, D. C.
WCAO	Baltimore, Md.	WMAQ	Addison, Ill. (Chicago).
WCAU	Byberry, Pa. (Philadelphia).	WMBG	Detroit, Mich.
WCBD	Zion, Ill.	WNBH	Fair Haven, Mass. (New Bedford).
WCBM	Baltimore, Md.	WOAI	Selma, Tex. (San Antonio).
WCDA	Cliffside Park, N. J. (New York, N. Y.).	WOC	Davenport, Iowa.
WCFL	Chicago, Ill.	WODA	Patterson, N. J.
WCHI	Deerfield, Ill. (Chicago).	WOI	Ames, Iowa.
WCSH	Scarboro, Me. (Portland).	WOKO	Albany, N. Y.
WDAE	Tampa, Fla.	WOL	Washington, D. C.
WDAF	Kansas City, Mo.	WOMT	Manitowoc, Wis.
WDAG	Amarillo, Tex.	WOQ	Kansas City, Mo.
WDBJ	Roanoke, Va.	WOR	Kearny, N. J. (Newark).
WDEL	Wilmington, Del.	WORC	} Auburn, Mass. (Worcester).
WDOD	Brainerd, Tenn. (Chattanooga).	WEPS	
WEBC	Superior, Wis.	WOS	Jefferson, City, Mo.
WEBQ	Harrisburg, Ill.	WOW	Omaha, Nebr.
WEBR	Buffalo, N. Y.	WOWO	Fort Wayne, Ind.
WEDC	Chicago, Ill.	WPG	Atlantic City, N. J.
WEEL	Weymouth, Mass. (Boston).	WPTF	Raleigh, N. C.
WENR	Downers Grove, Ill. (Chicago).	WQBC	Vicksburg, Miss.
WFAA	Grapevine, Tex. (Dallas).	WRAX	Philadelphia, Pa.
WFBE	Cincinnati, Ohio.	WRC	Washington, D. C.
WFI	Philadelphia, Pa.	WRHM	Fridley, Minn. (Minneapolis).
WFIW	Hopkinsville, Ky.	WRUF	Gainesville, Fla.
WFOX	Brooklyn, N. Y.	WSAR	Fall River, Mass.
WGAL	Lancaster, Pa.	WSB	Atlanta, Ga.
WGBI	Scranton, Pa.	WSBT	South Bend, Ind.
WGCM	Mississippi City, Miss. (Gulfport).	WSEN	Columbus, Ohio.
WGES	Chicago, Ill.	WSM	Nashville, Tenn.
WGH	Newport News, Va.	WSUI	Iowa City, Iowa.
WGR	Amherst, N. Y. (Buffalo).	WTAG	Worcester, Mass.
WHAS	Louisville, Ky.	WTAM	Brecksville Village, Ohio (Cleveland).
WHAZ	Troy, N. Y.	WTAH	} Norfolk, Va.
WHB	Kansas City, Mo.	WPOR	
WHBD	Mount Orab, Ohio.	WTIC	Mount Avon, Conn. (Hartford).
WHDH	Gloucester, Mass. (Boston).	WWJ	Detroit, Mich.
WHEC	} Rochester, N. Y.	WWSW	Pittsburgh, Pa.
WABO			WXYZ
WHK	Village of Seven Hills, Ohio (Cleveland).		

LESS THAN 100 CY

KBPS	Portland, Oreg.	KFRU	Columbia, Mo.
KBTM	Paragould, Ark.	KFSG	Los Angeles, Calif.
KDKA	Saxonburg, Pa. (Pittsburgh).	KFKM	San Bernardino, Calif.
KDYL	Salt Lake City, Utah.	KGA	Spokane, Wash.
KFEL	Denver, Colo.	KGCA	Decorah, Iowa.
KFH	Wichita, Kans.	KGFI	Corpus Christi, Tex.
KFI	Los Angeles, Calif.	KGGF	Coffeyville, Okla.
KFKA	Greeley, Colo.	KGIZ	Grant City, Mo.
KFKX	} Bloomington, Ill. (Chicago)	KGKL	San Angelo, Tex.
KYW			KHJ
KFPL	Dublin, Tex.	KICK	Red Oak, Iowa.
KFMX	Northfield, Minn.	KLO	Ogden, Utah.
KFNF	Shenandoah, Iowa.	KLS	Oakland, Calif.
KFOX	Long Beach, Calif.	KMBC	Independence, Mo. (Kansas City).
KFRC	San Francisco, Calif.	KMCS	Inglewood, Calif.

LESS THAN 100 CYCLES—Continued

Call signal	Transmitter location, studio location in parentheses	Call signal	Transmitter location, studio location in parentheses
KMMJ	Clay Center, Nebr.	WIBW	Topeka, Kans.
KOA	Denver, Colo.	WJAS	Pittsburgh, Pa.
KOL	Seattle, Wash.	WJBW	New Orleans, La.
KOY	Phoenix, Ariz.	WJKS	Gary, Ind.
KPCB	Seattle, Wash.	WJR	Sylvan Lake Village, Mich. (Detroit).
KREG	Santa Ana, Calif.	WKBFB	Clermont, Ind. (Indianapolis).
KUOA	Fayetteville, Ark.	WKBI	Chicago, Ill.
KVI	Des Moines, Wash. (Tacoma).	WKJC	Lancaster, Pa.
KVOR	Colorado Springs, Colo.	WKY	Oklahoma City, Okla.
KVOS	Bellingham, Wash.	WKZO	Kalamazoo, Mich.
KWKH	Kennonwood, La. (Shreveport).	WLAC	Nashville, Tenn.
WAAB	Lexington, Mass.	WLEY	Lexington, Mass.
WABC	Wayne, N. J. (New York, N. Y.).	WLVA	Lynchburg, Va.
WAIU	Columbus, Ohio.	WMBI	Addison, Ill. (Chicago).
WAPI	Birmingham, Ala.	WMPC	Lapeer, Mich.
WASH	Grand Rapids, Mich.	WMT	Waterloo, Iowa.
WBCM	Bay City, Mich.	WNAX	Yankton, S. Dak.
WCAP	Asbury Park, N. J.	WNBFB	Binghamton, N. Y.
WCCO	Anoka, Minn. (Minneapolis).	WNBW	Carbondale, Pa.
WCKY	Crescent Springs, Ky. (Covington).	WNYC	New York, N. Y.
WCRW	Chicago, Ill.	WOAX	Trenton, N. J.
WDBO	Orlando, Fla.	WPRO	Providence, R. I.
WDGY	Minneapolis, Minn.	WREC	Whitehaven, Tenn. (Memphis).
WDRC	Bloomfield, Conn. (Hartford).	WREN	Lawrence, Kans.
WDSU	Gretna, La. (New Orleans).	WRNY	Coytesville, N. J. (New York, N. Y.).
WEAF	Bellmore, N. Y. (New York, N. Y.).	WRR	Dallas, Tex.
WFBL	Collamer, N. Y. (Syracuse).	WRVA	Mechanicsville, Va. (Richmond).
WGAR	Cuyahoga Heights, Ohio (Cleveland).	WSBC	Chicago, Ill.
WGN	Elgin, Ill. (Chicago).	WSMB	New Orleans, La.
WGY	Schenectady, N. Y.	WSPD	Toledo, Ohio.
WHAD	Milwaukee, Wis.	WTAD	Quincy, Ill.
WHAM	Rochester, N. Y.	WTMJ	Brookfield, Wis. (Milwaukee).
WHAP	New York, N. Y.	WWL	New Orleans, La.
WHBY	West de Pere, Wis. (Green Bay).	WWVA	Wheeling, W. Va.
WIBA	Madison, Wis.		

LESS THAN 200 CYCLES

KDB	Santa Barbara, Calif.	WELK	Philadelphia, Pa.
KECA	Los Angeles, Calif.	WEVD	Forest Hills, N. Y. (New York, N. Y.).
KFBB	Great Falls, Mont.	WFAM	South Bend, Ind.
KFJM	Grand Forks, N. Dak.	WFBR	Baltimore, Md.
KFLX	Galveston, Tex.	WGBF	Evansville, Ind.
KFVD	Culver City, Calif.	WHAT	Philadelphia, Pa.
KFWB	Hollywood, Calif.	WHFC	Cicero, Ill.
KGFG	Oklahoma City, Okla.	WHOM	Jersey City, N. J.
KGGM	Albuquerque, N. Mex.	WIBM	Jackson, Mich.
KGKY	Scottsbluff, Nebr.	WJAR	Providence, R. I.
KMJ	Fresno, Calif.	WJAY	Cleveland, Ohio.
KNX	Los Angeles, Calif. (Hollywood).	WJDX	Jackson, Miss.
KOIN	Portland, Oreg.	WKBN	Youngstown, Ohio.
KONO	San Antonio, Tex.	WLBX	Long Island City, N. Y.
KPRC	Houston, Tex.	WLTH	Brooklyn, N. Y.
KROW	Richmond, Calif. (Oakland).	WMAK	Grand Island, N. Y. (Buffalo).
KSCJ	Sioux City, Iowa.	WMBD	Peoria Heights, Ill.
KSEI	Pocatello, Idaho.	WMBQ	Brooklyn, N. Y.
KTBR	Portland, Oreg.	WMC	Bartlett, Tenn. (Memphis).
KTSA	San Antonio, Tex.	WMSG	New York, N. Y.
KWG	Stockton, Calif.	WNAD	Norman, Okla.
WAAM	Newark, N. J.	WNBR	Memphis, Tenn.
WAAW	Omaha, Nebr.	WOOD	Furnwood, Mich. (Grand Rapids).
WACO	Waco, Tex.	WPAP	Cliffside, N. J. (New York, N. Y.).
WBBC	Brooklyn, N. Y.	WQAO	Hoboken, N. J. (New York, N. Y.).
WBMS	Haekensack, N. J.	WPCB	Scranton, Pa.
WCAE	Pittsburgh, Pa.	WQAN	Reading, Pa.
WCB	Allentown, Pa.	WRAW	Mason, Ohio (Cincinnati).
WCBS	Springfield, Ill.	WSAI	Grove City, Pa.
WCLS	Joliet, Ill.	WTAJ	Cumberland, Md.
WCMA	Culver, Ind.	WTBO	Hammond, Ind.
WCOB	Harrisburg, Pa.	WWAE	
WEAO	Columbus, Ohio.		

TYPE TESTING OF FREQUENCY CHECKING APPARATUS FOR BROADCASTING STATIONS

At the request of the Federal Radio Commission the Bureau of Standards has begun the testing of several types of special frequency checking equipment now offered by various manufacturers to broadcast stations. These equipments are intended to fulfill the requirements specified in the commission's Regulation No. 145. Briefly, the regulation requires every broadcast station, on and after June 22 this year, to maintain its frequency within plus or minus 50 cycles of the assigned frequency and to have some form of visual indicating instrument entirely independent of the frequency control equipment to indicate the departure of the station frequency from the assigned frequency. From the results of the tests as reported by the Bureau of Standards to the commission, approval or disapproval of the frequency checking equipment will be determined by the commission.

The manufacturers of such equipment, after making arrangements for test with the commission, forward sample equipment, adjusted for use at 1,500 kc. to the Bureau of Standards for test. The approval of a particular type of equipment will be announced to the broadcast stations by the Federal Radio Commission; the individual frequency checking equipment of that type will not have to be tested by the Bureau of Standards.

The frequency checking equipments thus far offered consist of a temperature-controlled piezo oscillator of great accuracy and stability having either the frequency of the broadcast station or else 500 or 1,000 cycles different, and suitable systems for bringing the frequency of the transmitter and piezo oscillator together, rectifying and amplifying the frequency difference and impressing it upon a direct-reading frequency meter with a scale reading from 0 up to 50 or 100 cycles in both directions. Some of these equipments are made to operate entirely from alternating current supply, while others use alternating current only for the heating units.

The tests made by the bureau on each equipment, 14 in number, require about 5 weeks to complete. Some of the 14 tests are made 12 times during the month. The tests include such items as accuracy, sensitivity, temperature-control stability, and such miscellaneous tests as the effects of changing tubes, varying voltages, etc. Tests at room temperatures of 15°, 25°, and 35° C. are included. The tests are intended to show what performance may be expected from the equipment in actual use in a broadcast station.

The Bureau of Standards makes tests of frequency standards for transmitting stations of any frequency only upon request of the Federal Radio Commission.

INVESTIGATION OF KENNELLY-HEAVISIDE LAYER HEIGHTS FOR FREQUENCIES BETWEEN 1,600 AND 8,650 KILOCYCLES PER SECOND

In a paper of the above title by T. R. Gilliland, G. W. Kenrick, and K. A. Norton, Research Paper 390, Bureau of Standards Journal of Research, December, 1931, the results of observations of the height of the Kennelly-Heaviside layer carried out near Washington, D. C., during 1930 are presented. Evidence for the existence of two layers (corresponding closely in virtual height to the E and F regions discussed by Professor Appleton) is found during daylight on frequencies between 3,000 and 5,000 kilocycles. The modification in the virtual height of the higher F layer produced by the existence of a low E layer is investigated theoretically, and the possibility of large changes in virtual height near the highest frequency returned by the E layer is pointed out. A number of oscillograms showing the characteristic types of records observed during the tests are presented, together with a graph of average heights from January to October, 1930.

Reprint copies of this paper will be available within a few weeks and may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The price will be quoted by that office on application.

DISTANCE RANGES OF RADIO WAVES

It is well known that the distances over which practical radio communication is possible vary greatly with the frequency used and with many other factors. The effects of some of these factors can not be predicted. Nevertheless sufficient experience has accumulated so that the distance ranges under average conditions can be fairly well summarized. Such a summary is a valuable guide in radio operations and is given in a mimeographed pamphlet just prepared by the Bureau of Standards. This is not a printed publication, but a copy can be secured upon application by anyone having use for the information.

The information is given mainly in two graph sheets, one for day and one for night transmission. The whole range of radio frequencies is covered. The effects of wave transmission along the ground and in the upper atmosphere are explained. A brief bibliography is included.

Anyone having use for the information can secure a copy upon request for Letter Circular 317, Distance ranges of radio waves, addressed to Bureau of Standards, Washington, D. C.