

RADIO SERVICE BULLETIN

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ABBREVIATIONS AND SYMBOLS

The necessary corrections to the list of Commercial and Government Radio Stations of the United States and to the International Lists of Radio Stations, appearing in this bulletin under the heading "Alterations and Corrections;" are published after the stations affected in the following order:

Name	= Name of station.
Loc.	= Geographical location. W=west longitude. N=north latitude. S=south latitude. E=east longitude.
Call	= Call signal (letters) assigned.
Type	= Type of wave classified as follows: A1=continuous wave (tube), A, arc=continuous wave, A2=interrupted continuous wave, A3=phone, B=spark.
Fy.	= Frequency in kilocycles; normal frequency in italics; wave length in meters in parentheses.
Service	= Nature of service maintained: PG=general public (ship to shore), PR=limited public (limited to public correspondence between fixed stations), P=private (limited com- mercial and special), O=Government business exclusively.
Class	= FX=fixed station (point-to-point service), RG=radio-compass station, FA=aeronautical station, AB=aviation station, RF=circular radiobeacon, B=ship station, FC=coast station.
Hours	= Hours of operation: N=continuous service, X=no regular hour, Y=sunrise to sunset.
Accounts	= Message accounts settled by.
I. R. T. Co.	= Intercity Radio Telegraph Co.
I. W. T. Co.	= Independent Wireless Telegraph Co.
M. R. T. Co.	= Mackay Radio & Telegraph Co.
R. C. A.	= Radio Corporation of America.
R. M. C. A.	= Radiomarine Corporation of America.
T. R. T. Co.	= Tropical Radio Telegraph Co.
C. w.	= Continuous wave.
I. c. w.	= Interrupted continuous wave.
A. c.	= Alternating current.
V. t.	= Vacuum tube.
M. a.	= Meters-amperes.
U. S. L.	= Applies only to the list of Commercial and Government Radio Stations of the United States.
Δ	= Equipped with a radio compass (direction finder).

NEW STATIONS

Commercial land stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1929, and to the International List of Fixed and Land Stations, published by the Berne bureau]

Station	Class	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Owner
Akron, N. Y. ¹	FX	WNDF	5,095 (58.88)	PR	N	Universal Wireless Communications Co. (Inc.).
Bar Harbor, Me. ²	FC	WAG	418 (720), 500 (600), 4,196 (71.496), 5,525 (54.3), 8,670 (34.6), 11,050 (27.15), 11,380 (26.36), 16,580 (18.094), 16,900 (17.751), 22,100 (13.575), 21,620 (18.876).	PG	N	Mackay Radio & Telegraph Co.
Brunswick, Ohio ¹	FX	WNDB	3,304 (90.8)	PR	N	Universal Wireless Communications Co. (Inc.).
Do. ¹	FX	WNDC	4,625 (64.86), 5,185 (57.86).	PR	N	Do.
Chicago, Ill. ³	FX	WJA	9,755 (30.75), 15,910 (18.856).	P		Press Wireless (Inc.).
Do. ³	FX	WJC	7,820 (38.36), 15,640 (19.182).	P		Do.
Cleveland, Ohio	FX	WRBH		P		City of Cleveland, Police Department.
Columbus, Ohio ¹	FX	WNDM	3,310 (90.63)	PR	N	Universal Wireless Communications Co. (Inc.).
Dayton, Ohio ¹	FX	WNDI	do	PR	N	Do.
Garden City, Kans. ⁴	FA, FX	KGKQ	333 (900), 457 (655)	P		Universal Aviation Corp.
Indianapolis, Ind.	FX	WMDZ	1,712 (175.23)	P	X	Indianapolis Police Department.
Little Neck, N. Y. ¹	FX	WJN	7,370 (40.71), 15,610 (19.218).	P		Press Wireless (Inc.).
Do. ³	FX	WJO	7,640 (39.27)	P		Do.
Do. ³	FX	WJP	7,925 (37.85)	P		Do.
Do. ³	FX	WJQ	7,835 (33.29)	P		Do.
Do. ³	FX	WJS	7,850 (38.22), 15,700 (19.103).	P		Do.
Do. ³	FX	WJU	7,340 (40.87), 15,580 (19.255).	P		Do.
Los Angeles, Calif. ²	FX	KOS	15,880 (13.892)	P		Do.
Do. ³	FX	KPG	7,625 (39.35)	P		Do.
Miami, Fla.	FX	WNSA	1,712 (175.28)	P	X	Police Department, City of Miami.
Milford, Ohio ¹	FX	WNDD	4,585 (65.43)	PR	N	Universal Wireless Communications Co. (Inc.).
Milwaukee, Wis. ¹	FX	WNDL	4,565 (65.72)	PR	N	Do.
New Orleans, La. ³	FX	WJF	7,625 (39.35)	P		Press Wireless (Inc.).
Newton, Mass. ³	FX	WJK	7,355 (40.79), 15,760 (19.036).	P		Do.
Pasadena, Calif. ¹	FX	KGJX	1,712 (175.28)	P	X	Pasadena Police Department.
Peoria, Ill. ¹	FX	WNDJ	4,565 (65.72)	PR	N	Universal Wireless Communications Co. (Inc.).
Philadelphia, Pa. ³	FX	WJG	7,355 (40.79)	P		Press Wireless (Inc.).
Do. ³	FX	WPDP		P		City of Philadelphia, Bureau of Police.
San Francisco, Calif. ¹	FX	KOP	15,730 (19.072)	P		Press Wireless (Inc.).
Do. ³	FX	KOQ	do	P		Do.
San Juan, P. R. ¹	FA	WMDU	5,445 (55.09), 8,015 (37.43).	P	X	Pan American Airways (Inc.).

¹ Type, A1.

² Type, A1 and A2; rates, ship service, 10 cents (52 centimes) per word.

³ Type, A1 and A2.

⁴ Type, A1, A2, and A3; hours, 8 a. m. to 6 p. m.

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

Station	Class	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Owner
South Lyon, Mich. ¹	FX	WNDE	4,605 (65.15)-----	PR	N	Universal Wireless Communications Co. (Inc.).
Springfield, Ill. ¹	FX	WNDK	4,565 (65.72)-----	PR	N	Do.
Taunton, Mass. ¹	FX	WNDG	5,105 (58.76)-----	PR	N	Do.
Do. ¹	FX	WNDH	3,310 (90.63)-----	PR	N	Do.
Tulare, Calif.-----	FX	WPDA	-----	P	-----	City of Tulare, Police Department.
Washington, D. C. ³	FX	WJM	7,640 (39.27)-----	P	-----	Press Wireless (Inc.).
Portable						
California ² -----	FX	KGKN	4,244 (70.68), 8,810 (34.05).	P	X	State of California, Division of Forestry.
Do. ⁴ -----	FX	KGKP	---do.	P	X	Do.

¹ Type, A1.

² Type, A1 and A2

³ Type, A1 and A3.

Commercial ship stations, alphabetically, by name of vessels

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1929, 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 accounts settled by—
City of Panama.	WMDY	8	PG	-----	Panama Mail S. S. Co.	
Jupiter	WODB	8	PG	X	Neptune Line (Inc.)-----	R. M. C. A.
Lotosland	WMDV	8	PG	X	E. A. Deeds	Do.
Margaret Lykes.	KOBX	8	PG	X	Lykes Bros. S. S. Co.	Do.
Neptune	WODO	8	PG	X	Neptune Line (Inc.)-----	Do.
Orion	WODE	-----	-----	-----	Carl J. Forstmann	
Patrick J. O'Hara.	WMDX	8	PG	X	O'Hara Bros. Co. (Inc.)-----	Do.
Providence	KUTV	8	PG	-----	Merchants and Miners Transportation Co.	Do.
York	KDKP	8	PG	-----	do.	Do.

Commercial land and ship stations, alphabetically, by call signals

Call signal	Name of station	Call signal	Name of station
KDKP	York-----	WMDU	San Juan, P. R.-----
KGJX	Pasadena, Calif.-----	WMDV	Lotosland-----
KGKN	California (portable)-----	WMDX	Patrick J. O'Hara-----
KGKP	do.-----	WMDY	City of Panama-----
KGKQ	Garden City, Kans.-----	WMDZ	Indianapolis, Ind.-----
KOBX	Margaret Lykes-----	WNDA	Miami, Fla.-----
KOP	San Francisco, Calif.-----	WNDB	Brunswick, Ohio.-----
KOQ	do.-----	WNDC	do.-----
KOS	Los Angeles, Calif.-----	WNDD	Millford, Ohio.-----
KPG	do.-----	WNDE	South Lyon, Mich.-----
KUTV	Providence-----	WNEF	Akron, N. Y.-----
WAG	Bar Harbor, Me.-----	WNDG	Taunton, Mass.-----
WJA	Chicago, Ill.-----	WNDH	do.-----
WJC	do.-----	WNDI	Dayton, Ohio.-----
WJF	New Orleans, La.-----	WNDJ	Peoria, Ill.-----
WJG	Philadelphia, Pa.-----	WNDK	Springfield, Ill.-----
WJK	Newton, Mass.-----	WNDL	Milwaukee, Wis.-----
WJM	Washington, D. C.-----	WNDM	Columbus, Ohio.-----
WJN	Little Neck, N. Y.-----	WODB	Jupiter-----
WJO	do.-----	WODC	Neptune-----
WJP	do.-----	WODE	Orion-----
WJQ	do.-----	WPDA	Cleveland, Ohio.-----
WJS	do.-----	WPDP	Philadelphia, Pa.-----
WJU	do.-----	WRBH	Cleveland, Ohio.-----

Commercial aircraft stations, alphabetically, by names of craft

[Additions to the List of Radio Stations of the United States, edition of June 30, 1929, and to the International List of Aircraft Stations published by the Berne bureau]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Service	Hours	Owner
NC74-K	KHEL		P	X	John Hertz.
NC142-M	KHFN				Pan American Airways.
NC800-E ¹	KHEM	3,106 (96.58), 3,484 (86.10), 5,600 (53.57).	P	X	Universal Aviation Corp.
X118-E ¹	KHEI	278 (1,080), 383 (900), 375 (800), 500 (600).			Skylines (Inc.) (station operated by R. M. C. A.).
(Unnamed)	KHEK				New York, Rio, & Buenos Aires Line.

¹ Type, A1 and A3.

Commercial aircraft stations, alphabetically, by call signals

Call signal	Name of station	Call signal	Name of station
KHEI	X118-E.	KHEM	NC800-E.
KHEK	(Unnamed).	KHFN	NC142-M.
KHEL	NC74-K.		

Broadcasting station, alphabetically, by name of State and city

[Addition to the List of Radio Stations of the United States, edition of June 30, 1929, and the International List of Broadcasting Stations published by the Berne bureau]

State and city	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)
North Carolina: Winston-Salem	WSJS	1,310 (229)	100

Broadcasting station, alphabetically, by call signal

Call signal	Location of transmitter (mail address)	Owner	Frequency in kilocycles, meters in parentheses	Power (watts)
WSJS	Winston-Salem, N. C.	Winston-Salem Journal Co.	1,310 (229)	100

Government ship station, alphabetically, by name of station

[Addition to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1929, 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
Willow	WWDM	396 (755)	O	X	Department of Commerce, Bureau of Lighthouses.

Government land and ship station, alphabetically, by call signal

Call signal	Name of station
WWDM	Willow

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, 1929]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	Owner
California: Galt..	W6XBX	1,608 (186.57), 2,302 (130.32), 3,076 (97.53), 4,108 (73.02), 5,510 (54.44), 6,155 (48.74).	75	Galt Technical Junior College for Aeronautics.
Illinois: Addison.	W9XAL	1,608 (186.57), 3,076 (97.53), 6,155 (48.74).	500	Chicago Daily News.
West Virginia: Morgantown.	W8XAW	1,604 (187.03), 2,398 (125.1), 3,256 (92.5), 4,795 (62.57), 6,425 (46.7), 8,650 (34.68), 12,850 (23.35), 17,300 (17.341).	200	West Virginia University, physics department.
<i>Portable</i>				
Illinois: Chicago.	W9XAK	1,712 (175.23)-----	500	R. C. A. Communications (Inc.).
<i>Aircraft</i>				
C2614-----	W10XO	3,076 (97.53), 5,510 (54.44), 6,155 (48.74).	50	Radio Engineering Laboratories.
C3002-----	W10XP	do-----	50	Do.
NC-9677-----	W10XS	1,608 (186.57), 2,326 (128.97), 3,088 (97.15), 4,785 (62.69).	100	Colonial Air Transport (Inc.).
NC-9745-----	W10XQ	6,350 (47.24)-----	100	Do.
(Unnamed)-----	W10XR	do-----	7½	William D. Van Dyke, Dallas Heights, Chattanooga, Tenn.

Relay broadcasting stations, alphabetically, by names of stations

[Additions to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1929]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	Owner
New Jersey: Ampere.	W2XCU	1,604 (187.03), 2,398 (125.1), 3,256 (92.5), 4,795 (62.57), 6,425 (46.7), 8,650 (34.68), 12,850 (23.35), 17,300 (17.341), 35,000 (8.57).	20,000	Wired Radio (Inc.), 60 Broadway, New York, N. Y.

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, 1929]

Station	Call signal	Frequency in kilocycles, meters in parentheses	Power (watts)	Owner
Massachusetts: Boston.....	W1XAV	2,100 (142.9) to 2,300 (136.4)...	500	Shortwave and Television Laboratory (Inc.).
New Jersey: Bound Brook.	W3XL	2,850 (105.3) to 2,950 (101.7)...	30,000	R. C. A. Communications (Inc.).

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

Call signal	District and station	Call signal	District and station
W1XAV W2XCU W3XL W6XBX W8XAW	First district: Boston, Mass. Second district: Ampere, N. J. Third district: Bound Brook, N. J. Sixth district: Galt, Calif. Eighth district: Morgantown, W. Va. Ninth district:	W10XO W10XP W10XQ W10XR W10XS	C-2614. C-3002. NC-9745. (Unnamed.) NC-9677.
W9XAK W9XAL	Chicago, Ill. (portable). Addison, Ill.		<i>Aircraft</i>

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, 1929, and to the International List of Fixed and Land Stations, published by the Berne bureau]

- ABERDEEN, WASH.**—Service, PG; owner (accounts settled by), R. M. C. A.; rates, 10 cents (52 centimes) per word.
- CHICAGO, ILL. (WOF).**—Loc., changed to Downers Grove, Ill.; type, add A1.
- EVERETT, WASH. RADIO.**—Fy., strike out 182.82 (1,641), add 5,525 (54.3), 8,630 (34.76), 11,050 (27.15), service, PG only.
- HONOLULU HAWAII (KGS).**—Fy., add 7,437.5 (40.34), 14,875 (20.175).
- KAILUA (HONOLULU), HAWAII (KNN).**—Type, A1 and A2; fy., strike out 8,710 (34.44), add 8,720 (34.4).
- LOS ANGELES, CALIF. (KGX).**—Fy., add 7,437.5 (40.34), 14,875 (20.175).
- LOS ANGELES, CALIF. (KRM).**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).
- MARION, ILL.**—Type, A3; fy., 3,076 (97.53); service, FA; hours, 10 a. m. to 6 p. m. and 9.30 p. m. to 5 a. m.
- MARION, MASS. RADIO (WCC).**—Fy., add 406 (740), 500 (600).
- NORTH BEND, OREG. RADIO.**—Loc. 124° 13' 24" W., 43° 24' 26" N.
- OCEAN TOWNSHIP, N. J. (WND).**—Loc., changed to Lawrenceville, N. J., 74° 44' 42" W., 40° 19' 5" N.
- PALO ALTO, CALIF. (NEAR) (KNK).**—Fy., 6,815 (44.02), 6,875 (43.64), 7,655 (39.09), 7,662.5 (38.65), 7,670 (39.11), 7,730 (38.81), 7,737.5 (38.78), 7,745 (38.74), 7,752.5 (38.7), 7,760 (38.66), 8,075 (37.15), 8,710 (34.44), 8,850 (33.9), 8,970 (33.44), 8,980 (33.41), 8,990 (33.37), 9,070 (33.08), 9,290 (32.29), 10,170 (29.5), 10,490 (28.6), 10,810 (27.75), 10,820 (27.73), 10,830 (27.7), 10,890 (27.55), 13,000 (23.08), 13,015 (23.05), 13,030 (23.02), 13,750 (21.82), 13,960 (21.49), 14,680 (20.44), 14,695 (20.415), 14,710 (20.39), 14,725 (20.375), 14,740 (20.35), 14,755 (20.335), 14,770 (20.31), 17,140 (17.503), 17,420 (17.222), 17,660 (16.988), 17,680 (16.968), 17,700 (16.949), 18,260 (16.429), 18,780 (15.974), 19,540 (15.253), 19,560 (15.337), 19,580 (15.322), 19,600 (15.306), 19,620 (15.291), 19,740 (15.198), 20,300 (14.778), 20,980 (14.299), 21,330 (14.032).
- PALO ALTO, CALIF. (NEAR) (KNW).**—Type, A1 and A2.
- PALO ALTO, CALIF. (KWT).**—Type, add A1.
- PILLAR BAY, ALASKA.**—Owner, Pacific American Fisheries.
- SACRAMENTO, CALIF. (KRJ).**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).
- SAN FRANCISCO, CALIF. (KGO).**—Loc., changed to Musselrock, Calif.; fy., add 7,437.5 (40.34), 14,875 (20.175).
- SAN FRANCISCO, CALIF. (KRG).**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).
- SAN JOSE, CALIF.**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).
- SEATTLE, WASH. RADIO (KPE).**—Fy., strike out 167 (1,796); add 5,525 (54.3), 6,515 (46.04), 8,630 (34.76), 11,050 (27.15), 11,140 (26.93), 16,580 (18.094), 16,900 (17.751); service, strike out PR.
- SEBASTOPOL, CALIF.**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).

Portable

- CALIFORNIA (KRB).**—Loc., now stationary at Salinas, Calif., 121° 39' 00" W., 36° 41' 00" N.; owner, Federal-State Marketing Service, State Department of Agriculture (California).
- CALIFORNIA (KRN).**—Owner, Federal-State Marketing Service, State Department of Agriculture (California).
- Strike out all particulars of the following named stations: Ashfork, Ariz.; Austin, Tex.; Barstow, Calif.; Chicago, Ill. (WMDA); Clovis, N. Mex. (KGTC); Dallas, Tex.; East Pittsburgh, Pa.; Elgin, Ill.; Flagstaff, Ariz. (KGSJ); Fort Worth, Tex.; Gallup, N. Mex. (KGTB); Houston, Tex.; Los Angeles, Calif. (KQT); Marea, Tex.; Muskogee, Okla.; Needles, Calif.; Oklahoma City, Okla.; St. Louis, Mo.; San Antonio, Tex.; San Francisco, Calif. (Mills Field-KGTK); San Francisco, Calif. (KMN); Sweetwater, Tex.; Tucson, Ariz.; Wichita Falls, Tex. (KGSV); Williams, Ariz.; Winslow, Ariz.; *portable*: California (KNG).

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, 1929, and to the International List of Ship Stations, published by the Berne bureau]

- AGWILAKE.—Name changed to Cities Service Denver; owner, Cities Service Transportation Co.
- ALAMEDA.—Accounts, owner.
- ALASKA.—Accounts, owner.
- ALPHA (WMDP).—Type, B; fy., 375 (800), 425 (705), 500 (600).
- ARIZONA (WPCU).—Fy., add 375 (800); accounts, R. C. A.
- BARBARA CATES.—Owner, Christenson S. S. Co. (Inc.).
- BOWDOIN.—Type, A1; fy., 425 (705), 500 (600), 2,740 (109.5), 5,525 (54.3), 5,555 (54), 8,330 (36.01), 11,050 (27.15), 11,110 (27); accounts, Zenith Radio Corp.
- CHARLES C. WEST.—Type, A2; fy., add 143 (2,100), 151 (1,985), 394 (760).
- CHARLES M. SCHWAB.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 375 (800), 394 (760), 410 (730), 425 (705).
- CITY OF ELWOOD.—Type, A, arc; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 425 (705), 500 (600); hours, N (first class), X (third class).
- CLAVARACK.—Owner, Mississippi Shipping Co.
- COCKAPONSET.—Accounts, R. M. C. A.
- DENALI.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 375 (800), 425 (705), 500 (600); accounts, owner.
- DULCINO.—Name changed to Marina.
- EASTERN KNIGHT.—Name changed to San Lucas.
- EAST SIDE.—Accounts, R. M. C. A.
- GALVESTON.—Type A, arc and B; fy., 143 (2,100), 151 (1,985), 153 (1,960), 157 (1,910), 160 (1,875), 375 (800), 425 (705), 500 (600).
- GENERAL MARKHAM.—Owner, Continental S. S. Co.
- GLADYSBE.—Owner, Spencer Kellogg & Sons (Inc.).
- GOLIAH (KFDI).—Fy., 375 (800), 400 (750), 425 (705), 468 (640), 500 (600).
- GULFPENN.—Fy., 375 (800), 400 (750), 425 (705), 500 (600).
- HIES-MARO.—Read Hi-Esmaro.
- HUMUULA.—Type, A1 and 2; fy., 375 (800), 400 (750), 425 (705), 468 (640), 500 (600); service, PG; hours, X; rates, 8 cents per word; accounts, R. M. C. A.
- JEFFERSON MYERS.—Owner, Pacific-Atlantic S. S. Co. (Inc.).
- J. R. GORDON.—Name changed to Herman F. Whiton.
- KARADOR.—Type, A1 and 2; fy., 375 (800), 500 (600); service, PG; hours, X; accounts, owner.
- LAKINA.—Hours, N (first class), X (third class); accounts, owner.
- LEVIATHAN.—Type, A1-2-3; fy., add 3,428 (87.51), 4,392 (68.30), 6,635 (45.21).
- MALABAR.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 157 (1,910), 160 (1,875), 375 (800), 425 (705), 500 (600).
- METON.—Type, A, arc; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 425 (705), 500 (600).
- MIGRANT.—Type, A1 and 2; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 400 (750), 425 (705), 468 (640), 500 (600).
- MUNSOMO.—Type, A2; fy., 375 (800), 400 (750), 425 (705), 468 (640), 500 (600).
- NEW ORLEANS.—Type, A arc.
- NIZINA.—Accounts, owner.
- NORMAN BRIDGE.—Owner, Pan-American Petroleum & Transport Co.
- NOSA PRINCE.—Type, A2; fy., 375 (800), 425 (705), 500 (600).
- NOSA QUEEN.—Type, A2; fy., 375 (800), 425 (705), 500 (600).
- ODUNA.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 375 (800), 425 (705), 500 (600); accounts, owner.
- OLDHAM.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 425 (705), 500 (600); hours, N (first class), X (third class).
- ORINOCO.—Name changed to San Domingo.
- O. T. WARING.—Type, A1 and 2; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 400 (750), 425 (705), 468 (640), 500 (600).
- PLYMOUTH (WCCL).—Owner, Plymouth S. S. Co.
- ROYAL ARROW.—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 400 (750), 425 (705), 468 (640), 500 (600).

- RUSTLER.**—Type, B; fy., 375 (800), 425 (705), 500 (600); service, P; hours, X; owner, Ulican Towing Co.
- SANTA CECELIA.**—Hours, N.
- SANTA RITA.**—Type, A1 and 2; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 400 (750), 425 (705), 468 (640), 500 (600); hours, N.
- SHASTA (WMDJ).**—Type, A1; fy., 5,525 (54.3), 5,555 (54), 8,330 (36.01); service, P; hours, X.
- S. O. Co. No. 3.**—Type, A1; fy., 375 (800), 425 (705), 500 (600), 2,320 (129.3); service, PG; hours, X; rates, 6 cents per word.
- SOCONY 83.**—Fy., strike out 410 (730), 455 (660).
- SOCONY 90.**—Fy., strike out 410 (730), 455 (660).
- SUTRANSCO.**—Name changed to Admiral Chase; owner, Pacific S. S. Co.
- TOPA TOPA.**—Accounts, R. M. C. A.
- WALTER MILLER.**—Owner, Continental S. S. Co.
- WARD.**—Type, A, arc and B; fy., 143 (2,100), 151 (1,985), 153 (1,960), 155 (1,935), 157 (1,910), 159 (1,885), 160 (1,875), 375 (800), 425 (705), 500 (600); hours, N (first class), X (third class).
- W. E. FITZGERALD.**—Fy., strike out 394 (760)
- WEST KATAN.**—Accounts, owner.
- WEST KEATS.**—Accounts, owner.
- WEST MINGO.**—Accounts, owner.
- WEST MONTOP.**—Accounts, owner.
- WEST POCASSET.**—Type, B; fy., 375 (800), 425 (705), 500 (600); accounts, R. M. C. A.
- WILLANGLO.**—Accounts, owner.
- WILLWELLO.**—Accounts, owner.
- YORBA LINDA.**—Fy., 143 (2,100), 151 (1,985), 153 (1,960), 160 (1,875), 375 (800), 425 (705), 500 (600).
- Strike out all particulars of the following-named vessels: City of Bangor, City of Seattle, Dorothy, Favorite (WADP), Heber, San Juan (WFDE), Seaward, The Old Timer No. 3, Tiger (KFMV), Toteco.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY, BY CALL SIGNALS

- KDNN,** read Cities Service Denver; **KGO,** read Musselrock, Calif.; **KIMX,** read San Domingo; **KOML,** read Herman F. Whiton; **KUFB,** read San Lucas; **KUZG,** read Admiral Chase; **WJDY,** read Hi-Esmar; **WKCU,** read Marina; **WND,** read Lawrenceville, N. J.; strike out all particulars following the call signals: **KDDU,** **KDSU,** **KFEH,** **KFMV,** **KGCV,** **KGSA,** **KGSC,** **KGSE,** **KGSG,** **KGSJ,** **KGSK,** **KGSN,** **KGSO,** **KGSQ,** **KGSS,** **KGST,** **KGSU,** **KGSV,** **KGSW,** **KGSY,** **KGSZ,** **KGTB,** **KGTC,** **KGTE,** **KGTF,** **KGTK,** **KKOA,** **KMN,** **KNG,** **KQT,** **WADP,** **WBDK,** **WECM,** **WFDE,** **WKA,** **WMDA,** **WNB**

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, 1929, and to the International List of Aircraft Stations, published by the Berne bureau]

- NC-147H (KHFE).**—Type, A1, A2, and A3; fy., 333 (900), 375 (800), 414 (725), 457 (655), 500 (600), 2,662 (112.7), 3,070 (97.71), 3,106 (96.58), 5,690 (52.72).
- NC-197H (KHFG).**—Type, A1, A2, and A3; fy., 333 (900), 375 (800), 414 (725), 457 (655), 500 (600), 2,662 (112.7), 3,070 (97.71), 3,106 (96.58), 5,690 (52.72).
- NC-811H (KHFF).**—Type, A1, A2, and A3; fy., 333 (900), 375 (800), 414 (725), 457 (655), 500 (600), 2,662 (112.7), 3,070 (97.71), 3,106 (96.58), 5,690 (52.72).
- NC-812H (KHFH).**—Type, A1, A2, and A3; fy., 333 (900), 375 (800), 414 (725), 457 (655), 500 (600), 2,662 (112.7), 3,070 (97.71), 3,106 (96.58), 5,690 (52.72).
- Strike out all particulars of the following named stations: **NC-9,700 (KHAM);** **NC-9,713 (KHAN);** **NX-7713 (KHEE).**

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, 1929, and the International List of Broadcasting Stations published by the Berne bureau]

- KFJI** (Astoria, Oreg.).—Owner, KFJI Broadcasters (Inc.).
- KFWC** (Ontario, Calif.).—Call changed to **KFXM.**
- KGFG** (Oklahoma, Okla.).—Loc., 97° 33' 51" W., 35° 26' 28" N.

- KGFW** (Ravenna, Nebr.).—Loc., 98° 54' 37" W., 41° 01' 30" N.
KMJ (Fresno, Calif.).—Fy., 1,210 (247.9), power, 100.
KOAC (Corvallis, Oreg.).—Fy., 550 (545).
KTAB (Oakland, Calif.).—Fy., 560 (536); power, 500 normally, 1,000 experimentally.
KWTC (Santa Ana, Calif.).—Call changed to KREG.
KYA (San Francisco, Calif.).—Owner, F. C. Dahlquist (receiver).
WABZ (New Orleans, La.).—Loc., 90° 04' 22" W., 29° 56' 18" N.
WJAS (Pittsburgh, Pa.).—Loc., changed to North Fayette Township, Pa.
WLBW (Oil City, Pa.).—Owner, Radio-Wire Program Corporation of America.
WMBH (Joplin, Mo.).—Loc., 94° 30' 36" W., 37° 05' 30" N.
WRBL (Columbus, Ga.).—Owner, David Farmer.
WSGP (Savannah, Ga.).—Call changed to WTOC.
 Strike out all particulars of the following-named stations: **KFIU** (Juneau, Alaska); **KGCN** (Concordia, Kans.); **KGHD** (Missoula, Mont.); **WMBF** (Miami Beach, Fla.); **WSIS** (Sarasota, Fla.); **WSMD** (Salisbury, Md.).

GOVERNMENT LAND STATION, ALPHABETICALLY, BY NAME OF STATION

[Alteration and correction to be made to the List of Commercial and Government Radio Stations of the United States, edition of June 30, 1929, and to the International List of Fixed and Land Stations, published by the Berne bureau]

DILLINGHAM, ALASKA.—Loc., changed to Kanakanak, Alaska.

GOVERNMENT LAND AND SHIP STATION, ALPHABETICALLY BY CALL SIGNAL

Strike out all particulars following the call signal **WZE**.

EXPERIMENTAL STATIONS, BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1929]

- MASSACHUSETTS:** **Wiano** (W1XA).—Fy., add 28,200 (10.638).
NEW YORK: **South Schenectady** (W2XAW).—Fy., variable from and above 23,000 (13.043).
AIRCRAFT: **C-268** (W7XAA).—Fy., 1,608 (186.57), 2,302 (130.32), 3,076 (97.53), 4,108 (73.02), 5,510 (54.44), 6,155 (48.74).
 Strike out all particulars of the following-named stations: **California**, **Los Angeles** (W6XF); **District of Columbia**, **Washington** (W3XAV); **Florida**, **Winter Park** (W4XE); **New York**, **Long Island City** (W2XBT) and **Water Mill** (W2XBM); **portable—Illinois**, **Chicago** (W9XZ).

VISUAL BROADCASTING STATIONS, BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1929]

- NEW JERSEY:** **Jersey City** (W2XCR).—Type, add A3.
NEW YORK: **New York** (W2XBS).—Type, add A3.

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, 1929, and to the International List of Stations Performing Special Services published by the Berne bureau]

- Ambrose Channel Lightship, N. J.**—Hours, changed to the second 15 minutes of each third hour, 3, 6, 9, and 12 a. m. and p. m.
Cape Mala Light Station, Panama.—Hours, now operates continuously during two 10-minute periods of each hour beginning at the 15th and 45th minutes; frequency, changed to 295 kc. (1,017 m.).
Lake Huron Lightship, Mich.—Hours, changed to the last 15 minutes of each hour throughout each 24 hours.

MISCELLANEOUS

SHIPS EQUIPPED WITH RADIO COMPASS

The Hi-Esmaro (WJDY), owned by H. E. Manville, and the City of San Francisco (WNDW), owned by the Panama Mail S. S. Co., have been so equipped.

VENEZUELA RATIFIES THE INTERNATIONAL RADIO CONVENTION

This country deposited its ratification of the convention and general and supplementary regulations on September 10, 1929.

GENERAL ORDERS OF THE FEDERAL RADIO COMMISSION

Regulation governing the sharpness of emissions by ships using damped waves (General Order No. 70, September 13, 1929).—At all ship stations using damped waves the logarithmic decrement per complete oscillation in the wave trains emitted by the transmitter shall not exceed two-tenths, except when sending distress signals or signals and messages relating thereto.

Postponement of General Order No. 43 regulating chain programs (General Order No. 71, September 18, 1929).—The commission hereby further postpones the effective date of General Order No. 43, limiting duplicated operation on cleared channels to stations more than 300 miles apart, 90 days, to December 31, 1929.

Alaskan station licenses extended (General Order No. 72, September 26, 1929).—Pending the adoption by the Federal Radio Commission of a policy with regard to stations in the Territory of Alaska, all existing licenses and/or special authorizations covering the operation of coastal and point-to-point transmitting stations located in said Territory which by their terms, expire September 30, 1929, are hereby extended for a period of 31 days, to expire October 31, 1929.

Provided, however, that this order shall not be deemed or construed as a finding of decision by the commission or as any evidence whatsoever that the continued use or operation of any such station after October 31, 1929, serves or will serve public interest, convenience or necessity, or that public interest, convenience, or necessity would be served by the granting of any pending application for license or renewal of license, and the holder of any license or special authorization subject to this order who continues to use or operate any station during the period covered by this order shall be deemed to have consented to such condition.

MEDICAL ADVICE TRANSMITTED BY JULIANEHAAB, GREENLAND, STATION

This station, call signal OXF, transmits on a frequency of 81.1 kc. (3,700 m.), c. w., to ships in cases of illness occurring on board, medical advice furnished gratuitously by doctors of hospitals in Julianehaab. Ships wishing to consult these doctors should transmit to the station a brief description of the symptoms, signed by the master, either in Danish, English, French, or German. All messages are transmitted free of charge.

NITON (BRITISH) RADIO FITTED WITH WORKING FREQUENCY

In accordance with article 17, 1 (5) of the International Radiotelegraph Regulations, this station has been fitted with a working frequency of 460 kc. (652 m.), type A2.

CHANGE IN METHOD OF TRANSMITTING MESSAGES BY BRITISH RADIO-COMPASS STATIONS

The practice heretofore followed by these stations in the United Kingdom of including a serial number in messages giving bearings to ships has been discontinued.

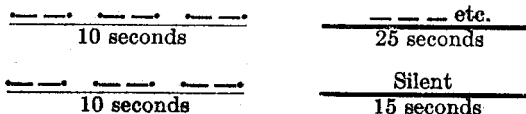
ADDITIONAL SIGNAL TRANSMITTED BY SPURN LIGHT VESSEL RADIOBEACON
(BRITISH)

In addition to the radiobeacon signal transmitted from this light vessel located on the east coast of England in approximately 53° 34' N., 0° 14' E. in thick or foggy weather, the following signal is transmitted during clear weather, in order to afford facilities to mariners for obtaining bearings, for 1 minute every 4 minutes on a frequency of 300 kc. (1,000 m.), i. c. w. The signal MMH

(— — — —) emitted continuously at the rate of 15 words per minute for 48 seconds; a continuous dash (—) of 9.6 seconds duration; the signal MMH made once of 2.4 seconds duration (these transmissions to take a total of 60 seconds); a silent interval of 180 seconds. Four emissions of the whole of the signal described above will be made consecutively every 3 hours commencing at noon.

RADIOBEACON ESTABLISHED AT PLANIER ISLAND, FRANCE (MEDITERRANEAN)

A radiobeacon has been established at the lighthouse in approximately 43° 12' N., 5° 14' E. Operates on a frequency of 300 kc. (1,000 m.), c. w. and i. c. w. The signal consists of five successive transmissions of the following signals:

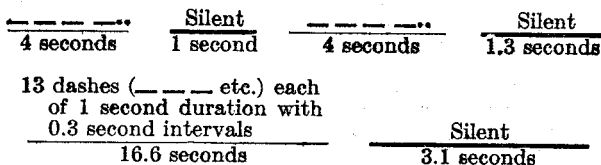


Total duration, 1 minute.

During fog, c. w. emissions are transmitted half hourly, at the beginning of each half-hour; i. c. w. emissions are transmitted at the 5th, 15th, 25th, 35th, 45th, and 55th minutes of each hour. During clear weather c. w. emissions are transmitted half hourly, at the beginning of each half hour.

RADIOBEACON ESTABLISHED AT SWINEMUNDE (BALTIC), GERMANY

This beacon, established in approximately 53° 55' N., 14° 17' E., transmits the following signals continuously during thick or foggy weather on a frequency of 289 (1,037 m.), i. c. w.:



Total duration, 30 seconds. These signals will be transmitted seven times in 3½ minutes, followed by a silent interval of 4 minutes. The group of seven signals will be repeated eight times every hour. In clear weather the group of seven signals will be transmitted three times during the following periods:

H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
2	18	45	2	37	15	14	18	45	14	37	15
5	18	45	5	37	15	20	18	45	20	37	15
11	18	45	11	37	15	23	18	45	23	37	15

NOTE.—The beacon, in conjunction with the submarine oscillator, situated about 2 miles to the northward, can be used for the determination of bearing and distance.

REGULATIONS GOVERNING THE ISSUANCE OF RADIO OPERATORS' LICENSES

1. *Commercial extra first class.*—To be eligible for examination, an applicant for this class of license must have held a commercial first-class license and must have been actually engaged as an operator at stations open to public correspondence for at least 18 months during the 2 years previous to his application. A speed in transmission and reception of at least 30 words per minute, in code groups, Continental Morse Code, and 25 words per minute, in plain language, American Morse Code, 5 characters to the word, must be attained. The questions in this examination will cover the same subjects required for a commercial second-class license but considerably wider in scope. A percentage of at least 80 will constitute a passing mark. Holders of licenses of this class are authorized to act as chief operator at any licensed radio station.

2. *Commercial first class.*—To be eligible for examination, an applicant for this class of license must have been actually engaged as an operator at stations

open to public correspondence for at least 12 months. Applicants for this class of license must pass code tests in transmission and reception at a speed of at least 20 words per minute in Continental Morse Code, in code groups, and 25 words per minute in Continental Morse Code, in plain language (5 characters to the word). The practical and theoretical examination will cover the same subjects as required for the commercial second-class license. A percentage of 75 will constitute a passing mark. Holders of this class of license are authorized to act as chief operator at any licensed radio station.

3. *Commercial second class.*—Applicants for this class of license must pass code tests in transmission and reception at a speed of at least 16 words per minute in Continental Morse Code, in code groups, and 20 words per minute in Continental Morse Code, in plain language (5 characters to the word). The practical and theoretical examination shall consist of comprehensive questions under the following headings:

(a) Diagram of radio installation: Applicants are required to draw a complete wiring diagram of a modern marine radio installation as used aboard American vessels. The applicant may be required to draw either a spark, arc, or vacuum tube transmitter (with radiotelephone attachment).

(b) General principles of electricity, theory, adjustment, operation, and care of modern radiotelegraph and radiotelephone apparatus.

(c) Receiving apparatus.

(d) Operation and care of storage batteries.

(e) Motors and generators.

(f) International regulations governing radio communication and the United States Radio Laws and Regulations.

(g) Experience: An allowance for experience will be made as follows—Three months' or more satisfactory service at a station open to public correspondence under a commercial license, 10 per cent; two months' satisfactory service at a station open to public correspondence under a commercial license, 7.5 per cent; one month's satisfactory service at a station open to public correspondence under a commercial license, 5 per cent; service at United States Government stations open to public correspondence, same as above; service at limited commercial or other United States Government stations of three months or more duration, 5 per cent; less than three months, in proportion; graduates of residence radio schools, 5 per cent; amateur operators or graduates of correspondence radio schools, 2 per cent. Applicants must present satisfactory written evidence of their experience in order to obtain due allowance. A percentage of 65 will constitute a passing mark for this class of license.

This license is valid for the operation of any licensed land or aircraft radio station or on any vessel except as indicated in the following. Holders of this class of license are not authorized to act as chief operator on a vessel in the first class. They will be authorized to act as chief operator on a vessel in the second class upon submission of written evidence at any time during the term of the license indicating six months or more satisfactory service as an operator at a station open to public correspondence.

4. *Broadcast class (unlimited).*—Applicants for this class of license must pass code tests in transmission and reception at a speed of at least 16 words per minute in Continental Morse Code, in code groups, and 20 words per minute in Continental Morse Code in plain language (5 characters to the word). The theoretical examination will cover the same subjects as indicated for the commercial second-class license, except that under subject (a) the applicant is required to draw a diagram of a modern broadcast transmitter, and under subject (b) the questions will relate strictly to broadcast apparatus. An allowance for service as an operator at a broadcast or other station will be made in accordance with the scale indicated under "3. Commercial second class." A percentage of 75 will constitute a passing mark. Holders of this class of license are authorized to act as operator only at a licensed broadcast station.

5. *Broadcast class (limited).*—No code test is required for this class of license, otherwise the requirements are the same as for the broadcast class (unlimited) license. Holders of this class of license are authorized to act as operator only at a licensed broadcast station not required to maintain a listening watch on marine distress frequencies.

6. *Radiotelephone class.*—No code test is required for this class of license. The practical and theoretical examination for this class of license shall consist of questions on adjustment and operation of radiotelephone apparatus and knowledge of international regulations governing radio communication and the United States Radio Laws and Regulations. The applicant must demonstrate his

ability to transmit and receive clearly conversation by telephone apparatus. Whenever possible, a demonstration of the applicant's ability to operate radiotelephone apparatus will be required. A percentage of 75 will constitute a passing mark. Holders of this class of license are authorized to act as operator only at licensed radiotelephone stations, other than broadcast or amateur, of 300 watts or less input power.

7. *Amateur extra first class.*—To be eligible for examination, an applicant for this class of license must have had at least two years' service as a licensed radio operator and must not have been penalized for violation of the radio laws. The applicant must pass code tests in transmission and reception at a speed of at least 16 words per minute in Continental Morse Code, in code groups, and 20 words per minute in Continental Morse Code in plain language (5 characters to the word). An applicant must pass a special examination relating to amateur apparatus and international regulations and acts of Congress affecting amateur stations and operators. A percentage of 75 will constitute a passing mark. This license is valid for the operation of licensed amateur radio stations only.

8. *Amateur class.*—Applicants for this class of license must pass a code test in transmission and reception at a speed of at least 10 words per minute in Continental Morse Code (5 characters to the word). An applicant must pass an examination which will develop knowledge of the adjustment and operation of the apparatus which he desires to use and of the international regulations and acts of Congress in so far as they relate to interference with other radio communications and impose duties on all classes of operators. A percentage of 70 will constitute a passing mark. This license is valid for the operation of licensed amateur radio stations only.

9. *Temporary amateur license.*—Amateurs who can not present themselves for examination may be issued temporary licenses valid for the operation of a particular station until such time as they can be examined for a regular license but not to exceed a period of one year. The applicant must submit a sworn statement attesting to his ability to transmit and receive at a speed of not less than 10 words per minute in Continental Morse Code.

10. *Renewals.*—(a) Commercial extra first class: These licenses may be renewed without examination provided the record shows 12 months' satisfactory service in a land or ship station open to general public service, at least 6 months of which must have been during the last 12 months of the license period. Holders of these licenses employed as radio inspectors, radio instructors, or in similar occupations requiring exceptional qualifications, where the duties require the testing, or demonstrating, or otherwise using commercial radio apparatus and the telegraph codes, may be issued renewals of their licenses without examination, provided such employment has covered a period of 18 months out of the 2-year license period. Where the applicant has not regularly used the telegraph codes, he will be given the code examination as for an original license, and if he has used only one code, he will be examined in the code not used.

(b) Other renewals: Renewal licenses may be issued to operators of other classes without examination, provided the operator has had three months' satisfactory service during the last six months of the license term. One year satisfactory service out of two years of the license term may be accepted for renewal at the discretion of the examining officer.

(c) Holders of commercial first-class or commercial second-class radio operator licenses who have not had sufficient service at commercial stations to permit the unconditional renewal of such licenses, but indicate satisfactory service at broadcasting stations for the length of time necessary for renewal, and are unable to pass the required code test or to present themselves for a code test, may be issued restricted renewals of their existing licenses. The licenses so issued should bear across their face, preferably in red, the following restriction: "This license not valid for the operation of any limited or general public station."

Applicants holding restricted commercial operators' licenses, broadcast or radiotelephone operators' licenses may be issued renewals of such licenses provided the service records indicate three months' satisfactory service during the last six months of the license term. One year satisfactory service out of the 2-year term of the license may be accepted at the discretion of the examining officer. Renewal commercial first-class or commercial second-class licenses so issued shall bear the indorsement, "This license not valid for the operation of any limited or general public station."

Holders of restricted licenses may have this restriction removed at any time during the term of this license by passing the code test required for the class of license held by them. This restriction will be removed by the supervisor of radio

or examining officer by drawing lines through the restriction and adding on the license adjacent thereto the following: "Restriction removed," date and initials of the examining officer. The expiration date of the license will remain the same.

Applicants who have passed the regular commercial examination but who hold renewal commercial licenses indorsed, "This license is not valid for the operation of any limited or general public station," may be issued unconditional renewals of such licenses provided they have the required service as indicated above and pass the code test required by the regulations for the class of license held by them.

(d) Renewals or new licenses may be issued a reasonable length of time previous to the expiration of existing licenses but must bear the exact date of issue, which must correspond with the date on Form 756 forwarded to the radio division. Operators who fail to apply for renewal of their licenses on or prior to the date of expiration must be reexamined. If, because of circumstances over which the applicant has no control, an operator is unable to apply for renewal of license on or prior to the date of expiration, an affidavit may be submitted to the radio division through the supervisor of radio or examining officer, attesting to the facts, which will be considered by the radio division, which will advise the supervisor of radio or examining officer in regard to the issue of a renewal of the license without reexamination. Service records must be completed and signed only by masters, employers, or the duly authorized agents of either. Any improper alteration of the service record or the forgery of masters' or employers' signatures constitutes a violation of the regulations, and the operator may suffer suspension of license for a period not exceeding two years, at the discretion of the Secretary of Commerce.

11. *Reexamination.*—No applicant who fails to qualify will be reexamined within three months from date of the previous examination. However, when an applicant for the commercial first-class license fails in the code examination he will be reexamined the same day for any other one class of license desired. Those who pass the code test successfully but fail to attain a percentage of at least 75 but do attain a percentage of at least 65 will be issued a commercial second-class license, if desired. Those who fail in the code examination for the broadcast-class license will be examined the same day for either the radio-telephone or amateur class license, if desired. An applicant for the broadcast-class license who fails to attain a percentage of at least 75 but does attain a percentage of at least 65 will be issued a radiotelephone-class license, if desired. All examination papers, except amateur, whether the applicant qualifies or not, will be forwarded to the Department of Commerce, radio division, for filing.

List of Canadian broadcasting stations

Location	Call signal	Frequency in kilocycles, meters in parenthesis	Power (watts)
Bowmanville, Ontario	CKGW	960 (312.5)	5,000
Brandon, Manitoba	CKX	540 (555.6)	500
Brantford, Ontario	CKCR	1,010 (297)	50
Calgary, Alberta	CFAC, CNRC	690 (434.8)	500
Do	CFCN, CNRC	690 (434.8)	1,800
Do	CJCT, CHCA	690 (434.8)	500
Charlottetown, Prince Edward Island	CFOY	960 (312.5)	250
Do	CHC K	960 (312.5)	30
Chatham, Ontario	CFCO	1,210 (247.9)	50
Chilliwack, British Columbia	CHWK	1,210 (247.9)	5
Cobalt, Ontario	CKMC	1,210 (247.9)	15
Edmonton, Alberta	CHMA	580 (517.2)	250
Do	CJCA, CNRE	580 (517.2)	500
Do	CKUA	580 (517.2)	500
Flaming, Saskatchewan	CJRW	600 (500)	500
Frederickton, New Brunswick	CFNB	1,210 (247.9)	50
Halifax, Nova Scotia	CHNS	930 (322.6)	500
Hamilton, Ontario	CHML	880 (340.9)	50
Do	CKOC	880 (340.9)	50
Do	CHCS	880 (340.9)	10
Iroquois Falls, Ontario	CFCH	600 (500)	250
Kamloops, British Columbia	CFJC	1,120 (267.9)	15
King, York County, Ontario	CFRB, CJBC	960 (312.5)	4,000
Kingston, Ontario	CFRC	1,120 (267.9)	500
Lethbridge, Alberta	CJOC	1,120 (267.9)	50
London, Ontario	CJGC, CNRL	910 (329.7)	500
Midland, Ontario	CKPR	1,120 (267.9)	50
Monoton, New Brunswick	CNRA	630 (476.2)	500
Montreal, Quebec	CFCF, CNRM	1,030 (291.3)	1,650
Do	CHYC	730 (411)	500
Do	CKAC, CNRM	730 (411)	5,000
Moose Jaw, Saskatchewan	CJRM	600 (500)	500
Ottawa, Ontario	CKCO	690 (434.8)	100
Do	CNRO	690 (434.8)	500
Pilot Butte, Saskatchewan	CHWG	1,210 (247.9)	500
Prescott, Ontario	CFLC	1,010 (297)	50
Preston, Ontario	CKPC	1,210 (247.9)	50
Quebec, Province Quebec	CHRC	880 (340.9)	25
Do	CKCI	880 (340.9)	22½
Do	CKOV, CNRQ	880 (340.9)	50
Red Deer, Alberta	CKLC, CHCT	840 (357.1)	1,000
Regina, Saskatchewan	CKCK, CNRR, CJBR	960 (312.5)	500
St. Hyacinthe, Quebec	CKSH	1,010 (297)	50
St. John, New Brunswick	CFBO	890 (337.1)	50
Saskatoon, Saskatchewan	CFQC, CNRS	910 (329.7)	500
Do	CJHS	910 (329.7)	250
Sea Island, British Columbia	CJOR	1,030 (291.3)	50
Summerside, Prince Edward Island	CHGS	1,120 (267.9)	25
Sydney, Nova Scotia	CJCB	880 (340.9)	50
Toronto, Ontario	CFCA, CKOW, CNRT, CJBC	840 (357.1)	500
Do	CKCL, CFCL, CJBC, CJSC	580 (517.2)	500
Do	CKNC, CNHC, CJBC	580 (517.2)	500
Vancouver, British Columbia	CKCD, CHLS	730 (411)	50
Do	CKFC	730 (411)	50
Do	CKMO	do	50
Do	CKWX	do	100
Do	CNRV	1,030 (291.3)	500
Victoria, British Columbia	CFCT	630 (476.2)	500
Winnipeg, Manitoba	CJRX	11,720 (25.6)	2,000
Do	CKY, CNRW	780 (384.6)	5,000
Wolfville, Nova Scotia	CKAC	930 (322.6)	50
Yorkton, Saskatchewan	CJGX	630 (476.2)	500

REFERENCES TO CURRENT RADIO LITERATURE

These lists heretofore published in this Bulletin will be discontinued beginning with this edition. They now appear in the Proceedings of the Institute of Radio Engineers, published monthly by the Institute of Radio Engineers, 33 West Thirty-ninth Street, New York, N. Y.