

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION, DEPARTMENT OF COMMERCE

Washington, February 1, 1917—No. 26.

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DEPARTMENT OF COMMERCE,
BUREAU OF NAVIGATION,
Washington, January 14, 1915.

To collectors of customs, radio inspectors, and others concerned:

This publication is issued monthly by the Bureau of Navigation, Department of Commerce, and distributed to the United States officers engaged in or concerned with the enforcement of the radio laws for their guidance and instruction, and to those concerned with the operation of Government and commercial radio stations for their information.

The Radio Service Bulletin supersedes the quarterly supplements to the List of Radio Stations of the United States and contains information concerning Government, commercial, and special stations only. Information regarding amateur stations appears only in the annual edition of the List of Radio Stations of the United States.

The bulletin contains tables of new stations, alterations, and corrections under headings, so that the List of Radio Stations of the United States and the List of Radiotelegraph Stations, published by the international bureau at Berne, may be brought up to date. Additions, alterations, and corrections should be entered in these two publications promptly on receipt of the bulletin.

Amendments to or changes in the Radio Laws and Regulations of the United States (edition of July 27, 1914) are printed in this bulletin in such a manner that they may be clipped and pasted in their proper places in that publication.

Items of general interest concerning the enforcement of the radio laws are printed in the bulletin from time to time, as occasion warrants.

E. T. CHAMBERLAIN,
Commissioner of Navigation.

Approved:

E. F. SWEET,
Acting Secretary.

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NEW STATIONS.

LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the List of Radio Stations of the United States, edition of July 1, 1916, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	System.	Wave lengths.	Serv-ice.	Hours.
Empire, Oreg. ¹	NZV.	U. S. Army.....	300.....	O	X
Fort Bliss, Tex. ¹	WZO.	do.....	.....	.....	.....
Fort Huachuca, Ariz. ¹	WZP.	do.....	.....	.....	.....

¹ Station operated and controlled by the United States Signal Corps, War Department, Washington, D. C.

SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

[Additions to the List of Radio Stations of the United States, edition of July 1, 1916, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Vessel.	Call signal.	System.	Wave lengths.	Serv-ice.	Hours.
Admiral Sobree ¹	WAG.	.....	300, 600.....	.....	.....
Benj. F. Packard ²	WLA.	Kilbourne & Clark, 1,000.....	300, 450, 525, 600.....	PG	X
Cambridge ³	KGR.	.....	300, 600.....	.....	.....
Capto.....	KWL.	.....	.....	.....	.....
Carl D. Bradley ⁴	WGN.	Marconi.....	300, 600.....	PG	.....
City of Brockton ⁵	KXO.	Nesco.....	300, 600.....	.....	.....
Col. P. S. Michie ⁶	NZU.	U. S. Army.....	200, 300, 425, 600.....	O	X
Ragle ⁷	KIR.	Marconi.....	300, 600.....	PG	.....
Firwood ⁸	WSB.	Kilbourne & Clark, 1,000.....	300, 450, 525, 600.....	PG	N
Freeport Sulphur No. 1 ⁹	KRA.	Marconi, 1,000.....	300, 600.....	PG	X
Freeport Sulphur No. 2 ¹⁰	KRG.	Marconi.....	300, 600.....	.....	.....
Greenwood ¹¹	WLL.	.....	.....	.....	.....
Julia Luckenbach ¹²	KGZ.	.....	300, 600.....	.....	.....
Luckenbach No. 5 ¹³	KEV.	.....	.....	.....	.....
Nokomis ¹⁴	WHD.	Marconi.....	.....	.....	.....
Redwood ¹⁵	WSD.	Kilbourne & Clark, 1,000.....	300, 450, 525, 600.....	PG	N
Santa Rosa ¹⁵	WBO.	Marconi.....	300, 600.....	.....	.....
Tiger ⁷	KIT.	do.....	300, 600.....	PG	.....
Van Hogendorp ¹⁶	KVN.	do.....	300, 450, 600.....	PG	.....
Vigo ¹⁷	KMC.	do.....	300, 600.....	PG	.....
W. C. Teagle ¹⁸	KTY.	do.....	300, 600.....	PG	.....
W. F. Burrows ¹⁹	WHG.	Kilbourne & Clark, 1,000.....	300, 450, 525, 600.....	PG	X
W. F. White ²⁰	WGC.	Marconi.....	300, 600.....	PG	.....

¹ Pacific Alaska Navigation Co., owner of vessel.

² Range 100; rates, 4 c. per word 40 c. minimum per radiogram. Radio station operated and controlled by the Northwestern Fisheries Co., owner of vessel.

³ New York & New Orleans Steamship Co., owner of vessel.

⁴ Rates, 2 c. per word 20 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Bradley Transportation Co., owner of vessel.

⁵ New England Steamship Co., owner of vessel.

⁶ Radio station operated and controlled by the United States Signal Corps, War Department, Washington, D. C. Government, owner of vessel, seagoing dredge.

⁷ Rates, North and South American service, 4 c. per word 40 c. minimum per radiogram; transoceanic service, 8 c. per word 80 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Standard Transportation Co., owner of vessel.

⁸ Range, 100; rates, 4 c. per word 40 c. minimum per radiogram. Radio station operated and controlled by the Pacific American Fisheries Co., owner of vessel.

⁹ Range, 100; rates, North and South American service, 4 c. per word 40 c. minimum per radiogram; transoceanic service, 8 c. per word 80 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Freeport Sulphur Transportation Co., owner of vessel.

¹⁰ Freeport Sulphur Transportation Co., owner of vessel.

¹¹ Greenwood Steamship Co., owner of vessel.

¹² Edgar F. Luckenbach, owner of vessel.

¹³ Luckenbach Steamship Co., owner of vessel.

¹⁴ Horace E. Dodge, owner of vessel, yacht.

¹⁵ W. R. Grace & Co., owner of vessel.

¹⁶ Rates, North and South American service, 4 c. per word 40 c. minimum per radiogram; transoceanic service, 8 c. per word 80 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Sarnia Steamship Corp., owner of vessel.

¹⁷ Rates, North and South American service, 4 c. per word 40 c. minimum per radiogram; transoceanic service, 8 c. per word 80 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Junius H. Stone (Transoceanic Steamship Corp.), owner of vessel.

¹⁸ Rates, North and South American service, 4 c. per word 40 c. minimum per radiogram; transoceanic service, 8 c. per word 80 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Standard Oil Co. of N. J., owner of vessel.

¹⁹ Range, 100; rates, 4 c. per word 40 c. minimum per radiogram. Radio station operated and controlled by Libby, McNeill & Libby Co., owner of vessel.

²⁰ Rates, 2 c. per word 20 c. minimum per radiogram. Radio station operated and controlled by the Marconi Co. Limestone Transportation Co., owner of vessel.

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LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

[b=ship station; c=land station.]

Call signal.	Name.	Call signal.	Name.		
KEV..	Luckenbach, No. 5.....	b	NZV..	Empire, Oreg.....	c
KGR..	Cambridge.....	b	WAG..	Admiral Seabee.....	b
KGZ..	Julia Luckenbach.....	b	WBO..	Santa Rosa.....	b
KIR..	Eagle.....	b	WGC..	W. F. White.....	b
KIT..	Tiger.....	b	WGN..	Carl D. Bradley.....	b
KMC..	Vigo.....	b	WHD..	Nokomis.....	b
KRA..	Freeport Sulphur No. 1.....	b	WHG..	W. F. Burrows.....	b
KRG..	Freeport Sulphur No. 2.....	b	WLA..	Benj. F. Packard.....	b
KTY..	W. C. Teagle.....	b	WLL..	Greenwood.....	b
KVN..	Van Hogendorp.....	b	WSB..	Firwood.....	b
KWL..	Capto.....	b	WSD..	Redwood.....	b
KXO..	City of Broekton.....	b	WZO..	Fort Bliss, Tex.....	c
NZU..	Col. P. S. Michie.....	b	WZP..	Fort Huachuca, Ariz.....	c

SPECIAL LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the List of Radio Stations of the United States, edition of July 1, 1916, only.]

Station.	Call signal.	Wave lengths.	Service.	Hours.	Station controlled by--
Medford, Mass.....	1XE..	300, 600, variable.	P	X	American Radio & Research Corp.
Minneapolis, Minn.....	9YP..	800, 425.....	P	X	American Telegraph College.
Rawson Ranch, near Kuna, Idaho.	7ZR..	800, 425.....	P	X	Homer E. Rawson.
Roland Park, Md.....	3XA..	200, 300, 400, 600.	P	X	Louis D. Coriell.
Valley Stream, N. Y.....	2ZL..	200, 300, 425, 600.	P	X	J. Owen Smith.
Woodstock, Ill.....	9ZG..	800, 425.....	P	X	Sydney A. Greenleaf.

SPECIAL LAND STATIONS, GROUPED BY DISTRICTS.

Call signal.	District and station.	Call signal.	District and station.
1XE...	First district: Medford, Mass.	7ZR....	Seventh district: Rawson Ranch, near Kuna, Idaho.
2ZL...	Second district: Valley Stream, N. Y.	9YP...	Ninth district: Minneapolis, Minn.
3ZA....	Third district: Roland Park, Md.	9ZG....	Woodstock, Ill.

ABBREVIATIONS.

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

- Name = Name of station.
- G. loc = Geographical location: O=west longitude, N=north latitude.
- Call = Call letters assigned.
- System = Radio system used and sparks per second.
- Range = Normal range in nautical miles.
- W. L. = Wave lengths assigned: Normal wave lengths in italics.

Service=Nature of service maintained:

PG=General public.

PR=Limited public.

P =Private.

O =Government business exclusively.

Hours =Hours of operation:

N =Continuous service.

X =No regular hours.

m =a. m. (12m=midday).

s =p. m. (12s=midnight).

Rates =Ship or coast charges, in cents: c=cents. (The rates in the international list are given in francs and centimes. For approximate purposes, 1 franc equals 20 cents and 5 centimes equal 1 cent.)

Notes =Refer to notes in the Berne list.

ALTERATIONS AND CORRECTIONS.

LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of July 1, 1918, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

AVALON, CAL.—W. L., 300, 500, 600. Note, Radio station operated and controlled by the Marconi Co. The station communicates only with the steam ferries *Cabrillo* and *Hermosa* and with the station E. San Pedro, Cal.; rates, 2c. per word 20c. minimum per radiogram.

CAPE MAY, N. J.—W. L., 300, 450, 600.

CHICAGO, ILL.—System, Marconi, 1,000; W. L., 300, 450, 600; hours, 1m-11m, 12m-5s, 8s-12s.

DAUNTLESS (WRP).—Strike out all particulars.

DOUGLAS, ARIZ.—Range, 100; W. L., 600, 1650; service, limited commercial.

ENSENADA, P. R.—Range, 150; system, Marconi, 480; hours, week days, 8m-12m, 2s-5s.

FORT YUKON, ALASKA.—Service, PG.

HOLY CROSS, ALASKA.—Hours, receives and transmits at 11m, 3s and 6s on week days, 11m and 6s Sundays and holidays.

JUNEAU, ALASKA.—Note, Radio station operated and controlled by the Marconi Co. The station also communicates with Chichagof; rates as for Jualin, Alaska.

KAUNAKAKAI, ISLAND OF MOLOKAI, HAWAII.—Note, Rates for interisland messages (address and signature counted and charged for), ordinary messages 15c. per word no minimum, press messages 7½c. per word no minimum, cipher or code messages (origin and destination Hawaiian Islands), 25c. per word no minimum, night letters, in plain language only, \$1 for first 24 words 4c. for each additional word. Night letters are not accepted for ships. Messages in other than the English language are charged for at code rate. Double-rush messages are charged for at double rate. Cablegrams or trans-Pacific wireless messages in cipher, code, foreign or English, are accepted and forwarded at ordinary rates plus the forwarding charges of the cable or wireless company when such messages are delivered to them for forwarding.

KAWAIHAE, ISLAND OF HAWAII, HAWAII.—Same note as for Kaunakakai, Island of Molokai, Hawaii.

LAHAINA, ISLAND OF MAUI, HAWAII.—Same note as for Kaunakakai, Island of Molokai, Hawaii.

LIHUE, ISLAND OF KAUAI, HAWAII.—Same note as for as Kaunakakai, Island of Molokai, Hawaii.

SEATTLE, WASH. (KPA).—G. loc., O 122° 20' 00'', N 47° 36' 00''; range 150; W. L., 300, 500, 600, 1650, 2,980. Notes, Radio station operated and controlled by the Marconi Co. The station also communicates with coast stations at Juneau and Ketchikan, Alaska; rates, domestic count, day messages 10 c. per word \$1 minimum per radiogram, night messages 8 c. per word 80 c. minimum per radiogram, night letters 50 words for \$1, 20 c. for each additional 10 words or less, press dispatches 3 c. per word \$1 minimum per radiogram.

WAHIWA, ISLAND OF OAHU, HAWAII.—Notes, Radio station operated and controlled by the Mutual Telephone Co. (Ltd.). Station conducts special interisland service with Kawaihae, Lahaina, and Lihue, Hawaii, and communicates with Tutuila and Apia, Samoa. Rates for interisland messages (address and signature counted and charged for) ordinary messages 15 c. per word no minimum, press messages 7½ c. per word no minimum, cipher or code messages (origin and destina-

tion Hawaiian Islands) 25 c. per word no minimum, night letters, in plain language only, \$1 for first 24 words 4 c. for each additional word. Night letters are not accepted for ships. Messages in other than the English language will be charged for at code rate. Double-rush messages will be charged for at double rate. Cablegrams or trans-Pacific wireless messages in cipher, code, foreign or English, will be accepted and forwarded at ordinary rates plus the forwarding charges of the cable or wireless company when such messages are to be delivered to them for forwarding. For messages exchanged with Tutuila, 10 c. per word \$1 minimum per radiogram; for messages exchanged with Apia, 50 c. per word no minimum; for press messages transmitted to ships at sea, 5 c. per word 50 c. minimum per radiogram.

SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of July 1, 1916, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

ALAMO.—W. L., 300, 450, 600.

AMOLCO.—W. L., 300, 600; service, PG; hours, X; rates, 8 c. per word 80 c. minimum per radiogram. Note, Radio station operated and controlled by the Boston Molasses Co., owner of vessel.

ANN ARBOR No. 6.—Range, 100; system, Marconi, 480; hours, X.

ATLANTA.—Strike out all particulars.

BRAZOS.—System, Marconi, 1,000; W. L., 300, 450, 600; rates, North and South American service, 4 c. per word 40 c. minimum per radiogram, transoceanic service, 8 c. per word 80 c. minimum per radiogram.

BUCCANER.—Range 150; system, Marconi, 240; service, PG; hours, X.

CALIFORNIA (WOR).—Note, Radio station operated and controlled by the Marconi Co. Harby Steamship Co. (Inc.), owner of vessel.

CITY OF SEATTLE.—Note, Radio station operated and controlled by the Marconi Co. Pacific Coast Co., owner of vessel. Pacific Steamship Co., charterers of vessel.

COMMODORE.—Range, 75; system, Nesco, 1,000; W. L., 300, 600, 820, 925, 1020, 1110, 1200, 1260, 1350; service, P., hours, X. Note, Radio station operated and controlled by the Illinois Naval Battalion, owner of vessel.

EL RIO.—System, Marconi, 1,000; W. L., 300, 450, 600; rates, North and South American service, 4 c. per word 40 c. minimum per radiogram, transoceanic service, 8 c. per word 80 c. minimum per radiogram.

FORDONIAN.—System, Marconi; W. L., 300, 600; service, PG; rates, North and South American service, 4 c. per word 40 c. minimum per radiogram, transoceanic service, 8 c. per word 80 c. minimum per radiogram. Note, Radio station operated and controlled by the Marconi Co. A. J. Outerbridge, owner of vessel.

FRANCIS HANIFY.—Strike out all particulars.

GOVERNOR FORBES.—Strike out all particulars.

MAINE (KXD).—System, Fessenden, 260; W. L., 300, 550, 600.

MARYLAND.—Strike out all particulars.

MAUI.—Service, PG; rates, North and South American service, 4 c. per word 40 c. minimum per radiogram, transoceanic service, 8 c. per word 80 c. minimum per radiogram. Note, Radio station operated and controlled by the Marconi Co. Matson Navigation Co., owner of vessel.

MUNDALE.—Range, 200; system, Marconi, 1,000; W. L., 300, 450, 600; hours, X.

NACOCHEE.—W. L., 300, 450, 600.

ONEIDA (KYP).—Range, 250; system, Composite, 1,000.

ONEONTA.—System, Kilbourne & Clark, 1,000; W. L., 300, 450, 525, 600. Note, Radio station operated and controlled by the port of Portland, Oreg., owner of vessel.

PAUL JONES (KVU).—Rates, 4 c. per word 40 c. minimum per radiogram.

PENNANT.—Range, 200; system, Marconi, 1,000; W. L., 300, 450, 600; hours, X.

QUEEN (WGX).—Note, Radio station operated and controlled by the Marconi Co. Pacific Coast Co., owner of vessel. Pacific Steamship Co., charterers of vessel.

SENATOR.—Note, Radio station operated and controlled by the Marconi Co. Pacific Coast Co., owner of vessel. Pacific Steamship Co., charterers of vessel.

SPOKANE.—Note, Radio station operated and controlled by the Marconi Co. Pacific Coast Co., owner of vessel. Pacific Steamship Co., charterers of vessel.

SUNLITE.—Range, 200; system, Marconi, 1,000; W. L., 300, 450, 600; hours, X.

UMATILLA.—Note, Radio station operated and controlled by the Marconi Co. Pacific Coast Co., owner of vessel. Pacific Steamship Co., charterers of vessel.

VENEZUELA.—Range, 200; system, Marconi, 480; hours, N.

WALLULA.—System, Kilbourne & Clark, 1,000; W. L., 300, 450, 525, 600. Note, Radio station operated and controlled by the port of Portland, Oreg., owner of vessel.

SPECIAL LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of July 1, 1916, only.]

COLUMBIA, MO. (9XQ).—Strike out all particulars.

KEY WEST, FLA.—Strike out all particulars.

RAPID CITY, S. DAK. (9XA).—W. L., 425, variable. Radio station operated and controlled by the South Dakota School of Mines.

MISCELLANEOUS.

COMMERCIAL RADIO OPERATORS LICENSED DURING MONTH OF DECEMBER, 1916.

Extra first grade.

Date.	Licensee.	Address.	Serial No.	Where issued. ¹
1	Ingalls, Herbert E.	176 Hickborn St., Revere, Mass.	60	Boston. ²

First grade.

7	*Barbalate, Aaron.	1549 44th St., Brooklyn, N. Y.	14984	New York.
7	*Baxter, Joseph H.	274 10th St., Astoria, Ore.	14751	Seattle.
20	*Beach, Chester L.	215 Clark St., Westfield, N. J.	15006	New York.
13	*Bell, Lloyd E.	803 N. Fulton Ave., Baltimore, Md.	14280	Boston.
12	*Bergman, Lester J.	R. F. D. No. 2, Belmar, N. J.	14997	New York.
18	*Black, William R.	547 E. 87th St., New York, N. Y.	15251	Brooklyn. ²
27	*Blake, Charles H.	Care Federal Tel. Co., South San Francisco, Cal.	13947	San Francisco.
11	Blankenship, Charles C.	59 Cottage St., Everett, Mass.	14279	Boston.
18	*Bolton, James J.	State Road East, Wayland, Mass.	14285	Do.
12	*Bookmyer, Alvin J.	115 Wilmot St., San Francisco, Cal.	13934	San Francisco.
2	*Boucheron, Pierre H.	29 Fulton St., Maspeth, L. I., N. Y.	14975	New York.
9	*Bourne, Evan F.	Santa Marta, Republic of Colombia.	14989	Do.
26	*Bowers, Albert F.	1946 W. Pratt St., Baltimore, Md.	12210	Baltimore.
2	Bowman, Orley D.	Fort Monroe, Va.	13592	Fort Monroe. ³
18	*Boyle, John M.	3228 Mission St., San Francisco, Cal.	13939	San Francisco.
20	*Breitenbach, Derek S.	Buxton, N. C.	12208	Baltimore.
2	Bridger, Harley J.	Fort Monroe, Va.	15104	Fort Monroe. ³
2	Brock, Terry P.	do.	15102	Do. ²
14	*Broadhead, Edgar F.	Sayville, L. I., N. Y.	15003	New York.
22	*Broussard, Joseph E.	25 Elm St., New York, N. Y.	15008	Do.
12	*Brower, Robert H.	3184 Washington St., San Francisco, Cal.	13931	San Francisco.
29	Bruce, Edmund.	731 Rock Creek Church Road, Washington, D. C.	12018	Washington.
8	*Burch, Joseph A.	S. S. Topila, Galveston, Tex.	14184	New Orleans.
13	*Burgess, George H.	1148 57th St., Brooklyn, N. Y.	14090	New York.
6	*Campbell, Colby D.	2001 Ave I, Galveston, Tex.	14182	New Orleans.
19	*Cannon, Clifford, H.	3047 23d St., San Francisco, Cal.	13941	San Francisco.
11	*Carter, Maurice G.	47 Thames St., Newport, R. I.	14993	New York.
14	*Cheatham, Henry R.	81 Avon St., Somerville, Mass.	15001	Do.
19	Circeo, Charles J.	22 Battery St., Boston, Mass.	14288	Boston.
8	Cohen, Louis.	71 Hinsdale St., Brooklyn, N. Y.	14935	Brooklyn. ²
2	*Colc, George E.	624 E. 17th St., Brooklyn, N. Y.	14977	New York.
29	Cole, Jirah D., jr.	810 Vernon Ave., Glencoe, Ill.	13747	Chicago.
8	*Coleman, Arthur.	4 Stone St., New York, N. Y.	14587	New York.
1	*Commagere, E. L.	835 Roosevelt Pl., New Orleans, La.	14177	New Orleans.
18	Cornet, Hermanus J.	363 Main St., Union Hill, N. J.	14944	Brooklyn. ²
8	*Crittenden, Algernon.	1937 Stillwell Ave., Brooklyn, N. Y.	14985	New York.
8	Croncy, Joseph, E.	690 Prospect Pl., Brooklyn, N. Y.	14933	Brooklyn. ²
1	*Cronin, Jeremiah K.	U. S. Naval Radio Station, Norfolk, Va.	12968	Norfolk. ³
9	*Curtis, Otto E.	84 St. Stephen St., Boston, Mass.	12200	Baltimore.
13	*Dalley, Richard B.	Buxton, N. C.	12204	Do.
11	*Davies, Richard J., jr.	334 4th St., Union Hill, N. J.	14991	New York.
28	*Davis, William H.	201 W. Franklin St., Baltimore, Md.	12211	Baltimore.
29	Davis, William R.	1409 West Edwards St., Springfield, Ill.	13746	Chicago.

*License issued as renewal of expiring license without examination. Otherwise license issued on written examination.

¹ All licenses issued by radio inspectors of the Department of Commerce unless otherwise indicated.

² License issued by radio examining officer, Navy Department.

³ License issued by radio examining officer, War Department.

MISCELLANEOUS—Continued.

COMMERCIAL RADIO OPERATORS LICENSED DURING MONTH OF DECEMBER, 1916—continued.

First grade—Continued.

Date.	Licensee.	Address.	Serial No.	Where issued.
13	*De Coste, Daniel J.	90 Lonsdale St., Dorchester, Mass.	14281	Boston.
18	*Dent, Laramie C.	608 S. Dearborn St., Chicago, Ill.	13742	Chicago.
2	De Pretis, John.	Fort Monroe, Va.	13596	Fort Monroe. ¹
11	*Deyscher, John P.	Sayville, L. I., N. Y.	14992	New York.
2	*Dobbins, John S.	R. F. D. No. 2, New Orleans, La.	14187	New Orleans.
4	*Drumney, William J.	424 Broadway, South Boston, Mass.	14274	Boston.
2	Dula, Julius A.	Fort Monroe, Va.	13599	Fort Monroe. ¹
2	Easterbrook, Charles A.	do.	13591	Do. ¹
27	*Eckhardt, John P., jr.	615 Prospect Pl., Brooklyn, N. Y.	15260	Brooklyn. ²
12	*Eddy, Arlof N.	Block Island, R. I.	12367	Boston. ²
15	Edmonds, Alonzo.	332 Duke St., Norfolk, Va.	13006	Charleston. ²
8	*Edmonds, Edward J.	Pacific States Hotel, San Francisco, Cal.	13927	San Francisco.
6	Elliott, Fred.	1102 E. Pearl St., Jackson, Mich.	13740	Chicago.
9	*Elliott, Seymour R.	16 Kent St., Cliftondale, Mass.	14278	Boston.
12	*Fagan, Charles L.	Rahway, N. J.	14996	New York.
29	*Fairley, Edward R.	987 Pine St., Oakland, Cal.	13950	San Francisco.
18	Ferrick, William J.	185 Audubon Ave., New York, N. Y.	14947	Brooklyn. ²
9	Ferris, Malcolm.	3409 Baring St., Philadelphia, Pa.	12917	Philadelphia. ²
15	Fields, James C.	Naval Radio Station, New Orleans, La.	14191	New Orleans.
12	*Filson, Norman W.	29 Barton St., Waltham, Mass.	14282	Boston.
11	*Flotman, John M.	Care Marconi Co., San Francisco, Cal.	13929	San Francisco.
11	Forness, Fred.	Wahiawa, Hawaii.	13310	Pearl Harbor, Hawaii. ²
27	*Friend, William H.	217 W. Clark St., Eureka, Cal.	13948	San Francisco.
4	Fuller, Ray.	Care Tropical Radio Tel. Co., New Orleans, La.	14178	New Orleans.
18	Gaul, Charles.	320 St. Nicholas Ave., New York, N. Y.	14949	Brooklyn. ²
12	*Giambruno, Waldon P.	1423 Linden St., Oakland, Cal.	13930	San Francisco.
2	Goodwin, James E.	Fort Monroe, Va.	13597	Fort Monroe. ¹
8	*Grinnell, Milton W.	55 Buffum St., Salem, Mass.	14275	Boston.
19	Hanley, John E.	2580 Poplar St., New York, N. Y.	15255	Brooklyn. ²
7	Harrigan, John J.	Virginia Beach, Va.	12196	Baltimore.
8	*Harte, James W.	1862 N. Uber St., Philadelphia, Pa.	14988	New York.
7	*Hartley, Edwin M.	257 Grant St., Cape May, N. J.	12195	Baltimore.
20	*Hatch, Robert I.	1485 Pine St., San Francisco, Cal.	13942	San Francisco.
14	Helser, Fred D.	Sayville, L. I., N. Y.	15002	New York.
12	*Henderson, George E.	233 S. Pierce St., New Orleans, La.	14185	New Orleans.
2	Hodges, Sandel A.	2804 Kelsey St., Berkeley, Cal.	13935	San Francisco.
2	Howe, Sidney C.	Fort Monroe, Va.	13598	Fort Monroe. ¹
18	Hughes, William V.	965 Teller Ave., New York, N. Y.	14945	Brooklyn. ²
12	*Hillingworth, F. Harold.	501 E. Forsythe St., Jacksonville, Fla.	12202	Baltimore.
9	*Jagers, Homer D.	312 University St., Healdsburg, Cal.	13928	San Francisco.
6	*Jensen, Jens.	1101 13th Ave. South, Seattle, Wash.	14150	Seattle.
6	*Jepsson, Jeppo H.	Skive, Denmark.	14981	New York.
18	Jewett, Robert C.	607 Eagle Ave., New York, N. Y.	14948	Brooklyn. ²
7	Johnson, Axel W.	459 E. 135th St., New York, N. Y.	14932	Do. ²
21	*Jones, Carl L.	Bostick, S. C.	15007	New York.
4	*Jones, Edward T.	3999 Dumaine St., New Orleans, La.	14180	New Orleans.
13	*Julien, Ira F.	P. O. Box 43, Astoria, Oreg.	14759	Seattle.
14	Kahl, Harry.	967 Sherman Ave., New York, N. Y.	14937	Brooklyn. ²
8	Kallinic, Peter.	312 W. 27th St., New York, N. Y.	14934	Do. ²
19	*Keever, Ross N.	66 Heidt Ave., Oakwood, Mich.	13743	Chicago.
27	*Kennedy, Colin.	2340 West Boulevard, Los Angeles, Cal.	13945	San Francisco.
4	*Kent, William P.	Virginia Beach, Va.	12193	Baltimore.
12	*Lange, August F.	2824 W. Genesee St., Seattle, Wash.	13932	San Francisco.
12	Lawrence, Edwin E.	Naval Radio Station, New Orleans, La.	14188	New Orleans.
27	Leathers, John W.	78 Bay State Ave., Somerville, Mass.	14291	Boston.
11	Leighton, Harold W.	25 Walnut St., Lynn, Mass.	12655	Do. ²
21	*Lewis, James C.	538 Massachusetts Ave., Boston, Mass.	14290	Do. ²
2	Long, Arthur M.	Fort Monroe, Va.	13595	Fort Monroe. ¹
9	*Lovejoy, Loren A.	535 N. 75th St., Seattle, Wash.	14752	Seattle.
15	Lovett, John A.	30 Bayside Pl., Rockaway Beach, N. Y.	14940	Brooklyn. ²
12	*Lovlee, Raymond P.	Kenneth Hotel, Seattle, Wash.	14754	Seattle.
18	Madden, Francis X.	2391 Davidson Ave., New York, N. Y.	14946	Brooklyn. ²
15	Mahoney, John J.	550 Kappock St., New York, N. Y.	14939	Do. ²
13	*Marrlott, John A.	Kensington, Alaska.	14761	Seattle.
12	Mason, Howard F.	2702 31st Ave., South Seattle, Wash.	14755	Do.
1	*Maxson, Charles P.	10 Maxson St., West Mystic, Conn.	14176	New Orleans.
7	*McBride, Karl.	1003 Edmonson Ave., Baltimore, Md.	12191	Baltimore.
4	*McKee, Loyal W.	231 N. Monroe St., Baltimore, Md.	12192	Do.
15	McKee, Russel.	4218 Napier Ave., New York, N. Y.	14942	Brooklyn. ²

* License issued as renewal of expiring license without examination. Otherwise license issued on written examination.

¹ License issued by radio examining officer, War Department.

² License issued by radio examining officer, Navy Department.

MISCELLANEOUS—Continued.

COMMERCIAL RADIO OPERATORS LICENSED DURING MONTH OF
DECEMBER, 1916—continued.

First grade—Continued.

Date.	Licensee.	Address.	Serial No.	Where issued.
27	*McKinnon, John L.	3014 Blanchard St., Los Angeles, Cal.	13946	San Francisco.
27	*McLarny, Thomas A.	Care of United Fruit Co., Bocas del Toro, Panama.	15011	New York.
28	*McQuaid, John F.	L. C. Smith Bldg., Seattle, Wash.	14771	Seattle.
4	McWeeny, John L.	U. S. S. Porter, New York, N. Y.	12654	Boston.
7	*Meekin, William J.	Pier 37, Brooklyn, N. Y.	14982	New York.
2	Messerschmidt, John A.	Fort Monroe, Va.	13594	Fort Monroe. ²
11	Miller, Herbert W.	203 E. 71st St., New York, N. Y.	14936	Brooklyn. ¹
15	Miller, William C.	Naval Radio Station, Tatoosh, Wash.	13204	Tatoosh. ¹
23	*Mohl, Edward O.	920 Taylor St., San Francisco, Cal.	13944	San Francisco.
21	*Morean, Arthur.	4 Londonderry Rd., Liverpool, Eng.	14289	Boston.
8	*Morris, Maynard C.	601 American Bldg., Baltimore, Md.	12199	Baltimore.
15	*Moulton, Arthur D.	45 Avon St., Wakefield, Mass.	14283	Boston.
13	*Mousley, Franklin.	Palace Hotel, San Francisco, Cal.	13937	San Francisco.
2	Muller, Hans A.	Fort Monroe, Va.	15101	Fort Monroe. ²
14	*Murphy, Francis J.	1526 Sansom St., Philadelphia, Pa.	15005	New York.
2	Murphy, Joseph.	Fort Monroe, Va.	15105	Fort Monroe. ²
21	*Murray, Eugene M.	Haverford, Pa.	12209	Baltimore.
7	*Nelson, Francis A.	Virginia Beach, Va.	12197	Do.
26	*Nicholas, Edwin A.	2889 W. 12th St., Cleveland, Ohio.	13744	Chicago.
8	*Nicholls, George W.	9 Wolcott St., Malden, Mass.	14276	Boston.
12	*Nichols, Clifton T.	2762 San Antonio Ave., Alameda, Cal.	13933	San Francisco.
18	Northrop, William T.	Grant Ave., Bronx, New York, N. Y.	15252	Brooklyn. ¹
2	Oldham, David C.	Fort Monroe, Va.	13593	Fort Monroe. ²
12	*O'Neill, John H.	1643 47th Ave., San Francisco, Cal.	13936	San Francisco.
28	*Ormiston, Kenneth G.	San Francisco, Cal.	13949	Do.
9	O'Stein, William W.	Newbern, N. C.	12069	Norfolk. ¹
19	*Ott, George A.	U. S. S. Pamlico, Newbern, N. C.	15151	Do.
4	*Pannill, Charles J.	Radio, Va.	12017	Washington.
11	*Pearse, William C.	505 W. 111th St., New York, N. Y.	14994	New York.
7	Perry, Joseph O.	784 Garfield St., Appleton, Wis.	13361	Darien, C. Z. ¹
21	Peterson, Frank E.	2615 Virginia St., Berkeley, Cal.	13943	San Francisco.
2	Pistolek, Frederick J.	Fort Monroe, Va.	15103	Fort Monroe. ²
29	Prenzel, Elmer.	718 S. 14th St., Sheboygan, Wis.	13745	Chicago.
6	*Quigley, Edward I.	Pier 47, North River, New York, N. Y.	14980	New York.
12	*Randow, Albert H.	Philadelphia, Pa.	12201	Baltimore.
19	Ray, John W.	151 Smart Ave., Flushing, L. I., N. Y.	15258	Brooklyn. ¹
12	*Rehbein, Arthur H. F.	163 E. 4th St., Brooklyn, N. Y.	14998	New York.
8	*Ridley, Arthur E.	South Hanson, Mass.	14277	Boston.
13	Rodan, Cornelius F.	U. S. Naval Radio Station, New Orleans, La.	14189	New Orleans.
15	*Rodebaugh, Herbert M.	Chestnut Hill, Philadelphia, Pa.	12206	Baltimore.
7	Satome, Frederic W.	1493 Harrison St., Oakland, Cal.	13926	San Francisco.
12	*Savage, Reginald S.	Care of Marconi Co., New York, N. Y.	14995	New York.
7	Sazer, Maurice L.	1019 Perdido St., New Orleans, La.	14183	New Orleans.
15	Schwartz, Frederick.	128 W. 112th St., New York, N. Y.	14941	Brooklyn. ¹
2	Seemann, Robert.	Fort Monroe, Va.	13600	Fort Monroe. ²
15	Sellers, James H.	Care Tropical Radio Tel. Co., New Orleans, La.	14190	New Orleans.
13	*Shalleross, Howard W.	West Cape May, N. J.	12203	Baltimore.
2	Shatto, Alva E.	Fort Monroe, Va.	15106	Fort Monroe. ²
16	*Shaw, Frank W.	1366 Green St., San Francisco, Cal.	13938	San Francisco.
28	Shorey, Gustavus F.	249 Grove St., Melrose, Mass.	14292	Boston.
15	Smith, Alan P., 3d.	18 E. Madison St., Baltimore, Md.	12207	Baltimore.
4	*Smith, Robert G.	Swan Island.	14179	New Orleans.
5	Stairley, Benjamin F.	Naval Radio Station, New Orleans, La.	14181	Do.
18	*Stevens, Thomas M.	Merchants Exchange Bldg., San Francisco, Cal.	13940	San Francisco.
8	*Stewart, Charles H.	St. David's, Pa.	12198	Baltimore.
19	*Tierney, Matthew C.	Siasconset, Mass.	14287	Boston.
18	Tilley, Henry H.	5 Dartmouth St., Newport, R. I.	14286	Do.
12	*Trevatt, Charles F.	L. C. Smith Bldg., Seattle, Wash.	14753	Seattle.
19	Upham, Henry.	1829 Bathgate Ave., New York, N. Y.	15256	Brooklyn. ¹
12	*Vermilya, Irving.	South Wellfleet, Mass.	12636	Boston. ¹
14	*Vogel, Wm. F.	1219 William St., Baltimore, Md.	12205	Baltimore.
15	Vosburgh, Charles P.	4328 Richardson Ave., New York, N. Y.	14943	Brooklyn. ¹
2	*Vosburgh, Ross J.	322 Lincoln Rd., Brooklyn, N. Y.	14976	New York.
18	*Wampler, Edward V.	Lynden, Wash.	14758	Seattle.
14	Ward, James J.	522 W. 182d St., New York, N. Y.	14938	Brooklyn. ¹
18	Ward, John F.	do.	14950	Do. ¹
7	*Weaver, Charles J.	1016 E. 13th St., Brooklyn, N. Y.	14983	New York.

* License issued as renewal of expiring license without examination. Otherwise license issued on written examination.

¹ License issued by radio examining officer, Navy Department.

² License issued by radio examining officer, War Department.

MISCELLANEOUS—Continued.

COMMERCIAL RADIO OPERATORS LICENSED DURING MONTH OF
DECEMBER, 1916—continued.

First grade—Continued.

Date.	Licensee.	Address.	Serial No.	Where issued.
7	*White, Chester C. 1	554 Brunswick St., San Francisco, Cal.	13908	San Francisco.
1	Whil, Otto H.	76 Woodward Ave., San Francisco, Cal.	13925	Do.
14	*Wiltse, George V.	Hotel Delta, Seattle, Wash.	14756	Seattle.
18	*Woods, R.	118 Johns St., Seattle, Wash.	14757	Do.
9	Worrell, Richard A.	Sussex St., Larchmont, Norfolk, Va.	12970	Norfolk. ²
2	*Wright, Marshall C.	569 West End Ave., New York, N. Y.	14978	New York.
12	*Young, Robert I.	1421 Arch St., West Tampa, Fla.	14186	New Orleans.
10	*Yuter, Abe I.	715 Tremont Ave., New York, N. Y.	14990	New York.

Second grade.

29	Agnoli, Justus J.	16 Purvis St., Long Island City, N. Y.	13836	Brooklyn. ²
19	Cardoza, James G.	Campbel St., Oakland, Cal.	13225	San Francisco.
27	Clarkin, William	2416 Morris Ave., New York, N. Y.	13835	Brooklyn. ²
26	Donohue, Peter J.	137 W. 60th St., New York, N. Y.	13832	Do. ²
27	Downing, Joseph F.	353 W. 57th St., New York, N. Y.	13833	Do. ²
29	Fitzpatrick, George W.	3245 Ferdinand St., Seattle, Wash.	12276	Seattle.
18	*Gillen, William H.	407 W. 23d St., New York, N. Y.	12104	New York.
7	Hicks, Thomas R.	318 W. 57th St., New York, N. Y.	13831	Brooklyn. ²
4	Hotchkiss, Raymond S.	U. S. S. Porter, New York, N. Y.	12422	Boston. ²
29	Krog, Albert.	Valparaiso, Ind.	12393	Chicago.
7	May, Fred	143 High St., Montclair, N. J.	13829	Brooklyn. ²
5	McKee, Stuart S.	New Orleans, La.	12210	New Orleans.
27	Mosher, Robert B.	236 W. 83d St., New York, N. Y.	13834	Brooklyn. ²
26	Pennypacker, Thomas R.	St. George's School, Newport, R. I.	12073	Boston.
1	Peterson, Robert M.	3 Blodgett Pl., Worcester, Mass.	12072	Do.
7	Roy, James A.	303 Orange Rd., Montclair, N. J.	13830	Brooklyn. ²
23	Swenson, Joseph	7852 Ashworth Ave., Seattle, Wash.	12275	Seattle.
1	White, Elliott A.	634 Hinman Ave., Evanston, Ill.	12392	Chicago.

* License issued as renewal of expiring license without examination. Otherwise license issued on written examination.

¹ License issued in November; particulars received at bureau too late for publication in November list.

² License issued by radio examining officer, Navy Department.

UNUSUAL SOURCE OF AUXILIARY POWER SUPPLY.

The following is an extract from the report of Radio Operator Willard Ferris, of the steamship *Carolina* of the Goodrich Transit Co., which met with an accident on December 3, 1916, running aground on Stony Creek Reef and springing several plates. The vessel is voluntarily equipped with radio apparatus and is not supplied with an auxiliary source of power supply:

The power went off at 7 p. m., and the Manitowoc station called at frequent intervals until 10 p. m., and from that time until 11 p. m. the Ludington and Milwaukee stations called, but I was unable to answer them, as there was no power. About 11 o'clock, with the permission of the captain and the assistance of some of the crew, I removed the storage batteries from the six automobiles which were on board.

I wired these batteries in series, obtaining a total voltage of 36. The transmitter was of the one-half kilowatt, 120 cycle, panel type, and by adjusting the rheostats for full power and using six plates in the quenched gap a reading of one-fourth ampere on the hot-wire ammeter was obtained and communication was established with Ludington, a distance of about 75 miles.

It was necessary to short circuit the automatic starter, as there was not enough power to raise the solenoid, and to substitute a wire for the generator field switch, in order to disconnect the motor running the quenched-gap blower and save all the power for the operation of the motor generator. The batteries were restored to the automobiles the following afternoon when the cars were placed aboard a relief vessel.

ALASKAN RADIO STATIONS CLOSED.

The radio stations at Alockanok River and Clarks Point, Alaska, and the permanently moored schooner *Metha Nelson*, located at Bristol Bay, Alaska, have been closed for the season and will reopen about March, 1917.

CHANGE IN SERVICE OF NOME RADIO STATION.

The continuous service maintained by the Signal Corps station at Nome, Alaska, has been discontinued and will be resumed on June 1, 1917. The present hours of operation are from 8 a. m. to 9 p. m. on week days, and 8 a. m. until clear and 4 p. m. until clear on Sundays and holidays.

CHANGES IN FRENCH RADIO STATIONS.

The Bureau is in receipt of information from the Director of the International Radiotelegraphic Bureau at Berne, Switzerland, that he has been advised by the Minister of French Colonies that the land station at Tabou, Occidental French Africa, has again been opened to service and that the operation of the land station at Monrovia, Liberia (FMA), has been suspended.

PROPOSED TELEGRAPH LINES, RADIO STATION, AND CODE IN PERU.

Measures have been adopted by the Peruvian Government authorizing the construction of a telegraph line between the cities of Ica and Castrovirreyna, at a cost of 6,300 Peruvian pounds (\$30,659), and the installation of wireless stations at various points in the basin of the Amazon, at a cost of 10,000 Peruvian pounds (\$48,665). El Peruano also notes that a new telegraphic code has been compiled by the Department of Telegraphs and Mails, and a commission of Government officials has been appointed to examine the code and to make a recommendation as to its adoption.

NEW RADIO STATION IN BOLIVIA.

A new radio station has recently been erected at Viacha near La Paz. The West Coast Leader says that commercial service was established October 20 between the Bolivian station and the Lima wireless station at San Cristobal.

MARINE DISASTERS IN WHICH WIRELESS FIGURED DURING THE PERIOD
JULY 1 TO DECEMBER-31, 1916.

July 11.—Steamship *Ramos* foundered in a gale while en route from Philadelphia to Cartagena, Colombia. SOS calls were answered by the Miami land station and the steamships *Van Hogendorp* and *Illinois*, all but five persons on board being saved.

July 22.—Steamship *Matatua*, stranded on rocks 7 miles south of St. Mary's Light, Cape Race. Vessel shot line to shore, and passengers and crew were removed. The distress call was answered by the steamship *Stephano*, Red Cross Line, which stood by until passengers were safely removed.

September 15.—Steamship *Congress*, with 445 persons on board, caught fire off Coos Bay, Marshfield, Oreg. The vessel was headed toward shore. SOS calls being sent out continuously, which were received by the land stations at Marshfield, Oreg., Cape Blanco, Oreg., and Eureka, Cal., and the steamship *F. A. Kilburn*. Rescue vessels were dispatched by the Marshfield station, and all persons on board were saved.

September 23.—Steamship *Bay State* ran ashore off Cape Elizabeth, Me.; total loss. Distress calls were answered by the Coast Guard cutter *Ossippe* and the naval station at Cape Elizabeth, which dispatched the tugs *Portland* and *Cumberland*. All persons on board, approximately 200 in number, were saved.

October 7.—Steamship *Antilla*, with 56 persons aboard, caught fire off the Virginia Capes while en route from Guantanamo, Cuba, to New York. Approximately 25 vessels responded to the distress calls, and all persons were saved.

October 19.—Steamship *Arapahoe* lost her rudder 25 miles north of Cape Lookout. SOS calls were answered by the steamship *Henry R. Mallory* and the Coast Guard cutters *Seminole* and *Tampa*, which towed the vessel to Norfolk.

October 28.—Steamship *Chicago*, with 265 passengers and crew, caught fire at sea and arrived safely at the Azores Islands. Communication was established with vessels, but assistance was not needed.

October 29.—Tug *Vigilant* disabled 150 miles off Irish coast. SOS call answered by the steamship *Ryndam*, which towed the tug to Queenstown.

November 25.—Steamship *Powhatan*, en route from Boston to Baltimore, caught fire off Block Island. Fire was controlled before arrival of Coast Guard cutters, which answered the distress call.

November 27.—Steamship *Niels Nielson* lost propeller in heavy gale. Distress calls were answered by several vessels, which assisted the disabled vessel to make port.

November 28.—Steamship *Coronado* lost propeller off Tillamook Head. Distress calls answered by Astoria, Oreg., station, which dispatched tug to assistance of disabled vessel.

December 3.—Steamship *Carolina*, Goodrich Transit Co., struck rocks off entrance to Sturgeon Bay Canal. Distress calls were received by the Manitowoc, Wis., station, which dispatched a tug to the assistance of the disabled vessel.

December 12.—Steamship *Sumner* grounded in fog off Barnegat, N. J. Six vessels responded to SOS calls, and all persons on board were saved.

December 14.—Steamship *Powhatan*, en route from Norfolk to Boston, sank in collision with unknown vessel on way to open sea. Several United States destroyers, Coast Guard cutters, and steamship *Jamestown* answered SOS calls. Crew transferred to Coast Guard vessels and passengers were taken to New York on the steamship *Jamestown*.

December 25.—Steamship *Maryland* sank at sea, position as given in SOS call 380 miles east of Sandy Hook, with crew of 34. Distress calls answered by several Coast Guard cutters, but they were unable to locate the disabled vessel.

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