RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION, DEPARTMENT OF COMMERCE

Washington, January, 1915—No. 1

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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 instructions, 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 will contain information concerning Government, commercial, and special stations only. Information regarding amateur stations will appear 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) will be 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 will be 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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ABBREVIATIONS.

INTERNATIONAL ABBREVIATIONS USED IN THIS LIST.

Nature of service:
PG=General public.
PR=Limited public or limited commercial.
P=Private.
O=Government business exclusively.

Hours of operation:
N=Continuous service.
X=No regular hours.
m=a. m.
s=p. m.
12 m=Midday.
12 s=Midnight.
fr.=Franc (francs).
c.=Cents.

OTHER ABBREVIATIONS.

Name =Name of station.
G. loc. =Geographical location (O=west longitude, N=north latitude).
Call =Radio call letters.
System=Radio system used and sparks per second.
Range =Normal range in nautical miles.
W. L. =Wave lengths.
Service=Nature of service.
Hours =Hours of operation.
Rates =Ship or coast charges in francs and dollars.
Notes =Refers to notes in the Berne list.

NEW STATIONS.

LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

Additions to the list of Radio Stations of the United States, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Longitude and latitude (approximate).	Call signal.	Range.	System.	Wave lengths.	Service.	Hours.
Benton Harbor, Mich.[1]	O 86 28 21 N 42 06 42	WIZ	125	Marconi, 125...	300, 500, *600*	PR[2]...	X.
Huntington Harbor, Northport, N. Y.[3]	.....	WLM	.....	.....	.....	.....	
Oakland, Cal.[4]...	O 122 16 14 N 37 48 41	KGI	200	Composite, 540	300, 500, *600*	P.....	X.
Passagrille, Fla.[5].	O 82 45 00 N 27 42 00	WRG	20	.....	300, 450, *600*	PG[6]...	8.30m–11.30m. 1.30s– 3.00s. 4.30s– 6.30s. 7.30s–10.00s.
St. Petersburg, Fla.[7]	O 82 38 27 N 27 46 28	WIX	25–50	.....	300, 450, *600*	PR[8]...	8.30m–11.30m. 1.30s– 3.00s. 4.30s– 6.30s. 7.30s–10.00s.

[1] Radio station operated and controlled by the Graham & Morton Transportation Co.
[2] The vessel communicates only with vessels of the Graham & Morton Transportation Co.
[3] Radio station operated and controlled by W. K. Vanderbilt, jr.
[4] Radio station operated and controlled by *Ellery W. Stone.*
[5] Radio station operated and controlled by C. A. Brown.
[6] The station also communicates with a land station at St. Petersburg (WIX), Fla. The rates for this station are as follows:

	Per word.	Minimum per radiogram.
Ordinary day messages	2 c. (0.10 fr.)	(10 words) 35 c. (1.75 fr.)
Ordinary night messages	2 c. (0.10 fr.)	(10 words) 25 c. (1.25 fr.)
Day letters	4 c. (0.20 fr.)	(50 words) 55 c. (2.75 fr.)
Night letters	2 c. (0.10 fr.)	(50 words) 35 c. (1.75 fr.)

[7] Radio station operated and controlled by C. C. Brown.
[8] The station is limited to correspondence with a land station at Passagrille (WRG), Fla. Rates for this station same as Passagrille (no ship service).

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SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

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

Name.	Call signal.	System.	Wave lengths.	Ship rate.	
				Per word.	Minimum per radiogram.
Addison E. Bullard [1]	KWL		300, 600		
Alberta [2]	KZA				
Baton Rouge [3]	KSG		300, 600		
Bayway [3]	KSR		300, 600		
Brockton [4]	KNH		300, 600		
Caddo [3]	KSK		300, 600		
Caloria* [3]	KSP	Marconi	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Charles E. Harwood* [5]	WID	do	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Charlton Hall [6]	KLU		300, 600		
Colusa* [7]	WIN	Marconi	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Craster Hall [6]	KLK		300, 600		
Cushing (KSC) [3]	KSC		300, 600		
De Soto [3]	KNI		300, 600		
Edward L. Doheny* [5]	WIE		300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Emeline [8]	KZD				
Francis Hanify* [9]	KRA	Marconi, 1,000	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Gargoyle [10]	KRK		300, 600		
Great Northern* [11]	WIR	Marconi, 1,000	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Herbert G. Wylie* [5]	WIF	Marconi	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Howick Hall* [6]	KLT	do	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Llama* [3]	KSI	do	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Lyman Stewart [12]	WTL		300, 600		
Maracas* [13]	KMR	Marconi	300, 600		
Motano [3]	KSB		300, 600		
Norman Bridge* [5]	WIG	Marconi	300, 600	4 c. (0.20 fr.)	40 c. (2 fr.)
Olson & Mahony† [14]	WIK	Composite, 375	300, 600	2 c. (0.10 fr.)	20 c. (1 fr.)
Princeton (KST) [10]	KST		300, 600		
Sandy Hook [15]	KNJ		300, 600		
Santa Clara (KIR) [16]	KIR		300, 600		
Somerset (KSU) [10]	KSU		300, 600		
Tarantula [17]	KZT				
Winchester* [18]	KZK				

*Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.
†Radio station operated and controlled by the Golden Gate Transportation Co.
[1] J. B. Crocker, owner of vessel.
[2] F. D. Bourne, owner of vessel.
[3] Standard Oil Co. of New Jersey, owner of vessel.
[4] Colonial Navigation Co., owner of vessel.
[5] Petroleum Transport Co., owner of vessel.
[6] United States Steel Products Co., owner of vessel.
[7] W. R. Grace & Co., owner of vessel.
[8] Robert Graves, owner of vessel.
[9] G. R. Hanify & Co., owner of vessel. The station has a range of 100 miles, general public service, with no regular hours.
[10] Vacuum Oil Co., owner of vessel.
[11] Great Northern Pacific Steamship Co., owner of vessel. The station has a range of 150 miles, general public service, with continuous hours.
[12] Union Oil Co. of California, owner of vessel.
[13] New York Transatlantic Steamship Co. (Inc.), owner of vessel.
[14] Olson & Mahony, owner of vessel. The station has a range of 200 miles, general public service, with no regular hours.
[15] United New York & Sandy Hook Pilot's Association, owner of vessel.
[16] American & Cuban Steamship Line, owner of vessel.
[17] W. K. Vanderbilt, jr., owner of vessel.
[18] Irving Cox, owner of vessel.

LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

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

Call signal.	Station.	Call signal.	Station.
KGI	Oakland, Cal.....c	KSU	Somerset.....b
KIR	Santa Clara.....b	KWL	Addison E. Bullard.....b
KLK	Craster Hall.....b	KZA	Alberta.....b
KLT	Howick Hall.....b	KZD	Emeline.....b
KLU	Charlton Hall.....b	KZK	Winchester.....b
KMR	Maracas.....b	KZT	Tarantula.....b
KNH	Brockton.....b	WID	Charles E. Harwood.....b
KNI	De Soto.....b	WIE	Edward L. Doheny.....b
KNJ	Sandy Hook.....b	WIF	Herbert G. Wylie.....b
KRA	Francis Hanify.....b	WIG	Norman Bridge.....b
KRK	Gargoyle.....b	WIK	Olson & Mahony.....b
KSB	Motano.....b	WIN	Colusa.....b
KSC	Cushing.....b	WIR	Great Northern.....b
KSG	Baton Rouge.....b	WIX	St. Petersburg, Fla.....c
KSI	Llama.....b	WIZ	Benton Harbor, Mich.....c
KSK	Caddo.....b	WLM	Huntington Harbor, Northport, N. Y..c
KSP	Caloria.....b	WRG	Passagrille, Fla.....c
KSR	Bayway.....b	WTL	Lyman Stewart.....b
KST	Princeton.....b		

SPECIAL LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the list of Radio Stations of the United States only.]

Station.	Call signal.	Wave lengths.	Service.	Hours.	Station controlled by—
Montgomery, Ala.....	5ZI	300, *600*, 1625, 1800.....	P	X	Wm. H. Amerine (Signal Corps, Ala. Nat. Guard).
Pacific Grove, Cal.....	6ZB	300, 500, *600*.....	P	X	Howard S. Bunting.
Richmond, Va.....	3ZK	500, variable.....	P	X	Frank S. Splatt (Signal Corps, Va. Nat. Guard).
Schenectady, N. Y.....	2XA	300, *600*, 1000, 1200, 1700.	P	X	E. M. Kinney.

SPECIAL LAND STATIONS, GROUPED BY DISTRICTS.

Call signal.	District and station.	Call signal.	District and station.
	Second district:		Fifth district:
2XA	Schenectady, N. Y.	5ZI	Montgomery, Ala.
	Third district:		Sixth district:
3ZK	Richmond, Va.	6ZB	Pacific Grove, Cal.

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, and in the International List of Radiotelegraph Stations published by the Berne bureau.]

ASTORIA, OREG.—Rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

AVALON, CAL.—W. L., 300, 527, *600*.

BALBOA, PANAMA.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

BALTIMORE, MD.—Range, 125.

BOSTON (WBF), MASS.—Range, 200; system, Marconi, 218.

BROOKLYN, N. Y.—System, Fessenden, 250–1000; W. L., 300, *600*, 1650, 1800, 2600, 3600; service, PG and PR; hours, 4m–12m, 1s–9s; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram; transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram; ships plying between New York City and points distant not more than 200 miles by water, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram. Strike out Note.

BUFFALO, N. Y.—Range, 185; system, Marconi, 50; hours, Apr. 15–June 3, 7s–12s, 1m–7m; June 3–Sept. 15, 7m–12m, 1s–6s, 7s–12s, 1m–6m; Sept. 15–Dec. 15, 7s–12s, 1m–7m.

BURRWOOD, LA.—Range, 400; system, composite, 500; W. L., 300, *600*, 1650, 1800; service, PG and PR; hours, 7m–7.05m, 9m–9.05m, 11m–11.05m, 2s–2.05s, 4s–4.05s, 7s–7.05s; rates, PG service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram, PR service to New Orleans (WNU), La., 5 c. (0.25 fr.) per word, without minimum. Notes, Station also corresponds with a station at Cape San Antonio, Cuba, and one at New Orleans (WNU), La. The operator listens in at intermittent times on the hour and half hour.

CALUMET, MICH.—Range, 150; system, Marconi, 120; W. L., 300, *600;* service, PG; hours, 8m–1s, 2s–7s, 8s–1m, 2m–7m; rates, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram.

CAPE BLANCO, OREG.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum per radiogram.

CAPE HATTERAS, N. C.—Range, 200; system, Marconi, 240.

CAPE MAY, N. J.—System, Marconi, 240.

CHICAGO, ILL.—Range, 150; system, Marconi, 120.

CLEVELAND, OHIO.—Range, 150; system, Marconi, 120; hours, 9m–12m, 12.30s–8s, 9s–11s, 12s–8m.

COLON, PANAMA.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

DAVAO, P. I.—Note, Radio station operated and controlled by the Philippine insular government.

DETROIT, MICH.—G. loc., O 83° 07′ 15″, N 42° 15′ 17″; system, Marconi, 120.

DOUGLAS, ARIZ.—System, Marconi, 480.

DULUTH, MINN.—Range, 150; system, Marconi, 120; hours, 8m–12m, 1s–7s, 8s–12s, 1m–7m.

EAST SAN PEDRO, CAL.—System, Marconi, 235; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram, to ships *Hermosa* and *Cabrillo*, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram (address and signature free of charge), for radiotelegrams exchanged with Avalon, Catalina Island, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

EL PASO, TEX.—Notes, The station is reserved for limited public service overland with Fort Worth, Tex., Los Angeles (KLS), and South San Francisco, Cal. The station applies special zone rates, which may be obtained upon application to the Federal Telegraph Co.

ENSENADA, P. R.—G. loc. (approximate), O 66° 57′ 00″, N 17° 59′ 00″; range, 250; system, Marconi, 240; W. L., 300, *600*, 1610; service, PG and PR; hours, week days, 8m–6s, Sundays, 9m–12m; rates, to ships, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram; to San Domingo City, La Romana, and San Pedro Macoras, 12 c. (0.60 fr.) per word, without minimum.

EUREKA (NPW), CAL.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

EUREKA (KPM), CAL.—Rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

FORT MILLS, P. I.—Service, PG.

FORT MORGAN, ALA.—Service, PG and PR; hours, PG service, 7.10m–7.20m, 7.40m–7.50m, 8.10m–8.20m, 8.40m–8.50m, 9.10m–9.20m, 10.10m–10.20m, 10.40m–10.50m, 11.10m–11.20m, 11.40m–11.50m, 12.10s–12.20s, 2.10s–2.20s, 2.40s–2.50s, 3.10s–3.20s, 3.40s–3.50s, 4.10s–4.20s, 4.40s–4.50s, 5.10s–5.20s, 5.40s–5.50s, 6.10s–6.20s; PR service, 7.00m–7.10m, 7.30m–7.40m, 8.00m–8.10m, 8.30m–8.40m, 9.00m–9.10m, 10.00m–10.10m, 10.30m–10.40m, 11.00m–11.10m, 11.30–11.40, 12.00m–12.10s, 2.00s–2.10s, 2.30s–2.40s, 3.00s–3.10s, 3.30s–3.40s, 4.00s–4.10s, 4.30s–4.40s, 5.00s–5.10s, 5.30s–5.40s, 6.00s–6.10s; rates, to ships, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram; PR service with Mobile, Ala., 10 c. (0.50 fr.) per word, $2 (10 fr.), minimum, per radiogram. Note, The station also corresponds with Mobile, Ala.

FRANKFORT, MICH.—System, Marconi, 120; service, PG; hours, 8m–12m, 1s–7s; rates, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram. Strike out Notes.

FRIDAY HARBOR, WASH.—System, Marconi, 120; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

GALVESTON, TEX.—System, Marconi, 400.

GRAND HAVEN, MICH.—Service, PG; hours, 7m–12m, 8s–11s. Strike out Note.

GRAND MARAIS, MINN.—System, Marconi, 120; service, PG. Strike out Note.

GUANTANAMO BAY, CUBA.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

HEEIA POINT, HAWAIIAN ISLANDS.—Note, The station communicates only with south San Francisco, Cal.; minimum, per radiogram, 75 c. (3.75 fr.), special count.

HILLCREST (DALY CITY), CAL.—System, Marconi, 120; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.). minimum, per radiogram.

HOLLISTER, CAL.—System, composite, 466. Strike out Note.

HULL, MASS.—G. loc., O 70° 54′ 00″, N 48° 18′ 22″; range, 100; system, composite, 1,000.

JACKSONVILLE, FLA.—G. loc., O 81° 38′ 56″, N 30° 19′ 25″; range, 150.

KEY WEST, FLA.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

LOS ANGELES (KEX), CAL.—System, Marconi, 120.

LUDINGTON, MICH.—System, Marconi, 120; hours, 12.30m–6m, 7.30m–11.30m, 1s–5.30s, 7.30s–11.30s, when lake is open to navigation. Strike out Notes.

MACKINAC ISLAND, MICH.—G. loc. (approximate), O 84° 35′ 00″, N 45° 54′ 00″; range, 150; system, Marconi, 120; W. L., 600; service, PG; hours, 8m–12m, 2s–8s, 8s–9s; rates, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram.

MANISTIQUE, MICH.—Range, 125; system, Marconi, 240; W. L., 300, 600; service, PG; hours, 8m–11m, 2s–5s, 7s–9s; rates, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram.

MANITOWOC, WIS.—Range, 125.

MARSHFIELD, OREG.—System, Marconi, 120; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

MIAMI, FLA.—Range, 300; system, Marconi, 240; W. L., 300, 550, 600.

MILWAUKEE, WIS.—Hours, 1.30m–7m, 8m–12m, 1s–6s, 8s–12.30m. Strike out Notes.

MOBILE, ALA.—Service, PG and PR; hours, PG service, 7.10m–7.30m, 7.40m–8.00m, 8.10m–8.30m, 8.40m–9.00m, 10.10m–10.30m, 10.40m–11.00m, 11.10m–11.30m, 11.40m–12m, 2.10s–2.30s, 2.40s–3.00s, 3.10s–3.30s, 3.40s–4.00s, 4.10s–4.30s, 4.40s–5.00s, 5.10s–5.30s, 5.40s–6.00s; PR service, 7.00m–7.10m, 7.30m–7.40m, 8.00m–8.10m, 8.30m–8.40m, 9.00m–9.10m, 10.00m–10.10m, 10.30m–10.40m, 11.00m–11.10m, 11.30m–11.40m, 12m–12.10s, 2.00s–2.10s, 2.30s–2.40s, 3.00s–3.10s, 3.30s–3.40s, 4.00s–4.10s, 4.30s–4.40s, 5.00s–5.10s, 5.30s–5.40s, 6.00s–6.10s; rates, for service with ships, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram; PR service with Fort Morgan, Ala., 10 c. (0.50 fr.) per word, $2 (10 fr.), minimum, per radiogram. Note, Station also corresponds with Fort Morgan, Ala.

NEW LONDON (WLC), CONN.—Range, 100; system, Fessenden, 120.

NEW ORLEANS (WHK), LA.—G. loc. (approximate), O 90° 07′ 00″, N 29° 59′ 00″; range, 200; system, Marconi, 400.

NEW ORLEANS (WNU), LA.—Range, 400; system, composite, 1000; W. L., 300, *600*, 1800, 1850; service, PG, PR, and P; hours, N; rates, for service with ships, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram. PR service rates (charges per word, cable count, no minimum), as follows:

	Francs.	Cents.
Belize, British Honduras	0.875	17.5
Bluefields, Nicaragua	1.125	22.5
Bocas del Toro, Panama	1.375	27.5
Burwood, La	.25	5.0
Ceiba, Spanish Honduras	1.25	25.0
Colon, Panama	1.00	20.0
Port Limon, Costa Rica	1.25	25.0
Puerto Barrios, Guatemala	1.125	22.5
Puerto Cortez, Spanish Honduras	1.125	22.5
Santa Marta, Colombia	1.875	37.5
Swan Island	.625	12.5
Tela, Spanish Honduras	1.125	22.5
Truxillo, Spanish Honduras	1.125	22.5

NEWPORT (WCI), R. I.—System, Fessenden, 260.

NEWTON, MASS.—System, Clapp-Eastham, 2000; service, P.

NEW YORK (WHB).—System, Wireless Specialty Apparatus Co., 1000; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

NEW YORK (WNT).—Range, 150; system, Telefunken, 1000; hours, 9m–5s, except Sundays and holidays.

NORTH HEAD, WASH.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

PHILADELPHIA (WHE), PA.—System, Marconi-United, 240; W. L., 300, *600*, 1650; hours, 8m–12s.

POINT ARGUELLO, CAL.—Rates 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

PORT ARTHUR, TEX.—G. loc., O 93° 55′ 35″, N 29° 52′ 46″; system, Marconi, 400.

SAN DIEGO (NPL), CAL.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

SAN JUAN, P. R.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

SAN LUIS OBISPO, CAL.—G. loc. (approximate), O 120° 45′, 00″, N 35° 10′ 00″; range, 150; system, Marconi, 240; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

SAVANNAH, GA.—Range, 200; system, Marconi-United, 240; W. L., 300, 500, *600*.

SAYVILLE, N. Y.—Strike out all particulars regarding limited public-service station.

SAYVILLE, N. Y. (PG station).—Hours, 2m–2s.

SEATTLE, WASH.—Range, 200; system, Marconi, 120; rates, North and South American service, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram.

SIASCONSET, MASS.—System, Marconi, 480.

SOUTH SAN FRANCISCO, CAL.—Note, Station reserved for correspondence with El Paso, Tex., and Heeia Point (near Honolulu), Hawaiian Islands. Rates, 75 c. (3.75 fr.) per radiogram, special count.

SOUTH WELLFLEET, MASS.—System, Marconi, 120–233; W. L., 300, *600*, 2100; rates, North and South American service, 6 c (0.30 fr.), per word, 60 c. (3 fr.), minimum, per radiogram, transoceanic service, 12 c. (0.60 fr.) per word, $1.20 (6 fr.), minimum, per radiogram, distances exceeding 400 miles, 42 c. (2.10 fr.) per word, $4.20 (21 fr.), minimum, per radiogram.

TAMPA, FLA.—System, Marconi, 400.

TATOOSH, WASH.—Rates, 6 c. (0.30 fr.) per word, 60 c. (3 fr.), minimum, per radiogram.

TUTUILA, SAMOA.—Rates, 5 c. (0.25 fr.) per word, 50 c. (2.50 fr.), minimum, per radiogram.

VIRGINIA BEACH, VA.—System, Marconi, 240; W. L., 300, 550, *600*.

SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

[Alterations and corrections to be made in the list of Radio Stations of the United States, and in the International List of Radiotelegraph Stations published by the Berne bureau.]

ABANGAREZ.—Range, 500; system, Wireless Specialty Apparatus Co., 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ADELINE SMITH.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

ADMIRAL DEWEY.—System Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram; hours, N.

ADMIRAL EVANS.—System, Marconi; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ADMIRAL FARRAGUT.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, *80 c. (4 fr.), minimum, per radiogram. Note.* Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

ADMIRAL SAMPSON.—Strike out all particulars.

ADMIRAL SCHLEY.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ADMIRAL WATSON.—Range, 150; system, Marconi, *120;* rates, *North and South* American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ADVANCE.—Range, 300; system, Telefunken, 1000.

A. G. LINDSAY.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

ALABAMA (KSX).—Strike out all particulars.

ALABAMA (KUN).—Range, 200; system, Marconi, 240; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

ALABAMA (WFB).—Range, 150; system, Marconi, 120.

ALAMEDA.—Range, 200; system, Marconi, 120; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

ALAMO.—System, Marconi, 400.

ALASKAN.—Range, 200; system, Telefunken, 1000; hours, 9m–12m, 2s–5s, 8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, *transoceanic service, 8 c. (0.40 fr.) per word,* 80 c. (4 fr.), minimum, per radiogram.

ALBATROSS.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

ALGONQUIN (KVG).—System, Marconi, 120.

AL-KI.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), mininum, per radiogram. Note, Northland Steamship Co., owner of vessel.

ALLIANÇA.—Range, 300; system, Telefunken, 1000; W. L., 300, 450, *600.* Note, Radio station operated and controlled by the Atlantic Communication Co.

ALLIANCE.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

AMERICAN.—Range, 200; system, Telefunken, 1000; hours, 9m–12m, 2s–5s, 8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ANCON.—Range, 300; system, Telefunken, 1000; W. L., 300, 400, 500, *600.*

ANN ARBOR, No. 3.—Range, 125; system, Marconi, 120; hours, N.

ANN ARBOR, No. 4.—Range, 125; system, Marconi, 120; hours, N.

ANN ARBOR, No. 5.—Range, 125; system, Marconi, 120; hours, N.

ANTILLES.—System, Marconi, 120.

APACHE (KVA).—System, Marconi, 250.

ARAPAHOE.—System, Marconi, 400.

ARGYLL (WTB).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

ARIZONA.—Range, 150; system, Marconi, 120; hours, X.

ARIZONAN.—Range, 350; system, Telefunken, 1000; hours, 9m–12m, 2s–5s,8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

AROLINE.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ASHTABULA.—Range, 125; system, Marconi, 240.

ASTRAL.—Note, Standard Oil Co. of New York, owner of vessel.

ASUNCION (WTX).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

ATENAS.—Range, 500; system, composite, 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ATLANTIC.—Range, 200; system, Marconi, 240; hours, X.

ATLAS (WTT).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Note, Standard Oil Co. of California, owner of vessel.

AZTEC.—System, Marconi, 240; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

BAY STATE.—Range, 300.

BEAR (WWD).—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

BEAVER (WWB).—Range, 200; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

BELFAST.—Range, 200; system, Marconi, 120.

BERKSHIRE.—System, Marconi-United, 240.

BERLIN (WRB).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

BORINQUEN.—Strike out system. Strike out notes.

BRAZOS.—System, Marconi, 240.

BREAKWATER.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

BRILLIANT (KTI).—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of New York, owner of vessel.

BRINDILLA.—Note, Standard Oil Co. of New Jersey, owner of vessel.

BRUNSWICK.—System, Marconi, 240.

BUFFALO (NBU).—Call, NCU.

CABRILLO.—Range, 150; system, Marconi, 120; hours, X; rates, San Pedro-Avalon ferry service, 1 c. (0.05 fr.) per word, 10 c. (0.50 fr.), minimum, per radiogram.

CALIFORNIA (KYQ).—Note, Mrs. Clara B. Stocker, owner of vessel (yacht).

CALVIN AUSTIN.—Range, 200; system, Marconi, 120.

CAMDEN.—Range, 200; system, Marconi, 120.

CAMINO.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

CAPTAIN A. F. LUCAS.—Range, 200; system, Marconi, 120; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

CARACAS.—System, Marconi, 120.

CARLOS.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

CAROLINA (WFE).—Range, 150; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.

CARTAGO.—Range, 500; system, Wireless Specialty Apparatus Co., 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

CATANIA.—Strike out all particulars.

CELILO.—System, Marconi, 120; service, PG; rates, North and South American service, 4c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram, transoceanic service, 8c. (0.40 fr.) per word, 80c. (4 fr.), minimum, per radiogram.

CENTRALIA.—System, Marconi, 120; hours, X; rates, North and South American service, 4c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram, transoceanic service, 8c. (0.40 fr.) per word, 80c. (4 fr.), minimum, per radiogram.

CHALMETTE.—System, Marconi, 400.

CHEROKEE.—System, Marconi, 400.

CHICAGO (WAC).—System, Marconi; rates, 4c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram. *Note*, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

CHICAGO (WFI).—Range, 150; system, Marconi, 120; W. L., 300, *600;* service, PG; *hours, N; rates, 2c. (0.10 fr.) per word, 20c.* (1 fr.), *minimum, per radiogram.* Note, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America.

CHINA (WWA).—*Rates, North and South American service, 4c. (0.20 fr.) per word,* 40c. (2 fr.), minimum, per radiogram, transoceanic service, 8c. (0.40 fr.) per word, 80c. (4 fr.), minimum, per radiogram.

CHRISTOPHER COLUMBUS.—Range, 150; system, Marconi, 120; hours, N; rates, 2c. (0.10 fr.) per word, 20c. (1 fr.), minimum, per radiogram.

COAMO.—System, Marconi, 400.

COL. E. L. DRAKE.—Rates, North and South American service, 4c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram, transoceanic service, 8c. (0.40 fr.) per word, 80c. (4 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

COL. JAMES M. SCHOONMAKER.—Range, 150; system, Marconi, 120.

COLON.—System, Telefunken, 1000; W. L., 300, 450, *600.*

COLUMBIA (KYM).—System, Telefunken, 1000.

COLUMBIA (WHC).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

COLUMBIAN (WKS).—Range, 200; system, Telefunken, 1000; hours, 9m–12m, 2s–5s, 8s–10.30s, rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) *per word, 80 c. (4 fr.), minimum,* per radiogram.

COMAL.—System, Marconi, 400.

COMANCHE.—System, Marconi, 400.

COMET (KTJ).—*Notes, Radio station operated and controlled by the Marconi* Wireless Telegraph Co. of America. Standard Oil Co. of New York, owner of vessel.

COMUS (KKD).—System, Marconi, 120.

CONCHO.—System, Marconi, 120.

CONGRESS.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

COPPENAME.—Range, 350; system, Wireless Specialty Apparatus Co., 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80c. (4 fr.), minimum, per radiogram.

CORDOVA.—System, Marconi, 120; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

CORONADO.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Coronado Co., owner of vessel.

CREOLE.—System, Marconi, 400.

CRETAN.—System, Marconi-United, 120.

CRISTOBAL.—Range, 300; system, Telefunken, 1000; W. L., 300, 450, *600.*

CYPRUS.—*System, Marconi;* rates, 4c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Daniel C. Jackling, owner of vessel (yacht).

CITY OF ALPENA II.—*Range, 125; system, Marconi,* 120; hours, X.

CITY OF ANNAPOLIS.—Strike out all particulars.

CITY OF AUGUSTA.—System, Marconi, 120.

CITY OF BALTIMORE.—*Strike out all particulars.*

CITY OF BANGOR.—Range, 200; system, Marconi, 240; W. L., 300, *600;* service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Eastern Steamship Corporation, owner of vessel.

CITY OF BENTON HARBOR.—Range, 150; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.
CITY OF BUFFALO.—Range, 100; system, Marconi, 120.
CITY OF CHICAGO.—Range, 125; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.
CITY OF CLEVELAND III.—Range, 125; system, Marconi, 240. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Detroit & Cleveland Navigation Co., owner of vessel.
CITY OF COLUMBUS.—System, Marconi, 240.
CITY OF DETROIT II.—Range, 125; system, Marconi-United, 120.
CITY OF DETROIT III.—Range, 125; system, Marconi, 120.
CITY OF ERIE.—System, Marconi, 240; hours, X.
CITY OF EVERETT.—Note, Standard Oil Co. of New York, owner of vessel.
CITY OF GRAND RAPIDS.—Range, 125; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.
CITY OF MACKINAC II.—Range, 125; system, Marconi, 120; hours, X.
CITY OF MONTGOMERY.—System, Marconi, 120.
CITY OF NORFOLK.—Strike out all particulars.
CITY OF PARA.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
CITY OF PUEBLA.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
CITY OF RICHMOND.—Strike out all particulars.
CITY OF ROCKLAND.—Range, 200; system, Marconi, 120.
CITY OF ST. IGNACE.—Range, 125; system, Marconi, 120; hours, X.
CITY OF ST. LOUIS.—System, Marconi, 400.
CITY OF SAVANNAH.—System, Marconi, 400.
CITY OF SEATTLE.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
CITY OF SYDNEY.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
CITY OF TOPEKA.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.), per word, 80 c. (4 fr.), minimum, per radiogram.
DAKOTAN.—System, Marconi, 480.
DAMARA.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Edgar F. Luckenbach, owner of vessel.
DELAWARE SUN.—Range, 250; system, Marconi, 120; hours, 8m–12m; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
DELHI.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
DENVER (KED).—System, Marconi, 120.
DOLPHIN (WAU).—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
DORA.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Alaska Steamship Co., owner of vessel.
DORCHESTER.—Range, 200; system, Marconi-United, 120.
DOROTHY BRADFORD.—Range, 200.
EASTERN STATES.—Range, 125; system, Marconi, 240.
EASTLAND.—Range, 100; system, Marconi-United, 120.
EDGAR H. VANCE.—Range, 150; system, Marconi, 1000; W. L., 300, *600;* service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Hammond Lumber Co., owner of vessel.
EL ALBA.—System, Marconi, 480; hours, N.
EL CID.—System, Marconi, 120.
EL DIA.—System, Marconi, 120; hours, X.
EL MUNDO.—System, Marconi, 120.
EL OCCIDENTE.—System, Marconi, 400.
EL ORIENTE.—System, Marconi, 400.
EL RIO.—System, Marconi, 400.

EL SEGUNDO.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

EL SIGLO.—System, Marconi, 120.

EL SOL.—System, Marconi, 400.

EL SUD.—System, Marconi, 1000.

ENTERPRISE.—System, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

EOCENE.—Note, Radio station operated and controlled by the Standard Oil Co. of New York, owner of vessel.

ERSKINE M. PHELPS.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. William D. Sewall (Union Oil Co.), owner of vessel.

ESPERANZA.—System, Marconi, 120.

ESSEX (KQE).—System, Marconi-United, 120.

EXCELSIOR (KKO).—System, Marconi, 400.

F. A. KILBURN.—Range, 150; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

FALCON (WRK).—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

FAVORITE.—Range, 100; system, Marconi, 120; hours, X; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.

FIFIELD.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

FLORIDA (KSY).—Strike out all particulars.

FLORIDA (KUS).—Range, 150; system, Marconi, 240; W. L., 300, *600;* service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

FRANK H. BUCK.—System, Marconi; rates, 4 c.(0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Associated Oil Co., owner of vessel.

FRIEDA.—System, Marconi, 480; hours, X.

GENERAL HUBBARD.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Hubbard Steamship Co., owner of vessel.

GENL. PETTIBONE.—Note, Guyton & Co., owner of vessel.

GEO. W. ELDER.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. North Pacific Steamship Co., owner of vessel.

GEORGE W. FENWICK.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Fenwick Steamship Co. (California & Atlantic Steamship Co.), owner of vessel.

GEORGIAN (WKG).—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

GLORY OF THE SEAS.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Glacier Fisheries Co., owner of vessel.

GLOUCESTER (KQG).—System, Marconi-United, 120.

GOVERNOR.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

GOVERNOR COBB.—Range, 200; system, Marconi, 120.

GOVERNOR DINGLEY.—Range, 200; system, Marconi, 120; hours, N; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

GRACE DOLLAR.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

GRECIAN.—Range, 150; system, Marconi, 240.
GUARDIAN.—Range, 200; system, Marconi, 240; hours, N; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
GULFOIL.—Range, 200; system, Marconi, 240; hours, various from 6m–9s; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
GULFSTREAM.—Range, 250; system, Marconi, 240; hours, 8m–12m; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
HAMILTON.—System, Marconi, 140.
HANALEI.—Strike out all particulars.
HARVARD.—System, Poulsen arc. Strike out Rates. Notes, Radio station operated and controlled by the Federal Telegraph Co. Metropolitan Steamship Co. (Pacific Steam Navigation Co.), owner of vessel.
HAVANA.—System, Marconi, 120.
HENRY M. FLAGLER.—Range, 100; system, Marconi, 240; service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Florida East Coast Railway Co., owner of vessel.
HENRY T. SCOTT.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. California Steamship Co., owner of vessel.
HEREDIA.—Range, 500; system, composite, 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
HILONIAN.—Range, 200; system, Marconi, 120; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram,
HOLLAND (WDW).—Range, 150; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.
HONOLULAN.—Range, 250; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
HOWARD.—System, Marconi-United, 120.
HUMBOLDT.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
HURON.—System, Marconi, 400.
HYADES.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Matson Navigation Co., owner of vessel.
IAQUA.—System, Marconi, 230; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
ILLINOIS (WCZ).—Range, 150; system, Marconi, 120.
INDEPENDENT.—System, Marconi; W. L., 300, *600;* rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Weiding & Independent Fisheries Co., owner of vessel.
INDIAN (KQI).—Range, 150; system, Marconi-United, 120.
INDIANA (WFC).—Range, 150; system, Marconi, 120.
IOWA (WFD).—Range, 150; system, Marconi, 120.
IOWAN.—Range, 250; system, Telefunken, 1000.
IROQUOIS (KVF).—Range, 200; system, Marconi, 400; W. L., 300, *600;* service, PG; hours, N; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Clyde Steamship Co., owner of vessel.
ISTHMIAN.—Range, 200; system, Telefunken, 1000; hours, 9m–12m, 2s–6s, 8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
J. A. CHANSLOR.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Associated Oil Co., owner of vessel.
JAMESTOWN.—System, Marconi, 120.
J. B. STETSON.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
JEFFERSON (KOD).—System, Marconi, 120.

JEFFERSON (WAJ).—System, Marconi, 120; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

J. M. GUFFEY.—Range, 200; system, Marconi, 120; hours, various from 6m–9s; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

JOHN A. HOOPER.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

JOHN D. ARCHBOLD.—Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of New York, owner of vessel.

JOHN D. ROCKEFELLER.—Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of New Jersey, owner of vessel.

JUNIATA (KQJ).—System, Marconi-United, 120.

KERSHAW.—System, Marconi-United, 120.

KLAMATH.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

KOREA.—Range, 250; system, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

LAKEPORT.—Range, 100; system, Marconi, 240; W. L., 300, *600;* service, PG; hours, X; rates, 2 c. (10 fr.), per word, 20 c. (1 fr.), minimum, per radiogram.

LAMPASAS.—System, Marconi, 120.

LANSING.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

LARIMER.—Range, 200; system, Marconi, 120; hours, various from 6m–9s; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

LATOUCHE.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

LEELANAW.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

LEWIS LUCKENBACH.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Edgar F. Luckenbach (California & Atlantic Steamship Co.), owner of vessel.

LEXINGTON (KNB).—System, Fessenden, 260.

LEXINGTON (KQL).—Range, 150; system, Marconi-United, 240.

LOUISE.—Range, 75; system, Marconi-United, 120; W. L., 300, *600;* service, PG: hours, 9m–11s. Notes, Radio station operated and controlled by the Marconi Wire less Telegraph Co. of America. Tolchester Beach Improvement Co., owner of vessel.

LOUISIANA (KUL).—Range, 200; system, Marconi, 240; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

LURLINE.—Range, 200; system, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

LYRA (WNF).—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MACKINAW.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MADISON.—System, Marconi, 120.

MANCHURIA.—Range, 250; system, Marconi, 240; hours, N; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MANITOU (WFW).—Range, 150; system, Marconi, 120.

MANOA.—Range, 200; system, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MARACAIBO.—System, Marconi, 120.

MARIPOSA.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

MAROWLINE.—Range, 350; system, Wireless Specialty Apparatus Co., 1000; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MARQUETTE & BESSEMER No. 1.—Range, 125; system, Marconi, 240.

MARQUETTE & BESSEMER No. 2.—Range, 125; system, Marconi, 240; hours, X.

MASSACHUSETTS (KJM).—Range, 200; system, Marconi, 120; hours, N; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Eastern Steamship Corporation, owner of vessel.

MATSONIA.—Range, 200; hours, N; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MAVERICK.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

MERRIMACK.—System, Marconi-United, 120.

MEXICAN.—Range, 350; system, Telefunken, 1000; hours, 9m–12m, 2s–5s, 8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MEXICO (KWX).—System, Marconi, 400.

MILLINOCKET.—System, Marconi, 120. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. A. H. Bull Steamship Co., owner of vessel.

MINNESOTA (WEK).—Range, 150; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Lake Michigan Steamship Co., owner of vessel.

MINNESOTA (WMI).—Rate, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

MINNESOTAN.—System, Marconi, 1000.

MISSOURI (WFX).—Range, 125; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.

MOHAWK (KVM).—System, Marconi, 400.

MOHAWK (NRM).—Call in United States list should be NRM instead of NVM.

MOHEGAN.—System, Fessenden, 250.

MOMUS.—System, Marconi, 120.

MONGOLIA.—Range, 250; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

MONTEREY (KWY).—System, Marconi, 400.

MORRO CASTLE.—System, Marconi, 120.

MULTNOMAH.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Multnomah Steamship Co., owner of vessel.

NACOOCHEE.—System, Marconi, 120.

NANN SMITH.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

NANTUCKET.—System, Marconi-United, 120.

NAVAJO (WNJ).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Western Steam Navigation Co. (California & Atlantic Steamship Co.), owner of vessel.

NEBRASKAN.—System, Telefunken, 1000; hours, 9m–12m, 2s–5s, 8s–10.30s.

NELSON.—Range, 200; system, Marconi, 480.

NEMO.—Range, 20; system, Wireless Improvement Co., 1000; hours, X. Notes, Radio station operated and controlled by Emil J. Simon. M. N. Liebmann, owner of vessel.

NEVADAN.—Range, 200; system, Telefunken, 1000; hours, 9m–12 m, 2s–5s, 8s–10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

NEWPORT (WWH).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

NOME CITY.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

NORTH AMERICAN.—Range, 150; system, Marconi, 480.
NORTHLAND (WNX).—System, Marconi, rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. E. J. Dodge & Co., owner of vessel.
NORTH LAND (WCN).—System, Marconi, 120.
NORTH LAND (KJD).—System, Marconi, 120.
NORTH STAR (KJS).—System, Marconi, 120.
NORTHWESTERN.—System, Marconi, 120.
NORTH WIND.—System, Telefunken, 120.
NORWOOD.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
NUECES.—System, Marconi, 120.
NEW HAVEN (KXN).—System, Fessenden, 260.
NEW JERSEY (KNJ).—Strike out all particulars.
OCEANA.—Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Bermuda-American Steamship Co., owner of vessel.
OCTORARA.—System, Marconi, 120.
OLEUM.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Fillmore Condit (Union Oil Co.), owner of vessel.
OLIVER J. OLSON.—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
OLIVETTE.—Range, 200; system, Marconi, 400.
ONEONTA.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Port of Portland, owner of vessel.
ONTARIO.—System, Marconi-United, 120.
PAMPANGA.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
PANAMA (KMH).—Range, 300; system, Telefunken, 1000; W. L., 300, 450, *600*.
PAN-AMERICAN.—Range, 150; system, Marconi, 400; W. L., 300, *600;* service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.) minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Texas Steamship Co., owner of vessel.
PARAGUAY.—Range, 150; system, Marconi-United, 120; W. L., 300, *600;* service, PG.
PARAISO.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2fr.), minimum, per radiogram.
PARISMINA.—Range, 500; system, composite, 1000; service, PG; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Tropical Radio Telegraph Co. Parismina Steamship Corporation, owner of vessel.
PARTHIAN.—Range, 150; system, Marconi-United, 120.
PENNSYLVANIA (WWI).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
PERE MARQUETTE.—Range, 100; system, Marconi, 120; hours, N.
PERE MARQUETTE 17.—System, Marconi, 120; hours, N.
PERE MARQUETTE 18.—Range, 125; system, Marconi, 120.
PERE MARQUETTE 19.—System, Marconi, 120; hours, N.
PERE MARQUETTE 20.—Range, 125; system, Marconi, 120; W. L., 300, *600*.
PERFECTION.—System, Marconi; W. L., 300, *600;* rates, 4 c (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Standard Oil Co. of New York, owner of vessel.
PERSIAN.—System, Marconi-United, 120.
PERU (WWJ).—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
PHILADELPHIA (KDA).—System, Marconi, 400.
PHILADELPHIA (KSM).—Range, 200; system, Marconi, 240.
PLEIADES.—Range, 200; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
PLYMOUTH.—System, Fessenden, 260.
PONCE.—System, Marconi, 400.
PORTLAND.—Range, 200; system, Marconi, 240; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

POWHATAN (KQY).—System, Marconi-United, 120.
PRESIDENT.—Range, 200; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
PRINCESS ANNE.—System, Marconi, 120.
PROTEUS (KKP).—System, Marconi, 120.
PROTEUS (NNG).—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
PROVIDENCE.—System, Fessenden, 260.
PURITAN (WDU).—Range, 150; system, Marconi, 120.
QUEEN (WGX).—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
RADIANT.—System, Marconi; strike out service and hours; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of New York, owner of vessel.
RAYO.—Note, Standard Oil Co. of New York, owner of vessel.
REDONDO.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
RELAY.—Range, 200; system, Marconi, 240; service, P; hours, N.
RELIEF LIGHTSHIP 66 OR 85.—Service, PG; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
RELIEF LIGHTSHIP 71 OR 72.—Service, PG; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
RELIEF LIGHTSHIP 94 OR 53.—Service, PG; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
REUCE.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Columbia River Packers' Association, owner of vessel.
RICHMOND.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.
RIO GRANDE (KEG).—System, Marconi, 400.
ROANOKE.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
ROMA (WTE).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Union Steamship Co. (Union Oil Co.), owner of vessel.
ROSE CITY.—Range, 200; system Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
SABINE.—System, Marconi, 400.
SAN JACINTO.—System, Marconi, 460.
SAN JOSE.—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.), per word, 80 c. (4 fr.), minimum, per radiogram.
SAN JUAN (KGJ).—System, Marconi, 120.
SAN JUAN (WWM).—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
SAN MARCOS.—System, Marconi, 120.
SAN RAMON.—System, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.
SANTA ANA.—Rate, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Alaska Steamship Co., owner of vessel.
SANTA CATALINA.—Strike out all particulars.
SANTA CECILIA.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
SANTA CLARA (WBA).—Range, 200; system, Marconi, 240; hours, N; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.
SANTA CLARA (WRS).—System, Marconi, 120; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

SANTA CRUZ (WBD).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Atlantic & Pacific Steamship Co., owner of vessel.

SANTA MARIA (WTF).—Range, 200; system, Marconi, 120; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

SANTA RITA (WTG).—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. United Steamship Co. (Union Oil Co.), owner of vessel.

SANTANTA.—Range, 30; system, Clapp-Eastham, 900; service, P; hours, X.

SARATOGA (KWS).—System, Marconi, 120.

SATELLITE (KPS).—Range, 30; system, composite, 120; service, PG; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Note, Radio station operated and controlled by Alfred S. Sorenson & Sons, owners of vessel.

SEEANDBEE.—Range, 150; system, Marconi, 120.

SEGURANCA.—System, Marconi, 400. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. New York & Cuba Mail Steamship Co. (Ward Line), owner of vessel.

SEMINOLE (KVJ).—System, Marconi, 120.

SENATOR.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

SENATOR BAILEY.—Strike out all particulars.

SEWARD.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Alaska Steamship Co., owner of vessel.

SHENANGO (KTC).—Range, 150; system, Marconi, 120; hours, various from 6m–9s; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

SHENANGO (WET).—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

SIBERIA.—Range, 250; system, Marconi. 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

SIERRA.—Strike out range, system, and rates. Note, Oceanic Steamship Co., owner of vessel.

SOCONY.—Note, Standard Oil Co. of New York, owner of vessel.

SOMERSET (KQS).—System, Marconi-United, 120.

SONOMA (WHM).—Range, 250; system, Marconi, 240; rates, North and South American service, 4 c. (0.20 fr.) per word, 40c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

SOUTH AMERICAN (KVW).—Range, 150; system, Marconi. 240; hours, X; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

SOUTH AMERICAN (WEO).—Range, 125; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.

SPEEDWELL.—Range, 100; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

SPOKANE.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

S. O. Co. No. 91.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

S. O. Co. No. 92.—Note, Standard Oil Co. of New York, owner of vessel.

S. O. Co. No. 93.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

S. O. Co. No. 94.—Note, Standard Oil Co. of New York, owner of vessel.

S. O. Co. No. 95.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of California, owner of vessel.

STANLEY DOLLAR.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Dollar Steamship Line, owners of vessel.

STARR.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. San Juan Fishing & Packing Co., owner of vessel.

STATE OF OHIO.—Range, 100; system, Marconi-United, 120. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Cleveland & Buffalo Transit Co., owner of vessel.

SUN.—Range, 250; system, Marconi, 240; hours, 8m-12m.

SUWANNEE.—System, Marconi-United, 120.

ST. FRANCIS.—System, Marconi; rates 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Libby, McNeill & Libby, owners of vessel.

ST. HELENS.—Rates, North and South American service 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

ST. NICHOLAS.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Columbia River Packers' Association, owner of vessel.

TAHOMA.—Strike out all particulars.

TASCO.—System, Fessenden, 250; service, PG; hours, X; rates, 3 c. (0.15 fr.) per word, 30 c. (1.50 fr.), minimum, per radiogram.

TEXAS (KUR).—Range, 200; system, Marconi, 240; hours, X; rates 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

THEODORE ROOSEVELT.—Range, 150; system, Marconi, 120; hours, N; rates, 2 c. (0.10 fr.) per word, 20 c. (1 fr.), minimum, per radiogram.

TIONESTA.—System, Marconi, 120.

TIVIVES.—Range, 500; system, composite, 1000; hours, N; service PG; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

TOLEDO.—Range, 200; system, Marconi, 120; W. L., 300, *600;* service, PG; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Sun Co., owner of vessel.

TOPILA.—Hours, 7m-12m, 1s-5s, 7s-10s.

TURRIALBA.—Range, 500; system, Wireless Specialty Apparatus Co., 1000; service, PG; hours, N. Notes, Radio station operated and controlled by the Tropical Radio Telegraph Co. Turrialba Steamship Corporation, owner of vessel.

TUSCAN.—Range, 150; system, Marconi-United, 120; hours, 8m-8s.

UMATILLA.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

VANADIS.—Range, 300; system, Telefunken, 1000; W. L., 300, 450, *600;* service, P; hours, X. Note, Radio station operated and controlled by C. K. G. Billings, owner of vessel (yacht).

VENTURA.—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

VESTA (KTS).—System, Marconi; W. L., 300, *600;* rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Standard Oil Co. of New York, owner of vessel.

VESTAL.—Rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

VICTORIA (WAD).—Rates, 4 c (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

VIGILANCIA.—System, Marconi, 400.

VIRGINIA (KSZ).—Strike out all particulars.

VIRGINIAN (WKV).—Range, 350; system, Telefunken, 1000; hours, 9m-12m, 2s-5s, 8s-10.30s; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

WALLULA.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Port of Portland, owner of vessel.

WASHINGTONIAN.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. American-Hawaiian Steamship Co., owner of vessel.

WASHTENAW.—Range, 200; system, Marconi, 120; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

W. B. FLINT.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Libby, McNeill & Libby, owners of vessel.

WESTERN STATES.—Range, 125; system, Marconi, 240; hours, X.

WHITTIER.—Range, 200; system, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), *minimum, per radiogram.*

WILHELMINA.—Range, 250; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word 80 c. (4 fr.), minimum, per radiogram.

WILLAMETTE.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Willamette Steamship Co., owner of vessel.

WILLIAM CHATHAM.—System, Marconi, 120; hours, X; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

WM. F. HERRIN.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

WILLIAM P. SNYDER JR.—Range, 125; system, Marconi, 120.

WINDBER.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Pacific-American Fisheries, owner of vessel.

WINIFRED.—*Range, 200; system, Marconi, 120; hours, 7m–9s;* rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram.

W. S. PORTER.—Rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Marconi Wireless Telegraph Co. of America. Associated Oil Co., owner of vessel.

YAGUEZ.—Strike out range and system. Note, Ocean Freight Line (Inc.), owner of vessel.

YALE.—System, Poulsen arc. Strike out rates. Notes, Radio station operated and controlled by the Federal Telegraph Co. Metropolitan Steamship Co. (Pacific Steam Navigation Co.), owner of vessel.

YOSEMITE.—System, Marconi, 120; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram.

YUCATAN.—Range, 200; rates, North and South American service, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram, transoceanic service, 8 c. (0.40 fr.) *per word, 80 c. (4 fr.), minimum,* per radiogram.

ZACAPA.—Range, 500; system, composite, 1000; service, PG; hours, N; rates, 8 c. (0.40 fr.) per word, 80 c. (4 fr.), minimum, per radiogram. Notes, Radio station operated and controlled by the Tropical Radio Telegraph Co. Zacapa Steamship Corporation, owner of vessel.

ZAPORA.—System, Marconi; rates, 4 c. (0.20 fr.) per word, 40 c. (2 fr.), minimum, per radiogram. *Notes, Radio station operated and controlled by the Marconi* Wireless Telegraph Co. of America. International Fisheries Co., owner of vessel.

ZULIA.—System, Marconi, 240.

LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

Strike out particulars after the following call signals: KGS, KNJ, KRY, KRZ, KSV, KSW, KSX, KSY, KSZ, NRK, WAS, WBC, WHN, WTI.

SPECIAL LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Alterations and corrections to be made in the list of Radio Stations of the United States only.]

GRAND FORKS, N. DAK.—Call, 9XN; W. L., 300–1400*.

HYATTSVILLE, MD.—W. L., 300, 400, *600**.

NEW BEDFORD, MASS.—W. L., 200, 300, 425, *600*.

OAKLAND, CAL.—Strike *out* all particulars.

PHILADELPHIA, PA.—W. L., 300, 500, *600*.

ST. DAVIDS, PA.—W. L., 300, 425, *450*, 600.

SPECIAL LAND STATIONS, ALPHABETICALLY BY CALL SIGNALS.

Strike out 6YE, and change 9YN to 9XN.

MISCELLANEOUS.

SOUTH WELLFLEET STATION.

The license issued to the Marconi Wireless Telegraph Co. of America for their high-powered station at South Wellfleet, Mass., has been amended, authorizing a coast-station rate of 42 cents per word on radiograms transmitted to vessels at sea, distant 400 miles or more. This rate, plus an 8-cent ship-station charge, makes a total wireless rate of 50 cents per word, to which the land line charges must be added.

CLASSIFICATION OF SHIP STATIONS.

There seems to be some misunderstanding concerning the classification of ship stations, as provided in the Laws and Regulations, edition of July 27, 1914, page 51.

If a vessel volunteers to enter a class higher than required by the regulations, and is so licensed, the vessel is required to maintain the service or watch prescribed. The license is a guaranty to the public for the class of service designated therein. Vessels violating classification requirements indicated by their licenses may be penalized under section 1 of the act of August 13, 1912, as any station operating in violation of the provisions of its license is held to be operating for a purpose other than that for which it was licensed.

If a vessel of the first class finds it impossible at any time to obtain two first-grade operators, it would constitute a violation for a second-grade operator to serve, but any mitigating circumstances may be presented to the Secretary of Commerce.

The London convention provides that ship-service messages or messages of the crew may be transmitted by a second-grade operator, but contemplates that all regular paid passenger traffic be handled by first-grade operators at not less than 20 words per minute.

GASOLINE ENGINES.

Attention is invited to the act of Congress, approved October 22, 1914, effective on and after date of approval, amending section 4472, Revised Statutes, and which reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section forty-four hundred and seventy-two of the Revised Statutes of the United States of America be, and the same is hereby, amended by adding thereto the following provision:

"*Provided, however*, That nothing in the foregoing or following section of this Act shall prohibit the transportation and use by vessels carrying passengers or freight for hire of gasoline or any of the products of petroleum for the operation of engines to supply an auxiliary lighting and wireless system independent of the vessel's main power plant: *Provided further*, That the transportation or use of such gasoline or any of the products of petroleum shall be under such regulations as shall be prescribed by the board of supervising inspectors, with the approval of the Secretary of Commerce."

In the near future regulations authorized by the last proviso of the amendment will be adopted by an executive committee of the Board of Supervising Inspectors of Steam Vessels. When these regulations are approved they will be published in this bulletin as an amendment to the Radio Laws and Regulations, edition of July 27, 1914, page 49, paragraph 8.

If an internal-combustion engine is provided as the only means of auxiliary power supply to operate the radio equipment, under the act of June 24, 1910, amended July 23, 1912, it will be necessary for radio inspectors to determine if the equipment is efficient under the ship act, and in accordance with the regulations governing radio communication, page 49, paragraphs 1 to 5, inclusive.

Until such regulations are approved, gasoline may not be carried except with the approval of the Secretary of Commerce in each case, and then subject to change to meet such requirements as may be later promulgated.

INTERFERENCE.

The twelfth and thirteenth regulations, section 4, of the radio act, approved August 13, 1912, provide for a division of time between Government and commercial radio stations when interference between such stations can not be eliminated by the enforcement of the wave length and sharp tuning regulations.

In some localities where two or more commercial land stations are operated in close proximity, the various owners have mutually agreed upon a division of time.

In particular, complaints have been entered against the Federal Telegraph Co. for interference on general public service and Government wave lengths, caused by their Poulsen arc stations at San Francisco and Honolulu.

F. A. Kolster, radio expert of the Bureau of Standards, was sent to San Francisco to determine the cause of the interference and remedy it if possible. The details of his investigations will be published in an early edition of the Proceedings of the Institute of Radio Engineers. The conclusions reached by Mr. Kolster indicate that the interference caused by the arc stations is due to certain reinforced harmonics, which, in extreme cases, can be eliminated or reduced by the employment of special circuits at either the sending or receiving stations, or both. It appears, however, in the particular cases reported and investigated, that the interference can be sufficiently reduced or eliminated at the receiving station by proper manipulation of modern efficient receiving apparatus.

Operators should bear in mind the following:

First. Interference of this character can be reduced and often entirely eliminated by proper adjustment of the coupling of the receiving transformer. In most cases a fairly "loose coupling" will be required.

Second. Variation of coupling destroys resonance and thereby reduces the strength of the desired incoming signals unless the circuits are readjusted to resonance for each variation of coupling.

COMMERCIAL EXTRA FIRST-GRADE OPERATORS.

As a reward for long and efficient service, the Secretary of Commerce has issued commercial extra first-grade licenses to the following operators:

E. N. Pickerill, New York, N. Y.
H. Sadenwater, New York, N. Y.
R. R. Carlisle, San Francisco, Cal.
D. I. Moir, Seattle, Wash.
H. B. Herty, New Orleans, La.
E. M. Cadwell, New York, N. Y.
S. E. Miller, San Francisco, Cal.
C. A. Scott, Boston, Mass.
J. A. Worrall, New York, N. Y.
E. K. Oxner, Boston, Mass.
J. W. Swanson, New York, N. Y.
A. E. Gerhard, San Francisco, Cal.
G. A. Geare, Washington, D. C.

RADIO SERVICE PERSONNEL.

R. E. Thompson, radio inspector at Seattle, resigned January 1, 1915, and R. H. Marriott, one of the radio inspectors at New York, has been transferred to Seattle.

W. O. Hensgen, one of the radio inspectors at New York, resigned January 1, 1915, and C. C. Kolster, assistant radio inspector, has been detailed to New York.

PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

The Bureau of Standards and the Bureau of Navigation will have a joint radio exhibit at the Panama-Pacific International Exposition. The exhibit will be located in the Liberal Arts Building.

The one-quarter kilowatt, quenched spark gap, battery operated panel set, designed by the Bureau of Standards, which did such good work on the Department's motor boat *Tarragon* last summer on the Atlantic coast, will be exhibited and demonstrated. A complete set of inspection instruments used by the radio inspectors in the enforcement of the wireless laws will be included in the exhibit and the method of inspection will be explained and demonstrated frequently. Several other features of interest to those concerned with radiotelegraphy will be exhibited and demonstrated by the Bureau of Standards.

Benjamin E. Wolf, radio inspector of the Bureau of Navigation, has been appointed special agent in charge of the Bureau of Navigation exhibit. A radio inspector will be in constant attendance and will be prepared to give information concerning the radio laws and regulations to owners and masters of vessels, operators, and amateurs. Examinations of operators for Government licenses will be conducted at the exhibit by appointment.

OPERATOR EXAMINATIONS.

The Army Service School at Fort Leavenworth, Kans., has been added to the list of places where operators may take examination for licenses.

RADIO RATES INCREASED.

The Marconi Wireless Telegraph Co. of America has been authorized to increase the Pacific coast radio rates of their ship and shore stations for the North and South American service, as follows: Ship rate from 2 cents to 4 cents per word; coastal rate from 3 cents to 6 cents per word.

This makes uniform rates for this Marconi service on both the Atlantic and Pacific coasts, and conforms to the rates of the United States Naval Radio Service.

AMATEUR FINED.

A. W. Eaton, of Los Angeles, Cal., who operated his amateur station without a license, was reported by the radio inspector of that district, and was found guilty and fined on November 24, 1914, by Judge Wellborn, of the United States district court.

This case is interesting because the defendant contended that his station did not require a license, inasmuch as he could not interfere with commercial stations in the vicinity or transmit beyond the limits of the State in which his station was located. His conviction was obtained on the ground that he could interfere with the interception of signals from outside that State by licensed amateurs, and establishes a precedent in this regard.

AMENDMENTS.

[To be cut out and pasted in your copy.]

The Radio Communication Laws of the United States, edition of July 27, 1914, are hereby amended as follows:

Paragraph 153, page 66, add the following sentence:

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 the back of Form 756 forwarded to the Commissioner of Navigation.

Paragraph 162, page 67, should read:

Operators desiring to retain their expired or canceled licenses may make application therefor to the examining officer or to the Commissioner of Navigation. Old licenses returned to operators will be marked "Canceled" or "Expired" in red across their faces, and the service record will be transcribed on the back of Form 756 sent to the Commissioner of Navigation, in accordance with paragraph 154, above.

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