DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION

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CONTENTS

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.
Loc. = Geographical location. O = west longitude. N = north latitude. S = south 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.
- FX = Point-to-point (fixed service).
- PG = General public.
- PR = Limited public.
- RC = Radiocompass station.
- FS = Fog signal.
- P = Private.
- G = Government business exclusively.

Hours = Hours of operation.
- N = Continuous service.
- X = No regular hours.

F. T. Co. = Federal Telegraph Co.
I. R. T. Co. = Intercity Radio Telegraph Co.
I. W. T. C. = Independent Wireless Telegraph Co.
K. & C. = Kilbourne & Clark Manufacturing Co.
R. C. A. = Radio Corporation of America.
U. R. Corp. = Universal Radio Corporation.
W. S. A. Co. = Wireless Specialty Apparatus Co.
C. w. = Continuous wave.
I. c. w. = Interrupted continuous wave.
K. c. = Kilocycles.
Fy. = Frequency.
A. c. = Alternating current.
V. t. = Vacuum tube.
U. S. L. = After operating company denotes that the change applies only to the List of Radio Stations of the United States.

NEW STATIONS

Commercial land stations, alphabetically by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1925, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Cleveland, Ohio [1]	WLI	43.43, 50.00	FX	X	J. P. Burton Coal Co.
Manila, P. I. [2]	KZRC	600, 2100	PG	N	Radio Corporation of the Philippines.
Manzana (moored vessel at Herendeen Village, Alaska). [3]	KHE	600, 700	FX	X	Manzana S. S. Co.
Miami Beach, Fla. [4]	WFU	118	P	*	Carl G. Fisher Co.
Newark, N. J. [5]	WAQ	50.05	FX	X	Westinghouse Electric & Manufacturing Co.
New Brunswick, N. J. [6]	WIK	22	FX	N	R. C. A.
Raspberry Island, Alaska. [7]	KMQ	600, 725	FX	X	Caw Packing Co.
Wheelwright, Ky. [8]	WLK	43.43, 50.00	FX	X	By Products Coal Co. (J. P. Burton Coal Co.)

[1] Loc. (approximately) O 81° 32' 30", N 41° 28' 00"; range, 250; system, composite, v. t. telegraph.
[2] Loc. O 120° 57' 30" E., N 14° 35' 12"; range, 150; system, v. t. telegraph; rates, foreign vessels 10 cents per word, interisland vessels 6 cents per word.
[3] Loc. (approximately) O 161° 00' 00", N 66° 00' 00"; range, 200; system, Navy-K. & C., 1000; message accounts are settled by the I. W. T. Co.
[4] Loc. (approximately) O 80° 09' 00", N 25° 49' 00"; range, 100; system, composite, v. t. telephone and telegraph; hours, 10–12 a. m. and 1–5 p. m.
[5] Loc. (approximately) O 74° 10' 00", N 40° 44' 00"; range, 2,000; system, Westinghouse v. t. telegraph.
[6] Loc. O 74° 29' 15", N 40° 30' 10"; range, 4,000; system, General Electric Co. v. t. telegraph.
[7] Loc. (approximately) O 153° 18' 00", N 58° 05' 00"; range, 150; system, Navy, 1,000.
[8] Loc. (approximately) O 82° 42' 00", N 37° 21' 00"; range, 250; system, composite, v. t. telegraph.

Commercial ship stations, alphabetically, by names of vessels

[Additions to the List of Radio Stations of the United States, edition of June 30, 1925, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Name of vessel	Call signal	Rates	Service	Hours	Owner of vessel	Station controlled by—
Apollo [1]	WOU	8	PG	X	Siberian Fish & Cold Storage Co.	Owner of vessel.
Crest [2]	KGAU	.....	PG	X	Great Lakes Dredge & Dock Co.	R. C. A.
Evangeline	KGAZ	8	PG	.....	Eastern S. S. Lines	Do.
Foss No. 21	KGAK	.....	.....	.....	Foss Launch & Tug Co.	Houston Wall.
Haligonian [3]	KGAW	.....	P	X	Perry G. Wall	
Lagonda [4]	KGAS	.....	PG	X	Interlake S. S. Co.	
Lake Benbow	KVAE	8	PG	X	.....	R. C. A.
Laurentian	KDTX	8	PG	X	.....	
Marj III	KGAT	.....	.....	.....	J. H. Oberfield	I. W. T. Co.
Overbrook [5]	KLAE	8	PG	X	M. & J. Tracy (Inc.)	R. C. A.
Point Fermin	KGCP	8	PG	X	.....	
Point Sur	KUKD	8	PG	X	Hencken & Hoyt	I. W. T. Co.
Rushville [6]	KUDS	6	PG	X	Gillian Co.	
Salmon King	KGBA	8	PG	X	B. F. Carter	I. R. T. Co.
Sandmaster [7]	KDIW	.....	PG	X	Construction Materials Co.	Owner of vessel.
Star of Greenland [8]	KERF	8	PG	X	Alaska Packers Association.	
Volador	KGAV	.....	.....	.....	W. L. Valentine	R. C. A.
Yarmouth	KGAY	8	PG	.....	Eastern S. S. Lines	

[1] Range, 150; system, Navy-Lowenstein, 1,000; w. l., 600, 700, 800.
[2] Rates, Great Lakes service, 4 cents per word.
[3] Range, 50; system, composite v. t. telegraph; w. l., 110.
[4] Rates, Great Lakes service, 4 cents per word.
[5] Range, 200; system, Marconi, 1,000; w. l., 600, 700, 800.
[6] Range, 200; system, Navy-Simon, 1,000; w. l., 600, 700, 800.

Commercial land and ship stations, alphabetically, by call signals

[b, ship station; c, land station]

Call signal	Name of station		Call signal	Name of station	
KDIW	Sandmaster	b	KGAV	Volador	b
KDTX	Laurentian	b	KGAW	Hiligonian	b
KERF	Star of Greenland	b	KGAX	Post No. 21	b
KGAS	Legenda	b	KGAY	Yarmouth	b
KGAT	Marj III	b	KGAZ	Evangeline	b
KGAU	Crest	b	KGBA	Salmon King	b
KHE	Mazama (moored vessel at Herendeen Village, Alaska)	c	KZRC	Manila, P. I.	c
KLAE	Overbrook	b	WAQ	Newark, N. J.	c
KMQ	Raspberry Island, Alaska	c	WFU	Miami Beach, Fla.	c
KOCP	Point Fermin	b	WIK	New Brunswick, N. J.	c
KUDS	Rushville	b	WLI	Cleveland, Ohio	c
KUKD	Point Sur	b	WLK	Wheelwright, Ky.	c
KVAE	Lake Benbow	b	WOU	Apollo	b

Government land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1925, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Fort Barrancas, Fla.[1]	WZD	1000	O	X	U. S. Army.

[1] Loc. O 87° 18' 02", N 30° 20' 43".

Government ship stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1925, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Corregidor[1]	KZAQ	300, 425, 600	PO	X	Philippine Insular Government, Bureau of Commerce and Industry.

[1] Range, 100; system, K. & C., 1,000.

Government land and ship stations, alphabetically, by call signals

[b, ship station; c, land station]

Call signal	Name of station		Call signal	Name of station	
KZAQ	Corregidor	b	WZD	Fort Barrancas, Fla.	c

Special land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1925]

Station	Call signal	Station controlled by—
Chicago, Ill. (portable)	9XZ	Pyle-National Co., 1334 North Kostner Avenue.
Fort Shafter, Hawaii	6XK	Harold J. Adams, captain, U. S. A.
Los Angeles, Calif. (portable)	6XAQ	Warner Bros. Pictures (Inc.), 5520 Sunset Boulevard.
Milford, Utah	6XH	Airways Radio Service (Inc.), 344 Cracker Street, Los Angeles, Calif.
Naknek, Alaska	7XP	Alaska Packers Association, 111 California Street, San Francisco, Calif.
Newark, N. J.	2XAI	Westinghouse Electric & Manufacturing Co., 66 Orange Street.
Do	2XL	Public Service Electric & Gas Co.
New York, N. Y.	2XAB	Calvary Baptist Church, 123 West Fifty-seventh Street.
Portland, Oreg.	7XAO	Wilbur Jerman (Inc.), 235 Fifty-eighth Street, South.
Wyandotte, Mich.	8XBK	Wyandotte Transportation Co.

Special land stations, grouped by districts

Call signal	District and station	Call signal	District and station
	Second district:		Seventh district:
2XAI	Newark, N. J.	7XAO	Portland, Oreg.
2XAB	New York, N. Y.	7XP	Naknek, Alaska.
2XL	Newark, N. J.	8XBK	Eighth district: Wyandotte, Mich.
	Sixth district:	9XZ	Ninth district: Chicago, Ill. (portable).
6XAQ	Los Angeles, Calif. (portable).		
6XH	Milford, Utah.		
6XK	Fort Shafter, Hawaii.		

ALTERATIONS AND CORRECTIONS

COMMERCIAL LAND STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1925, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

BAYTOWN, TEX.—W. l., *600*, 915.
BELFAST, ME. (WGU).—Range, 400.
CANDLE, ALASKA.—W. l., add 900.
CHIGNIK, ALASKA (KNP).—W. l., strike out 706.
DUNDAS, ALASKA.—W. l., add 1,704.
FLAGSHIP DIVISION 1, CAMP EUSTIS, VA.—*Read* Camp Eustis, Va., Flagship Division 1; w. l., *600*, 706.
FRACKVILLE, PA.—W. l., 136.9.
HUNTERS BAY, ALASKA.—W. l., add 1,704.
KASAAN, ALASKA.—W. l., add 1,704.
LAWTON, OKLA.—W. l., 140.1.
LIHUE, HAWAII—Service, FX.
MARION, MASS. (Mattapoisett-WRQ).—W. l., 13,505.
OKLAHOMA, OKLA. (portable-KPK).—W. l., 140.1.
OKLAHOMA, OKLA. (KPR).—W. l., 140.1.
OWENSBORO, KY.—System, De Forest v. t. telephone and telegraph.
POTTSVILLE, PA.—W. l., 136.9.
QUADRA, ALASKA (KOR).—W. l., add 1,704.
QUANAH, TEX.—W. l., 140.1.
SEATTLE, WASH (KPE).—W. l., *600*, 706, 875, 1,041, 1,800, 1,900, 2,200, 2,300.
SHAKAN, ALASKA.—W. l., add 1,704.
SPRINGDALE, PA.—W. l., 90.86, 136.9.
WILLIAMSPORT, PA.—W. l., 136.9.
Strike out all particulars of the following-named stations: Dearborn, Mich.;

COMMERCIAL 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 June 30, 1925, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

ABANGAREZ.—W. l., *600*, 706, 800.
AMAZON.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word.
AMELIA.—W. l., add 800.
ANGELINE.—Station controlled by I. R. T. Co.
ANN ARBOR No. 7.—System, R. C. A. v. t. telegraph; w. l., *715*, 800, 875.
ARBUTUS.—Range, 150; system, Marconi, 1,000; w. l., *600*, 706, 800; station controlled by I. W. T. Co.
AZALEA.—System, Marconi, 1,000; w. l., *600*, 706; station controlled by I. W. T. Co.
BALLCAMP.—System, K. & C., 1,000; w. l., *715*, 800, 875.
BALSAM.—W. l., *600*, 706, 800.
BANTU.—W. l., *600*, 706, 800.
BARBARA.—System, K. & C., 1,000; w. l., *600*, 706, 800.
BEARPORT.—W. l., *600*, 706, 800.
BRISTOL.—Range, 300; system, Navy-R. C. A., 1,000; w. l., *600*, 706, 800; station controlled by R. C. A.
BROAD ARROW.—System, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900.
CADARETTA.—W. l., *600*, 706, 800.
CADILLAC.—Station controlled by I. R. T. Co.
CAMBRIA.—Station controlled by I. R. T. Co.
CARRISO.—Station controlled by F. T. Co.
CAUTO.—System, Marconi, 1,000; w. l., *600*, 706, 800.
CELILO.—W. l., *600*, 706, 800.
CENTRAL WEST.—Station controlled by I. R. T. Co.
CHARLTON HALL.—W. l., *600*, 706, 800.
CHATHAM.—Station controlled by R. C. A.
CITY OF BIRMINGHAM.—System, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
CITY OF CHATTANOOGA.—System, R. C. A. v. t. telegraph, only; w. l., *600*, 706, 750, 800, 900, 1,800, 2,000, 2,100, 2,400.
CLAREMONT.—W. l., *600*, 706, 800.
CLEMENS A. REISS.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word.
CLETUS SCHNEIDER.—Station controlled by I. R. T. Co.
COALINGA.—W. l., *600*, 706, 800, 1,800, 2,100, 2,400.
CODY.—W. l., *600*, 706, 800, 875.
COLONEL.—Station controlled by I. R. T. Co.
DE BARDELEBEN.—W. l., *600*, 706, 800.
D. E. CALLENDER.—Station controlled by I. R. T. Co.
DEPERE.—Owner of vessel, Alaska S. S. Co.
DIO.—W. l., *600*, 706, 800; station controlled by I. W. T. Co.
EASTERN GLADE.—Owner of vessel, American South African Line.
EDWARD J. BERWIND.—Station controlled by I. R. T. Co.
EL OCCIDENTE.—System, Marconi, 1,000; w. l., *600*, 706, 800.
E. M. CLARK.—Range, 300; system, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900.
EMORY L. FORD.—Station controlled by I. R. T. Co.
ERNEST H. MEYER.—Range, 200; w. l., *600*, 706, 800.
E. R. STERLING.—W. l., add 800; station controlled by F. T. Co.
FONTANA.—Station controlled by I. R. T. Co.
FRED G. HARTWELL.—Station controlled by I. R. T. Co.
FRONTENAC.—Station controlled by I. R. T. Co.
G. A. TOMLINSON.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word.
GENERAL W. C. GORGAS.—Range, 150; w. l., *600*, 706, 800; hours, X.
GENEVIEVE LYKES.—W. l., *600*, 706, 800, 875.
GLEN WHITE.—Owner of vessel Mystic S. S. Co.
GRAND ISLAND.—Station controlled by I. R. T. Co.
GULFSTREAM.—W. l., *600*, 706, 800.
HALEAKALA (KOHL).—W. l., *600*, 706, 800.
HAMLIN F. MCCORMICK.—System, Marconi, 1,000; w. l., *600*, 706, 800.
HAMPTON ROADS (KESR).—W. l., *600*, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.

HARRY FARNUM.—System, R. C. A., v. t. telegraph; w. l., *600*, 706, 750, 800, 900.
HARTWOOD.—W. l., *600*, 706, 800.
HOLLYWOOD.—Owner of vessel, Pacific Argentine Brazil Line.
HUGOTON.—System, Navy-Marconi, 1,000; w. l., *600*, 706, 800.
INDEPENDENCE HALL.—W. l., 600, 706, 800.
INDIA ARROW.—W. l., *600*, 706, 800.
JANE CHRISTENSEN.—Range, 200; system, Navy-K. & C., 1,000; w. l., *600*, 706, 800.
J. C. FITZSIMONS.—Station controlled by F. T. Co.
JEPTHA.—W. l., *600*, 706, 800, 1,900, 2,000, 2,100, 2,400.
J. H. SHEADLE.—Station controlled by I. R. T. Co.
JOHN ANDERSON.—Station controlled by I. R. T. Co.
JOHN W. BOARDMAN.—System, strike out R. C. A., 1,000; w. l., *715*, 1,585; service, P.
JOSEPH D. WOOD.—System, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900; owner of vessel, Wood Towing Corp.
KATRINA LUCKENBACH.—W. l., *600*, 706, 800.
LACKAWANNA.—Station controlled by I. R. T. Co.
LAKE GORIN.—System, Navy-Marconi, 1,000; w. l., *600*, 706, 800.
LAKE TEDDA.—W. l., *600*, 706, 800.
LAUREL.—W. l., *600*, 706, 800; station controlled by F. T. Co.
LEBANON.—Station controlled by I. R. T. Co.
LEHIGH (WLN).—Station controlled by I. R. T. Co.
LEMUEL BURROWS.—Owner of vessel, Mystic S. S. Co.
MANCHURIA.—System, Navy-Lowenstein, 1,000 and I. W. T. Co. arc; w. l., *600* 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
MARACAIBO.—System, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900; hours, N.
MARQUETTE.—Station controlled by I. R. T. Co.
MARYLAND.—Station controlled by I. R. T. Co.
MERICOS H. WHITTIER.—W. l., *600*, 706, 800.
MICHIGAN.—Station controlled by I. R. T. Co.
MOHAWK (KFYU).—W. l., add 1,900.
MONTICELLO.—W. l., *600*, 706, 800.
MORAVIA BRIDGE.—Name changed to Mana.
MUNISING.—Station controlled by I. R. T. Co.
MUNPLACE.—System, Marconi, 1,000; w. l., *600*, 706; 800; hours, N.
NEGAUNEE.—Station controlled by I. R. T. Co.
NEW YORK (KUW).—W. l., *600*, 706, 800.
OCEANUS.—Station controlled by owner of vessel.
OREGON.—Owner of vessel, C. A. Burckhardt.
PACIFIC FIR.—W. l., strike out 450.
PANAY (KFUA).—Station controlled by I. R. T. Co.
PERE MARQUETTE.—W. l., *715*.
PERE MARQUETTE 15.—W. l., *715*.
PERE MARQUETTE 17.—W. l., *715*.
PERE MARQUETTE 18.—W. l., *715*.
PERE MARQUETTE 19.—W. l., *715*.
PETER WHITE.—Station controlled by I. R. T. Co.
PHILIP D. BLOCK.—Station controlled by I. R. T. Co.
PIONEER (KFMK).—Station controlled by I. R. T. Co.
POINT BONITA.—System, Navy-Lowenstein, 1,000; w. l., *600*, 706, 800.
POINT REYES.—Range, 300; system, Navy-Marconi, 1,000; w. l., *600*, 706, 800.
PONTIAC.—Station controlled by I. R. T. Co.
PRESIDENT GARFIELD.—W. l., 450, *600*, 706, 800.
PRESIDENT MONROE.—W. l., 450, *600*, 706, 800; station controlled by I. W. T. Co.
PRESQUE ISLE.—Station controlled by I. R. T. Co.
PRISCILLA (KFSE).—W. l., *600*, 706, 800.
PROVIDENCE.—Station controlled by R. C. A.
QUINAULT.—W. l., *600*, 706, 800; rates, all classes, 8 cents per word.
RAJAH.—W. l., *600*, 706, 800.
RIPPLE (KFLF).—W. l., *600*, 706, 800.
ROBERT J. PAISLEY.—Station controlled by I. R. T. Co.
ROBIN ADAIR.—W. l., *600*, 706, 800.
RUTH ALEXANDER.—Station controlled by F. T. Co.

SAUCON (WLH).—Station controlled by I. R. T. Co.
SENATOR.—Station controlled by I. R. T. Co.
SENATOR BAILEY.—W. l., *600*, 706, 800.
SEWALLS POINT.—Owner of vessel, Mystic S. S. Co.
SOCONY 94.—W. l., *600*, 706.
SOLANA.—W. l., add 800.
SENORA.—*Read* Sonora; range, 150; system, Navy-Lowenstein, 1,000; w. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word.
SPRAY III.—W. l., 120; service, P.
STANWOOD.—Range, 200; system, F. T. Co., 1,000; station controlled by F. T. Co.
STAR OF ENGLAND.—W. l., *600*, 706, 800.
STAR OF FALKLAND.—W. l., *600*, 706, 800.
STEELTON.—Station controlled by I. R. T. Co.
STORM KING (KDJM).—Owner of vessel, Export S. S. Corp.
SUNELSECO.—W. l., *600*, 706, 800.
SWIFT ARROW.—System, Navy-K. & C., 1,000; w. l., *600*, 706, 800.
TOTECO.—W. l., *600*, 706, 800.
TUSCAN.—W. l., add 800.
UTACARBON.—Station controlled by F. T. Co.
VENEZUELA.—Range, 500; w. l., add 800.
VINITA.—Name changed to Eleanor Christenson.
VOLUNTEER.—W. l., *600*, 706, 800.
WAHKEENA.—W. l., *600*, 706, 800.
WALTER D. MUNSON.—System, Navy-Lowenstein, 1,000; w. l., *600*, 706, 800.
WALTER D. NOYES.—W. l., *600*, 706, 800.
WAPAMA.—W. l., *600*, 706, 800.
WESTERN PLAINS.—W. l., add 800.
WEST HERBURN.—Name changed to Charles Christenson; system, Navy-K. & C., 1,000; w. l., *600*, 706, 800; station controlled by F. T. Co.
WEST INSKIP.—W. l., *600*, 706, 800.
WEST KASSON.—W. l., *600*, 706, 800.
WEST MAHWAH.—System, Navy-Marconi, 1,000; w. l., *600*, 706, 800; owner of vessel, Pacific Argentine Brazil Line; station controlled by I. W. T. Co.
WEST MONTOP.—W. l., add 800; station controlled by F. T. Co.
WEST NORMANUS.—Owner of vessel, Ocean Transport Co.
WEST NOTUS.—W. l., add 2,100; station controlled by I. W. T. Co.
WEST WIND.—System, Navy, 1,000; w. l., *600*, 706, 800; station controlled by F. T. Co.
WILLIAM A. REISS.—W. l., *715*, 800, 875; rates, Great Lakes service, 4 cents per word.
WILLIAM G. MATHER.—Station controlled by I. R. T. Co.
WILLIAM N. PAGE.—Owner of vessel, Mystic S. S. Co.
YOSEMITE (WPU).—Station controlled by I. R. T. Co.
YOUNGSTOWN.—W. l., *600*, 706, 800.
Strike out all particulars of the following-named vessels: Agarista, Fort George, Jamestown, Merrimack, Missouri (WFX), Suduffco, Tillamook, Windham, Wishkah.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

KGAP, *read* Sonora; KINP, *read* Charles Christenson; KOTL, *read* Eleanor Christenson; KOZG, *read* Mana; WPF, *read* Camp Eustis, Va., Flagship Division 1; strike out all particulars following the call signals, KDDO, KDJB, KFGH, KFZN, KLQ, KLUU, KNEU, KOC, KQM, WAV, WFX, WMOA.

BROADCASTING STATIONS BY CALL SIGNALS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1925, and list in Radio Service Bulletin No. 106, January 30, 1926]

KFJZ (Fort Worth, Tex.).—Owner of station, W. E. Branch.
KFKZ (Kirksville, Mo.).—Owner of station, Chamber of Commerce.
KFRW (Olympia, Wash.).—Owner of station, G. & G. Radio & Electric Shop.
KFUU (Oakland, Calif.).—Owner of station, H. C. Colburn and E. L. Mathewson.
KFWC (Upland, Calif.).—Changed to San Bernandino, Calif.; power, 5.
KFWM (Oakland, Calif.).—Power, 250

WBRC (Birmingham, Ala.).—Address, Age-Herald Building.
WEAF (New York, N. Y.).—Owner of station, Broadcasting Company of America (Inc.).
WEAR (Cleveland, Ohio).—Owner of station, Willard Storage Battery Co.
WFKB (Chicago, Ill.).—Owner of station, Francis K. Bridgman (Inc.).
WGES (Oak Park, Ill.).—Changed to Chicago, Ill., 128 North Crawford Avenue.
WHBH (Culver, Ind.).—Call signal changed to WCMA.
WIBX (Utica, N. Y.).—Owner of station, WIBX (Inc.).
WMBC (Detroit, Mich.).—Owner of station, Michigan Broadcasting Co. (Inc.).
Strike out all particulars of the following-named stations: WEBE (Cambridge, Ohio); WWAD (Philadelphia, Pa.).

SPECIAL LAND STATIONS, BY NAMES OF STATIONS

(Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1925)

BANDINI, CALIF. (6XBU).—Address, 344 Crocker Street, Los Angeles, Calif.
BUFFALO, N. Y. (portable, SXAO).—Owner of station, Howell Broadcasting Co.
EUGENE, OREG. (7XG).—Strike out all particulars.
LAS VEGAS, NEV. (6XBS).—Address, 344 Crocker Street, Los Angeles, Calif.
SALT LAKE CITY, UTAH (6XBT).—Address, 344 Crocker Street, Los Angeles, Calif.

MISCELLANEOUS

VESSELS EQUIPPED WITH RADIOCOMPASS

The following-named vessels have been equipped with a radiocompass (direction finder): Commercial vessels—*Admiral Farragut, Admiral Fiske, Admiral Schley, Captain A. F. Lucas, Charles L. Hutchinson, Dakotan, Greater Detroit, Greater Buffalo, J. C. Fitzsimmons, Louis W. Hill, Maunalei;* Government vessels—*Acushnet, Amaranth, Cambrai, Carrabasset, Cedar, Chateau Thierry, Dellwood, Grant, Manning, Medoc, Majave, Orchid, Redwing, St. Mihiel, Sequoia, Shawnee, Somme, Tallapoosa, Tampa, Thomas* (WXM), *Tulip.*

SPECIAL NAVY CALL LETTERS ASSIGNED TO AMATEUR STATION

The amateur station, 9EK of the C. F. Burgess laboratories, Madison, Wis., has been allowed to use call letters NRRL when communicating with amateur operators who are members of the naval reserve for instruction purposes and only when operated by a member of the naval reserve.

DAYLIGHT SAVING TIME IN EFFECT IN FOREIGN COUNTRIES

The legal time was advanced one hour in Belgium and France during the night of April 17 and 18 at 11 p. m.; in Great Britain on April 18 at 2 a. m. until October 3, 1926, at the same hour; and in Ireland (Free State) on April 18 at 2 a. m.

The legal time in Uruguay, in force the year round, will be that of mean time of Montevideo advanced 14 minutes 51 seconds, or 3 hours and 39 minutes slower than Greenwich.

NEW RADIO BEACON (FOG SIGNAL) STATIONS ESTABLISHED

The following-named radio beacons will be established in the near future:

Portland Lightship, Me.—Location, O 70° 05′ 38″, N 43° 31′ 30″; characteristic, to sound every 120 seconds, groups of 1 dash and 2 dots for 60 seconds, silent 60 seconds, thus:

— · · — · · — · · etc. (60 seconds) Silent (60 seconds)

The signal will also be sounded daily in clear weather from 9 to 9.30 a. m. and from 3 to 3.30 p. m., seventy-fifth meridian time.

Grays Harbor Light Stations, Wash.—Location O 124° 06′ 57″, N 46° 53′ 19″; characteristic, to sound every 120 seconds, groups of 4 dashes for 60 seconds, silent 60 seconds, thus:

— — — — — — — — etc. (60 seconds) Silent (60 seconds)

The signal will also be sounded daily in clear weather from 9 to 9.30 a. m. and

Cape Spencer Light Station, Alaska.—Location, O 136° 38' 24", N 58° 11' 43"; characteristic, to sound every 120 seconds, single dashes for 60 seconds, silent 60 seconds, thus:

— — — — — — — — — — — — etc. (60 seconds.) Silent (60 seconds.)

The signal will also be sounded daily in clear weather from 9 to 9.30 a. m. and from 3 to 3.30 p. m., one hundred and thirty-fifth meridian time.

All radio beacon stations on the coasts of the United States transmit radio signals during thick or foggy weather, or at other times as noted, on a wave length of 1,000 meters and are available for vessels equipped with radio compasses.

Unless otherwise stated, radio operators on lightships maintain watch on 600 meters for the first 15 minutes of each hour from 8 a. m. to 9.15 p. m., local standard time, except when the radiobeacon is in operation. Radio requests for special transmission of signals from lightships should be made during watch periods and on 600 meters.

CHANGES IN HOURS FOR NANTUCKET SHOALS LIGHTSHIP (MASS.) RADIOBEACON

This beacon is operated day and night for the second 15 minutes of every hour in clear weather, and it is operated continuously excepting listening-in periods from 10 to 10.15 a. m. and from 4 to 4.15 p. m., during thick weather.

OPERATING SCHEDULE FOR RADIOBEACONS ON GREAT LAKES

Devils Island and Detour	Manitou and Lake Huron Lightship	Whitefish Point and Detroit River
12 to 12.30 a. m.	2 to 2.30 a. m.	4 to 4.30 a. m.
6 to 6.30 a. m.	8 to 8.30 a. m.	10 to 10.30 a. m.
12 to 12.30 p. m.	2 to 2.30 p. m.	4 to 4.30 p. m.
6 to 6.30 p. m.	8 to 8.30 p. m.	10 to 10.30 p. m.

METEOROLOGICAL REPORTS TRANSMITTED BY GREENLAND STATION

The radio station at Julianehaab, Greenland, call signal OXF, now transmits meteorological reports on 3,700 meters at 1200 and 2400 G. M. T.

INCREASE IN RATES FOR DENMARK AND NORWAY

The land-line rate for radiotelegrams transmitted through a Danish coast station, except those situated in the Faroe Islands, and originating in or intended for Norway or Sweden, is 14 centimes per word, minimum charge 1 franc 40 centimes, for ordinary radiotelegrams, and 42 centimes per word, minimum charge 4 francs 20 centimes, for urgent radiotelegrams, effective April 1, 1926.

The Norwegian rate for radiotelegrams originating in or intended for Denmark or Sweden is the same as above. This charge includes the whole of the telegraph charges accruing to Norway and Denmark or Sweden. Pages 423 and 432 of the International List of Radiotelegraph Stations should be changed accordingly.

INCREASE IN RATES FOR FRANCE

The land-line rate for radiotelegrams transmitted by a coast station in France, Corsica, Algeria, or Tunis is 25 centimes per word, minimum charge, 2 francs 50 centimes, for ordinary radiotelegrams and 75 centimes per word, minimum charge 7 francs 50 centimes, for urgent radiotelegrams, effective May 2, 1926. Page 425 of the International List of Radiotelegraph Stations should be changed accordingly.

RADIO NAVIGATIONAL WARNINGS IN BRITISH ISLES

On and after June 1 certain alterations will be made in the procedure adopted for broadcasting information relating to navigational dangers. The times at which the radio stations at Fishguard, Port Patrick, Cullercoats, and Valencia broadcast these warnings will be altered to those shown in the accompanying schedule.

Warnings will not be repeated as hitherto after an interval of 10 minutes, but a repetition of any warning can be obtained by request to the station concerned

at the usual coast station charge for inquiry and reply. Operators should, however, make every effort to get the warning at the scheduled hours of sending.

Warnings with regard to lights on light buoys, etc., will not be broadcast at 0800 or 0818 throughout the year or at 1400 and 1418 between June 1 and August 6, 1926. In future years they will not be broadcast at 1400 and 1418 during the period May 13 to August 6.

Warnings will continue to be broadcast at the scheduled hours as long as may necessary, but the practice of broadcasting the cancellation of a warning previously issued will cease.

Full particulars of transmission of radio navigational warnings to shipping, in accordance with the new procedure, are given in the following schedule. These warnings contain information relating to derelicts, temporary extinction of lights or displacement of principal aids to navigation, drifting mines, and other important hydrographic matter:

Schedule

Radio station	Call signal	Position (latitude, longitude)	Time (G.M.T.)	Wave (meters)	Additional details
Niton	GNI	50 35 N. 1 17 W.	----------	600	Does not broadcast, but advises every ship approaching or leaving the port of Southhampton.
Land's End	GLD	50 07 N. 5 40 W.	0200, 0800 1400, 2000	600	Broadcasts to shipping in the English Channel and Bay of Biscay.
Fishguard	GRL	52 01 N. 4 59 W.	0218, 0818 1418, 2018	600	Broadcasts to shipping approaching or leaving St. George's Channel and the Bristol Channel.
Seaforth	GLV	53 28 N. 3 01 W.	----------	600	Does not broadcast, but advises every ship approaching or leaving the port of Liverpool.
Port Patrick	GPK	54 51 N. 5 07 W.	0218, 0818 1418, 2018	600	Broadcasts to shipping in the North Channel and Firth of Clyde.
Wick	GKR	58 26 N. 3 06 W.	0200, 0800 1400, 2000	600	Broadcasts to shipping in the North Sea, and to shipping approaching or leaving the Pentland Firth.
Cullercoats	GCC	55 02 N. 1 26 W.	0218, 0818 1418, 2018	600	Broadcasts to shipping in the North Sea.
North Foreland	GNF	51 22 N. 1 27 E.	0200, 0800 1400, 2000	600	Broadcasts to shipping in the English Channel and North Sea.
Valencia	GCK	51 56 N. 10 21 W.	0218, 0818 1418, 2018	600	Broadcasts to shipping in the Atlantic.
Malin head	GMH	55 22 N. 7 20 W.	0200, 0800 1418, 2018	600	Do.

NOTE.—All warnings are preceded by the radio danger call — — — (TTT), repeated at short intervals 10 times on full power; the warning is broadcast one minute later. The warnings are first of all broadcast immediately upon receipt by the station concerned and then at the above-mentioned times.

—*Admiralty Notice to Mariners No. 642, 1926, London.*

MAASLUIS AND YMUIDEN (NORTH SEA, NETHERLANDS) RADIOCOMPASS STATIONS ESTABLISHED

1. MAASSLUIS RADIOCOMPASS STATION.—Position: Close northward of the fixed red and green light on northern side of entrance to Maassluis Harbor (lat. 51° 55′ 02″ N., long. 4° 14′ 46″ E.). Call signal: PCMS. Wave length: 800 meters.

2. YMUIDEN RADIOCOMPASS STATION.—Position: At a distance of 6.47 cables, 082°, from the occulting green light on outer end of South Crib (lat. 52° 28′ N., long. 4° 35′ E., approximate). Call signal: PCYM. Wave length: 800 meters. Details: Vessels requiring bearings from these stations should first call Scheveningen station (call signal, PCH) on 600 meters, sending

QTE? PCMS (or PCYM)

= What is my true bearing from Maassluis (or Ymuiden)?

Scheveningen will reply by transmitting on 800 meters the letter K (— . —). The ship will thereupon signal on 800 meters, CT PCH, followed by repetitions of the ship's own call signal, repeated slowly for one minute with prolonged

station on 600 meters, as follows: QTE. Call signal of radiocompass station from which bearing is given. Group of three figures giving the true bearing, in degrees, of the ship from the radiocompass station (000=North; 270=West). Caution: From Ymuiden radiocompass station bearings northward of 300° are unreliable. For the present no charge is made for furnishing a bearing. Responsibility for any inaccuracy in the bearings supplied is not accepted by the authorities.—Notice No. 729, 1926, The Hague.

CHANGES IN FOG-SIGNALS BY NORDERNEY LIGHT VESSEL, NORTH SEA, GERMANY

Position.—Latitude 53° 59′ N., longitude 7° 14′ E. (approximate).

During fog or misty weather the following-described fog signals will be transmitted by Norderney light vessel.

1. AIR FOG SIGNAL.—Details: The electric membrane transmitter will send the Morse letter N twice (— . — .) every 30 seconds, thus:—

—	interval	.	interval	—	interval	.	interval
2 sec.	1 sec.	1 sec.	1 sec.	2 sec.	1 sec.	1 sec.	21 sec.

This fog signal is transmitted continuously and follows the submarine fog signal after an interval of one second. If the apparatus is disabled, the steam foghorn will be substituted and will sound a group of three blasts every minute, thus:

blast	interval	blast	interval	blast	interval
2.5 sec.	4.5 sec.	2.5 sec.	4.5 sec.	2.5 sec.	43.5 sec.

2. RADIO FOG-SIGNAL.—Call signal: KAI. Wave length: 940 meters (continuous wave). Details: The radio fog-signals consist of a repetition of the Morse letters NN (— . — .), followed by 15 dashes (— — — etc.) sent every 30 seconds, thus:

— . — . — . — .	silent	15 one-second dashes (— — — etc.) with 0.253 sec. intervals.
8 sec.	1.253 sec.	18.542 sec.

silent 2.205 sec.

Duration = 30 sec.

The whole group, after being repeated seven times in 3½ minutes, is followed by a silent interval of 4 minutes. Total period, 7½ minutes. The seven groups are repeated six times from 18m 45s to 59m 45s past each hour.

3. SUBMARINE FOG-SIGNALS.—Details: Submarine fog-signals will be transmitted continuously by an electric membrane transmitter and will consist of the Morse letters NN (— . — .), sent every thirty seconds, thus:

— . — .	silent
9 sec.	21 sec.

DETERMINATION OF BEARING AND DISTANCE.—The bearing of the light vessel can be determined, either with the ship's direction finder by means of the radio fog signals or, with the submarine sound signal receivers, by means of the submarine fog signals.

The distance of the light-vessel can be determined by using the radio fog signals in conjunction with the submarine fog signals by the following methods:

1. Between 18m 45s and 59m 45s, the submarine fog signal (— . — .) commences immediately after the final dot of the radio fog signal (— . — . — . — .). The number of the dash of the series of 15 dashes (— — — etc.) which coincides with the beginning of the submarine fog signal when received on board gives the required distance in miles.

2. Count the number of seconds which elapse between the final dot of the radio fog signal (— . — . — . — .) and when the commencement of the submarine fog signal is received. Multiply this number by 0.8, and the product is the distance in miles.

Remarks: Until further notice radio fog signals will also be transmitted in clear weather, daily, for experimental purposes, during the following hours: From 0800 to 0900, from 1200 to 1300, and from 1700 to 1800, G. M. T.

Any vessel desirous of determining her distance during these times or, to determine her bearing and distance at times other than those mentioned above, should first communicate with the light vessel, using similar procedure to that laid down for Borkum Riff Light Vessel (see Radio Service Bulletin, No. 107

USES AND POSSIBILITIES OF PIEZO-ELECTRIC OSCILLATORS

At the May 5 meeting of the Institute of Radio Engineers Dr. A. Hund read a paper describing the work that has been done by him at the Bureau of Standards on piezo oscillators. This paper describes how the piezo oscillator may be used with an auxiliary generator for standardizing a frequency meter. A single piezo-electric plate can be employed as a standard for the entire range of frequencies used in radio communication. If the piezo-electric plate is cut as described in the paper, the frequencies available are three fundamentals and numerous harmonics. Emperical formulas were obtained which give the approximate relationship existing between the fundamental frequencies and the dimensions of the quartz plate. According to these formulas very large plates would ordinarily have to be used to produce alternating currents of audio-frequency, but by means of beats produced by the simultaneous production of two radio-frequencies by the quartz plate a small plate can produce audio-frequencies. Several other applications are described. This paper, now in reprint form, will appear in an early issue of the Proceedings of the Institute of Radio Engineers. Copies of the proceedings may be obtained from Institute of Radio Engineers, 37 West Thirty-ninth Street, New York, N. Y.

STANDARD FREQUENCY STATIONS

As a result of measurements by the Bureau of Standards upon the transmitted waves of a limited number of radio-transmitting stations, data are given in each month's Radio Service Bulletin on such of these stations as have been found to maintain a sufficiently constant frequency to be useful as frequency standards.

There may be many other stations maintaining their frequency just as constant as these, but these are the only ones among those observed at the bureau. There is, of course, no actual guaranty that the stations named below will maintain the constancy shown, but the data indicate the high degree of confidence that can be placed in them. The transmitted frequencies from these stations can be utilized for standardizing frequency meters and other apparatus by the procedure given in Bureau of Standards Letter Circular No. 171, which may be obtained by a person having actual use for it upon application to the Bureau of Standards, Department of Commerce, Washington, D. C.

Station	Owner	Location	Assigned frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since Apr. 25, 1926
						Per cent	*Per cent*
WQL	Radio Corporation of America.	Coram Hill, L. I., N. Y.	17.13	15	84	0.2	(1)
WCI	Do	Barnegat, N. J.	17.95	15	79	.1	0.1
WGG	Do	Tuckerton, No. 1, N. J.	18.86	33	245	.2	.2
WII	Do	New Brunswick, N. J.	21.80	13	106	.1	.1
WRT	Do	....do	22.60	12	84	.1	.2
WVA	U. S. Army	Annapolis, Md.	100	14	126	.2	.5
NAA	U. S. Navy	Arlington, Va.	113	7	40	.2	(2)
WJR WCX	Detroit Free Press Jewett Radio & Phonograph Co.	Pontiac, Mich.[1]	580	7	33	0	(2)
WEAF	American Telephone & Telegraph Co.	New York, N. Y.	610	17	119	0	0
WCAP	Chesapeake & Potomac Telephone Co.	Washington, D. C.	640	32	137	.1	0
WRC	Radio Corporation of America.	....do	640	29	127	.1	0
WSB	Atlanta Journal	Atlanta, Ga.	700	32	147	.2	.2
WGY	General Electric Co.	Schenectady, N. Y.	790	35	109	.1	.1

[1] Not measured since Feb. 20.
[2] Not measured since Apr. 25.

REFERENCES TO CURRENT RADIO LITERATURE

This is a monthly list of references prepared by the radio laboratory of the Bureau of Standards and is intended to cover the more important papers of interest to professional radio engineers which have recently appeared in periodicals, books, etc. The number at the left of each reference classifies the reference by subject, in accordance with the scheme presented in A Decimal Classification of Radio Subjects—An Extension of the Dewey System, Bureau of Standards Circular No. 138, a copy of which may be obtained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. The various articles listed below are not obtainable from the Bureau of Standards. The various periodicals can be consulted at large public libraries.

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