

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION

Washington, November 30, 1926—No. 116

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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.
	AB = Aviation beacon.
	B = Beacon.
	P = Private.
	O = Government business exclusively.
Hours	= Hours of operation:
	N = Continuous service.
	X = No regular hours.
F. T. Co.	= Federal Telegraph Co.
I. R. T. Co.	= Inter-city Radio Telegraph Co.
I. W. T. Co.	= Independent Wireless Telegraph Co.
K. & C.	= Kilbourne & Clark Manufacturing Co.
R. C. A.	= Radio Corporation of America.
U. R. Corp.	= Universal Radio Corp.
W. S. A. Co.	= Wireless Specialty Apparatus Co.
C. w.	= Continuous wave.
I. c. w.	= Interrupted continuous wave.
Kc.	= Kilocycles.
Fy.	= Frequency.
A. c.	= Alternating current.
V. t.	= Vacuum tube.

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, 1926, and to the International List of Radiotelegraph Stations published by the Berns bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Bardlesville, Okla. ¹	KJM	1,775	PX	X	Phillips Petroleum Co.
Borger, Tex. (near) ²	KJB	1,775	PX	X	Do.
Chicago, Ill. ³	WCFL	1,950	PX		Chicago Federation of Labor.
Houston, Tex. ⁴	KOQ	44	PX	X	Humble Pipe Line Co.
Pampa, Tex. ⁵	KOB	43.5	PX	X	Do.

¹ Loc. O 95° 58' 45", N 36° 41' 45"; system, composite v. t. telegraph.

² Loc. (approximately.) O 101° 19' 00", N 36° 47' 00"; system, composite v. t. telegraph.

³ Loc. (approximately.) O 87° 37' 00", N 41° 52' 00"; system, composite v. t. telegraph; hours 8 a. m. to 5 p. m.

⁴ Loc. O 95° 23' 24", N 29° 46' 18"; range, 500; system, composite v. t. telegraph.

⁵ Loc. O 100° 57' 20", N 35° 32' 05"; range, 500; 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, 1926, and to the International List of Radiotelegraph Stations published by the Berns bureau]

Name of vessel	Call signal	Rate	Service	Hours	Owner of vessel	Station controlled by—
Abasco	KDDG	8	PG	X	U. S. Shipping Board	
Algonquin	KDDL	8	PG	N	Cherokee-Seminole Steamship Co.	
Antilla ¹	KWD	8	PG	X	New York & Cuba Mail Steamship Co.	I. W. T. Co.
City of Dahuri	KDNP	8	PG	X	U. S. Shipping Board	
City of Leidsburg ²	KUTE	8	PG	X	Coastwise Steamship & Inge Co.	Owner of vessel.
City of Rayville	KDGH	8	PG	X	U. S. Shipping Board	
Davenport ³	KUDR	8	PG	X	do	I. W. T. Co.
Eastern Elvora	WKIO	8	PG	X	do	Do.
Edgemoor	KEVF	8	PG	X	do	Do.
Englewood	WGAA	8	PG	X	do	Do.
Ervina V ⁴	KGDF		P	X	William E. Antony	Owner of vessel.
Frank D. Stout	KGDN				California & Oregon Lumber Co.	
Lake Fithian	KOKZ	8	PG	X	U. S. Shipping Board	
Lansing	WTC	8	PG	X	California Sea Products Co.	F. T. Co.
Mercer ⁵	KEPF	8	PG	X	U. S. Shipping Board	I. W. T. Co.
Munitions ⁶	KMZ	8	PG	N	Munson Steamship Line	Do.
Nashua	KDSM	8	PG	X	U. S. Shipping Board	S. O. R. S.
Nemaha	KUSR	8	PG	X	do	
Plow City ⁷	KUCG	8	PG	X	Charles Nelson Co.	I. W. T. Co.
Saccharappa	WGOL	8	PG	X	U. S. Shipping Board	
Sawokla	KDBW	8	PG	X	do	
Seminole	KUOP	8	PG	X	do	
Sinista	KDAC	8	PG	X	do	Do.
Tampa	KOVX	8	PG	X	do	R. C. A.
Unicol	KUQP	8	PG	X	do	
West Amargosa ⁸	KEJS	8	PG	X	do	I. W. T. Co.
West Apache ⁹	KJUJ	8	PG	X	do	Do.
Westchester	KGDR	8	PG	X	do	
West Cobalt	KEKD	8	PG	X	do	
West Crosby	WGOU	8	PG	X	do	
West Cumeta	KDIK	8	PG	X	do	
West Kinasco	WIOA	8	PG	X	do	
Western Light ¹⁰	KQOI	8	PG	X	do	Do.
Western Queen	KGDK	8	PG	X	do	
West Orma	WGIA	8	PG	X	do	
West Harts	KEFZ	8	PG	X	do	
West Hartland	KEOS	8	PG	X	do	
West Honaker ¹¹	KDFX	8	PG	X	do	Do.
West Kyska ¹²	WJOU	8	PG	X	do	Do.
West Loquassack	WJOI	8	PG	X	do	
Westmen ¹³	WDIO	8	PG	X	do	
Westmount	KDJG	8	PG	X	do	
Westward Ho	WRX	8	PG	X	do	Do.
West Zeda ¹⁴	WRUU	8	PG	X	do	R. C. A.
Wilcox	WPAO	8	PG	X	do	
Yapalaga ¹⁵	KDHK	8	PG	X	do	
Yonachichl	WPAI	8	PG	X	do	

¹ Range, 300; system, Navy-Marcconi, 1,000; w. l., 600, 700, 800.

² Range, 300; system, Navy-Lowenstein, 1,000; w. l., 600, 700, 800.

³ Range, 25; system, composite v. t. telegraph; w. l., 110.

⁴ Range, 200; system, Telefunken, 1,000; w. l., 600, 700, 800.

⁵ Range, 300; system, Navy, 1,000; w. l., 600, 700, 800.

⁶ Range, 300; system, Navy-Liberty, 1,000; w. l., 600, 700, 800.

⁷ Range, 300; system, F. T. Co. arc and Navy spark, 1,000; w. l., 600, 700, 800, 1,800, 1,900, 2,000, 2,100, 2,500.

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
KDAC	Sineta.....b	KOQ	Houston, Tex.....c
KDBW	Sawoka.....b	KOS	Pampa, Tex.....c
KDFX	West Honsker.....b	KOVX	Tampa.....b
KDGS	City of Rayville.....b	KQOI	Western Light.....b
KDHK	Yopalaga.....b	KUCC	Plow City.....b
KDIK	West Cussetta.....b	RUDR	Davenport.....b
KDIG	Westmount.....b	KUGP	Seminole.....b
KDNP	City of Dalhart.....b	KUQP	Unicoi.....b
KDSM	Nashaha.....b	KUSR	Nemaha.....b
REFZ	West Harts.....b	KUTK	City of Lordsburg.....b
KEGS	West Hartland.....b	KWD	Antilla.....b
KEJS	West Amargosa.....b	WCFL	Chicago, Ill.....c
KEED	West Cohalt.....b	WDIO	Westmead.....b
KFPF	Mercer.....b	WGAA	Englewood.....b
KEVP	Edgemoor.....b	WOLA	West Orma.....b
KGDF	Ervin V.....b	WGOI	Saccharappa.....b
KGDG	Absaroka.....b	WGOU	West Cressy.....b
KGDH	Westchester.....b	WJOA	West Elcason.....b
KGDK	Western Queen.....b	WJOI	West Loquassuck.....b
KODL	Algonquin.....b	WJOU	West Kynka.....b
KODN	Frank D. Stout.....b	WKIO	Eastern Shorn.....b
KJM	Hartleville, Okla.....c	WKUO	West Zeda.....b
KJS	Borger, Tex.....c	WKK	Westward Ho.....b
KJUU	West Apauam.....b	WPAI	Yomachichi.....b
KMZ	Muniercans.....b	WPAO	Wilsooi.....b
KOEZ	Lake Pithian.....b	WTC	Lansing.....b

Broadcasting stations, alphabetically, by names of States and cities

[Additions to the List of Radio Stations of the United States, edition of June 30, 1926]

State and city	Call signal	State and city	Call signal
California: Stockton.....	KGDM	New York-Continued.	
Connecticut: Bridgeport.....	WICD	Ithaca.....	WLGI
Illinois: Chicago Heights.....	WJHZ	Syracuse.....	WBYS
Indiana:		Oregon: Portland.....	KXL
Huntington.....	WHOG	Pennsylvania: Kingston.....	WABF
Muncie.....	WLBC	South Dakota: Sioux Falls.....	KBOO
Iowa: Cresco.....	KODJ	Tennessee: Nashville.....	WLAC
Louisiana: Shreveport.....	KRAC	Texas: Dallas.....	KGDO
Massachusetts: Gloucester.....	WEPS	Washington:	
Michigan:		Seattle.....	KGDI
Detroit.....	WWPR	Do.....	KGWA
Ludington.....	WKBZ	Do.....	KVOB
Missouri: Kansas City.....	WLBF	Tacoma.....	KVI
New Jersey: Newark.....	WDWM	Wisconsin:	
New York:		Manitowoc.....	WOMT
Brooklyn.....	WARS	Marshfield.....	WOBK
Do.....	WBKN		
Do.....	WLBE		

Broadcasting stations, alphabetically, by call signals*

Call signal	Location of station (address)	Owner of station
KGDI	Seattle, Wash., 614 Terminal Sales Building.....	Northwest Radio Service Co.
KGDM	Cresco, Iowa, 316 Fifth Avenue.....	R. Ratbert.
KGDM	Stockton, Calif., 332 East Channel Street.....	Victor O. Koping.
KODO	Dallas, Tex., 2012 Main Street.....	C. H. and Henry Garrett.
KGEA	Seattle, Wash., 5311 Fifth Avenue NE.....	Puget Sound Radio Broadcasting Co.
KRAC	Shreveport, La., Fair Grounds.....	Caddo Radio Club.
KBOO	Sioux Falls, S. Dak., 509 Minnehaha Building..	Sioux Falls Broadcast Association.
KVI	Tacoma, Wash., Ninth and A Streets.....	Puget Sound Radio Broadcasting Co. (H. W. - Winningham).
KVOB	Seattle, Wash., 1206 Tenth Avenue.....	L. L. Jackson and L. Kessler.
KXL	Portland, Oreg., 501 Pantages Building.....	KXL Broadcasters (Loye Electric Co.).
WABF	Kingston, Pa.....	Markle Broadcasting Corporation.
WARS	Brooklyn, N. Y. (77 Cortlandt Street, New York, N. Y.).	Amateur Radio Specialty Co.

Broadcasting stations, alphabetically, by call stations—Continued.

Call signal	Location of station (address)	Owner of station
WBKN	Brooklyn, N. Y., 1645 Eastern Parkway	Arthur Faska.
WDWM	Newark, N. J., 20 Central Avenue	Radio Industries Broadcast Co.
WEPS	Glocester, Mass., 282 Washington Street	Ralph G. Matheson.
WGHR	Marshfield, Wis., 407 South Central Avenue	George S. Ives.
WHOG	Huntington, Ind., 409 North Jefferson Street	Huntington Broadcasters Association.
WICO	Bridgeport, Conn., 1188 Main Street	Bridgeport Broadcasting Station (Harold D. Peur and Charles W. Selen).
WJBZ	Chicago Heights, Ill., 144 East Sixteenth Street	Roland G. Pampler and A. Coppolelli.
WKBY	Ludington, Mich., First National Bank Building	Karl L. Ashbocker.
WLAC	Nashville, Tenn.	Life & Casualty Insurance Co.
WLBC	Muncie, Ind., 2221 South Jefferson Street	D. A. Burton.
WLBE	Brooklyn, N. Y., 3029 Sixty-fifth Street	J. Henri Fruitman.
WLBF	Kansas City, Mo., 300a East Thirty-third Street	Everett L. Dillard.
WLGI	Ithaca, N. Y.	Lutheran Association of Ithaca, N. Y.
WOMT	Manitowoc, Wis.	Mikadow Theatre (Francis M. Kadow).
WBYR	Syracuse, N. Y., Hotel Syracuse	Clive B. Meredith.
WWPR	Detroit, Mich.	Detroit Police Department.

Government land stations, alphabetically, by names of stations

Additions to the List of Radio Stations of the United States, edition of June 30, 1928, and to the International List of Radiotelegraph Stations published by the Bureau

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Copper Center, Alaska ¹	WUD	440	FX	N	U. S. Army.
Grundler, Alaska ²	WZA	460	FX	N	Do.
Little Squaw Mines, Alaska ³	WUE		FX	N	Do.

¹ Loc. (approximately) O 145° 19' 13", N 61° 55' 42"; range, 100; system, U. S. Army v. t. telegraph.

² Loc. (approximately) O 145° 51' 21", N 64° 02' 02"; range, 100; system, U. S. Army v. t. telegraph.

³ Loc. (approximately) O 148° 05' 00", N 67° 32' 35"; range, 100; system, U. S. Army v. t. telegraph.

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
WUD	Copper Center, Alaska.....c	WZA	Grundler, Alaska.....c
WUE	Little Squaw Mines, Alaska.....c		

Special land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1928]

Station	Call signal	Station controlled by—
Oakland, Calif.....	6YE	Western Radio Institute, Hotel Oakland.
Pullman, Wash.....	7YE	State College of Washington.

Special land stations, grouped by districts

Call signal	District and station	Call signal	District and station
6YE	Sixth district: Oakland, Calif.	7YE	Seventh district: Pullman, Wash.

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, 1926, and to the International List of Radiotelegraph Stations, published by the Berns bureau]

- BECHAROF, ALASKA.—Service, P.
 CHICAGO, ILL. (WGO).—W. 1., add 1,800, 2,100, 2,400.
 DETROIT, MICH. (KDPH).—Service, FX.
 HIALEAH, FLA.—W. 1., 3,725.
 NEW BRUNSWICK, N. J. (WIK).—Changed to Rocky Point, N. Y.; loc. O 72° 56' 15", N. 40° 55' 20".
 NEW YORK, N. Y. (WHI).—System, composite v. t. telegraph and telephone.
 Strike out all particulars of the following-named stations: Laguna Bell Substation, Calif.; Northville, Mich.; Raleigh, N. C.; Seattle, Wash. (KPA).

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, 1926, and to the International List of Radiotelegraph Stations, published by the Berns bureau]

- ALOHA.—W. 1., 600, 706, 800.
 AMOLCO.—Station controlled by R. C. A.
 ANN ARBOR No. 3.—System, R. C. A. v. t. telegraph; w. 1., 715, 875.
 ANN ARBOR No. 4.—System, R. C. A. v. t. telegraph; w. 1., 715, 875.
 ANN ARBOR No. 6.—System, R. C. A. v. t. telegraph; w. 1., 715, 875.
 ATHERO II.—Range, 300; system, R. C. A. v. t. telegraph; w. 1., 600, 706, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
 BREMERTON.—W. 1., 600, 706, 800; station controlled by I. W. T. Co. (U. S. L.).
 BULKO.—Owner of vessel, U. S. Tank Ship Corporation.
 CADDOPEAK.—Station controlled by owner of vessel.
 CAIRIANA.—System, R. C. A. v. t. telegraph; w. 1., 600, 706, 750, 800, 900.
 C. A. SNIDER.—Station controlled by owner of vessel.
 CASTANA.—Range, 300; system, Navy-Liberty, 1,000; w. 1., 600, 706, 800.
 CATALINA.—System, R. C. A. v. t. telegraph and telephone; w. 1., 600, 706, 870; service, PG; hours, X; rates, 8 cents per word.
 CECIL COUNTY.—Station controlled by R. C. A.
 CITY OF ALTON.—Station controlled by R. C. A.
 CITY OF CLEVELAND III.—W. 1., add 1,578.
 CITY OF DETROIT III.—W. 1., add 1,578.
 CITY OF HOLLAND.—W. 1., 715; owner of vessel, Goodrich Transit Co.
 CITY OF SAUGATUCK.—W. 1., 715; owner of vessel, Goodrich Transit Co.
 COAHOMA COUNTY.—W. 1., 600, 706, 800.
 COASTWISE.—Station controlled by R. C. A.
 COAXET.—W. 1., 600, 706, 800.
 CROFTON HALL.—W. 1., 600, 706, 800.
 EASTERLING.—Station controlled by R. C. A.
 EASTERN GLADE.—W. 1., 600, 706, 800, 1,800, 2,100, 2,400.
 EDENTON.—System, Navy-Marconi, 1,000; station controlled by I. W. T. Co.
 EGLANTINE.—W. 1., 600, 706, 800.
 EGREMONT.—System, Navy-Lowenstein, 1,000.
 ELBENA.—W. 1., 600, 706, 800.
 ELMSPORT.—Station controlled by I. W. T. Co.
 EL MUNDO.—System, Marconi, 1,000; w. 1., 600, 706, 800.
 EL ORIENTE.—System, Marconi, 1,000; w. 1., 600, 706, 800.
 EOCENE.—Range, 300; system, R. C. A. v. t. telegraph; w. 1., 600, 706, 750, 800, 900.
 ESTRADA PALMA.—System, R. C. A. v. t. telegraph.
 FISHERMAN.—Station controlled by R. C. A.
 FRANK H. GOODYEAR.—W. 1., 715, 800, 875.
 FREDERIC EWING.—System, R. C. A. v. t. telegraph; w. 1., 600, 706, 750, 800, 900.
 FREEPORT SULPHUR No. 6.—W. 1., add 750.
 FRIEDA.—Station controlled by owner of vessel.
 GREATER BUFFALO.—W. 1., add 1,578.
 GREATER DETROIT.—W. 1., add 1,578.
 HALF MOON.—Owner of vessel, Export Steamship Corporation.
 HAMPTON ROADS (KESR).—Station controlled by R. C. A.
 HANOVER.—W. 1., 600, 706, 800.
 HENRY D. WHITON.—Station controlled by owner of vessel.

- HENRY FORD II.—W. L., 715, 800, 875, 1,875.
 HERMAN FRASCH.—Station controlled by owner of vessel.
 HIGHO.—Station controlled by R. C. A.
 HOVEN.—Station controlled by R. C. A.
 INDIANA (KGBL).—System, R. C. A. v. t. telegraph and telephone; w. l., 600, 706, 800, 870; service, PG; rates, 8 cents per word.
 INVADER.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 875.
 JAMES B. DUKE.—W. l., 600, 706, 800, 1,800, 2,100, 2,400.
 JEANETTE SKINNER.—System, Navy-Liberty, 1,000; w. l., 800, 706, 800; station controlled by R. C. A.
 JOHN D. ARCHBOLD.—System, R. C. A. v. t. telegraph only; w. l., 600, 706, 750, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
 J. R. GORDON.—Station controlled by owner of vessel.
 JUVIGNY.—Owner of vessel, Juvigny S. S. Co.; station controlled by I. W. T. Co.
 LAKE FRANCES.—System, Navy-Marconi, 1,000.
 MADISON.—Owner of vessel, Gulf & Southern Steamship Co.
 MALIKO.—Station controlled by F. T. Co.
 MATINICOCK.—W. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
 MONTEBELLO.—W. l., add 800.
 MUNLEON.—Range, 200; system, I. W. T. Co., 1,000; w. l., 600, 706, 800.
 MUNLOYAL.—Station controlled by I. W. T. Co.
 NATIHAR.—System, F. T. Co. arc and Navy spark, 1,000; w. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
 NEBRASKAN.—Station controlled by R. C. A.
 NEWTON.—W. l., 600, 706, 800.
 OAKLEY L. ALEXANDER.—Correct orthography, *Oakey* L. Alexander; station controlled by R. C. A.
 OAKMAN.—Range, 300; system, Marconi, 1,000; w. l., 600, 706, 800.
 OLEN.—Station controlled by R. C. A.
 OLEUM.—System, K. & C., 1,000; w. l., 600, 706, 800.
 OPHIS.—Station controlled by R. C. A.
 PERE MARQUETTE 15.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 17.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 18.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 19.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 20.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 21.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PERE MARQUETTE 22.—System, R. C. A. v. t. telegraph; w. l., 715, 875.
 PETER H. CROWELL.—W. l., 600, 706, 800.
 POINT BONITA.—Station controlled by F. T. Co.
 POINT JUDITH.—System, Marconi, 1,000.
 POLYBIUS.—W. l., 600, 706, 800.
 PRESIDENT HAYES.—W. l., 600, 706, 800.
 ROCKAWAY PARK.—Station controlled by I. W. T. Co. (U. S. L.).
 ROMAGNE.—Owner of vessel, Edward P. Farley & Co.
 SAN JUAN (WWM).—Station controlled by owner of vessel.
 SAVARONA.—Range, 200; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
 SEVERANCE.—Station controlled by owner of vessel.
 STEEL AGE.—W. l., 600, 706, 800.
 STEEL CHEMIST.—Range, 300; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 SUBOLCO.—W. l., 600, 706, 800.
 SUJAMECO.—W. l., 600, 706, 800.
 TOPA TOPA.—W. l., 600, 700, 800.
 TRADER.—Station controlled by I. W. T. Co.
 TRANSPORTATION.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 TUSCALOOSA CITY.—W. l., 600, 706, 800.
 VIKING.—System, Marconi, 240; w. l., 600, 706, 800.
 WEST ELCAJON.—Station controlled by I. W. T. Co. (U. S. L.).
 WEST HARDAWAY.—W. l., 600, 706, 800.
 WEST HEMATITE.—W. l., 600, 706, 800.
 WEST HODOMAC.—W. l., 600, 706, 800.
 WEST IVER.—W. l., 600, 706, 800.
 WEST JAFFREY.—Station controlled by I. W. T. Co.
 WEST KADER.—W. l., 600, 706, 800, 875.
 WEST KATAN.—W. l., add 800.

- WESTLAND.—Station controlled by I. W. T. Co.
 WEST MAXIMUS.—Station controlled by I. W. T. Co. (U. S. L.).
 WEST MUNAHM.—W. l., 600, 706, 800.
 WESTPORT.—System, Navy-Marconi, 1,000; w. l., 600, 706, 800; station controlled by I. W. T. Co.
 WEST SAGINAW.—W. l., 600, 706, 800; station controlled by I. W. T. Co.
 WILLETT.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
 WILLFARO.—W. l., 600, 706, 800.
 WINSTON-SALEM.—Station controlled by I. W. T. Co. (U. S. L.).
 ZAREMBO.—Station controlled by I. W. T. Co. (U. S. L.).
 Strike out all particulars of the following-named vessels: *Argus*, *Haloakala* (KORL), *Regulus*.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

- WFF, read Oakley L. Alexander; WIK, read Rocky Point, N. Y.; strike out all particulars following the call signals: KDEP, KGCZ, KGDB, KORL, KPA, KYG, WLAC.

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]

- KDYL (Salt Lake City, Utah).—Owner of station, Intermountain Broadcasting Corporation, Ezra Thompson Building.
 KFDD (Boise, Idaho).—Owner of station, St. Michaels Episcopalian Church (Paul Roberts).
 KFON (Long Beach, Calif.).—Owner of station, Nichols & Warriner (Inc.).
 KFRC (San Francisco, Calif.).—Owner of station, Don Lee (Inc.).
 KFVR (Denver, Colo.—near).—Owner of station, The Olinger Corporation Broadcasting, 1075 Penn Street, Denver, Colo.
 KFWH (Chico, Calif.).—Changed to Eureka, Calif., Hotel Vance.
 KFWV (Portland, Oreg.).—Owner of station KPWV Broadcast Studios (Inc.).
 KGBX (St. Joseph, Mo.).—Owner of station, Foster-Hall Tire Co.
 KGT (San Francisco, Calif.).—Owner of station, Glad Tidings Temple and Bible Institute.
 KNRC (Los Angeles, Calif.).—Owner of station, Clarence B. Juneau (Kierulff & Ravenscroft Co.).
 KRE (Berkeley, Calif.).—Owner of station, Berkeley Daily Gazette (C. E. Dunscomb).
 KVOO (Bristow, Okla.).—Owner of station, Southwestern Sales Corporation.
 WCAO (Baltimore, Md.).—Owner of station Monumental Radio (Inc.), 848 North Howard Street.
 WCLS (Joliet, Ill.).—Owner of station, WCLS (Inc.), 301 East Jefferson Street.
 WDAG (Amarillo, Tex.).—Call signal changed to KGRS.
 WDBE (Atlanta, Ga.).—Owner of station Gilham Electric Co.
 WEAJ (New York, N. Y.).—Owner of station, National Broadcasting Co.
 WFBE (Seymour, Ind.).—Changed to Cincinnati, Ohio; owner of station, Garfield Place Hotel Co. (Robert A. Casey).
 WFBL (Syracuse, N. Y.).—Owner of station, The Onondaga Co.
 WFRL (Brooklyn, N. Y.).—Owner of station, Robert M. Lacey.
 WHFC (Chicago, Ill.).—Owner of station, Triangle Broadcasters (Hotel Flanders).
 WKBW (Buffalo, N. Y.).—Owner of station Churchill Evangelistic Association.
 WQAW (Omaha, Nebr.).—Call signal changed to WOW.
 WPAK (Agricultural College, N. Dak.).—Should read Fargo, N. Dak.
 WQAM (Miami, Fla.).—Owner of station, Electrical Equipment Co. of Florida.
 Strike out all particulars of the following-named stations: KFJC (Junction City, Kans.); KGBW (Joplin, Mo.); WCAP (Washington, D. C.); WEBZ (Savannah, Ga.); WJBX (Osterville, Mass.); WSAU (Chesham, H. H.).

GOVERNMENT LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

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

- BOSTON, MASS. (NAD).—W. l., 2,939.
 CAPE BLANCO LIGHT STATION, OREG.—Loc. O 124° 33' 46", N 42° 50' 15".
 CAVITE, P. I.—W. l., 600, 962, 2,100, 2,667, 3,950, 5,260 15;630; service, O.
 CHARLESTON, S. C.—W. l., 600, 2,100, 2,776, 4,885.

- COLUMBIA RIVER LIGHTSHIP, OREG.—Loc. O 124° 11' 04", N 46° 11' 01".
 FIVE FATHOM BANK LIGHTSHIP, N. J.—Loc. O 74° 34' 33", N 38° 47' 16".
 FORT BLISS, TEX.—Loc. (approximately) O 106° 26' 00", N 31° 48' 00"; range, 600; w. l., add 1874; hours, 6 a. m. to 5 p. m.
 FORT SILL, OKLA.—Loc. (approximately) O 98° 23' 00", N 34° 40' 00"; range, 400; w. l., 1,499; hours, 7.30 a. m. to 4.30 p. m.
 GREAT LAKES, ILL.—W. l., 2,271.
 JUNEAU, ALASKA.—Loc. 134° 25' 02", N 58° 18' 13"; w. l., 800, 2,250.
 KETCHIKAN, ALASKA.—Loc. O 131° 40' 58", N 55° 21' 06"; w. l., add 800.
 MARSHFIELD, OREG.—Strike out all particulars.
 NORTH HEAD, WASH.—W. l., strike out 4997.
 PHILADELPHIA, PA.—W. l., 600, 2,828.
 ST. PAUL, ALASKA (traffic station).—W. l., 600, 2,541, 5,700.
 SEWARD, ALASKA.—Loc. O 140° 24' 42", N 60° 07' 27"; system, U. S. Navy, 1,000; w. l., 600, 800, 1,500; service, PG; hours, N; rates, 6 cents per word.
 VALDEZ, ALASKA.—Loc. (approximately) O 148° 17' 00", N 61° 07' 00"; system, U. S. Army v. t. telegraph; w. l., 450; hours, N.

GOVERNMENT SHIP STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1926, and to the International List of Radiotelegraph Stations, published by the Bureau]

Strike out all particulars of the following-named vessels: *John E. Klien*, *S. C. 214*, *S. C. 285*, *Zumbrota*.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

Strike out all particulars following the call signals; NELD, NONS, NOSN, NPF, WYCV.

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, 1926]

- CHICO, CALIF. (6XAK).—Changed to Eureka, Calif.
 DETROIT, MICH. (8XR).—Changed to Fordson, Mich.
 PULLMAN, WASH. (7XW).—Strike out all particulars.

MISCELLANEOUS

CHANGES IN RADIOBEACON STATIONS

Thunder Bay Island Light Station, Mich.—A new beacon station has been established at this light station. Characteristic to sound every 120 seconds; groups of 2 dashes for 60 seconds, silent 60 seconds, thus:

— — — — — etc.	Silent
60 seconds	60 seconds

The signal will be sounded during thick or foggy weather on a wave length of 1,000 meters, and will be available for vessels equipped with a radiocompass. The signal will also be sounded daily in clear weather from 1 to 1.30 and from 7 to 7.30 a. m., and from 1 to 1.30 and 7 to 7.30 p. m., ninetieth meridian time. Location, O 83° 11' 38", N. 45° 02' 15". The station will not maintain radio communication service.

Point Sur Light Station, Calif.—The operating interval has been changed to sound every 180 seconds; groups of 1 dot, 2 dashes, and 1 dot for 60 seconds, silent 120 seconds, thus:

— — — — — etc.	Silent
60 seconds	120 seconds

Will also operate during clear weather for the first 15 minutes of every even hour from 8 p. m. to 6.15 a. m., one hundred and twentieth meridian time.

San Francisco Light Station, Calif.—The operating interval has been changed to sound every 180 seconds; groups of 2 dashes for 60 seconds, silent 120 seconds, thus:

— — — — — etc.	Silent
60 seconds	120 seconds

U. S. ARMY STATIONS MAY BE USED AS RADIOBEACONS

The Army stations at Juneau, Seward, and Ketchikan, Alaska, will transmit their call signal as a beacon on 800 meters upon request from ships.

VESSELS EQUIPPED WITH RADIOCOMPASS

The following-named vessels have been equipped with a radiocompass: *C. A. Canfield, Charles G. Black, F. H. Wickett, J. M. Danziger, Savarona, William A. Atwater, Yukon*. In addition to these vessels the Interlake Steamship Co. vessels named hereafter, although not equipped for radio communication, have been equipped with a radiocompass: *Adriatic, Calumet, Canopus, Corvus, Crete, Cygnus, Elba, Harry R. Jones, Hemlock, James H. Reed, Jupiter, Neptune, Odanah, Pegasus, Perseus, Saturn, Taurus, Vega, Venus, Verona, Victory, and William B. Davock*.

CHANGES IN FOREIGN STATIONS

The Skaw, Skagens Row Light Vessel, Norway.—This vessel has been replaced by another light vessel with a radio beacon. The signal consists of the letters SKR of the Morse code, sent twice and then followed by nine dots, period 2 minutes. The submarine fog signal consists of three strokes (the letter S of the Morse code) every 30 seconds. The radio fog signal and the submarine fog signal are transmitted in such a manner that the first stroke of every fourth submarine signal occurs at the same time as the last dot of the last R of the radio fog signal. The radio fog signal is sent on a 950-meter wave and the range is about 50 miles. Location, latitude $57^{\circ} 46' 22''$ N., longitude $10^{\circ} 43' 43''$ E. (*Efterretninger for Sjøfarende 42, 1902, København, 1926*.)

Utsire, Norway.—A radiocompass station has been established on Utsire in latitude $59^{\circ} 18' 10.84''$ N., longitude $4^{\circ} 54' 47.09''$ E. For the present the service is only experimental. The call signal for the station is LGK, wave length 600 meters, service continuous. For the present no charge is made for bearings. A vessel requiring a bearing calls the station in the usual manner, and, when answered, sends "QTE (what is my true bearing from you?)." After receiving "K" the vessel proceeds to transmit her own call signal and the letter V (. . . —), alternately, for one minute. The signals should be made slowly and the dashes prolonged. The radiocompass station then replies: "QTE (the true bearing of your vessel from — is — degrees)," followed by a three-figure group (000^b = north, 270^b = west), giving the true bearing of the vessel from the station. If the observation does not give a sharp result owing to indefinite minima, the bearing will be indicated as "approximate." Masters of vessels, when certain of their positions are invited to forward requests for bearings in order that both the station and vessels may obtain the best possible information as to reliability of the bearing supplied; also when convenient to forward a report on the results obtained to the Director of Telegraphs, Radio Division, Oslo, Norway. The authorities accept no responsibility for the accuracy of the bearings furnished by the radiocompass station. (*Efterretninger for Sjøfarende 8 (371) Oslo, August 31, 1926*.)

Kattegat, Sweden.—A new light vessel has been established about $5\frac{1}{4}$ miles southward of Nidlingen Island in the position of the existing Fladen Light Vessel which it will replace. Location (approximately), latitude $57^{\circ} 13'$ N., longitude $11^{\circ} 51'$ E. Characteristics: Light-group flashing white every 30 seconds, thus: Flash 7.5 seconds, eclipse 3 seconds, flash 1.5 seconds, eclipse 18 seconds. Fog signals: (1) An air transmitter giving four blasts every minute, thus: Blast 3 seconds, silent 1.5 seconds, blast 3 seconds, silent 1.5 seconds, blast 3 seconds, silent 1.5 seconds, blast 3 seconds, silent 43.5 seconds. If the transmitter is disabled, a siren of lower tone will sound the same fog signal as above described. A third alternative will be a bell sounding four peals in quick succession every minute. (2) A submarine siren sounding four blasts in quick succession every 30 seconds. (3) An automatic radio signal will be made simultaneously with the submarine siren as follows: The Morse letter A (. —) sent twice, followed by 15 dots (with intervals of 1.3 seconds between each dot) every minute, thus:

These signals will enable vessels equipped with a radiocompass to obtain a bearing of the light vessel.

The submarine siren will commence simultaneously at the end of the dash of the second letter A (. —). When heard in the receivers on board, the number

of the dot in the group which coincides with the first submarine signal is the distance in miles of the vessel from the light vessel. Thus, if the tenth dot is received simultaneously with the first submarine signal, the distance is 10 miles.

The vessel, which will be painted red with Fladen in white on both sides, will have a light tower and two masts, the after of which will carry a ball. (*Stockholm, Notice No. 3259, 1926.*)

England.—A radiophone for communication with the shore for life-saving purposes only has been established on Longsands Light Vessel. Location $51^{\circ} 47' 30''$ N., $1^{\circ} 40' 40''$ E. (*Notice 69, Trinity House, London, 1926.*)

NEW SYSTEMS ADOPTED FOR INTERNATIONAL RADIO TIME SIGNALS AND RHYTHMIC TIME SIGNALS BY FRENCH STATIONS

In accordance with the decisions reached at the meeting of the International Time Commission held at Cambridge in July, 1925, the undermentioned permanent changes have been made in the transmission of time signals from radio stations in France and French Indo-China.

FRANCE

I.—Paris—Eifel Tower W/T Station

Position.—Latitude $48^{\circ} 51'$ N., longitude $2^{\circ} 18'$ E. (approximately).

Call signal.—FL.

Wave lengths.—32 (C. W.) and 2,650 (I. C. W.) meters.

Details.—International time signals.—Radio time signals are transmitted automatically from the standard clock at Paris Observatory, in accordance with the new international system of radio time signals as follows:

	h.	m.	s.	to	h.	m.	s.	on	
(1) From	7	56	00	to	8	00	00	on	32 meters.
(2) From	9	26	00	to	9	30	00	on	2,650 meters.
(3) From	19	56	00	to	20	00	00	on	32 meters.
(4) From	22	26	00	to	22	30	00	on	2,650 meters.

The transmission of each series of signals is similar in every respect, the procedure as regards (1) being:

G. M. T.			Signal			
h.	m.	s.	h.	m.	s.	
7	55	30				
7	56	05	to	7	56	50
	57	00	to	57	50	
	57	55	to	58	00	
				55	56	57 58 59 60
				.	.	.
				.	.	.
7	58	08	to	7	58	10
	58	18	to	58	20	
	58	28	to	58	30	
	58	38	to	58	40	
	58	48	to	58	50	
	58	55	to	59	00	
				55	56	57 58 59 60
				.	.	.
				.	.	.
	59	06	to	59	10	
	59	16	to	59	20	
	59	26	to	59	30	
	59	36	to	59	40	
	59	46	to	59	50	
7	59	55	to	8	00	00
				55	56	57 58 59 60
				.	.	.
				.	.	.

Call (—) followed by initials of the Bureau International de l'Heure (—).
 — every 10 seconds, the third series being a single dash prolonged for 5 seconds.
 etc.

Time signal.

Time signal.

Time signal.

— = 1 second; . = 0.2 second

NOTE.—It will be observed that the ordinary radio time signals transmitted between $22^{\text{h}} 45^{\text{m}} 00^{\text{s}}$ and $22^{\text{h}} 49^{\text{m}} 00^{\text{s}}$ have been discontinued; also, that the wave length of the new international radio time signals sent between $7^{\text{h}} 56^{\text{m}} 00^{\text{s}}$ and $8^{\text{h}} 00^{\text{m}} 00^{\text{s}}$ has been altered from 2,650 to 32 meters.

Rhythmic time signals.—The new international rhythmic radio time signals are transmitted four times daily, in each case immediately after the new international radio time signals, as follows:

	h.	m.	s.	to	h.	m.	s.	on	meters.
(1) From	8	01	00	to	8	06	00	on	32
(2) From	9	31	00	to	9	36	00	on	2,650
(3) From	20	01	00	to	20	06	00	on	32
(4) From	22	31	00	to	22	36	00	on	2,650

The new series consists of the automatic transmission from the standard clock, Paris Observatory, of 306 mean time signals in 300 seconds.

The transmission of each series of signals is similar in every respect, the procedure as regards (1) being:

G. M. T.			Signal
h.	m.	s.	
8	01	00	1st dash (—) followed by 60 dots (. etc.).
	02	00	82d dash (—) followed by 60 dots (. etc.).
	03	00	123d dash (—) followed by 60 dots (. etc.).
	04	00	184th dash (—) followed by 60 dots (. etc.).
	05	00	245th dash (—) followed by 60 dots (. etc.).
8	06	00	306th dash (—).
8	06	05	Transmission in G. M. T. of the extrapolated time of signals Nos. 1 and 306 of the previous day. This will be sent slowly, and repeated three times, as follows:

If the signal concerned has been sent 0.14 second slow, the correction is transmitted as a three-figure group, thus: 014.

If, on the other hand, the signal has been sent 0.09 fast, the complement of the correction is transmitted as a three-figure group, thus: 991.

If one or other of the signals has failed, the word "Néant" (nothing) is sent.

8	08	00	End of transmission (. — . — .) followed by B. I. H. (—)
---	----	----	--

Each dash (—) = 0.4 second; each dot (.) = 0.2 second; interval between each dot = $\frac{1}{2}$ second, nearly.

The beginning of each dash represents the G. M. T. of the even minute; the end of the final dash (No. 306) = 8^h 06^m 00.4^s G. M. T., subject to any of the above-mentioned corrections.

II.—Bordeaux—La Fayette radio station

Position.—Latitude 44° 42' N., longitude 0° 48' W. (approximately).

Call signal.—LY.

Wave length.—18,900 meters (C. W.).

Details.—(a) *International time signals.*—Time signals in accordance with the new international system of radio time signals are broadcast twice daily, viz, from 7^h 56^m 00^s to 8^h 00^m 00^s, and from 19^h 56^m 00^s to 20^h 00^m 00^s G. M. T. The signals are transmitted automatically by the standard clock at Paris Observatory. For procedure see Eiffel Tower new international system of radio time signals.

(b) *Rhythmic time signals.*—Rhythmic time signals in accordance with the new international scheme are broadcast twice daily from 8^h 01^m 00^s to 8^h 06^m 00^s, and from 20^h 01^m 00^s to 20^h 06^m 00^s G. M. T. The signals are transmitted automatically by the standard clock at Paris Observatory. For procedure see Eiffel tower new international rhythmic radio time signals.

FRENCH INDO-CHINA

Saigon Radio Station

Position.—Latitude 10° 47' N., longitude 106° 42' E. (approximately).

Call signal.—HZA.

Wave length.—25 (C. W.) and 15,800 (A. C. W.) meters. The latter is sometimes replaced by 20,800 meters wave.

Details.—*Rhythmic time signals.*—Rhythmic time signals in accordance with the new international scheme are broadcast simultaneously on 25 meters and 15,800 meters, between 19^h 00^m 00^s and 19^h 05^m 00^s, G. M. T. For procedure see Eiffel Tower new international rhythmic time signals.—Admiralty Notice No. 1781 of 1926, London.

TRANSMISSION OF TIME SIGNALS AND WEATHER BULLETINS FROM RADIO TELEPHONE STATIONS IN GREAT BRITAIN AND NORTHERN IRELAND

The time signals from all stations of the British Broadcasting Co., excluding Daventry, are relayed from London and will be transmitted as circumstances permit; but a continuous service is not undertaken, and they will never be superimposed upon program items, nor will they be transmitted on Sundays.

Daventry

Call signal.—5XX.

Wave length.—1,800 meters.

Power.—25.0 kw.

Time signal.—1030, 1600, 2200, G. M. T. Automatically transmitted from Greenwich Observatory.

The time signals consist of the automatic transmission by the standard clock at Greenwich Observatory of six dots (.) representing successive seconds, thus:

Seconds: 55th 56th 57th 58th 59th 60th

Dots:

The final dot (which is made at 1030, 1600 and 2200) is the time signal.

The amount of lag is less than 0.01 second.

The time signals from Daventry at 1600 and 2200 will, when necessary, be superimposed on program, but the time signal will be loud enough to be easily discernible.

Weather bulletin.—1030, 1900, 2200, G. M. T. (Sundays at 2100 only.) Weather forecast for the British Islands from the Meteorological Office, Air Ministry.

London

Call signal.—2LO.

Wave length.—361.5 meters.

Power.—3.0 kw.

Time signal.—1600, 2200, G. M. T. (Not on Sundays.) See under Daventry for details.

Weather bulletin.—1900, 2200, G. M. T. (Sundays at 2100 only.) Weather forecast for the British Islands from the Meteorological Office, Air Ministry.

Aberdeen

Call signal.—2BD.

Wave length.—497.5 meters.

Power.—1.5 kw.

Time signal.—2,200 G. M. T.

Weather bulletin.—1,900, 2,200 G. M. T.

Birmingham

Call signal.—5IT.

Wave length.—478 meters.

Power.—1.5 kw.

Time signal.—2,200 G. M. T.

Weather bulletin.—1,900, 2,200 G. M. T.

Bournemouth

Call signal.—6BM.

Wave length.—385.5 meters.

Power.—1.5 kw.

Time signal.—2,200 G. M. T.

Weather bulletin.—1,900, 2,200 G. M. T.

Cardiff

Call signal.—5WA.

Wave length.—353.3 meters.

Power.—1.5 kw.

Time signal.—2,200 G. M. T.

Weather bulletin.—1,900, 2,200 G. M. T.

Dundee

Call signal.—2DE.
 Wave length.—314 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Edinburgh

Call signal.—2EH.
 Wave length.—328.2 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Glasgow

Call signal.—5SC.
 Wave length.—421.6 meters.
 Power.—1.5 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Hull

Call signal.—6KH.
 Wave length.—333.5 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Leeds—Bradford

Call signal.—2LS.
 Wave length.—320.5 and 310.5 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Liverpool

Call signal.—6LV.
 Wave length.—330.6 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Manchester

Call signal.—2ZY.
 Wave length.—378.5 meters.
 Power.—1.5 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Newcastle

Call signal.—5NO.
 Wave length.—407.1 meters.
 Power.—1.5 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Nottingham

Call signal.—5NG.
 Wave length.—326 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Plymouth

Call signal.—5PY.
 Wave length.—337.5 meters.
 Power.—0.2 kw.
 Time signal.—2,200 G. M. T.
 Weather bulletin.—1,900, 2,200 G. M. T.

Sheffield

Call signal.—6FL.
Wave length.—307 meters.
Power.—0.2 kw.
Time signal.—2,200 G. M. T.
Weather bulletin.—1,900, 2,200 G. M. T.

Stoke-on-Trent

Call signal.—6ST.
Wave length.—301 meters.
Power.—0.2 kw.
Time signal.—2,200 G. M. T.
Weather bulletin.—1,900, 2,200 G. M. T.

Swansea

Call signal.—5SX.
Wave length.—486 meters.
Power.—0.2 kw.
Time signal.—2,200 G. M. T.
Weather bulletin.—1,900, 2,200 G. M. T.

Belfast

Call signal.—2BE.
Wave length.—443 meters.
Power.—1.5 kw.
Time signal.—2,200 G. M. T.
Weather bulletin.—1,900, 2,200 G. M. T.—Admiralty notice No. 1797 of 1926, London.

NEW WAVE LENGTHS USED BY BROADCASTING STATIONS IN GREAT BRITAIN AND NORTHERN IRELAND

[Admiralty Notice No. 1798 of 1926, London]

Station and call signal	New wave length (meters)	Station and call signal	New wave length (meters)
London (2LO).....	361.4	Bradford (2LS).....	294.1
Aberdeen (2BD).....	491.8	Liverpool (6LV).....	288.5
Birmingham (5IT).....	491.8	Manchester (2ZY).....	354.0
Bournemouth (6BM).....	306.1	Newcastle (5NO).....	312.5
Cardiff (5WA).....	353.0	Nottingham (5NG).....	288.5
Daventry (5XX).....	1,600.0	Plymouth (5PY).....	288.5
Dundee (2DE).....	288.5	Sheffield (6FL).....	288.5
Edinburgh (2EH).....	288.5	Stoke-on-Trent (6ST).....	288.5
Glasgow (5GO).....	405.4	Swansea (6SX).....	288.5
Hull (6KH).....	288.5	Belfast (2BE).....	326.1
Leeds (2LE).....	297.0		

! No alteration.

CONSTANT FREQUENCY STATIONS

The list of "constant frequency stations" given below supplements the list of "standard frequency stations." The transmitted waves from the station in either list should be of value to the public as frequency standards because of their constancy and close adherence to the licensed values. The Bureau of Standards makes regular measurements of the transmitted frequencies of the standard frequency stations only. The constant frequency stations in the following supplementary list do not carry the same assurance of reliability as if the transmitted waves were regularly measured by the Bureau of Standards, but it is probable that if measurement data were available many of them would show the same constancy as the standard frequency stations.

The fundamental requirement of a broadcasting station for inclusion in the following list is the employment of a special device for controlling or checking the frequency, the calibration of such a device being in agreement with the bureau's frequency standards. The special device may be automatic piezo control, a piezo oscillator, piezo resonator, or frequency indicator. Stations not

Included in this list nor in the list of standard frequency stations, which use one of the special devices for frequency regulation, are invited to communicate with the Bureau of Standards requesting a copy of Letter Circular 214, "Requirements of constant frequency stations."

Station	Owner	Location	Frequency (kilocycles)	Wave length (meters)	Apparatus for frequency regulation
WHO	Bankers Life Co.....	Des Moines, Iowa.....	570	526	Piezo oscillator.
KFRU	Stephens College.....	Columbia, Mo.....	600	492.7	Frequency indicator.
WOC	Palmer School of Chiropractic.....	Davenport, Iowa.....	620	483.6	Piezo oscillator.
WTIC	Travelers' Insurance Co.....	Hartford, Conn.....	630	475.9	Do.
WMAQ	Chicago Daily News.....	Chicago, Ill.....	670	447.5	Frequency indicator, type B.
KLDS	Reorganized Church of Jesus Christ of Latter Day Saints.....	Independence, Mo.....	650	440.0	Frequency indicator.
KFO	Hale Bros. and The Chronicle.....	San Francisco, Calif.....	700	428.3	Do.
WLW	Crosley Radio Corporation.....	Harrison, Ohio.....	710	422.3	Frequency indicator and piezo oscillator.
WCCO	Washburn-Crosby Co.....	St. Paul-Minneapolis, Minn.....	720	416.4	Piezo oscillator.
WTAM	Willard Storage Battery Co..... New Arlington Hotel Co.....	Cleveland, Ohio.....	770	389.4	Do.
WEAR		Hot Springs, Ark.....	800	374.8	Frequency indicator, type B.
ETHS					
WJJD	Loyal Order of Moose.....	Mooshoast, Ill.....	810	370.2	Piezo oscillator.
EGO	General Electric Co.....	Oakland, Calif.....	830	361.2	Do.
WJAD	Frank P. Jackson.....	Waco, Texas.....	850	352.7	Frequency indicator.
WWJ	Detroit News.....	Detroit, Mich.....	850	352.7	Do.
WLS	Hearn, Roebuck & Co.....	Crete, Ill.....	870	344.6	Piezo oscillator.
KYAB	Nebraska Buick Auto Co.....	Lincoln, Nebr.....	880	340.7	Frequency indicator, type B.
WKAQ	Radio Corporation of Porto Rico.....	San Juan, P. R.....	850	340.7	Do.
ROA	General Electric Co.....	Denver, Colo.....	930	322.4	Piezo oscillator.
WEAO	Ohio State University.....	Columbus, Ohio.....	1,020	293.9	Frequency indicator, type B.
WFBG	Wm. F. Gable Co.....	Altoona, Pa.....	1,080	277.6	Frequency indicator.
KFKA	Colorado State Teachers College.....	Greeley, Colo.....	1,100	272.6	Piezo oscillator.
WBAA	Purdue University.....	West Lafayette, Ind.....	1,100	272.6	Do.
WOI	Iowa State College.....	Ames, Iowa.....	1,110	270.1	Automatic piezo control (checked with type B frequency indicator).
KFH	Hotel Lassen.....	Wichita, Kans.....	1,120	267.7	Frequency indicator, type B.
WENR	All-American Radio Corporation.....	Chicago, Ill.....	1,130	265.8	Piezo oscillator.
WOAD	St. Lawrence University.....	Canton, N. Y.....	1,140	263	Frequency indicator.
WAAM	I. R. Nelson.....	Newark, N. J.....	1,140	263	Piezo oscillator.
WOWO	Main Auto Supply Co.....	Fort Wayne, Ind.....	1,320	227.1	Do.
WBBM	Atlas Investment Co.....	Chicago, Ill.....	1,330	223.4	Do.
WEBQ	Tate Radio Co.....	Harrisburg, Ill.....	1,330	223.4	Piezo oscillator, type N.
KFVS	Hirsch Battery & Radio Co.....	Cape Girardeau, Mo.....	1,340	221.7	Frequency indicator, type B.
WOK	Neutrowound Radio Manufacturing Co.....	Homewood, Ill.....	1,380	217.3	Piezo oscillator.
WFDQ	Hiram L. Torbet.....	Buffalo, N. Y.....	1,460	206.4	Frequency indicator, type B.

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 standards.

As shown by the list of "constant frequency stations," there may be many other stations not measured in the bureau's laboratory which maintain their frequencies just as constant as the stations listed below. There is, of course, no actual guaranty that these stations 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 standard frequency stations can be utilized

for calibrating 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	Frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since Oct. 25, 1923
N88	United States Navy...	Annapolis, Md.....	17.50	6	30	<i>Per cent</i>	<i>Per cent</i>
WCI	Radio Corporation of America.	Tuckerton, N. J.....	17.95	21	96	0.2	0.1
WSS	do.....	Rocky Point, N. Y.....	18.60	2	6	.2	.2
WGG	do.....	Tuckerton No. 1, N. J.....	18.85	39	271	.1	.2
WII	do.....	New Brunswick, N. J.....	21.80	19	126	.1	(^c)
WVA	United States Army...	Annapolis, Md.....	100	20	163	.2	.2
NAA	United States Navy...	Arlington, Va.....	112	13	69	.2	.2
WEAF	National Broadcasting Co.	New York, N. Y.....	610	23	143	.0	.0
WRC	Radio Corporation of America.	Washington, D. C.....	640	35	160	.1	.0
WJZ	do.....	Bound Brook, N. J.....	660	6	22	.2	.3
NAA	United States Navy...	Arlington, Va.....	620	6	51	.0	.1
WGY	General Electric Co.	Schenectady, N. Y.....	790	41	185	.1	.0
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.....	900	29	83	.1	.3
KDKA	do.....	East Pittsburgh, Pa.....	970	6	31	.1	.2
KDKA ^b	do.....	do.....	4,711	6	20	.1	.1

^a Not measured since Oct. 25.

^b High-frequency telephone transmitting set.

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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