DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY RADIO DIVISION

Washington, October 31, 1927—No. 127

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 longtitude. 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 = Radio compass.
- 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. = Intercity Radio Telegraph Co.
I. W. T. C. = Independent Wireless Telegraph Co.
K. & C. = Kilbourne & Clark Manufacturing Co.
M. R. T. Co. = Mackay Radio and Telegraph Co.
R. C. A. = Radio Corporation of America.
T. R. T. Co. = Tropical Radio Telegraph Co.
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.
U. S. L. = Applies only to the list of Commercial and Government 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, 1927, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Akron, Ohio	WTF	52.06-52.08	FX	X	Firestone Plantations Co.
California (portable)[1]	KNG	51.69	FX	X	State of California, Department of Natural Resources, Division of Fish and Game.
Evansville, Ind.[2]	WTI	42.83	FX	X	Graham Bros.
Guam, Guam[3]	KTA	18, 21.8, 22, 23.5, 35, 43.6, 44, 47.	FX	N	M. R. T. Co.
Honolulu, Hawaii (near)[4]	KNN	17.2, 23, 23.7, 23, 34.4, 46, 47.4, 56, 8,500.	FX	N	Do.
Midway Island[5]	KTF	21.6, 33.2, 43.2, 66.4.	FX	N	Do.
Palo Alto, Calif.[6]	KNW	16.7, 17, 24, 33.4, 34, 45, 51, 8,000.	FX	N	Do.
San Francisco, Calif.[6]	KMN	51.69	FX	X	State of California, Department of Natural Resources, Division of Fish and Game.

[1] Range, 50; system, composite v. t. telegraph.
[2] Range, 200; system, composite v. t. telegraph.
[3] Range, 7,000; system, F. T. Co. arc and F. T. Co. v. t. telegraph.
[4] Range, 5,000; system, F. T. Co. v. t. telegraph.
[5] Range, 200; 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, 1927, 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—
Brant	KUDB	8	PG	X	Charles Schudt	
Corsicana	WQBB	8	PG	X	Pillsbury & Curtis	
David P. Fleming[1]	WPBS		P	X	Wilmington Transportation Co.	Owner of vessel.
Santa Barbara	WPBT	8	PG	X	Grace S. S. Co.	
Santa Paula	WPBW	8	PG	X	do	
Savarona	WPBY				Emily R. Cadwalader	
Teal	KOTC	8	PG	X	Charles Schudt	
West Helix	WSUA	8	PG	X	Dimon S. S. Corporation	R. C. A.
William P. Snyder, jr.	WPBZ		PG	X	Shenango Furnace Co.	

[1] W. 1., 100.

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	
KNG	California (portable)	c	WPBT	Santa Barbara	b
KNN	Honolulu, Hawaii (near)	c	WPBW	Santa Paula	b
KNW	Palo Alto, Calif. (near)	c	WPBY	Savarona	b
KMN	San Francisco, Calif.	c	WPBZ	William P. Snyder, jr.	b
KTA	Guam, Guam	c	WQBB	Corsicana	b
KTF	Midway Island	c	WSUA	West Helix	b
KOTC	Teal	b	WTF	Akron, Ohio	c
KUDB	Brant	b	WTI	Evansville, Ind.	c
WPBS	David P. Fleming	b			

Commercial airplane stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1927, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Dawn [1]	WMU	600, 800	P	X	Aeckner-Grayson Aircraft Corporation.
No. 1985	KHAB		P	X	Charles E. Kingsford-Smith et al.

[1] Range, 50; system, composite v. t. telegraph.

Commercial airplane stations, alphabetically, by call signals

Call signal	Name of station	Call signal	Name of station
KHAB	No. 1985.	WMU	Dawn.

Broadcasting stations, alphabetically, by names of States and cities

[Additions to the List of Radio Stations of the United States, edition of June 30, 1927]

State and city	Call signal	Wave length	Frequency (kilocycles)	Power (watts)
Colorado:				
Pueblo [1]	KGDP	223.7	1,340	10
Do	KGHF	209.7	1,430	250
Florida: Tampa	WQBA	238	1,260	250
Minnesota: Slayton	KGHC	209.7	1,430	15
Mississippi: Utica	WQBC	215.7	1,390	100
Montana: Hardin	KGHP	263	1,140	50

[1] Notice in August Bulletin to strike out all particulars published in error.

Broadcasting stations, alphabetically, by call signals

Call signal	Location of station (address)	Owner of station	Power (watts)	Wave length	Frequency (kilocycles)
KGDP	Pueblo, Colo. [1]	Boy Scouts of America	10	223.7	1,340
KGHC	Slayton, Minn	Hegsted Radio Co	15	209.7	1,430
KGHF	Pueblo, Colo	Philip G. Lasky and J. H. Albert	250	209.7	1,430
KGHP	Hardin, Mont	Hardin Post No. 8, American Legion.	50	263	1,140
WQBA	Tampa, Fla	Amore College	250	238	1,260
WQBC	Utica, Miss	L. B. Jones	100	215.7	1,390

[1] Notice in August Bulletin to strike out all particulars published in error.

Government land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1927, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Quantico, Va. (marine school)	NZY		O		U. S. Navy.
St. Petersburg, Fla	NGK		O		U. S. Coast Guard.

Government ship stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1927, and to the International List of Radiotelegraph Stations published by the Berne bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Dorothy	NURN		O	X	Department of Commerce, Bureau of Fisheries.

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
NOK	St. Petersburg, Fla. c	NZY	Quantico, Va. c
NURN	Dorothy b		

Special land stations, alphabetically, by names of stations

[Additions to the List of Radio Stations of the United States, edition of June 30, 1927]

Station	Call signal	Wave length (meters)	Frequency (kilocycles)	Power (watts)	Station controlled by—
Alabama:					
Fort Morgan	5XL	Variable	Variable	Variable	T. R. T. Co.
Mobile	5XM	do	do	do	Do.
Illinois: Chicago	9XY	do	do	do	Westinghouse Electric & Manufacturing Co.
Maine: Portland [1]	1XAB	63.79	4,700	250	Congress Square Hotel Co. (Henry P. Rines).
Massachusetts: Boston	1XT	Variable	Variable	Variable	T. R. T. Co.
New York:					
Garden City	2XBD	5.85, 10, 21.4, 40, 80, 100, 130.	66, 622–2,306.	20	Capt. Edmund B. Moore.
Rocky Point	2XT	16.17	18,540	80,000	R. C. A.

[1] Relay broadcast station.

Special land stations, grouped by districts

Call signal	District and station	Call signal	District and station
	First district:		Fifth district:
1XAB	Portland, Me.	5XL	Fort Morgan, Ala.
1XT	Boston, Mass.	5XM	Mobile, Ala.
	Second district:	9XY	Ninth district: Chicago, Ill.
2XBD	Garden City, N. Y.		
2XT	Rocky Point, N. Y.		

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, 1927, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

DETROIT, MICH. (WJF).—W. 1., 42.83.

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, 1927, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

A. & P. NAKEEN No. 7.—W. l., 69.56.
ABANGAREZ.—Range, 200.
ABERCOS.—System, Navy, 1000; w. l., *600*, 706, 800.
ABSAROKA.—Range, 300; system, Navy-Marconi, 1000; w. l., *600*, 706, 800.
ADMIRAL DEWEY.—Range, 150–300.
ADMIRAL FARRAGUT.—Range, 150–300.
ADMIRAL FISKE.—Range, 150–300.
ADMIRAL PEARY.—Range, 150–300.
ADMIRAL WATSON.—Range, 200–300.
ALAMEDA.—Station controlled by owner of vessel.
ANN ARBOR No. 7.—W. l., *715*, 875.
APEX.—Hours, N.
AQUILO.—Range, 200.
ARTIGAS.—System, W. S. A. Co., 1000.
ATENAS.—Range, 200.
BALLEW.—Name changed to Sulphite.
BANNACK.—Station controlled by I. W. T. Co.
BARBARA C.—Range, 200.
BARNEY, Jr.—Range, 150; system, Navy-Cutting & Washington, 1000; w. l., *600*, 706, 800; service, PG; hours, X; rates, 8 cents per word; station controlled by owner of vessel.
BAYPORT.—W. l., *600*, 706, 800.
BEATRICE.—W. l., *600*, 706, 800.
BETTY R.—Range, 100; w. l., 109, *715*.
BRAVE COEUR.—Station controlled by R. C. A. (U. S. L.).
BROOKDALE.—Owner of vessel, Brookdale S. S. Co.
BRUSH.—System, Navy, 1000; w. l., *600*, 706, 800.
CALAWAH.—System, F. T. Co. arc, with chopper, 1000.
CAMDEN.—W. l., *600*, 706, 800.
CAPT. JOHN W. MCKIE.—Range, 200; system, Navy-Marconi, 1000.
CARL D. BRADLEY.—Range, 200; system, composite v. t. telegraph; rates, Great Lakes service, 4 cents per word; owner of vessel, Bradley Transportation Co.; station controlled by owner of vessel.
CARTAGO.—Range, 200.
CASCO.—W. l., strike out *600*.
CATHWOOD.—System, Marconi, 1000.
C. C. WEBBER.—Range, 200; system, Westinghouse v. t. telegraph; w. l., 37.4, 1100; service, P; hours, X; owner of vessel, Upper Mississippi River Barge Line Co.; station controlled by owner of vessel.
C. D. JOHNSON III.—Range, 175; system, F. T. Co., 1000.
CHILORE.—Range, 200; system, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900.
CHIPPEWA.—Range, 150; system, Marconi, 1000; w. l., *715*, 800, 875; owner of vessel, Pioneer S. S. Co.; station controlled by I. R. T. Co.
CITY OF FAIRBURY.—Station controlled by I. W. T. Co. (U. S. L.).
CITY OF FORT WORTH.—System, Navy-Marconi, 1000.
CITY OF HOUSTON.—System, Navy-Marconi, 1000.
CLAIRTON.—System, Navy-Marconi, 1000; w. l., *600*, 706, 800; hours, X; station controlled by I. W. T. Co. (U. S. L.).
COLOMBIA.—Range, 100–300; system, F. T. Co. arc and F. T. Co. spark, 1000; w. l., *600*, 706, 800, 1800 2100, 2400.
COMMODORE.—Range, 150; system, composite, 1000; w. l., *600*, 706, 800; service, PG; hours, X; rates, 8 cents per word; station controlled by owner of vessel.
COPPENAME.—Range, 200.
COULEE.—Name changed to William C. Atwater; owner of vessel, Fall River Navigation Co.
CRAPO.—Correct name S. T. Crapo.
CREST.—Station controlled by R. C. A.
DARTFORD.—Range, 300; system, Navy-Marconi, 1000; w. l., *600*, 706, 800.
DEMOPOLIS.—System, Navy-R. C. A., 1000.
DIRIGIO.—Correct orthography Dirigo (U. S. L.).
DISTRICT OF COLUMBIA.—System, F. T. Co. arc with chopper, 1000.
DOROTHY ALEXANDER.—W. l., add 800.

DURANGO.—Range 100–300; system, F. T. Co. arc and Navy spark, 1000; w. l., *600*, 706, 800, 1800, 1900, 2000, 2100, 2400.
EASTERN PLANET.—Station controlled by I. W. T. Co. (U. S. L.)
EASTERN TEMPLE.—Range, 200; system, Navy-K. & C., 1000; w. l., *600*, 706, 800; station controlled by I. W. T. Co.
ECUADOR.—W. l., add 1800; hours, N.
EDENTON.—Station controlled by I. W. T. Co. (U. S. L.).
EDGEMONT.—Station controlled by I. W. T. Co. (U. S. L.).
EDMORE.—Correct call signal KILJ (U. S. L.).
EDWIN CHRISTENSON.—Range, 200.
EFFNA.—System, Navy, 1000; w. l., *600*, 706, 800.
ELDORADO.—System, Marconi, 1000.
EMORY L. FORD.—Station controlled by owner of vessel.
FAVORITE (KIFG).—System, R. C. A. v. t. telegraph.
FIRMORE.—Range, 200; system, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900; owner of vessel, Ore S. S. Corporation.
FRANK H. BUCK.—W. l., *600*, 706, 800, 1800, 2100, 2400.
FRED G. HARTWELL.—Station controlled by owner of vessel.
GAR, Sr.—Range, 50; system, composite v. t. telephone; w. l., 109.
GENERAL ASHBURN.—Range, 200; system, Westinghouse v. t. telegraph; w. l., add 37.4, strike out *600*; station controlled by owner of vessel.
GOLD SHELL.—Range, 200.
GREATER BUFFALO.—System, R. C. A. v. t. telegraph and R. C. A. spark, 1000; w. l., *715*, 875, 1800; service, PG.
GREATER DETROIT.—System, R. C. A. v. t. telegraph and R. C. A. spark, 1000; w. l., *715*, 875, 1800; service, PG.
GULFPORT.—System, Navy-Marconi, 1000.
HANLEY.—W. l., add 2000.
HANNAWA.—System, F. T. Co. arc with chopper, 1000; w. l., *600*, 706, 800, 1800, 2100, 2400.
HARVARD.—System, composite, 1000.
HEREDIA.—Range, 200.
H. F. ALEXANDER.—Range, 200–300.
H. M. FLAGLER.—Owner of vessel, Standard Shipping Co.
HOXIE.—System, Navy-Marconi, 1000; w. l., *600*, 706, 800.
HYBERT.—Station controlled by R. C. A. (U. S. L.).
ILLINOIS (KFMC).—System, R. C. A., 1000; w. l., 1100; service, P.
IOLANTHE.—Range, 100; w. l., 34.78, 69.56, 129.8.
IOWA.—Range, 300; system, Navy-Lowenstein, 1000; w. l., 1100.
JACKSONVILLE.—Owner of vessel Ashbee Motor Ship Corporation.
JAMES B. DUKE.—Name changed to Massmar; owner of vessel, Calmar S. S. Corporation.
JAMES MACNAUGHTON.—Range, 200; system, Navy-Simon, 1000; w. l., *715*, 800, 875; station controlled by I. R. T. Co.
JANE NETTLETON.—System, composite, 1000.
J. C. DONNELL.—Range, 150; w. l., *600*, 706, 750, 800, 900.
J. H. SHEADLE.—Range, 200; w. l., *715*, 800, 875.
JOSEPH SEEP.—Owner of vessel, Standard Shipping Co.
KATHERINE.—Range, 50; system, composite v. t. telegraph; w. l., 109; service, P; hours, X; station controlled by owner of vessel.
LAKE BENTON.—Range, 200; system, Navy, 1000; w. l., *600*, 706, 800.
LAKE CAPENS.—Range, 200; system, Marconi, 1000.
LAKE GAITHER.—Owner of vessel, New England, New York and Texas S. S. Corporation.
L. E. BLOCK.—Range, 200; system, composite v. t. telegraph; w. l., *715*, 875; station controlled by owner of vessel.
LEVISA.—Range, 150; system, G. E. Co. v. t. telegraph; hours, N.
LIBBY MAINE.—System, composite, 1000.
LT. COL. ROBERT G. GILBART.—System, Navy-Marconi, 1000.
M. A. BRADLEY.—System, R. C. A. v. t. telegraph; w. l., *715*, 875.
MARI III.—Range, 200; system, composite v. t. telegraph and Marconi spark, 1000; w. l., *715*, 800, 875; service, P.
MARQUETTE & BESSEMER No. 2.—Range, 150; w. l., *715*, 800, 875.
MARY LUCKENBACH.—Range, 200; w. l., *600*, 706, 750, 800, 900.
MAZAMA.—Hours, N.
MAZATLAN.—Owner of vessel, John Craig, 2d.
M. F. ELLIOTT.—Owner of vessel, Standard Shipping Co.

MIMI.—Range, 25; w. l., 109.
MINNEQUA.—Owner of vessel, American Scantic Line.
MINNESOTA.—W. l., 1100.
MISSOURI.—Range, 300; system, Navy-Lowenstein, 1000; w. l., *600*, 1100; service, P.
MOBILE.—System, Navy-Marconi, 1000.
NEMAHA.—Station controlled by R. C. A. (U. S. L.).
NEWTON.—Range, 200; system, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900.
NIPPEKONTU.—Range, 10; system, add composite v. t. telephone; w. l., 34.78, 69.56.
NORMA.—System, Navy, 1000.
O'DUNA.—System, F. T. Co. arc.; w. l., *600*, 706, 800; hours, N-X; station controlled by owner of vessel.
OSPREY.—System, Navy, 1000.
OUANANICHE.—Station controlled by owner of vessel.
PARIA.—Owner of vessel, International Packing Co.
PARISMINA.—Range, 200.
PERE MARQUETTE 15.—Range, 100; rates, Great Lakes service 6 cents per word, relay 10 cents per word.
PERE MARQUETTE 17.—Range, 100; rates, Great Lakes service, 6 cents per word, relay 10 cents per word.
PERE MARQUETTE 18.—Range, 100; rates, Great Lakes service, 6 cents per word, relay 10 cents per word.
PERE MARQUETTE 19.—Range, 100; rates, Great Lakes service, 6 cents per word, relay 10 cents per word.
PERE MARQUETTE 20.—Range, 100.
PRESIDENT GARFIELD.—Station controlled by owner of vessel.
PRESIDENT HARRISON.—Station controlled by owner of vessel.
PRESIDENT JACKSON.—W. l., *600*, 706, 800, 1800, 2100, 2400.
PRESIDENT MCKINLEY.—System, F. T. Co. arc and Navy-W. S. A. Co., 1000.
PRESIDENT MONROE.—Station controlled by owner of vessel.
PRESIDENT POLK.—Station controlled by owner of vessel.
PRESIDENT VAN BUREN.—Station controlled by owner of vessel.
PRESIDENT WILSON.—Range, 150-500; w. l., *600*, 706, 800, 1800, 2100, 2400.
REDONDO.—Hours, N-X; station controlled by owner of vessel.
RESTORER.—Range, 200; system, R. C. A. v. t. telegraph; w. l., *600*, 706, 750, 800, 900; service, PG; hours, X.
RIPPLE (KFLF).—Owner of station, E. C. Wilson.
ROSAMOND.—Range, 200.
SAMUEL L. FULLER.—Owner of vessel, Sinclair Navigation Co.
SANDMASTER.—Range, 200; system, Navy-Simon, 1000.
SAN JUAN (WWM).—Owner of vessel, Albert E. Gillespie.
SARAMACCA.—W. l., *600*, 706, 750, 800, 900, 1800, 1900, 2000, 2100, 2400.
S. B. WAY.—Range, 200; system, K. & C., 1000.
SCANTIC.—System, Navy-Lowenstein, 1000.
SPRAY III.—W. l., 34.78, 109.
S. S. THORPE.—Range, 200; system, Westinghouse v. t. telegraph; w. l., 1100; service, P; hours, X; station controlled by owner of vessel.
ST. LOUIS.—W. l., *600*, 706, 800; service, P.
SURF.—Station controlled by R. C. A.
SWELL.—Station controlled by R. C. A.
TRIMOUNTAIN.—System, Navy, 1000; w. l., *600*, 706, 800.
UNGAVA.—Range, 150; system, composite v. t. telegraph; w. l., 23.18, 34.78, 109; service, P; owner of vessel, Albert W. Johnston.
VENTURA.—Range, 75-300; system, F. T. Co. arc and F. T. Co. spark, 1000.
VIGILANT.—W. l., *600*, 800.
VOLADOR.—Range, 150; system, Navy-Lowenstein, 1000; w. l., *600*, 706, 800; service, PG; hours, X; rates, 8 cents per word; station controlled by owner of vessel.
WAWALONA.—Station controlled by R. C. A.
WEST CAMAK.—System, Navy, 1000.
WEST CHETAC.—System, Navy, 1000; w. l., *600*, 706, 800.
WEST CUSSETA.—Range, 200-300; system, Navy spark, 1000 and F. T. Co. arc; w. l., *600*, 706, 800, 1800, 2100, 2400.
WEST HARSHAW.—W. l., *600*, 706, 800.
WEST HONAKER.—Range, 200-300; w. l., *600*, 706, 800, 2100, 2250, 2400.

WEST KISKA.—Station controlled by R. C. A. (U. S. L.).
WEST MADAKET.—W. l., *600*, 706, 800.
WEST MAXIMUS.—W. l., *600*, 706, 800.
WESTMEAD.—Name changed to Willangle.
WESTMOUNT.—Station controlled by R. C. A.
WEST NERIS.—W. l., *600*, 706, 800.
WEST NOSSKA.—W. l., *600*, 706, 800.
WEST ZEDA.—System, Navy-W. S. A. Co., 1000; station controlled by R. C. A. (U. S. L.).
WESTERN GLEN.—Name changed to Willwello.
WESTERN OCEAN.—Station controlled by I. W. T. Co. (U. S. L.).
W. F. WHITE.—Owner of vessel, Bradley Transportation Co.
WILLIAM CAMPION.—Owner of vessel, Calmar S. S. Corporation.
WILLIAM C. ATWATER.—Range, 200; system, Navy-Simon, 1000; w. l., *715*, 800, 875; station controlled by I. R. T. Co.
WILLIAM PERKINS.—Name changed to Yorkmar.
WINONA COUNTY.—Station controlled by I. W. T. Co. (U. S. L.).
W. M. BARTON.—Range, 150; w. l., *600*, 706, 750, 800, 900.
YARMOUTH.—Owner of vessel, Nova Scotia S. S. Corporation.
YOMACHICHI.—Station controlled by R. C. A.
Strike out all particulars of the following-named vessels, Barlow, Baymead, Ethel, Radio.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY, BY CALL SIGNALS

KEDR, *read* Willwello; KENQ, *read* Sulphite; KICP, *read* Yorkmar; KOKR, *read* Dora; KUSQ, *read* Massmar; WDIO, *read* Willangle; WOBA, *read* S. T. Crapo; WTOU, *read* William C. Atwater; strike out all particulars following the call signals, KFWY, WLAE, WNBE, WOBD.

COMMERCIAL AIRPLANE 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, 1927, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

VILLE DE PARIS.—Strike out all particulars. Call signal WOBW.

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, 1927]

KFDY (BROOKINGS, S. DAK.).—W. l., 440.9, fy. kc., 680.
KFJR (PORTLAND, OREG.).—Address, 95 Fifth Street.
KFJY (FORT DODGE, IOWA).—W. l., 232.4, fy. kc., 1,290.
KFMR (SIOUX CITY, IOWA).—W. l., 232.4, fy. kc., 1,290.
KFQA (ST. LOUIS, MO.).—W. l., 247.8, fy. kc., 1,210.
KFQB (FORT WORTH, TEX.).—W. l., 333.1, fy. kc., 900.
KFQW (SEATTLE, WASH.).—Owner of station, KFQW (Inc.).
KFUO (ST. LOUIS, MO.).—Changed to Clayton, Mo.; w. l., 234.2, fy. kc., 1,280; power, 1,000 night, 2,000 day.
KFYR (BISMARCK, N. DAK.).—W. l., 249.9, fy. kc., 1,200.
KGCU (MANDAN, N. DAK.).—W. l., 239.9, fy. kc., 1,250.
KGDW (HUMBOLDT, NEBR.).—W. l., 293.9, fy. kc., 1,020.
KGES (CENTRAL CITY, NEBR.).—Owner of station, Central Radio Electric Co.
KGEZ (KALISPELL, MONT.).—W. l., 293.9, fy. kc., 1,020.
KGFL (TRINIDAD, COLO.).—Changed to Raton, N. Mex.
KGFW (RAVENNA, NEBR.).—W. l., 296.9, fy. kc., 1,010.
KHJ (LOS ANGELES, CALIF.).—W. l., 416.4, fy. kc., 720.
KICK (ATLANTIC, IOWA).—Changed to Red Oak, Iowa; w. l., 322.4, fy. kc., 930.
KMMJ (CLAY CENTER, NEBR.).—W. l., 285.5, fy. kc., 1,050; power, 250 night, 500 day.
KOA (DENVER, COLO.).—Power, 2,500 night, 5,000 day.
KTBR (PORTLAND, OREG.).—Address, 525 Morrison Street.
KTCL (SEATTLE, WASH.).—Call signal changed to KXA; w. l., 348.6, fy. kc. 860.
KTNT (MUSCATINE, IOWA).—Power, 2,000.
KUOM (MISSOULA, MONT.).—W. l., 461.3, fy. kc., 650.
KVOS (SEATTLE, WASH.).—Changed to Bellingham, Wash., 1366 State Street.
KWCR (CEDAR RAPIDS, IOWA).—W. l., 239.9, fy. kc., 1,250.

KWJJ (Portland, Oreg.).—Address, 203 Broadway.
WAAW (Omaha, Nebr.).—W. l., 440.9, fy. kc., 680.
WABQ (Philadelphia, Pa.).—W. l., 223.7, fy. kc., 1,340.
WAFD (Detroit, Mich.).—W. l., 230.6, fy. kc., 1,300.
WAPI (Auburn, Ala.).—W. l., 325.9, fy. kc., 920.
WBES (Takoma Park, Md.).—W. l., 265.3, fy. kc., 1,130.
WBRE (Wilkes-Barre, Pa.).—Owner of station, Louis G. Baltimore.
WBRL (Tilton, N. H.).—W. l., 232.4, fy. kc., 1,290.
WCAD (Canton, N. Y.).—W. l., 243.8, fy. kc., 1,230; power, 500 night, 1,000 day.
WCAH (Columbus, Ohio).—W. l., 234.2, fy. kc., 1,280.
WCAU (Philadelphia, Pa.).—W. l., 260.7, fy. kc., 1,150.
WCOT (Providence, R. I.).—Power, 100.
WCSH (Portland, Me.).—W. l., 483.6, fy. kc., 620.
WCWS (Danbury, Conn.).—W. l., 265.3, fy. kc., 1,130.
WDAY (Fargo, N. Dak.).—Power, 250 night, 500 day.
WDBK (Akron, Ohio).—Call signal changed to WFJC.
WDEL (Wilmington, Del.).—W. l., 296.9, fy. kc., 1,010.
WDWF (Cranston, R. I.).—W. l., 275.1, fy. kc., 1,090.
WDWM (Asbury Park, N. J.).—W. l., 239.9, fy. kc., 1,250.
WEAM (North Plainfield, N. J.).—W. l., 263, fy. kc., 1,140.
WEBH (Chicago, Ill.).—Power, 500.
WEEI (Boston, Mass.).—W. l., 365.6, fy. kc., 820.
WFCI (Pawtucket, R. I.).—Power, 100.
WFDF (Flint, Mich.).—W. l., 272.6, fy. kc., 1,100.
WFLA (Clearwater, Fla.).—Additional call signal WSUN assigned for St. Petersburg, Fla.; owner of station, Clearwater Chamber of Commerce and St. Petersburg Chamber of Commerce; w. l., 508.2, fy. kc., 590; power, 750.
WHA (Madison, Wis.).—W. l., 333.1, fy. kc., 900.
WHAP (New York, N. Y.).—Changed to Carlstadt, N. J.
WHAZ (Troy, N. Y.).—W. l., 416.4, fy. kc., 720.
WHPP (New York, N. Y.).—Address 150 Delancey Street.
WIAS (Burlington, Iowa).—Changed to Ottumwa, Iowa; owner of station, Poling Electric Co.; w. l., 322.4, fy. kc., 930.
WICC (Easton, Conn.).—W. l., 265.3, fy. kc., 1,130; power, 500.
WJAD (Waco, Tex.).—W. l., 333.1, fy. kc., 900.
WJAM (Cedar Rapids, Iowa).—W. l., 239.9, fy. kc., 1,250.
WJAR (Providence, R. I.).—W. l., 374.8, fy. kc., 800.
WJBI (Red Bank, N. J.).—Power, 250.
WJBR (Omro, Wis.).—Call signal changed to WAIZ; location changed to Appleton, Wis.
WKBF (Indianapolis, Ind.).—W. l., 252, fy. kc., 1,190.
WKBI (Chicago, Ill.).—Address, Lincoln Avenue and Irving Park Boulevard.
WKBQ (New York, N. Y.).—Owner of station, Standard Cahill Co.
WKBW (Buffalo, N. Y.).—Power, 500 night, 750 day.
WKRC (Cincinnati, Ohio).—W. l., 245.8, fy. kc., 1,220; power, 500.
WLBL (Stevens Point, Wis.).—W. l., 333.1, fy. kc., 900; power, 1,000 night, 2,000 day.
WLBR (Belvidere, Ill.).—Changed to Rockford, Ill.; owner of station, Rockford Broadcasting Corporation.
WLSI (Cranston, R. I.).—W. l., 275.1, fy. kc., 1,090.
WMAL (Washington, D. C.).—W. l., 241.8, fy. kc., 1,240.
WMBB (Chicago, Ill.).—Consolidated with WOK, Homewood, Ill.; owner of station, American Bond & Mortgage Co., transmitter at Homewood, both call signals to be used.
WMBS (Harrisburg, Pa.).—Changed to Lemoyne, Pa.
WMES (Boston, Mass.).—Power, 50.
WNBZ (Saranac Lake, N. Y.).—W. l., 232.4, fy. kc., 1,290.
WOAI (San Antonio, Tex.).—W. l., 319, fy. kc., 940.
WOK (Homewood, Ill.).—Consolidated with WMBB, Chicago, Ill.; owner of station, American Bond & Mortgage Co., transmitter at Homewood, both call signals to be used.
WOMT (Manitowoc, Wis.).—Power, 100.
WOOD (Furnwood, Mich.).—Address, 144 Madison Avenue, Grand Rapids, Mich.
WOQ (Kansas City, Mo.).—Power, 500.

WORD (Batavia, Ill.).—W. l., 416.4, fy. kc. ,720.
WOS (Jefferson City, Mo.).—W. l., 422.3, fy. kc., 710.
WRAV (Yellow Springs, Ohio).—W. l., 296.9, fy. kc., 1,010.
WRR (Dallas, Tex.).—W. l., 461.3, fy. kc., 650.
WSAR (Portsmouth, R. I.).—Changed to Fall River, Mass., 46 North Main Street.
WSBF (St. Louis, Mo.).—W. l., 258.5, fy. kc., 1,160.
WSKC (Bay City, Mich.).—W. l., 272.6, fy. kc., 1,100.
WSOE (Milwaukee, Wis.).—Power, 250.
WSUI (Iowa City, Iowa).—W. l., 475.9, fy. kc., 630.
WTAL (Toledo, Ohio).—Address, 217 Superior Street.
WTAS (Hanover Township, Ill.).—W. l., 275.1, fy. kc., 1,090; power, 500.
WTAW (College Station, Tex.).—W. l., 483.6, fy. kc., 620.
WWVA (Wheeling, W. Va.).—W. l., 336.9, fy. kc., 890; power, 250.

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, 1927, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

Juneau, Alaska.—W. l., add 600.
Key West, Fla. (NGK).—Strike out all particulars.

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, 1927, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

Iroquois.—Strike out all particulars.
Scandia.—Strike out all particulars.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY, BY CALL SIGNALS

Strike out all particulars following the call signals, NGK (Key West, Fla.); NHV, NURR.

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, 1927]

Cleveland, Ohio (8XF).—Station portable.
Gibson, Ind. (9XS).—Changed to Hammond, Ind.; owner of station, Indiana Harbor Belt R. R. Co.
Harrison, Ohio (8XAL).—W. l., 52.69, fy. kc., 5,690; power, 250.

MISCELLANEOUS

Vessels equipped with a radio compass

Name	Call signal[1]	Owner
A. A. Augustus	KDXQ	Pioneer S. S. Co.
Amaton	KDXP	Do.
A. W. Osborne		Wilson Transit Co.
B. F. Jones		Interstate S. S. Co.
B. H. Taylor	KFLK	Bradley Transportation Co.
Calette	KDZN	Do.
Captain Thomas Wilson		Wilson Transit Co.
Carl D. Bradley	WOBK	Bradley Transportation Co.
Charles S. Hebard		Wilson Transit Co.
D. P. Thompson		Pioneer S. S. Co.
Frank Billings	KDXM	Do.
Frank E. Taplin		Wilson Transit Co.
G. A. Tomlinson	KDXJ	Pioneer S. S. Co.
General Garretson		Wilson Transit Co.
H. P. McIntosh		Do.
James E. Ferris	KDXK	Pioneer S. S. Co.
James Laughlin		Interstate S. S. Co.
James MacNaughton	KFCN	Wilson Transit Co.
James P. Walsh	KDXW	Pioneer S. S. Co.

[1] Vessels which do not have a call signal are not equipped with apparatus for communication.

Vessels equipped with a radio compass—Continued

Name	Call signal	Owner
J. E. Upson		Wilson Transit Co.
J. J. Sullivan	KDXV	Pioneer S. S. Co.
John G. Munson	KFSI	Bradley Transportation Co.
John S. Manuel	KDXL	Pioneer S. S. Co.
John Stanton	KDXT	Do.
Joseph Block		Inland S. S. Co.
Joseph G. Butler, jr	KDXU	Pioneer S. S. Co.
L. E. Block	KGFE	Inland S. S. Co.
Louis R. Davidson	KDUH	American S. S. Co.
Malko	WDOI	Matson Navigation Co.
Martin Mullen	KDXY	Pioneer S. S. Co.
N. F. Leopold		Inland S. S. Co.
Philip D. Block	WKO	Pioneer S. S. Co.
Price McKinney	KDXR	Do.
Santa Teresa	WLIA	Grace S. S. Line.
S. B. Coolidge	WHH	Pioneer S. S. Co.
S. H. Robbins		Wilson Transit Co.
Thomas Walters		Interstate S. S. Co.
T. W. Robinson	WMX	Bradley Transportation Co.
W. D. Calverley, jr	KDXS	Pioneer S. S. Co.
W. D. Rees		Wilson Transit Co.
W. F. White	WGC	Bradley Transportation Co.
W. H. McGean	WMIO	Pioneer S. S. Co.
William A. Paine	KDXZ	Do.
William C. Atwater	WPB	Wilson Transit Co.
William G. Mather	WBS	Cleveland Cliffs S. S. Co.
Willis L. King		Interstate S. S. Co.

CHANGES IN RADIOBEACON STATIONS

Makapuu Point Light Station, Hawaii.—Geographical location, 157° 39′ 08″ W., 21° 18′ 47″ N.

La Pointe Light Station, Wis.—New beacon established. Will transmit every 180 seconds, groups of 4 dashes for 60 seconds, silent 120 seconds, thus:

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

Beacon will be operated on 1,000 meters continuously during thick or foggy weather and daily in clear weather from 1.30 to 2 and 7.30 to 8, a. m. and p. m., ninetieth meridian time. Position, 90° 47′ 06″ W., 46° 43′ 44″ N. Radio communication service will not be maintained

Fire Island Lightship, N. Y.—On page 125, "Commercial and Government radio stations of the United States" and the "International list of radiotelegraph stations" strike out "and from 10 to 10.15 a. m. and from 4 to 4.15 p. m. in thick weather at which intervals the beacon is not operated."

Ambrose Channel Lightship, N. Y.—On page 125, "Commercial and Government radio stations of the United States" and the "International list of radiotelegraph stations" strike out "and from 10 to 10.15 a. m. and from 4 to 4.15 p. m. in thick weather, at which intervals the beacon is not operated." Call signal is WWAT.

BEACON ESTABLISHED ON ANHOLT KNOB LIGHT VESSEL, DENMARK

During the present month a beacon will be established on Anholt Knob Light Vessel, the *Kattegat*, Denmark. The signal will be transmitted on a wave length of 950 meters and will consist of the letters AK AK (. — — . — . — — . —) followed by 10 dashes, period 6 minutes. The range is about 30 miles. Approximate location, 11° 52′ E., 56° 46′ N.

CAPE GRIS NEZ (FRANCE) BEACON ALTERED

The beacon has been altered to transmit as follows:

— — . — — . — — .	— — — — — — etc.
10 seconds	30 seconds.

— — . — — . — — .	Silent	Total period 1 minute.
10 seconds	10 seconds	

During fog four successive transmissions of the above groups of signals are made, commencing at the 10th, 20th, 30th, 40th, 50th, and 60th minutes of each hour. Wave length, 1,000 meters, i. c. w.; approximate location, 1° 35′ E., 50° 52′ N.

BEACON ESTABLISHED AT BOULOGNE, FRANCE

A beacon has been established at the lighthouse on the western side of the entrance to Avant Port, about 8 cables eastward of the occulting white light on Carnot breakwater, in (approximately) 1° 35′ E., 50° 44′ N. The signals consist of the emission of a musical note of 800 vibrations per second, transmitted about every minute, thus:

(a) — . . . — . . . — . . . — . . .
(b) A series of long dashes —— —— —— —— —— etc.
(c) — . . . — . . . — . . . — . . .
(d) Silence.

Wave length, 1,000 meters; range, 50 miles.

BEACON ESTABLISHED AT WARNEMUNDE, MECKLENBURGER, BALTIC SEA, GERMANY

This beacon will be adjacent to the lighthouse, in (approximately) lat. 54° 10′ 54″ N., long. 12° 05′ 24″ E. The signal will consist of the Morse letters WN (. — — — .) sent twice, and followed by 13 dashes. The characteristic letters of the signal will be transmitted in 9 seconds and the 13 dashes will follow after a silent interval of 1.3 seconds. Each dash is of 1 second duration, and the interval between the dashes is 0.3 second. After the last dash there is a silent interval of 3.1 seconds. The complete signal is transmitted in 30 seconds and is given seven times in 3.5 minutes. The group of seven signals is followed by a silent interval of 4 minutes; total period for the group, 7.5 minutes. The group of seven signals is given eight times per hour. The frequency is 300 kilocycles (1,000-meter wave). For experimental purposes the group of seven signals will be given daily five times in succession from 0800ʰ. to 0835ʰ., from 1100ʰ. to 1135ʰ., from 1400ʰ. to 1435ʰ., and from 1700ʰ. to 1735ʰ.

RUGBY (ENGLAND) STATION TO TRANSMIT TIME SIGNALS

It is intended during the month of December, 1927, to inaugurate a service of wireless time signals at Rugby radio station, which will be broadcast twice daily—at 10ʰ. and 18ʰ., G. M. T.

The time signal will be of the modified rhythmic type recommended by the International Time Commission of 1925. It will comprise a series of 306 signals emitted in 300 seconds of mean time (or, alternatively, 245 signals emitted in 240 seconds of mean time), the concluding signal being the exact hour.

In each series, signals Nos. 1, 62, 123, 184 and 245 (and 306, if the series extends for five minutes) are single dashes (—) of 0.4 second duration and commence at the exact minute. Each dash is followed by 60 dots (.) of 0.1 second duration.

The commencement of successive signals, whether dot or dash, are equally spaced at intervals of 60/61 parts of one second of mean time.

The intended procedure will therefore be as follows:

G. M. T. m.	s.	Signal
55	00	1st signal, a dash (—) followed by 60 dots (. . . . etc.).
56	00	62d signal, a dash (—) followed by 60 dots (. . . . etc.).
57	00	123d signal, a dash (—) followed by 60 dots (. . . . etc.).
58	00	184th signal, a dash (—) followed by 60 dots (. . . . etc.).
59	00	245th signal, a dash (—) followed by 60 dots (. . . . etc.).
00	00	306th signal, a dash (—).

This type of time signal will enable chronometer comparisons of extreme accuracy to be obtained, the method employed being to count the number of intervals from the first dash (—) until coincidence occurs between one of the rhythmic signals and the beat of the chronometer. It is not necessary actually to count the signals. Take the nearest second of each dash by the chronometer and write down the chronometer time of coincidence. The difference gives the number of the rhythmic signal.

For ordinary navigational purposes a comparison obtained by disregarding the dots and using the commencement of the dashes only (given at the exact minute) will be sufficiently accurate. Call signal, GBR, wave length, 18,740 meters, c. w.; location (approximately), 1° 11′ W., 52° 22′ N.—*Admiralty, London, Notice 1643, September 26, 1927.*

List of Cuban broadcasting and experimental stations

Call signal	Owner	Address	Location	Frequency	Wave length	Power
				Kilocycles	*Meters*	*Watts*
PWX	Cuban Telephone Co.	Aguila 161	Habana	742.6	400	500
1AZ	Antonio Sarasola	Luz Caballero 82	Guanajay	1,090.2	275	5
2AB	Alberto S. Bustamante.	15 entre J y K, Vedado.	Habana	1,362.8	220	10
2BB	Bernardo Barrié	Presidente Zayas 57	do	1,208.9	248	15
2CT	Casimiro Pujadas	Carlos III 8-C	do	1,499.1	200	5
2FG	Alberto Alvarez	4ta. Avenida 43	Hershey	1,499.1	200	20
2GF	Francisco Williams	F. de Castro 152	Habana	1,561.5	192	10
2HP	Cristina W. Vda. de Crusat.	Morón 82	do	1,462.5	205	200
2JF	José L. Ferriol	Fluma 13	Marianao	1,223.7	245	5
2JL	José Leiro	4 (Redención) 75-C	do	1,019.7	294	5
2JT	José A. Terry	Campamento de Columbia.	do	6,517.8	46	5
2LC [1]	Luis Casas	J. C. Zenea 208	Habana	1,249.2	240-40	50
2LR [1]	José Lara	Patrocinio 29; Víbora	do	1,273.8	235	60
2MA	Modesto Alvarez	A entre 6 y 8, L. Sierra	Marianao	983	305	50
2MF	Moisés Fernández	Céspedes 7	Madruga	2,998.2	100	5
2MG	Manuel G. Salas	General Carrillo 14	Habana	1,055	284	20
2MK [1]	R. V. Waters	Avenida de Italia 29	do	3,427.2	85-39	100
2MU	Ulpiano Muñiz	Primelles 19	do	1,131.3	265	10
2OK	Mario García Vélez	3 No. 286, Vedado	do	832.8	360	100
2OL	Oscar Collado	Zenea 97	do	1,166.6	257	100
2RK	Raúl Karman	Malecón 7	do	951.8	315	20
2SZ [1]	Homero Sánchez	Buenaventura 64	do	1,660.6	180-41	10
2TW	Roberto E. Ramírez	Obispo 83	do	1,110.4	270	20
2UF	Benito Vieta Ferro	Obispo 83	do	844.5	355	20
2XA	Lecuona Music Co.	Espada 24	do	1,308.5	230	200
2XX	Antonio A. Ginard	Reina y A. Columbia	Marianao	1,335.5	225	5
5AZ [1]	Ernesto V. Figueroa	Independencia 130	Matanzas	1,499.1	200	50
5BY [1]	León González Vélez	Sta. Cristina 10	do	1,579	190	10
5DW	Ramón Sarria Calderón.	Emilio Blanchet 11	do	1,110.4	270	100
5EV	Leopoldo V. Figueroa	Martí 19	Colón	832.8	360	5
6BY	José Gandaxe	Argüelles 210	Cienfuegos	1,153.1	260	200
6DW [1]	Eduardo Terry	San Carlos 197	do	1,131.3	265	10
6EV	María J. Alvarez	Falero 17	Caibarién	1,199.2	250	50
6GR [1]	Gustavo Rodríguez	San Carlos 79	Cienfuegos	1,185	253	10
6OT [1]	Juan Pablo Ros	Independencia 150	do	1,678	190	5
6HS	Santiago Ventura	Colón 156	S. la Grande	1,499.1	200	10
6KC	Carlos Hernández	San Carlos 165	Cienfuegos	1,249.2	240	10
6KP	Antonio Galguera	Céspedes 178	Sancti Spíritus	1,537	195	20
6KW	Frank H. Jones	C. Tuinucú	Tuinucú	881.8	340	100
6LO	Manuel A. Alvarez	Falero 16	Caibarién	922.5	325	250
6RO	Rafael G. Pérez	Gloria 16	Santa Clara	1,499.1	200	20
6XJ [1]	Frank H. Jones	C. Tuinucú	Tuinucú	1,078.5	278	100
6YR	Diego Ibarra	L. Vidal 26	Camajuaní	1,499.1	200	20
7AZ	Pedro Noguera	Macso 1	Camagüey	1,332.5	225	10
7BY	Eduardo V. Figueroa	Independencia 76	Ciego de Avila	1,275.8	235	20
7CX [1]	Leonardo B. Fox	C. Florida	Florida	3,627.2	83	10
7DW [1]	M. L. Quintana	C. Tacajó	Tacajó	3,331.3	90	10
7FU	Feliciano Isaac	Independencia y F. Calleja.	Ciego de Avila	1,499.1	200	10
7GT	Armando Vaquer	J. Agüero 97	Camagüey	1,537.5	195	5
7HS	Porfirio de la Cruz	República 50	Ciego de Avila	1,561.5	192	10
7IR	Antonio Benguria	Independencia 25	do	1,554.3	193	20
7JQ	Leonardo B. Fox	C. Florida	Florida	7,138.5	42	5
7KP	Melchor Agüero	R. Mercquerado	Camagüey	1,303.5	230	20
7MN [1]	do	do	do	1,098.2	273	100
7NM	Domingo Caymares	A. Arango 31	Nuevitas	1,135.6	264	20
7SR	Salvador Blonda	Central Elia	Elia	856.6	350	500
8AZ [1]	Alfredo Broock Galo.	8 y 17, Vista Alegre	S. de Cuba	1,249.2	240	20
8BY	Alberto Ravelo	Rep. Mandúley	do	1,199.2	250	100
8FU	Andrés Vinent	Heredia Alta 25	do	1,332.5	225	15
8HS	Guillermo Polanco	M. Gómez Baja 17	do	1,499.1	200	20
8KP [1]	Juan F. de Castro	Rep. Punta Gorda	do	1,665.6	180	30
8LO	do	do	do	999.4	300	30

[1] Designates radiotelegraph stations, those not so designated are radiophone stations.

CALL SIGNALS ASSIGNED TO STATIONS TRAINING NAVAL RESERVES

Call signal NRRK has been assigned to the alternate control station of the fifth naval district, located at the Naval Reserve Armory, 815 West Broad Street, Richmond, Va. Call signal NRRE has been assigned to the master control station of the fifth naval district, located at the Naval Operating Base, Hampton Roads, Va. These calls will be used only in connection with the training of naval reserves.

VIOLATION OF THE INTERNATIONAL CONVENTION REGULATIONS BY RADIO OPERATORS OF VESSELS ON THE GREAT LAKES

A number of reports of violation of the international convention service regulations by radio operators of American vessels plying the Great Lakes have been received by the division. Radio operators are cautioned that they must observe the regulations, otherwise their licenses may be suspended or revoked.

OBITUARY

The Division deeply regrets to announce the death of Col. John F. Dillon, radio commissioner for the fifth zone. Colonel Dillon was appointed radio inspector in the Department of Commerce in 1912 and was continuously in the service of the department at Cleveland, Chicago, and San Francisco until appointed to the Radio Commission, with the exception of the period of the World War. He was appointed supervisor of radio in charge of the sixth radio district of the department at San Francisco on October 1, 1919. Colonel Dillon saw service with the Signal Corps during the Spanish-American War and again from 1904 to 1912. From 1917 to 1919 he served overseas with the Signal Corps, American Expeditionary Forces.

STANDARD FREQUENCY STATIONS

As a result of measurements by the Bureau of Standards upon the transmitted waves of a limited number of low-frequency 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. 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 those stations will maintain the constancy shown, but the data indicates the high degree of confidence that can be placed in them.

Frequency measurements upon the broadcasting stations formerly included in this list are not reported, as the list of "Constant frequency stations" offers a larger number of broadcast frequencies for calibration purposes.

The transmitted frequencies from the 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	Assigned frequency	Period covered by measurements	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since Oct. 25, 1927
			Kilocycles	*Months*		*Per cent*	*Per cent*
NSS	United States Navy.	Annapolis, Md.	17.00	17	71	0.14	0.06
WCI	Radio Corporation of America.	Tuckerton, N. J.	17.95	31	127	.14	.06
WSS	do	Rocky Point, N. Y.	18.60	13	43	.13	.43
WII [1]	do	New Brunswick, N. J.	21.80	28	149		
NAA	United States Navy.	Arlington, Va.	112.00	24	109	.18	.09

[1] Not measured since Aug. 25, 1927.

CONSTANT FREQUENCY STATIONS

The list of "constant frequency stations" given below supplements the list of "standard frequency stations." The transmitted waves from the stations in either list should be of value to the public as frequency standards because of their constancy and of close adherence to the licensed values. The Bureau of Standards makes occasional measurements of the frequencies of some of the stations in the following list. Each station employs a special device for con-

trolling or checking the frequency, the calibration of the device being in agreement with the bureau's frequency standards. The special device may be automatic piezocontrol, a piezooscillator, piezoresonator, or frequency indicator. Stations not included in this list which use one or more of the special devices mentioned are invited to communicate with the Bureau of Standards requesting a copy of Letter Circular 214, Requirements of Constant Frequency Stations.

Call signal	Owner	Location	Frequency	Wave length	Appearance for frequency regulation
			Kilocycles	*Meters*	
WEAF	National Broadcasting Co.	New York, N. Y.	610	491.5	Special frequency standard.
WRC	Radio Corporation of America.	Washington, D. C.	640	468.5	Do.
WMAQ	Chicago Daily News	Chicago, Ill.	670	447.5	Frequency indicator type B, and piezooscillator.
WCCO	Washburn-Crosby Co.	St. Paul-Minneapolis, Minn.	740	405.2	Piezooscillator.
WTAM WEAR	Willard Storage Battery Co.	Cleveland, Ohio	750	399.8	Do.
WBBM	Atlas Investment Co.	Chicago, Ill.	770	389.4	Do
KGO	General Electric Co.	Oakland, Calif.	780	384.4	Do.
KTHS	The Arlington Hotel	Hot Springs, Ark.	780	384.4	Do.
WGY	General Electric Co.	Schenectady, N. Y.	790	379.5	Special frequency standard.
WJJD	Loyal Order of Moose	Mooseheart, Ill.	820	365.6	Piezooscillator.
WLS	Sears, Roebuck & Co.	Crete, Ill.	870	344.6	Do.
WSM	National Life & Accident Insurance Co.	Nashville, Tenn.	860	349.2	Do.
WKAQ	Radio Corporation of Porto Rico.	San Juan, P. R.	888	340.7	Frequency indicator, type B.
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.	900	333.1	Special frequency standard.
KOA	General Electric Co.	Denver, Colo.	920	325.9	Piezooscillator.
KDKA	Westinghouse Electric & Manufacturing Co.	East Pittsburgh, Pa.	950	315.6	Special frequency standard.
KFAB	Nebraska Buick Auto Co.	Lincoln, Nebr.	970	309.1	Piezooscillator.
WBAL	Consolidated Gas, Electric Light & Power Co.	Glen Morris (Baltimore), Md.	1,000	299.8	Special frequency standard.
WHAM	Stromberg - Carlson Telephone Manufacturing Co.	Rochester, N. Y.	1,080	277.6	Piezooscillator.
WBAA	Purdue University	West Lafayette, Ind.	1,100	272.6	Do.
KFIZ	Fond du Lac Commonwealth Reporter.	Fond du Lac, Wis.	1,120	267.7	Frequency indicator, type B.
WHK	The Radio Air Service Corporation.	Cleveland, Ohio	1,130	265.3	Piezooscillator.
WMBI	Moody Bible Institute of Chicago.	Chicago, Ill.	1,140	263.0	Do.
WEBJ	Third Avenue Railway Co.	New York, N. Y.	1,170	256.3	Do.
KWUC	Western Union College	Le Mars, Iowa	1,230	243.8	Do.
KFVS	Hirsch Battery & Radio Co.	Cape Girardeau, Mo.	1,340	223.7	Frequency indicator, type B.

COOPERATIVE MEASUREMENTS OF RADIO FADING IN 1925

At the beginning of 1925 the Bureau of Standards invited a number of laboratories to participate in a cooperative program of radio measurements. This work, which was continued for a year, was largely confined to measurements of fading at frequencies within the broadcast band. The general plan of the work was the arrangement of special transmissions in which a station transmitted continuously during a specified period while the observing laboratories made graphic records simultaneously, employing the method previously used by G. W. Pickard.

The investigation included observations during the solar eclipse of January 24, during many sunset periods, and during a complete 24-hour cycle, in addition to a special study of the effect of high power on fading. The analysis of more than 150 graphic records made by 23 cooperating laboratories located in northeastern United States and Canada established a number of new facts about fading and radio wave transmission.

Among the principal conclusions resulting from the research are the following:

1. There is a degree of regularity in the average intensity during conditions of fading which has not hitherto been suspected. The ratio of average night to day intensity has a logarithmic relation to distance.

2. There are indications of series of maxima and minima of fluctuations with respect to distance from the transmitting station. The first maximum occurs at about 100 kilometers.

3. There is some evidence of correlation between direction shifts and fast fading.

4. The maximum diurnal intensity appears at about the same time (during the three hours just preceding sunrise in December) at all receiving points within 500 kilometers of the transmitting station (this conclusion is based on a single 24-hour observation period).

5. There is sometimes a special periodic type of fading, beginning about 15 to 20 minutes after sunset, of great regularity, the periodicity of which shows a correlation with the distance between the transmitting and receiving points and which is evidently due to an interference phenomenon.

6. Changes of transmitting power do not affect the characteristics of fading.

A more complete description of the method and results of this investigation have just been published in Bureau of Standards Scientific Papers No. 561, Cooperative Measurements of Radio Fading in 1925, by J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. This paper can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 15 cents.

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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