

DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION

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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.
	FS = Fog signal.
	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. Co.	= Independent Wireless Telegraph Co.
K. & C.	= Kilhourne & 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.

RADIO SERVICE BULLETIN

NEW STATIONS

Commercial land stations, alphabetically by names of stations

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

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Balangiga, P. I. (Samar).....	KZBL	600, 755, 950.....	PG	.....	Philippine Insular government.
Cleveland, Ohio ¹	WCY	715, 875, 890, 1,500, 2,100, 2,400.....	PG	N	R. C. A.
Cleveland, Ohio ²	WTL	1,950.....	FX	.....	Intercity Radio Telegraph Co.
Connellsville, Pa. ³	WOB	90.55.....	FX	X	West Penn Power Co.
East Moriches, N. Y. ⁴	WSA	690, 630.....	PG	N	J. W. T. Co.

¹ Loc. O 125° 23' 00" E., N 11° 09' 30"; range, 150; system, composite v. t. telegraph, c. w. and l. c. w.; hours, 8 a. m. -12 noon, 2-3.30 p. m. week days; 9-11 a. m. Sundays and holidays; ship service last 10 minutes of each hour; rates, ship service, 5 cents per word.

² Loc. (approximately) O 81° 48' 07", N 41° 25' 30"; range, 400; system, R. C. A., v. t. telegraph; rates ship service 10 cents (52 centimes) per word.

³ Loc. (approximately) O 81° 41' 00", N 41° 30' 00"; range, 500; system, composite, v. t. telegraph; hours, 8 a. m. -4 p. m.

⁴ Loc. O 77° 25' 45", N 40° 01' 42"; range, 200; system, composite v. t. telephone and telegraph.

⁵ Loc. (approximately) O 77° 45' 00", N 40° 45' 00"; range, 500; system, composite, 1,000; rates, ship service 10 cents (52 centimes) per word.

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 Bureau.]

Name of vessel	Call signal	Rates	Service	Hours	Owner of vessel	Station controlled by—
Albay ¹	KZAK	8	PG	X	Compania Maritima.....	Owner of vessel.
Colerden.....	KGCS	8	PG	X	General Metal Supply Co.....	Do.
Eastern Crown.....	KUNQ	8	PG	X	C. H. Sprague & Son.....	R. C. A.
Fisherman ²	KNT	8	PG	X	Zane Gray.....	Owner of vessel.
Honolulu ³	KGCO	8	PG	X	General Metal Supply Co.....	Do.
Lake Ellendale.....	KEPN	.....	.....	.....	William Clifford.....	Do.
Leona Burrows ⁴	KLY	8	PG	X	Mytic S. S. Co.....	R. C. A.
Petaluma ⁵	KGCT	.....	P	X	Petaluma & Santa Rosa Railway Co.	Edward J. Gabriel.
Palilo ⁶	KZCH	8	PG	X	Philippine Insular government.	Owner of vessel.
Sea Rover ⁷	KGCP	8	PG	X	Shipowners & Merchants Tugboat Co.	Do.
Suboco.....	KGCQ	8	PG	X	Sun Oil Co.....	Do.
The Old Timer No. 3 ⁸	KGCV	.....	P	X	G. E. Sovereign.....	Aladdin Co.
West Abek ⁹	KJUC	8	PG	X	U. S. S. B.....	J. W. T. Co.

¹ Range, 150; system, composite, 120; w. l., 600.

² Range, 300; system, Marconi spark, 1,000, and composite v. t. telegraph; w. l., 100-130, 600, 700, 800, 875.

³ Range, 300; system, Navy, 1,000; w. l., 600, 700, 800.

⁴ Range, 300; system, R. C. A., 1,000; w. l., 600, 700, 800.

⁵ Range, 25; system, composite v. t. telegraph; w. l., 40, 600.

⁶ System, W. S. A. Co., 1,000; w. l., 300, 600, 800.

⁷ Range, 150; system, Lowenstein, 1,000; w. l., 600, 700, 800.

⁸ System, R. C. A. v. t. telegraph and telephone; w. l., 100, 600.

⁹ Range, 300; system, Navy, 1,000; w. l., 600, 700, 800.

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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
KEPN	Lake Ellendale.....b	KNT	Flaberman.....b
KGCO	Honolulu.....b	KUNQ	Eastern Crown.....b
KGCP	Sea Rover.....b	KZAK	Albay.....b
KGCQ	Sunoco.....b	KZBL	Balangiga, P. I. (Samoa).....c
KGCS	Colorado.....b	KZCH	Polillo.....b
KGCT	Petaluma.....b	WCY	Cleveland, Ohio.....c
KGCV	The Old Turner No. 3.....b	WOB	Connellsville, Pa.....c
KJUG	West Alsek.....b	WBA	East Moriches, N. Y.....c
KLY	Lemuel Burrows.....b	WTL	Cleveland, Ohio.....c

Commercial airplane 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 Berne Bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Unnamed.....	WKBK				Radio Club of Rochester.

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
Arizona: Prescott.....	KPJM	New York:	
Idaho: Pocatello.....	KSEI	Brooklyn.....	WTRO
Illinois: Carthage.....	WCAZ	Newburgh.....	WKBM
Kansas: Concordia.....	KGCN	New York.....	WJUG
Michigan:		Do.....	WKBQ
Battle Creek.....	WKBP	North Dakota: Mandan.....	KGCU
Monroe.....	WKBL	Ohio: Columbus.....	WCAH
New Hampshire: Tilton.....	WBRL	South Dakota: Brookings.....	KGCR
New Jersey: Jersey City.....	WKBO	Texas: San Antonio.....	KGCM

Broadcasting stations, alphabetically, by call signals

Call signal	Location of station (address)	Owner of station
KGCM	San Antonio, Tex., 2412 Main Avenue.....	Robert B. Bridge.
KGCN	Concordia, Kans.....	Alva E. Smith.
KGCR	Brookings, S. Dak., 415 Main Street.....	Cutler's Radio Broadcasting Service (Inc.).
KGCU	Mandan, N. Dak.....	Mandan Chamber of Commerce.
KPJM	Prescott, Ariz.....	Wilbur Radio Service.
KSEI	Pocatello, Idaho.....	KSEI Broadcasting Association.
WBRL	Tilton, N. H.....	Booth Radio Laboratories.
WCAH	Columbus, Ohio, 321 West Tenth Avenue.....	Entrekin Electric Co.
WCAZ	Carthage, Ill.....	Carthage College.
WJUG	New York, N. Y., 35 Park Place.....	Uda H. Ross.
WKBL	Monroe, Mich., 16 South Monroe Street.....	Memrona Radio Manufacturing Co.
WKBM	Newburgh, N. Y., 365 Broadway.....	John W. Jones.
WKBO	Jersey City, N. J., 118 Concourse Building.....	Cumith Corporation.
WKBP	Battle Creek, Mich.....	Battle Creek Enquirer and News (A. L. Miller).
WKBQ	New York, N. Y., 1100 East One hundred and seventy-seventh Street.....	Starlight Amusement Park (Inc.).
WTRO	Brooklyn, N. Y., 62 Woodbine Street.....	Twentieth Assembly District Regular Republican Club (Inc.).

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Government 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 Bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Burgess Field, Pa. (Uniontown) ¹	WYI	1,400	O	X	U. S. Army.
Cumberland Field, Md. (Cumberland) ²	WYL	1,400	O	X	Do.
South Pass Lightship, La. ³	WYBK	600	O		Bureau of Lighthouses.

¹ Loc. (approximately) O 79° 45' 00", N 37° 45' 00"; range, 60-200; system, U. S. Army v. t. telephone and telegraph.

² Loc. (approximately) O 76° 45' 00", N 37° 35' 00"; range, 60-200; system, U. S. Army v. t. telephone and telegraph.

³ Loc. O 89° 05' 37", N 28° 38' 52"; range, 150; system, Marconi, 1,000; service, open to relaying public correspondence in emergency; hours, first 15 minutes of each hour between 8 a. m. and 9.15 p. m.

Government ship 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 Bureau]

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Active.....	NIXS	110, 115, 130..	O	X	U. S. Coast Guard.
Agassiz.....	NIVL	110, 115, 130..	O	X	Do.
Alert.....	NIVT	110, 115, 130..	O	X	Do.
Antistar.....	NITL	110, 115, 130..	O	X	Do.
Busham.....	NIXQ	110, 115, 130..	O	X	Do.
Boutwell.....	NIXX	110, 115, 130..	O	X	Do.
Cabonne.....	NIVI	110, 115, 130..	O	X	Do.
Cartigan.....	NIVK	110, 115, 130..	O	X	Do.
Crawford.....	NIVN	110, 115, 130..	O	X	Do.
Cuyaboga.....	NITM	110, 115, 130..	O	X	Do.
Diligence.....	NIXJ	110, 115, 130..	O	X	Do.
Dix.....	NIVC	110, 115, 130..	O	X	Do.
Ewing.....	NIXM	110, 115, 130..	O	X	Do.
Faunce.....	NIVV	110, 115, 130..	O	X	Do.
Frederick Lee.....	NIVZ	110, 115, 130..	O	X	Do.
General Greene.....	NIXL	110, 115, 130..	O	X	Do.
Harriet Lane.....	NIXR	110, 115, 130..	O	X	Do.
H. B. Taber.....	WYCW	600	O	X	U. S. Army.
Jackson.....	NIXC	110, 115, 130..	O	X	U. S. Coast Guard.
Legare.....	NITN	110, 115, 130..	O	X	Do.
McLane.....	NIVF	110, 115, 130..	O	X	Do.
Marian.....	NITB	110, 115, 130..	O	X	Do.
Montgomery.....	NITT	110, 115, 130..	O	X	Do.
Morris.....	NIVD	110, 115, 130..	O	X	Do.
Nemaha.....	NITK	110, 115, 130..	O	X	Do.
Northland.....	NISC	110, 115, 130..	O	X	Do.
Pulaski.....	NIXV	110, 115, 130..	O	X	Do.
Reliance.....	NIXF	110, 115, 130..	O	X	Do.
Rush.....	NITP	110, 115, 130..	O	X	Do.
Tiger.....	NIXP	110, 115, 130..	O	X	Do.
Travis.....	NITJ	110, 115, 130..	O	X	Do.
Vigilant.....	NIXE	110, 115, 130..	O	X	Do.
Winona.....	NIXN	110, 115, 130..	O	X	Do.
Woodbury.....	NIXZ	110, 115, 130..	O	X	Do.
Yenton.....	NINT	110, 115, 130..	O	X	Do.

Note.—All of the U. S. Coast Guard vessels mentioned above are equipped with Western Electric Co.

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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
NISC	Northland.....b	NIXC	Jackson.....b
NITB	Madison.....b	NIXF	Reliance.....b
NITJ	Travis.....b	NIXJ	Diligence.....b
NITK	Nemaha.....b	NIXK	Vigilant.....b
NITL	Antistam.....b	NIXL	General Greene.....b
NITM	Cuyahoga.....b	NIXM	Ewing.....b
NITN	Legare.....b	NIXN	Winona.....b
NITP	Rush.....b	NIXP	Tiger.....b
NITT	Montgomery.....b	NIXQ	Bonham.....b
NIVB	Morris.....b	NIXR	Harriet Lane.....b
NIVO	Dir.....b	NIXS	Active.....b
NIVF	Melane.....b	NIXT	Yeaton.....b
NIVJ	Cahoona.....b	NIXV	Pulaski.....b
NIVK	Cartigan.....b	NIXX	Boutwell.....b
NIVL	Agassiz.....b	NIXZ	Woodbury.....b
NIVN	Crawford.....b	W W B K	South Pass Lightship, La.....c
NIVT	Alert.....b	W Y C W	H. S. Taber.....b
NIVV	Faunce.....b	W Y I	Burgess Field, Pa. (Unlontown).....c
NIVZ	Frederick Lee.....b	W Y L	Cumberland Field, Md. (Cumberland).....c

Special land stations, alphabetically, by names of stations

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

Station	Call signal	Station controlled by—
Cincinnati, Ohio.....	5YX	University of Cincinnati.
New York, N. Y. (portable) ..	2XAL	Associated Broadcasters (Inc.), Hotel McAlpin.
Oklahoma, Okla.....	5YI	David R. Wallace, 105 West Thirteenth Street.
Omaha, Nebr. (portable).....	9XAB	R. J. Rockwell, 5019 Capitol Avenue.
Port Arthur, Tex.....	5YH	Port Arthur College.

Special land stations, grouped by districts

Call signal	District and station	Call signal	District and station
2XAL	Second district: New York, N. Y. (portable).	5YX	Eighth district: Cincinnati, Ohio.
5YH	Fifth district: Port Arthur, Tex.	9XAB	Ninth district: Omaha, Nebr. (portable).
5YI	Oklahoma, Okla.		

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 Berne bureau]

EAST HAMPTON, N. Y.—Call signal changed to WSE; range, 300; system, composite, 1,000; w. l., 600, 630.

Strike out all particulars of the following-named stations: Kanatak, Alaska (near); Negley, Ohio; New York, N. Y. (WSE).

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 Berne bureau]

ABBECON.—System, I. W. T. Co., 1,000; hours, N.
Aver.—Station controlled by I. W. T. Co.

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- ALASKA STANDARD.—W. L., 600, 706, 800; owner of vessel, Standard Oil Co. of California.
- AMERICAN FARMER.—System, Navy-Marconi, 1000; w. l., 600, 706, 800.
- AMERICAN SHIPPER.—System, Navy-Marconi, 1000; w. l., 600, 706, 800.
- ANTINOUS.—W. L., 600, 706, 800.
- ARCADIA.—Range, 300; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
- ARCHER.—Station controlled by R. C. A. (U. S. L.).
- ASHBEE.—W. L., 600, 706, 800.
- BOHEMIA.—Range, 200; system, R. C. A. v. t. telegraph; w. l., add 800; service, PG; hours, X; rates, 10 cents per word.
- CALAMARES.—System, composite, 1,000; w. l., 600, 706, 800.
- CALVIN AUSTIN.—System, R. C. A. v. t. telegraph.
- CAMDEN (KRC).—System, R. C. A. v. t. telegraph.
- CARL D. BRADLEY.—W. L., 715, 875.
- CITY OF CLEVELAND III.—System, R. C. A., 1000 and R. C. A. v. t. telegraph; w. l., 715, 875, 1,800.
- CITY OF DETROIT III.—System, R. C. A., 1000 and R. C. A. v. t. telegraph; w. l., 715, 875, 1,800.
- CITY OF ST. LOUIS.—W. L., 600, 706, 800.
- CLEMENCE C. MORSE.—Name changed to Oakman.
- CLIFFWOOD.—System, Navy-W. S. A. Co., 1,000; w. l., add 800.
- COCKAPONSET.—Range, 300; system, Navy-Lowenstein, 1,000; w. l., 600, 706 800.
- COELLEDA.—Station controlled by R. C. A. (U. S. L.).
- COMMERCIAL TRADER.—Range, 200; system, R. C. A. v. t. telegraph; w. l., 600, 706, 800.
- CRETAN.—Station controlled by owner of vessel.
- CUBA.—System, R. C. A. v. t. telegraph.
- CUPRUM.—W. L., add 800.
- DEER LODGE.—Station controlled by R. C. A. (U. S. L.).
- DERBLAY.—Range, 200; system, Navy-Simon, 1,000; w. l., 600, 706, 800.
- DEUEL.—Owner of vessel, Grace S. S. Co.
- DOLPHIN.—W. L., 600, 706, 800.
- DORCHESTER (KGBG).—Range, 300; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
- EASTERN DAWN.—W. L., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
- EASTERN PLANET.—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.
- EDGAR F. LUCKENBACH.—System, Navy-Wireless Improvement Co., 1,000.
- EDITH.—System, Navy-Simon, 1,000; w. l., 600, 706, 800.
- EL ESTERO.—W. L., 600, 706, 800.
- EL LAZO.—System, R. C. A., 1,000.
- ELLENOR.—System, I. W. T. Co., 1,000.
- EMIDIO.—Owner of vessel, Standard Transportation Co.
- Eocene.—Station controlled by R. C. A.
- FAIRFAX.—Range, 150; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 1,800, 1,900, 2,000, 2,100, 2,400; station controlled by R. C. A.
- FALCON.—Range, 200; system, R. C. A. v. t. telegraph; w. l., 600, 700, 750, 800, 900.
- FOAM (KFSR).—Range, 200; system, I. W. T. Co., 1,000; w. l., 600, 706, 800; station controlled by I. W. T. Co.
- FREEMPORT SULPHUR No. 1.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
- FREEMPORT SULPHUR No. 6.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800, 900.
- GENE CRAWLEY.—System, R. C. A. v. t. telegraph; w. l., 600, 706.
- GEORGE F. RAND.—W. L., 715, 800, 875; rates, Great Lakes service, 4 cents per word.
- GEORGE H. INGALLS.—W. L., 715, 800, 875; rates, Great Lakes service, 4 cents per word.
- HATTERAS.—Station controlled by R. C. A. (U. S. L.).
- HENRY P. WERNER.—W. L., 715, 800, 875.
- IDALIA.—W. L., 17, 37, 74, 127, 600, 706, 800.
- INDIANA (WFC).—Hours, N.
- JEFF DAVIS.—Station controlled by I. W. T. Co. (U. S. L.).

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- LAKE ELMHURST.—Name changed to City of Albany; system, Navy-Lowenstein, 1,000.
- LAKE FLATONIA.—Range, 200; system, Navy-R. C. A., 1,000; w. l., 600, 706, 800.
- LAKE GAITHER.—Range, 200; system, Navy-Simon, 1,000; w. l., 600, 715, 800; station controlled by I. R. T. Co.
- LAKE MIRAFLORES.—Range, 200; system, Navy-Marconi, 1,000; w. l., 600, 706, 800; station controlled by F. T. Co.
- LA PLACENTIA.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 870.
- LAVA.—Station controlled by R. C. A. (U. S. L.).
- LEBEC.—Owner of vessel, Standard Transportation Co.
- LIERRE.—Owner of vessel, Standard Transportation Co.; station controlled by I. W. T. Co.
- LURLINE.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800, 875.
- MATSONIA.—System, R. C. A. v. t. telegraph and R. C. A. spark, 1,000; w. l., 600, 706, 800, 1,800, 2,100, 2,400.
- MOHEGAN.—System, Lowenstein, 1,000; w. l., add 800.
- MOJAVE.—Owner of vessel, Standard Transportation Co.
- NADESNA.—W. l., add 800.
- OCEANIA VANCE.—Station controlled by R. C. A.
- OHIO.—Name changed to Miramichi; owner of vessel, E. W. Scripps, estate of.
- OHIOAN.—W. l., add 800.
- OTHO.—System, Navy-Lowenstein, 1,000.
- O. T. WARING.—W. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
- PACIFIC PINE.—System, Navy-Marconi, 1,000.
- PARISMINA.—Range, 300; w. l., add 800.
- PETREL.—System, Navy-Simon, 1,000.
- PHOENIX.—Station controlled by R. C. A.
- POINSETTIA.—System, composite v. t. telegraph; w. l., 37, 600, 706; owner of vessel, Walter W. Horne.
- PRESIDENT ADAMS.—W. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
- PRESIDENT ARTHUR.—Station controlled by R. C. A.
- QUAKER CITY.—W. l., 600, 706, 800.
- ROANOKE.—W. l., 600, 706, 800.
- SAPINERO.—W. l., add 800.
- SAUGERTIES.—Station controlled by R. C. A.
- SEA GULL.—Range, 150; system, Navy-K. & C., 1,000; station controlled by I. W. T. Co.
- SHADOW K.—Range, 50; system, composite v. t. telephone and telegraph; w. l., 115, 600; service, P; hours, X; owner of vessel, Peninsular Terminal Co.; station controlled by owner of vessel.
- SIERRA (WHJ).—System, add F. T. Co. arc; w. l., add 800.
- STANDARD SERVICE.—W. l., add 800.
- SUTRANSCO.—Owner of vessel, Submarine Boat Corporation.
- SWIFTWIND.—W. l., 600, 706, 800.
- SYLVAN ARROW.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
- TEJON.—Owner of vessel, Standard Transportation Co.
- THE ANGELES.—System, Navy-Marconi, 1,000.
- THEODORE H. WICKWIRE.—W. l., 715, 800, 875; rates, Great Lakes service, 4 cents per word.
- TOPILA.—System, Marconi, 1,000; w. l., 600, 706, 800.
- TORRES.—W. l., add 800.
- UNITED STATES.—W. l., 715, 800; service, P; station controlled by owner of vessel.
- VENETIA.—W. l., 600, 706, 800.
- VIDOR.—Station controlled by R. C. A.
- WATERTOWN.—System, Navy-Marconi, 1,000; w. l., 600, 706, 800.
- WEST CACTUS.—Owner of vessel, Pacific Argentine Brazil Line.
- WEST CADDOA.—W. l., 600, 706, 800.
- WEST CELERON.—W. l., 600, 706, 800.
- WEST EKONK.—W. l., 600, 706, 800.
- WEST HAVEN.—Station controlled by R. C. A. (U. S. L.).
- WEST IVIS.—Station controlled by I. W. T. Co. (U. S. L.).
- WEST MAHOMET.—Station controlled by R. C. A.
- WEST NILUA.—Station controlled by I. W. T. Co.

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WICHELMINA.—System, Westinghouse v. t. telegraph and R. C. A. spark, 1,000
YORBA LINDA.—Owner of vessel, Standard Transportation Co.
 Strike out all particulars of the following-named vessels: *Charles O. Jenkins,*
Hermosa, Iroquois, John Ena, Lake Crescent, Laurentian.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

KFCS, read *Miramichi*; **KOFQ,** read *City of Albany*; **KUGG,** read *Oakman*;
KZBZ-Mauban, call should read **KZBM**; **WSE,** read *East Hampton, N. Y.*;
 strike out all particulars following the call signals, **KDTX, KFZM, KGC,**
KIRS, KVF, WBP, WCQ, WFT.

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, 1926]

KFBC (San Diego, Calif.).—Owner of station, W. K. Azbill and Union League Club of San Diego County.
KFVD (San Pedro, Calif.).—Change to Venice, Calif.; owner of station, W. J. and C. I. McWhinnie.
KFXJ (Denver, Colo.).—Change to Edgewater, Colo. (near); owner of station, R. G. Howell (Olinger Gardens).
KOIL (Council Bluffs, Iowa).—Owner of station, Mona Motor Oil Co.
KSBA (Shreveport, La.).—Owner of station, W. G. Patterson.
KZUY (Baguio, P. I.).—Strike out all particulars.
WBRC (Birmingham, Ala.).—Owner of station, Birmingham Broadcasting Corporation.
WEHS (Evanston, Ill.).—Owner of station, Oliver G. Fordham (Robert E. Hughes).
WBJ (Fort Wayne, Ind.).—Call signal changed to **WCWK**; owner of station, Chester W. Keen.
WKBD (Jersey City, N. J.).—Call signal changed to **WAAT**.
WNAL (Omaha, Nebr.).—Owner of station, R. J. Rockwell, 5019 Capitol Avenue.
WSVS (Buffalo, N. Y.).—Owner of station, Seneca Vocational School (city of Buffalo), 666 East Delavan Avenue.

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, 1926, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

LANGIN FIELD (Moundsville), W. Va.—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, 1926, and to the International List of Radiotelegraph Stations, published by the Berne Bureau]

S. C. 154.—Strike out all particulars.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

WYI, read *Burgess Field, Pa. (Uniontown)*; strike out all particulars following the call signal **NOLC**.

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]

BALTIMORE, Md. (3XI).—Owner of station, George E. Sterling, 1818 Chilton Street.
EATONTOWN, N. J. (2XAU).—Strike out all particulars.
HOLLYWOOD, CALIF. (6XAL-portable).—Read, *Los Angeles, Calif. (portable).*
LOS ANGELES, CALIF. (6XBA).—Owner of station, Echophone Manufacturing

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MISCELLANEOUS

CHANGES IN RADIO-DRAGON STATIONS

Cape Spencer Light Station, Alaska.—Characteristic changed to sound every 180 seconds; single dashes for 60 seconds; silent 120 seconds, thus:

— — — — —	Silent
—————	—————
60 seconds	120 seconds

Point Arguello Light Station, Calif.—This beacon will, as heretofore, sound its characteristic continuously during thick or foggy weather but will also sound in clear weather during the first 15 minutes of every odd hour from 5 p. m. to 7.15 a. m., one hundred and twentieth meridian time.

CHANGES IN FOREIGN STATIONS

Gibraltar Rock.—For the information of vessels equipped with a radiocompass it is announced that a 600-meter i. c. w. transmitter has been installed at North Front radio station, and Gibraltar Rock station's call signal (BYW) is used.

Portugal.—Lavadores station, located in latitude $41^{\circ} 08' 01''$ north, longitude $8^{\circ} 39' 57''$; call signal CTP now furnishes bearings to ships on request. A charge of 0.25 francs is made for each bearing. Wave length, 600 meters; range, 150 miles.

England.—On November 1 next the name of the coast station at Grimsby, call signal GKZ, will be changed to "Humber."

Ceylon.—The time signals from Colombo are now transmitted on 600 meters, i. c. w., in lieu of 600 meters, spark.

NEW LISTS OF RADIO STATIONS AVAILABLE

The list of Commercial and Government Radio Stations of the United States, edition June 30, 1926, containing a complete list of the broadcasting stations up to the date of issuance, is now available for distribution by the Superintendent of Documents, Government Printing Office, this city; price, 15 cents per copy. The Radio Service Bulletin, published monthly as a supplement to the above-named publication, may also be purchased from the Government Printing Office; price, 5 cents per copy; subscription price, 25 cents per year.

The list of Amateur Radio Stations of the United States, edition June 30, 1926, will probably be ready for distribution about November 1 next. This publication can also be obtained from the above-named office; price, 25 cents per copy.

VESSELS EQUIPPED WITH A RADIOCOMPASS

The following-named vessels were recently equipped with a radiocompass: *Joseph H. Frantz, Rayo, and Santa Luisa.*

FREE MEDICAL RADIO SERVICE RENDERED BY THE TROPICAL RADIO TELEGRAPH CO. AND THE UNITED FRUIT CO.

The United Fruit Co. announces that the free medical radio service, which it inaugurated on August 1, 1922, from its hospitals in the various countries of Central America and from the passenger ships in its service, is now available for ships at sea through an additional number of stations. The following is a list of radio stations of the Tropical Radio Telegraph Co. and of the United Fruit Co. through which this service may hereafter be obtained without charge, so far as these companies are concerned, by ships of all nationalities:

Radio station	Call letters	Radio station	Call letters
Boston, Mass.....	WBF	Puerto Barrios, Guatemala.....	UF
Miami, Fla.....	WAX	Managua, Nicaragua.....	UL
New Orleans, La.....	WNU	Bluefields, Nicaragua.....	UQ
Burrwood, La.....	WBW	Cape Gracias, Nicaragua.....	UW
Fort Morgan, Ala.....	WIO	Puerto Limon, Costa Rica.....	UX
Mobile, Ala.....	WNN	Almirante, Panama.....	UE
Swan Island, Caribbean Sea.....	US	Santa Marta, Colombia.....	UJ
Tegucigalpa, Honduras.....	UG		

Free medical radio service is also available through the Tela Railroad Co.'s radio station, call letters UC, Tela, Honduras, and through the Truxillo Railroad Co.'s radio station, call letters UA, Puerto Castilla, Honduras. Both of these stations may be reached through any station of the United Fruit Co. or of the Tropical Radio Telegraph Co. listed above.

All passenger ships in the United Fruit Co. service carry doctors, and free medical service may also be secured by radio from any of them by addressing a radiogram to "Ship's doctor" followed by the name of the steamship. The radio call letters of the steamships in the company's service can be obtained from either the list of Commercial and Government Radio Stations of the United States, or from the International List of Radio Telegraph Stations (Berne).

This free medical service is maintained primarily for the benefit of ships at sea which do not carry doctors. Should occasion require, however, the doctors of other ships may hold consultation by radio with the United Fruit Co.'s hospital staffs or with doctors on steamships in its service.

Radiograms requesting medical advice should be signed by the captain of the ship and should state briefly but clearly the symptoms of the person afflicted. Such radiograms, if intended for a United Fruit Co. hospital, should be addressed "Unifruiteco," followed by the name of the place where the hospital is located. United Fruit Co. hospitals giving this service are located at the following places, and also may be reached through any of the above-mentioned radio stations: Santa Marta, Colombia; Puerto Limon, Costa Rica; Almirante, Panama; Puerto Barrios, Guatemala.

This service may also be obtained at the hospital of the Tela Railroad Co., Tela, Honduras, and at the hospital of the Truxillo Railroad Co., Puerto Castilla, Honduras. Radiograms for these hospitals should be addressed "Telarailco" and "Truxailco," respectively.

Medical advice radiograms must be checked and send "DH Medico." Such radiograms will be given preference over all other radiograms, except SOS calls, throughout the radio service of the Tropical Radio Telegraph Co. and the United Fruit Co.

Physicians and surgeons comprising the medical staff of the above-mentioned hospitals are all duly qualified. In view of the fact, however, that this radio medical service to ships at sea is free and is given without opportunity for a personal examination of the patients, no responsibility whatsoever will be

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clans and surgeons giving the advice, nor shall any responsibility attach for errors or delays in the receipt of transmission of any radiogram sent or received in connection with this service.

LOST COMMERCIAL RADIO OPERATORS' LICENSES

Hereunder is a list of radio operators' licenses which have been reported to this bureau as having been lost. Should any of them be found, they should be returned to the bureau for cancellation. Inspectors and others concerned should see that lost licenses are not being used by unauthorized persons.

Name	Class	No.	Date lapsed	Port issued
Alexonis, Anthony J.	Second	4217	Apr. 3, 1925	Chicago.
Bauer, Carl A.	First	147	Dec. 7, 1925	Washington.
Burt, Frank C.	do.	14347	Oct. 23, 1925	New Orleans.
Callaway, James C.	do.	12310	Dec. 14, 1924	New York.
Collins, William D.	do.	15937	June 24, 1924	Do.
Cornelius, Yewell M.	do.	11118	Sept. 17, 1924	New Orleans.
Escher, Mason R.	do.	10234	July 23, 1925	New York.
Goodbee, Gordon W.	Second	2577	Jan. 19, 1924	New Orleans.
Guerin, Byron C., jr.	First	18153	Aug. 3, 1925	New York.
Gussman, Allen P.	do.	4590	Mar. 15, 1923	Seattle.
Hickmox, William H.	do.	6007	May 14, 1923	Detroit.
Holland, Maurice.	do.	13128	July 23, 1923	New York.
Hollister, Kenneth G.	do.	10591	Aug. 21, 1924	Seattle.
Jarrette, Vernon	Second	3003	Aug. 23, 1924	Baltimore.
Loore, Harry B.	First	14619	Sept. 10, 1925	New York.
Middleton, Charles	Second	4268	July 10, 1925	Chicago.
Moore, Paul J.	First	11163	Nov. 19, 1924	New Orleans.
Nembach, M. A.	do.	14677	Oct. 8, 1925	New York.
O'Rourke, Philip A.	do.	10977	July 28, 1924	Do.
Perat, Charles.	do.	12463	Sept. 11, 1924	Do.
Persell, Ralph M.	do.	15926	Apr. 18, 1926	Do.
Sibens, Harold	Second	4038	Mar. 19, 1925	Chicago.
Styer, Chester L.	First	14519	Sept. 23, 1925	New York.
Testa, Luke J.	do.	12277	Dec. 24, 1924	Do.
Tierney, Paul V.	Second	4348	Feb. 12, 1926	Chicago.
Varestani, William J.	First	12345	Dec. 12, 1924	New York.
Wallis, Arthur F.	Extra	64	Apr. 21, 1924	Do.
Wells, Irwin R.	First	13427	Feb. 24, 1925	Do.
Young, Karl M.	do.	6758	Nov. 24, 1924	Chicago.

STANDARD FREQUENCY STATIONS

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

As shown by the list of "constant frequency stations," there may be many stations not measured in the bureau's laboratory which maintain their frequencies just as constant as these. There is, of course, no actual guaranty that the stations named below will maintain the constancy shown, but the data indicate the high degree of confidence that can be placed in them. The transmitted frequencies from these stations can be utilized for standardizing frequency meters and other apparatus by the procedure given in Bureau of Standards Letter Circular No. 171, which may be obtained by a person having actual use for it upon application to

Station	Owner	Location	Frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since Aug. 25, 1926
						Per ct.	Per ct.
NBS	U. S. Navy.....	Annapolis, Md.....	17.50	4	20	0.2	0.3
WCI	Radio Corporation of America.	Barnegat, N. J.....	17.95	19	90	.1	.1
WGG	Do.....	Tuckerton, No. J., N. J.	18.50	57	265	.1	.2
WII	Do.....	New Brunswick, N. J.	21.50	17	125	.1	.0
WRT	Do.....	do.....	22.60	16	40	.1	(*)
WVA	U. S. Army.....	Annapolis, Md.....	100	18	157	.2	.2
NAA	U. S. Navy.....	Arlington, Va.....	112	11	61	.2	.2
WEAF	American Telephone & Telegraph Co.	New York, N. Y.....	610	21	136	.0	.0
WRC	Radio Corporation of America.	Washington, D. C.....	640	33	149	.1	.2
WJZ	Do.....	Bound Brook, N. J.....	650	4	14	.1	.1
NAA	U. S. Navy.....	Arlington, Va.....	690	4	26	.0	.0
WOY	General Electric Co.....	Schenectady, N. Y.....	700	39	179	.1	.0
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.....	900	37	51	.1	.1
KDEA	Do.....	East Pittsburgh, Pa.....	970	4	24	.1	.2
KDEA*	Do.....	do.....	4,711	4	13	.1	.1

* Not measured since Aug. 25.

* High-frequency telephone transmitting set.

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 close adherence to assigned 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.

Stations included in the following list employ a special device for controlling or checking their frequencies and fulfill two additional conditions: (1) The frequency calibration of the device is in agreement with the frequency standards of the Bureau of Standards; (2) the station has given evidence of following carefully a special procedure in the use of the device. The special devices for frequency regulation include automatic piezo control, piezooscillators, piezo-resonators, and frequency indicators. A frequency indicator is a special type of frequency meter (wave meter) so constructed as to give readings at only a single point or over a very narrow range of frequencies (not over 10 per cent). The usual frequency meter designed for measurements of frequencies over a wide range is not suitable for this purpose.

Stations not included in the list which use one of the special devices for frequency regulation are invited to communicate with the Bureau of Standards, giving details of the method of checking the frequency and information concerning the transmitting equipment which would have a bearing on the constancy of the radiated frequency.

The use of the piezooscillator for checking a station's frequency and the use of a frequency indicator are described, respectively, in Bureau of Standards Letter Circulars 186 and 180, which publications give, in addition, specifications for the construction of these devices. They are entitled, respectively, "Speci-

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transmitting stations." Either letter circular may be obtained by a person having actual use for it upon application to the Bureau of Standards.

Station	Owner	Location	Fra- quency (kilo- cycles)	Wave length (meters)	Apparatus for frequency regulation
KFRU	Stephens College.....	Columbia, Mo.....	600	492.7	Frequency indicator.
WOC	Palmer School of Chiro- practic.....	Davenport, Iowa.....	620	483.0	Piezoscillator.
WTIC	Travelers' Insurance Co.....	Hartford, Conn.....	630	475.0	Do.
WMAQ	Chicago Daily News.....	Chicago, Ill.....	670	447.9	Frequency indicator, type B.
KLDS	Reorganized Church of Jesus Christ of Latter- Day Saints.....	Independence, Mo.....	680	442.0	Frequency indicator.
WLW	Crosley Radio Corpora- tion.....	Harrison, Ohio.....	710	423.3	Frequency indicator and piezoscillator.
WCCO	Wahbeun-Crosby Co.....	Minneapolis-St. Paul, Minn.....	720	418.4	Piezoscillator.
WTAM	Willard Storage Battery Co.....	Cleveland, Ohio.....	770	390.4	Do.
WEAR	New Arlington Hotel Co.....	Hot Springs, Ark.....	800	374.8	Frequency indicator, type B.
WJJD	Loyal Order of Moose.....	Mooseheart, Ill.....	810	370.2	Piezoscillator.
KGO	General Electric Co.....	Oakland, Calif.....	820	365.2	Do.
WIAD	Frank P. Jackson.....	Waco, Tex.....	830	362.7	Frequency indicator, type B.
WWJ	Detroit News.....	Detroit, Mich.....	850	352.7	Do.
WLB	Beart, Roebuck & Co.....	Gretna, Ill.....	870	344.6	Piezoscillator.
KFAB	Nebraska Bulck Auto Co.....	Lincoln, Nebr.....	880	340.7	Do.
WKAQ	Radio Corporation of Puerto Rico.....	San Juan, P. R.....	880	340.7	Frequency indicator, type B.
KOA	General Electric Co.....	Denver, Colo.....	900	332.4	Piezoscillator.
WRAO	Ohio State University.....	Columbus, Ohio.....	1,020	293.9	Frequency indicator, type B.
KWOR	Harry F. Pear.....	Cedar Rapids, Iowa.....	1,060	277.5	Piezoscillator.
WFBQ	Wm. F. Gable Co.....	Altoona, Pa.....	1,060	277.6	Frequency indicator.
KFKA	Colorado State Teach- ers' College.....	Greeley, Colo.....	1,100	272.6	Piezoscillator.
WBAH	Purdue University.....	Lafayette, Ind.....	1,100	272.6	Do.
WOI	Iowa State College.....	Ames, Iowa.....	1,110	270.1	Automatic piezocontrol (checked with type B frequency indicator).
KFH	Hotel Laxon (Rigby- Gray Hotel Co.).....	Wichita, Kans.....	1,120	267.7	Frequency indicator, type B.
WENR	All American Radio Corporation.....	Chicago, Ill.....	1,130	263.3	Piezoscillator.
WCAD	St. Lawrence University.....	Canton, N. Y.....	1,140	263	Frequency indicator, type B.
WAAM	I. B. Nelson.....	Newark, N. J.....	1,140	263	Piezoscillator.
WAKC	World's Star Knitting Co.....	Bay City, Mich.....	1,150	260.7	Frequency indicator.
WOWO	Main Auto Supply Co.....	Fort Wayne, Ind.....	1,320	227.1	Piezoscillator.
WBBM	Atlas Investment Co.....	Chicago, Ill.....	1,330	226.4	Do.
WEBQ	Tate Radio Co.....	Harrisburg, Ill.....	1,330	225.4	Do.
KFVS	Hirsch Battery & Radio Co.....	Cape Girardeau, Mo.....	1,340	225.7	Frequency indicator type B.
WOK	Nottowood Radio Manufacturing Co.....	Hemewood, Ill.....	1,380	217.3	Piezoscillator.
WPDQ	Hiram L. Turner.....	Buffalo, N. Y.....	1,460	205.4	Frequency indicator, type B.

BIBLIOGRAPHY ON RADIO WAVE PHENOMENA AND MEASUREMENT OF RADIO FIELD INTENSITIES

The Bureau of Standards has just issued Letter Circular No. 207, Bibliography on Radio Wave Phenomena and Measurement of Radio Field Intensities. The references in this list include the important papers on these subjects from early years to the present. It is expected that persons using this bibliography will notify the bureau of any corrections or desirable additions, so that a revised edition may be issued. Copies may be obtained by persons having actual use

ESTABLISHMENT OF RADIO STANDARDS OF FREQUENCY BY THE USE OF A HARMONIC AMPLIFIER

A scientific paper just issued by the Bureau of Standards, entitled "Establishment of Radio Standards of Frequency by the Use of a Harmonic Amplifier," describes a method used by the Bureau of Standards in establishing radio standards of frequency. It consists in the "stepping up" from a known low frequency to a radio frequency by the use of harmonics. The known low frequency used as a fundamental is a 1,025-cycle tuning fork driven by an electron tube. The low-frequency output from the tuning fork is carried through an amplifier, which distorts it and produce harmonics. Any desired harmonic may be selected by tuning the amplifier to its frequency. This harmonic is then amplified to sufficient power to operate the frequency meter (wave meter) under standardization. By selecting different harmonics of the tuning fork the entire range of a frequency meter from about 10 to 4,000 kilo cycles (30,000 to 75 meters) may be obtained from one tuning fork of known frequency. Any fixed frequency generator such as a piezooscillator may be standardized by the use of the harmonic amplifier with an auxiliary device for determining the frequency of the audible beat note between a harmonic from the known tuning-fork frequency and the unknown piezooscillator frequency.

The auxiliary device used in determining the beat-note frequency between a harmonic of the amplifier and unknown source is a sonometer. It consists of steel piano wire mounted across two movable knife-edges with a known tension applied. The frequency at which the wire will vibrate may be computed from its mass, tension, and length. The beat-note frequency is applied to the wire through a telephone receiver. The wire vibrates when its frequency is equal to the frequency of the applied beat-note frequency, due to the attraction of the wire by the telephone magnet. Thus the frequency of the beat note may be obtained by computing the vibration frequency of the wire. Two audio frequencies may be compared very accurately by the use of the harmonic amplifier and sonometer.

This publication is Scientific Paper No. 530, Establishment of Radio Standards of Frequency by the Use of a Harmonic Amplifier, by C. B. Jolliffe and Miss Grace Hazen. It may be obtained for 10 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D. C.

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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- R113 Cartier, Gém. La Radiophonie et les phénomènes de propagation (suite). *QST Français et Radioélectricité*, 7, pp. 15-20; September, 1926.
- R113.1 Bidwell, C. C. Why signals fade. *Popular Radio*, 10, pp. 531-533; October, 1926.
- R113.2 Rukop, H. Neuere Ergebnisse in der drahtlosen Telegraphie mit kurzen Wellen. *Jahrb. d. Drahtlosen Telegraphie*, 28, pp. 41-50; 1926.
- R113.3 Smith-Rose, R. L., and Barfield, R. H. The cause and elimination of night errors in radio direction finding. *Jour. Inst. Elec. Engrs. (London)*, 64, pp. 831-843; August, 1925.
- R113.4 Breit, G., and Tuve, M. A. A test of the existence of the conducting layer. *Physical Review*, 28, pp. 544-575; September, 1926.
- R113.9 Esau, A. Über das Verhalten von Empfängern bei Polarisationsänderungen der Elektrischen Wellen (Fadingerscheinungen). *Jahrb. d. Drahtl. Teleg.*, 28, pp. 50-53; 1926.
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- R120 Gruszkowski, J. Étude des gaz occlus dans les triodes. *L'Onde Électrique*, 5, pp. 404-412; August, 1926.
- R131 Henney, K. How to measure your own tubes. *Radio Broadcast*, 9, pp. 499-503; October 1926.
- R132 Pearson, H. O. Wireless circuits in theory and practice. (Valve amplifiers.) *Wireless World and Radio Review*, 19, pp. 313-14; September 1, 1926.

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- R132.3 Mercier, M. Recherches sur les meilleures conditions de fonctionnement d'un amplificateur a résistances. *L'Onde Électrique*, 2, pp. 413-424; August, 1925.
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 R139 Chauvierre, M. La lampe à deux grilles. *QST Français et Radioélectricité*, 7, pp. 42-44; September, 1925.
 R139 Rowe, G. C. H. Lampe de réception a éléments multiples. *QST Français et Radioélectricité*, 7, pp. 28-31; September, 1925.
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 R153 Fromy, E. Les relais a arc. *L'Onde Électrique*, 3, pp. 379-400; August, 1925.

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- R214 Dawson, L. H. Examining quartz for oscillator use. *QST*, 10, pp. 25-28; September, 1925.
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