

DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

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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.	=Kilbourne & Clark Manufacturing Co.
R. C. A.	=Radio Corporation of America.
S. O. R. S.	=Ship Owners' Radio Service.
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.	=After operating company denotes that the change applies only to the List of Radio Stations of the United States.

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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, 1924, and to the International List of Radiotelegraph Stations published by the Berns bureau]

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Charleroi, Pa. ¹	WJBF	142	FX	X	West Penn Power Co.
Detroit, Mich. ²	WDYC	133	P	X	Detroit Yacht Club.
Yacutaga Beach, Alaska ³	KYJ	600, 700, 1,500	P	X	General Petroleum Corp.

¹ Loc. (approximately) O 80° 07' 00", N 40° 55' 00"; range, 30; system, composite v. t. telephone.

² Loc. O 82° 38' 25", N 4° 21' 05"; range, 130; system, composite v. t. telephone and telegraph.

³ Loc. (approximately) O 141° 30' 00", N 60° 00' 00"; range, 200; system, Federal arc.

Commercial ship stations, alphabetically by names of vessels

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

Name of vessel	Call signal	Rates	Service	Hours	Owner of vessel	Station controlled by—
Baymead	KFWY	8	PG	X	U. S. S. B.	R. C. A.
Barrington	KIDT	8	PG	X	do	Do.
Bathalam	KIQT	8	PG	X	do	Do.
Chickamauga	KFXA	8	PG	X	Pacific Tow Boat Co.	
Cockaponset	KOFN	8	PG	X	U. S. S. B.	
Mary ¹	KTOE	8	PG	X	A. H. Bull S. S. Co.	L. W. T. Co.
Susan A. Moran	KFWX	8	PG	X	Moran Towing & Transportation Co.	Do.
Winston-Salem	KUJS	8	PG	X	U. S. S. B.	

¹ Range, 200; system, L. W. T. Co., 1,000; w. l., 600, 700, 800.

Commercial land and ship stations, alphabetically by call signals

(b, ship station; c, land station)

Call signal	Name of station	Call signal	Name of station		
KFWX	Susan A. Moran	b	KTOE	Mary	b
KFWY	Baymead	b	KUJS	Winston-Salem	b
KFXA	Chickamauga	b	KYJ	Yacutaga Beach, Alaska	c
KIDT	Barrington	b	WDYC	Detroit, Mich.	c
KIQT	Bathalam	b	WJBF	Charleroi, Pa.	c
KOFN	Cockaponset	b			

Broadcasting stations, alphabetically by names of States and cities

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

State and city	Call signal	State and city	Call signal
Alabama: Montgomery	WIBZ	Michigan: Pontiac	WJR
California:		Minnesota: Minneapolis	WRHM
Big Bear Lake	KFXB	New Jersey: Red Bank	WJBI
Santa Maria	KFXC	New York:	
Upland	KFWC	New York	WLWL
Colorado:		Richmond Hill	WWGL
Colorado Springs	KFXF	Oregon: Portland	KFWV
Trinidad	KFBS	Philippine Islands: Baguio	KZUY
Illinois: Sycamore	WOCG	Utah: Logan	KFXD
Iowa:		Wisconsin:	
Shenandoah	KMA	Camp Lake	WCLO
Waterloo	KFXE	Milwaukee	WKAF

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Stations broadcasting market or weather reports, music, concerts, lectures, etc., alphabetically by call signals

Call signal	Location of station (address)	Owner of station	Power (watts)	Wave length	Frequency (kilo-cycles)
KFBS	Trinidad, Colo.	School District No. 1	15	238	1,230
KFXB	Big Bear Lake, Calif.	Bertram O. Heller	10	202.8	1,480
KFWC	Upland, Calif.	L. E. Wall	50	211.1	1,430
KFWV	Portland, Oreg., 385 East Fifty-eighth Street South.	Wilbur Jerman	5	212.6	1,410
KFXC	Santa Maria, Calif.	Santa Maria Valley R. R. Co.	100	369.7	1,430
KFXD	Logan, Utah	L. H. Strong (Packard Motor Co.)	10	205.4	1,460
KFXE	Waterloo, Iowa	Electrical Research & Manufacturing Co.	10	236	1,270
KFXF	Colorado Springs, Colo., 225 Hagerman Building.	Pikes Peak Broadcasting Co.	500	250	1,240
KMA	Sionsandob, Iowa	May Seed & Nursery Co.	500	252	1,190
KZUY	Hague, P. I., Outlook Drive	F. Johnson Elser	500	360	833
WBZA	Boston, Mass.	Westinghouse Electric & Manufacturing Co.	250	242	1,240
WCLO	Camp Lake, Wis.	C. E. Whitmore	50	221	1,300
WIBZ	Montgomery, Ala., 811 Adams Avenue.	Powell Electric Co.	10	281	1,300
WJBI	Red Bank, N. J., 63 Broad Street	Robert S. Johnson	250	218.8	1,370
WJR	Pontiac, Mich.	Jewett Radio & Phonograph Co.	1,500	518.9	580
WKAF	Milwaukee, Wis., 130 Second Street.	WKAF Broadcasting Co.	250	261	1,150
WLWL	New York, N. Y.	Missionary Society of St. Paul the Apostle.	1,000	288.3	1,040
WCCG	Sycamore, Ill., 108 West State Street.	Triple Alliance Radio Station	10	305.4	1,460
WRHM	Minneapolis, Minn.	Rosedale Hospital	50	252	1,190
WWGL	Richmond Hill, N. Y., 890 One hundred and twenty-fourth Street.	Radio Engineering Corporation	500	212.6	1,410

Special land stations, alphabetically by names of stations

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

Station	Call signal	Station controlled by—
Alabama: Auburn	5YB	Alabama Polytechnic Institute.
Arizona: Phoenix	6XBB	Nielsen Radio Supply Co., 311 North Central Avenue.
California:		
Hollywood (portable)	6XBR	Warner Bros. Motion Picture Studios, 5842 Sunset Boulevard.
Los Angeles	6XBA	K. M. Turner Radio Corporation, 1517 North Wilton Place.
Hawaii: Honolulu (portable)	6XBZ	Mutual Telephone Co.
Maine: Orono	1YA	University of Maine.
Michigan: Detroit	8XAR	George H. Phelps, 110 Rowena Street.
New Mexico: State College	5YA	New Mexico College of Agriculture and Mechanic Arts.
New York:		
Buffalo (portable)	8XAO	H. H. Howell, 54 Niagara Street.
Buffalo	8XAT	Federal Telephone Manufacturing Corporation, 1738 Elmwood Avenue.
South Schenectady	2XAC	General Electric Co.
Do	2XAD	Do.
Do	2XAW	Do.

Special land stations grouped by districts

Call signal	District and station	Call signal	District and station
1YA	First district: Orono, Me.		
2XAC	Second district:	6XBA	Sixth district:
2XAD	South Schenectady, N. Y.	6XBB	Los Angeles, Calif.
2XAW	Do.	6XBR	Phoenix, Ariz.
	Do.	6XBZ	Hollywood, Calif. (portable).
	Fifth district:		Honolulu, Hawaii (portable).
5YA	State College, N. Mex.	8XAO	Eighth district:
5YB	Auburn, Ala.	8XAR	Buffalo, N. Y. (portable).
		8XAT	Detroit, Mich.
			Buffalo, 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, 1925, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

- ANVIK, ALASKA.—Strike out all particulars.
 BOSTON, MASS. (WBF).—W. l., 600, 690, 2,025, 2,350.
 BUTLER, PA.—System, Westinghouse v. t. telegraph; w. l., 1,199.
 CASPER, WYO.—System, composite v. t. telegraph; w. l., 140.
 DALLAS, TEX. (KVP).—Loc. (approximately) O 96° 47' 00", N 32° 46' 00".
 DETROIT, MICH.—System, General Electric Co. v. t. telegraph; w. l., add 715.
 EAST MORICHES, N. Y.—Loc. O 72° 46' 05", N 40° 45' 00"; w. l., 600, 1,800, 2,250, 2,478.
 HECETA ISLAND, ALASKA.—Station controlled by Nakat Packing Corp.
 HIDDEN INLET, ALASKA.—Station controlled by Nakat Packing Corp.
 MARSHVILLE, MICH.—System, General Electric Co. v. t. telegraph; w. l., 715, 1,621.
 MOUNT BAKER (moored vessel near Naknek, Alaska).—Read Mount Baker (moored vessel near Ugashik, Alaska; loc. (approximately) O 157° 35' 00", N 57° 34' 00").
 NEW YORK, N. Y. (WCG).—System, I. W. T. Co. arc, R. C. A. v. t. telegraph and R. C. A. spark, 1,000; w. l., add 2,478.
 NUSHAGAK BAY, ALASKA.—Read Nushagak, Alaska; loc. O 158° 32' 00", N 58° 52' 00"; w. l., 600, 625, 706, 1,600.
 PALM BEACH, FLA.—Hours, N.
 SELDOVIA, ALASKA.—W. l., 550, 600, 625.
 SHARON, PA.—W. l., 1,817.
 TAMPA, FLA.—Hours, 6 a. m.—6 p. m.
 TUCKERTON, N. J. (WSC).—W. l., 600, 650.
 UNION BAY, ALASKA.—W. l., 600, 625, 1,610, 1,750; station controlled by Nakat Packing Corp.
 WATERFALL, ALASKA.—Station controlled by Nakat Packing Corp.
 WYOMING, PA.—W. l., 1,199.

COMMERCIAL SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS

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

- ADMIRAL RODMAN.—W. l., 600, 706, 800.
 ADMIRAL SCHLEY.—R. C. A. spark, 1,000 and R. C. A. v. t. telephone; w. l., 600, 706, 800, 870.
 ALA.—System, Navy-R. C. A., 1,000; w. l., 450, 600, 706, 800.
 ALABAMA (WFB).—W. l., 715, 875.
 ALAMEDA.—W. l., 600, 706, 800.
 ALASKA.—W. l., 600, 706, 800.
 ALGIC.—Station controlled by R. C. A.
 AMAZON.—Station controlled by I. R. T. Co.
 ANNETTA.—Range, 200; system, K. & C., 1,000; w. l., 600, 706, 800.
 ARCTURUS.—Hours, X; U. S. S. B. owner of vessel.
 ARGON.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800.
 BAKERSFIELD.—Station operated and controlled by R. C. A.
 BELLFLOWER.—System, Navy-W. S. A. Co., 1,000; w. l., 450, 600, 706, 800.
 BENSON FORD.—W. l., 600, 715, 1,875.
 BERT E. HANEY.—W. l., 600, 706, 800.
 BIDWELL.—W. l., 600, 706, 800, 1,800, 2,000, 2,100, 2,400.
 BIENVILLE.—Name changed to El Boston.
 BRILLIANT.—Name changed to Richfield; Richfield Oil Co. owner of vessel.
 CAROLINA.—W. l., 715.
 CAYO MAMBI.—W. l., 600, 706, 800.
 CHARLES L. HUTCHINSON.—Station controlled by I. R. T. Co.
 CITY OF GRAND RAPIDS.—W. l., 715, 875; Goodrich Transit Co. owner of vessel.
 CITY OF ST. JOSEPH (KFIT).—W. l., 715; Goodrich Transit Co. owner of vessel.
 CLEMENT SMITH.—W. l., 600, 706, 800.
 COTOPAXI.—W. l., 600, 706, 800.
 CROOK.—W. l., 600, 706, 800.

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DELFINA.—Baltimore Insular Line owner of vessel.
 DEWEY.—W. l., 600, 706, 800.
 DICKENSON.—W. l., 600, 706, 800.
 DIXIANO.—W. l., 600, 706, 800.
 DOROTHY LUCKENBACH.—W. l., 600, 706, 800.
 DOROTHY WINTERMOTE.—W. l., 600, 706, 800; station controlled by I. W. T. Co.
 DURANGO.—W. l., 600, 706, 800, 2,100, 2,400.
 EASTERN GLADE.—W. l., 600, 706, 800, 1,800, 2,100, 2,400.
 EASTERN STATES.—W. l., 715, 800, 875.
 ECUADOR.—Panama Mail S. S. Co. owner of vessel.
 EL ABETO.—W. l., 600, 706, 800.
 EL CEDRO.—W. l., 600, 706, 800.
 EL CICUTA.—W. l., 600, 706, 800.
 EL SEGUNDO.—Range, 150; system, R. C. A. v. t. telegraph; w. l., 600, 706, 800, 875.
 E. R. KEMP.—W. l., 600, 706, 800.
 ESTHER WLEMS.—System, Navy-R. C. A., 1,000; w. l., 600, 706, 800.
 E. T. BEDFORD.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 F. A. WARNER.—W. l., 600, 706, 800.
 FEDERAL.—Station controlled by R. C. A. (U. S. L.).
 FLORENCE OLSON.—W. l., 600, 706, 800.
 FRANK LYNCH.—Station controlled by I. W. T. Co.
 FREEPORT SULPHUR No. 1.—W. l., 600, 706, 800.
 G. A. A. TOMLINSON.—Station controlled by I. R. T. Co.
 GEORGE C. GREER.—W. l., 600, 706, 800.
 G. J. GRAMMER.—Station controlled by owner of vessel.
 GOLD SHELL.—W. l., 600, 706, 800.
 GOVERNOR JOHN LIND.—Baltimore Insular Line owner of vessel; station controlled by R. C. A.
 HAHAIRA.—W. l., 600, 706, 800.
 HALF MOON.—Station controlled by R. C. A. (U. S. L.).
 HALSEY.—W. l., 600, 706, 800, 1,800, 2,100, 2,400.
 HANLEY.—W. l., 600, 706, 800, 1,800, 2,100, 2,400; station controlled by I. W. T. Co.
 HILTON.—W. l., 600, 706, 800.
 H. W. BAXTER.—System Navy-R. C. A. 1,000.
 ISAAC T. MANN.—W. l., 600, 706, 800.
 JAMES E. FERRIS.—Station controlled by I. R. T. Co.
 JAMES MCGEE.—W. l., 600, 706, 800.
 JAMES P. WALSH.—Station controlled by I. R. T. Co.
 J. FLETCHER FARRELL.—W. l., 600, 706, 800.
 J. J. SULLIVAN.—Station controlled by I. R. T. Co.
 JOHN S. MANUEL.—Station controlled by I. R. T. Co.
 JOHN STANTON.—Station controlled by I. R. T. Co.
 JOSEPH G. BUTLER, jr.—Station controlled by I. R. T. Co.
 JOSEPH R. PARROTT.—W. l., 600, 706, 800.
 JUNIATA (WCB).—W. l., 715, 800, 875.
 KERMIT.—W. l., 450, 600, 706, 800.
 LAKE GUNNI.—Lake Gunni Navigation Co. owner of vessel.
 LATOUCHE.—W. l., 600, 706, 800.
 LENAPE.—W. l., 600, 706, 800.
 LUBRICO.—W. l., 600, 800, 1,800, 2,100, 2,400.
 LURLINE.—W. l., 600, 706, 800.
 MACKINAC.—W. l., 600; station controlled by owner of vessel.
 MACOM.—W. l., 600, 706; City of New York, department of plant and structures owner of vessel.
 MAGMERIC.—W. l., 600, 706, 800.
 MAIDEN CREEK.—W. l., 450, 600, 706, 800.
 MAINE.—Station controlled by I. W. T. Co.
 MAITLAND No. 1.—W. l., 715, 875.
 MAJOR WHEELER.—W. l., 600, 706, 800; Baltimore Insular Line owner of vessel.
 MANITOU.—Range, 150; system, Navy, 1,000; w. l., 715, 875.
 MARTIN MULLEN.—Station controlled by I. R. T. Co.
 MARY LUCKENBACH.—System, R. C. A., v. t. telegraph; w. l., 450, 600, 706, 800, 875.
 MAUNLANI.—W. l., 600, 706, 800.

- MONTEOLITE.**—System, Navy-K. & C., 1,000; w. l., 600, 706, 800; Standard Oil Co. of Calif. owner of vessel.
MOUNT CLINTON.—Name changed to Maunalei; w. l., 600, 706, 800; station controlled by F. T. Co.
NEW JERSEY.—W. l., 600, 706, 800.
NEW YORK (WJK).—W. l., 600, 706, 1,250, 1,800.
ONEIDA (KYP).—W. l., 600, 706, 800; service, PG; rates, 8 cents per word.
OREGONIAN.—Range, 200; system, Telefunken, 1,000; w. l., 600, 706, 800; station controlled by owner of vessel.
PAUL H. HARWOOD.—W. l., 600, 706, 800.
PAWNEE (KFTL).—Station controlled by R. C. A.
PEARL SHELL.—W. l., 600, 706, 800.
PERFECTION.—Name changed to Bulko; Bulko S. S. Corp. owner of vessel.
PERSIAN.—W. l., 600, 706, 800.
PETER KERR.—W. l., 600, 706, 800.
PHYLLIS.—System, Navy-R. C. A., 1,000; w. l., 600, 706, 800.
POMONA.—W. l., 600, 706, 800.
QUISTCONCK.—Station controlled by R. C. A. (U. S. L.).
RADNOR.—Station controlled by R. C. A. (U. S. L.).
ROBERT E. HOPKINS.—W. l., 600, 706, 800.
ROBIN HOOD.—W. l., 600, 706, 800.
ROMAGNE.—W. l., 600, 706, 800.
ROOSEVELT.—W. l., 600, 706, 800; Washington Tug & Barge Co. owner of vessel.
ST. ANTHONY.—Station controlled by R. C. A.
SANTA ANA (WBX).—W. l., 600, 706, 800, 875.
SANTA ELISA.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
SANTA PAULA.—Name changed to Montanan, call signal changed to WKN.
SEANDBEE.—Station controlled by I. R. T. Co.
SEINER.—W. l., 600, 706, 800.
SELMA CITY.—W. l., 450, 600, 706, 800.
SEMINOLE.—Range, 300; system, I. W. T. Co. arc; w. l., 600, 706, 800, 1,800, 2,100, 2,400; station controlled by I. W. T. Co.
SENECA.—W. l., 600, 706, 750, 800, 900; Wilmington Terminal Co. owner of vessel; station controlled by R. C. A.
SHREVEPORT.—System, Navy-K. & C., 1,000; w. l., 600, 706, 800; Cities Service Refining Transport Co. owner of vessel.
SILVERADO.—W. l., 600, 706, 800.
SKYLARK II.—W. l., 115.
SOLITAIRE.—Range, 200; w. l., 600, 706, 800.
SOUTHERN CROSS.—System, Federal arc and Navy-R. C. A., 1,000; w. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
SPRAY III.—W. l., 110.
STEEL NAVIGATOR.—W. l., 450, 600, 706, 800.
SURICCO.—W. l., 600, 706, 800.
SWIFTSURE.—System, I. W. T. Co. arc; w. l., 600, 800, 1,800, 2,100, 2,400; New England Oil S. S. Co. owner of vessel.
TEJON.—W. l., 600, 706, 800.
THE HARVESTER.—System, R. C. A., v. t. telegraph; w. l., 715, 800, 875.
TULSA.—W. l., 600, 706, 800.
TURRIALBA.—W. l., 600, 706, 800.
T. W. ROBINSON.—Range, 150; system, Cutting & Washington, 1,000 and composite v. t. telegraph; w. l., 715, 875, 1,800; rates, Great Lakes service, 4 cents per word.
WALTER D. MUNSON.—W. l., 600, 706, 800.
WARRIOR.—System, R. C. A. v. t. telegraph.
W. D. ANDERSON.—W. l., 600, 706, 800.
WESTERN STATES.—W. l., 715, 800, 875.
WEST HIMROD.—System, Navy-R. C. A., 1,000; w. l., 600, 706, 800.
WEST ISON.—System, Navy-K. & C., 1,000; w. l., 600, 706, 800.
WEST KEDRON.—Station controlled by R. C. A.
WEST WAUNA.—System, Navy-R. C. A., 1,000; w. l., 450, 600, 706, 800, 875.
W. H. McGEAN.—Station controlled by I. R. T. Co.
W. H. TILFORD.—W. l., 600, 706, 800.
WILHELMINA.—System, Westinghouse v. t. telegraph; w. l., 600, 706, 800, 1,800, 2,100, 2,400.
WILSON & DUNN.—Station controlled by I. R. T. Co.

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WYTHEVILLE.—W. l., 450, 600, 700, 800; hours, N.
Strike out all particulars of the following-named vessels: F. B. Squire, Philadelphia, Progress, Westland (KDOY).

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

KDRV, read Maunalei; KFSL, read El Coston; KLJ, read Nushagak, Alaska; KTI, read Richfield; KTN, read Bulko; WBQ, changed to WKN, read Montanan; strike out all particulars following the call signals KDOY, KFSD, KKP, KSM, WFU.

BROADCASTING STATIONS, BY CALL SIGNALS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 20, 1925]

KFAE (Pullman, Wash.).—Call signal changed to KWSC.
KFBL (Everett, Wash.).—Power, 100.
KFDJ (Corvallis, Oreg.).—Power, 500.
KFJR (Portland, Oreg.).—Power, 50.
KFMQ (Fayetteville, Ark.).—Power, 750.
KFMX (Northfield, Minn.).—Power, 500.
KFOA (Seattle, Wash.).—Power, 1,000.
KFPG (Los Angeles, Calif.).—Owner of station, K. M. Turner Radio Corp. (Oliver S. Garretson), 1517 North Wilton Street; power, 250.
KFQH (Burlingame, Calif.).—Owner of station, Burlingame Chamber of Commerce (Albert Sherman).
KFUL (Galveston, Tex.).—Power, 50.
KFVP (Hollywood, Calif.).—Call signal changed to KNRC.
KFVI (Houston, Tex.).—W. l., 240; fy. kc., 1,250.
KFVR (Denver, Colo., near).—W. l., 244; fy. kc., 1,230.
KFWA (Ogden, Utah).—Power, 100.
KGB (Tacoma, Wash.).—Power, 100.
KNX (Los Angeles, Calif.).—Owner of station, Los Angeles Evening Express.
KOA (Denver, Colo.).—Power, 5,000.
KTAB (Oakland, Calif.).—Power, 500; w. l., 240; fy. kc., 1,250.
KWKH (Shreveport, La.).—Change to Kennonwood, La.; power, 500.
KYW (Chicago, Ill.).—Power, 2,000.
WBBL (Richmond, Va.).—Power, 150.
WCAU (Philadelphia, Pa.).—Owner of station, Universal Broadcasting Co. (Durham & Co.).
WCLS (Joliet, Ill.).—Power, 150; owner of station, Harold M. Couch.
WCX (Detroit, Mich.).—Change to Pontiac, Mich.; power, 1,500.
WEAF (New York, N. Y.).—Power, 4,500.
WEAR (Cleveland, Ohio).—Power, 750.
WEBK (Grand Rapids, Mich.).—Power, 100.
WENR (Chicago, Ill.).—Power, 1,000.
WFBQ (Raleigh, N. C.).—Call signal changed to WRCO; power, 100.
WGBM (Providence, R. I.).—Power, 30.
WGBR (Marshfield, Wis.).—Owner of station, George S. Ives, 731 West Fifth Street.
WGBU (Miami, Fla.).—Change to Fulford-by-the-Sea, Fla.; w. l., 278; fy. k. 1,080.
WGBW (Spring Valley, Ill.).—Owner of station, Valley Theatre.
WGY (Schenectady, N. Y.).—Power, 3,000.
WHBJ (Fort Wayne, Ind.).—Power, 50.
WHO (Des Moines, Iowa).—Power, 5,000.
WIBD (Joliet, Ill.).—W. l., 202.6; fy. kc., 1,480.
WIBQ (Chicago, Ill.).—Power, 1,000.
WJAD (Waco, Tex.).—Owner of station, Frank P. Jackson.
WJAZ (Chicago, Ill.; portable).—Call signal changed to WSAX.
WMCA (New York, N. Y.).—Change to Hoboken, N. J.
WNAV (Knoxville, Tenn.).—Call signal changed to WNOX; w. l., 268; fy. kc., 1,120.
WODA (Paterson, N. J.).—Owner of station, O'Dea Temple of Music; power, 100.
WOI (Ames, Iowa).—Power, 750.
WOK (Chicago Heights, Ill.).—Power, 5,000.
WORD (Batavia, Ill.).—Power, 5,000.
WQAM (Miami, Fla.).—W. l., 263; fy. kc., 1,140.
WRAX (Gloucester City, N. J.).—Power, 500.
WBRG (Birmingham, Ala.).—Power, 50.

WRK (Hamilton, Ohio).—Power, 100.
 WSB (Atlanta, Ga.).—Power, 1,000.
 WSY (Auburn, Ala.).—Call signal changed to WAPI; w. l., 248; fy. ke., 1,210.
 WTAW (College Station, Tex.).—Power, 500.
 Strike out all particulars of the following-named stations: KFQY (Belden, Nebr.); KFRM (Fort Sill, Okla.); KFUY (Butte, Mont.); KFVC (Camden, Ark.); KFVK (Sacramento, Calif.); KFVL (Vancouver, Wash.); WABN (La Crosse, Wis.); WABU (Camden, N. J.); WDAH (El Paso, Tex.); WFBN (Bridgewater, Mass.); WGBY (New Lebanon, Ohio); WHBV (Columbus, Ga.); WIBE (Martinsburg, W. Va.); WIBL (Chicago, Ill., portable); WSAG (St. Petersburg, Fla.).

GOVERNMENT LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS

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

KEY WEST, FLA.—Strike out all particulars of RC station.

SPECIAL LAND STATIONS, BY NAMES OF STATIONS

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

MEDFORD HILLSIDE, MASS. (1XE).—Station controlled by American Radio & Research Corp. (Carl F. Woods, receiver).

Strike out all particulars of the following-named stations: Chattanooga, Tenn. (5XAT); Dayton, Ohio (8XAK); Macon, Ga. (4XL); Mason, Ohio (8XAA); Orono, Me. (1XAH); San Diego, Calif., portable (6XN); Santa Rosa, Calif. (6XB); Tacoma, Wash. (7XV); Vermillion, S. Dak. (9XBP).

NEW LIST OF RADIO STATIONS

The annual list of Commercial and Government Radio Stations of the United States, edition June 30, 1925, is now available for distribution by the Superintendent of Documents, Government Printing Office, Washington, D. C., price 15 cents per copy. This publication contains a complete list of all commercial, Government, broadcasting, and special land stations.

The annual list of Amateur Radio Stations of the United States, edition June 30, 1925, will probably be ready for distribution about the middle of this month. This publication, which contains a complete list of all amateur and special land stations may also be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 25 cents.

Remittances for these publications should not be forwarded to the Bureau of Navigation or to any of the field offices of the bureau.

NEW RADIO FOG SIGNALS TO BE ESTABLISHED

About October 5, this year, there will be established at South Pass West Jetty Range Front Light Station, La., a radio fog signal. Characteristic: To sound every 120 seconds; groups of 2 dashes repeated for 60 seconds, silent 60 seconds, thus:

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

The station will transmit radio fog signals during thick or foggy weather, on a wave length of 1,000 meters, also daily in clear weather from 9 to 9.30 a. m. and from 3 to 3.30 p. m. (ninetieth meridian time). Location O 89° 08' 22", N 28° 59' 25".

About October 2, this year there will be established at Galveston Jetty Light Station, Tex., a radio fog signal. Characteristic: To sound every 105 seconds; one dash repeated for 60 seconds; silent 45 seconds, thus:

— — — — — etc. Silent
 60 seconds. 45 seconds.

The station will transmit radio fog signals during thick or foggy weather, on a wave length of 1,000 meters, also daily in clear weather from 9 to 9.30 a. m. and from 3 to 3.30 p. m. (ninetieth meridian time). Location O 94° 41' 31" N

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CHANGE IN RATES FOR GERMAN STATIONS

Since July 1, this year, the rate for general public service stations of Germany has been 40 centimes per word, no minimum. The minimum charge of 4 francs per radiogram for German ship stations was also abolished on July 1.

CHANGE IN LAND LINE RATES FOR BRAZIL

The rate for radiograms transmitted by the land station, Fernando de Noronha, sent on the cables of the South America Cable Co. and of the Western Telegraph, and originating or destined to telegraphic bureaus of Brazil, is 1 franc per word, no minimum. This rate became effective July 1, this year.

HOURS OF OPERATION OF ARUBA, CURACAO, STATION

The hours of operation of this station are as follows: Week days from 8 a. m. to 8 p. m. and on holidays from 8 a. m. to 12 noon and from 2 p. m. to 6 p. m., local time.

DISTRESS CALLS

The coast station Awarua, New Zealand, now maintains a permanent "listening in" service for distress and other urgent calls from ships.

NEW STATION OPENED IN CHINA

The Chinese Government Radio Administration announces that the radio station in the British concession at Tientsin was opened to general public service on April 15, this year. The range is such that communication with all Chinese radio stations and with ships at sea is secured. The calling signal is XOL; wave length, 750 to 1,000 meters; hours, day and night; rate, ship service, 50 centimes per word (gold). Heretofore radio messages from ships bound to or from Tientsin have had to be forwarded to Tientsin by telegraph from other points.

SIMULTANEOUS WORKING ON WAVE LENGTHS OF 2,100 AND 2,400 METERS BY DEVIZES (BRITISH) STATION

This station (call signal GKU) has been fitted with a second set of transmitting and receiving apparatus, using a wave length of 2,400 meters. This set will be used, in addition to the 2,100-meter set, daily from 09.00 to midnight (G. M. T.) (including the period of 35 to 45 minutes past each hour when working on 2,100 meters is suspended). The station is capable of exchanging traffic with two ships simultaneously between 09.00 and midnight (G. M. T.), and ships calling Devizes on either 2,100 meters or 2,400 meters during those hours may expect a reply on the wave length used for calling. Normally this station will call ships on the 2,100 meters wave, except between 35 and 45 minutes past each hour (G. M. T.), when the wave length of 2,400 meters only will be used. Operators are reminded that Devizes is a duplex station, and that consequently transmission can be interrupted at any moment if desirable.

RINELLA (MALTA) STATION WEATHER BULLETINS DISCONTINUED

On July 13, this year, the weather bulletins transmitted from Rinella, call letters BYZ, at 09.00 and 21.00 G. M. T. were discontinued. Vessels requiring meteorological information are advised to use the synoptic bulletins broadcast from Calafra radio station, call letter GHA, on 4,800 meters, C. W., at 07.35, 13.35, and 18.35 G. M. T. The location of Calafra is latitude 35° 48' 55" N., longitude 14° 32' 10" E.

NEW INSTALLATIONS OF RADIOCOMPASS

The following-named vessels have been equipped with radiocompass: *La Purissima* (KQVD) *Venetia* (WQV) *J. R. Gordon* (KQMI)

REGULATIONS REGARDING THE USE OF RADIO BY FOREIGN WARSHIPS IN BRITISH PORTS

The use of radio by foreign warships and service aircraft accompanying them in harbors of Great Britain and Northern Ireland as finally approved by the British Government are as follows:

A. Foreign men-of-war and service aircraft accompanying them lying in a naval port, or in any harbor which is close to a naval port, shall obtain permission from the senior naval officer at the naval port to use their wireless telegraphy or telephony apparatus, stating system, wave lengths, and times of transmission proposed.

B. Foreign men-of-war and service aircraft accompanying them lying in any harbor which is not close to a naval port shall conform to the following regulations:

I. Transmission on 600 meters is forbidden, except for the purpose of making or answering signals of distress.

II. Interference with naval, army, or air force signaling, or with any fixed shore station, must be avoided.

III. Transmission must be discontinued on request from (1) any naval authority, (2) the port authorities, (3) any fixed shore station.

IV. Protracted signaling, using apparatus transmitting other than pure continuous waves, must be avoided.

V. If there is a British or Dominion fleet or warship lying in the harbor, the senior naval officer should be consulted.

List of broadcasting stations transmitting crop and market reports and weather forecasts

[C, crop and market reports; W, weather forecasts]

Location	Call signal	Service	Location	Call signal	Service
Alabama: Auburn.....	WMAV	C., W.	Kentucky: Louisville.....	WHAS	C., W.
Arizona: Phoenix.....	KFAD	W.	Louisiana: New Orleans.....	WSMB	C., W.
Arkansas:			Maryland:		
Fayetteville.....	KFMQ	C.	Baltimore.....	WCBM	W.
Hot Springs.....	KTIS	W.	Do.....	WGBA	W.
California:			Massachusetts:		
Eureka.....	KFVU	W.	Boston.....	WNAC	C., W.
Fresno.....	KMJ	W.	Medford Herald.....	WARC	C., W.
Los Angeles.....	KFI	W.	Springfield.....	WBZ	C., W.
Do.....	KHJ	W.	Michigan:		
Oakland.....	KGO	C., W.	Detroit.....	WCX	C., W.
Do.....	KLX	C., W.	Do.....	WWJ	C., W.
San Francisco.....	KPO	W.	East Lansing.....	WKAR	W.
Do.....	KUO	C.	Escanaba.....	WEAK	W.
Colorado:			Grand Rapids.....	WBDC	W.
Denver.....	KLZ	W.	Do.....	WBEK	W.
Do.....	KOA	C., W.	Houghton.....	WWAO	W.
Connecticut:			Lansing.....	WREO	W.
Hartford.....	WTIC	W.	Minnesota:		
Mansfield.....	WCAC	W.	Breckenridge.....	KFUJ	W.
District of Columbia: Wash- ington.....	WRC	W.	Minneapolis-St. Paul.....	WCCO	C., W.
Florida: Tampa.....	WDAE	W.	Welcome.....	KFVN	W.
Georgia: Atlanta.....	WSB	C., W.	Missouri:		
Idaho: Boise.....	KFAU	W.	Jefferson City.....	WOS	C., W.
Illinois:			Kansas City.....	WDAF	W.
Chicago.....	KYW	C., W.	Do.....	WHB	C., W.
Do.....	WAAF	C., W.	St. Louis.....	KSD	C., W.
Do.....	WHT	W.	Do.....	WEW	C., W.
Do.....	WLS	C., W.	Montana:		
Do.....	WOK	W.	Havre.....	KFBB	C., W.
La Salle.....	WJBC	W.	Missoula.....	KUOM	W.
Indiana:			Nebaska:		
Evansville.....	WGBF	W.	Hastings.....	KFKX	C.
West Lafayette.....	WBAA	C., W.	Lincoln.....	WCAJ	W.
Urbana.....	WRM	C.	Do.....	WFAV	C., W.
Iowa:			Norfolk.....	WJAG	C., W.
Ames.....	WOI	C., W.	Omaha.....	WAAW	C.
Davenport.....	WOC	C., W.	Do.....	WOAW	W.
Des Moines.....	WHO	W.	University Place.....	WCAJ	C.
Shenandoah.....	KFNF	C., W.	New Jersey:		
Sioux City.....	WEAU	C., W.	Newark.....	WAAM	C.
Kansas:					

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List of broadcasting stations transmitting crop and market reports and weather forecasts—Continued

Location	Call signal	Service	Location	Call signal	Service
New York:			Pennsylvania—Continued.		
Buffalo.....	WGR	C., W.	Pittsburgh.....	KDKA	C., W.
Canton.....	WCAD	C., W.	Scranton.....	WQAN	W.
Lockport.....	WMAK	C., W.	Rhode Island:		
New York.....	WEAF	C., W.	Providence.....	WEAN	W.
Do.....	WHN	C.	Do.....	WJAR	W.
Do.....	WJZ	C., W.	South Carolina:		
Do.....	WNYC	C., W.	Charleston.....	WBBY	C.
Richmond Hill.....	WAHG	W.	Clemson College.....	WSAC	O.
Rochester.....	WHAM	C., W.	South Dakota:		
Schenectady.....	WGY	C., W.	Rapid City.....	WCAT	C., W.
Syracuse.....	WFBL	W.	Yankton.....	WNAX	C., W.
North Carolina:			Tennessee: Memphis.....	WMO	C., W.
Charlotte.....	WBT	C., W.	Texas:		
Raleigh.....	WRCO	W.	Austin.....	WCM	C., W.
North Dakota:			College Station.....	WTAW	C.
Devils Lake.....	KDLR	W.	Dallas.....	WFAA	C., W.
Fargo.....	WDAY	C., W.	Do.....	WRR	W.
Do.....	WPAK	C., W.	Fort Worth.....	WBAP	C., W.
Grand Forks.....	KFJM	C.	Houston.....	KFVI	W.
Ohio:			Do.....	KPRC	W.
Cleveland.....	WEAR	C., W.	Do.....	WEAY	C.
Columbus.....	WBAV	C., W.	Orange.....	KFGX	W.
Do.....	WEAO	C., W.	San Antonio.....	WOAI	W.
Harrison.....	WLW	C., W.	Utah: Salt Lake City.....	KDYL	C., W.
Oklahoma:			Virginia: Norfolk.....	WTAR	C., W.
Norman.....	WNAD	W.	Washington:		
Oklahoma.....	WKY	C.	Seattle.....	KFOA	W.
Oregon:			Do.....	KPQX	W.
Cornwallis.....	KFDJ	C.	Wisconsin:		
Portland.....	KPEC	C., W.	Fond du Lac.....	KFIZ	C., W.
Do.....	KGW	C., W.	La Crosse.....	WABN	W.
Pennsylvania:			Madison.....	WHIA	W.
Altoona.....	WFBG	W.	Milwaukee.....	WHAD	W.
Lancaster.....	WBBC	C., W.	Do.....	WBOE	W.
Philadelphia.....	WFI	C.	Osseo.....	WTAQ	W.
Do.....	WIP	C., W.	Stevens Point.....	WLBL	C., W.
Do.....	WOO	W.			

LIST OF FOREIGN BROADCASTING STATIONS

The following list of broadcasting stations is compiled from information submitted by consular officers and representatives of the Department of Commerce stationed in foreign countries. Attention is called to the fact that in the case of certain countries the lists have recently been revised by an officer stationed there. These revisions were submitted in response to a request sent out by the electrical equipment division and are based on the latest complete official information obtainable from Government agencies recording broadcasting stations. Such countries are indicated in this list by statements to that effect.

In accordance with this information there are 356 broadcasting stations now operating outside the United States, as compared with 566 stations listed by the radio division of the Bureau of Navigation, in the United States and possessions. Five stations in noncontiguous American territories are listed under both classifications. An asterisk (*) preceding the power of a station indicates that there is a doubt as to whether the power given is input or antenna measurement. No mark indicates antenna measurement, while input is indicated by a dagger (†).

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
AUSTRIA:				
Bregenz.....	Projected (relay)			
Graz.....	Oesterreichischer Radioverkehrs Gesellschaft.		404	*500
Innsbruck.....	Projected (relay)			
Klagenfurt.....	do			
Linz.....	do			
Salzburg.....	do			
Vienna.....	do			

List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
BELGIUM: Brussels	Radio Belgique Co.	(1)	265	1,600
CZECHOSLOVAKIA:				
Bratislava	Projected (relay)			500
Brunn		OKB	1,800	1,000
Do	Projected, to replace above station	OKB	1,800	1,000
Prague-Stranice		OKP	530	500
Do	Projected, to replace above station	OKP	513	5,000
Kocice	Projected			500
Ushocof	Projected (relay)			500
DENMARK:				
Hjorring	Relay		1,250	
Lynby	Danish State Telegraph System	OXE	2,400	2,500
Do	Danish Government		775	600
Odense	Relay		950	
Ryvang	Ministry of War		1,150	1,000
FINLAND:				
Helsingfors	Civil Guards of Finland			
Do	Youths' Society		300	*250
Skatudden	Military station	(2)	420	*1,000
Tammerfors	Nuoren Volman Liiton Radioyhdistys	3NB	300	*250
FRANCE:				
Abbeville			900	
Agen				
Bordeaux	Lafayette Station			
Dijon		FND	900	
Issy-sur-Moulinsaux	Ministry of Posts		1,600	
Lille	Coupleux Freres			
Lyon	Ministry of Posts	YN	550	*500
Do	Societe Lyonnaise de Radiophonie		287	*2,000
Montpellier	Societe Languedocienne de T. S. F.		185	*100
Nice	Ministry of Posts		362-480	
Paris	Ecole Supérieure de P. T. T.	ESP	458	*2,000
Do	Eiffel Tower, army	FI	2,650	*5,000
Do	Radio Electricite	SFR	1,780	*10,000
Do		SAJ	1,780	
Do	Petit Parisien		345	*500
Do			1,780	*15,000
Do			300	
Pic du Midi			1,525	
Toulouse	Aerodrome	MRD	2,500	*500
Tours	Ministry of Posts	YG		
GERMANY:				
Berlin	Konigsruherhausen	LP	330-680	15,000
Do	Telefunken Co.		290-750	12,000
Do	Vox Haus	II	425-505	11,500
Do	Magdeburger Platz (under construction)			
Bremen			350	
Breslau	Schlesische Rundfunk	GFU	418	11,500
Cassel			292	
Dresden			280	
Eberswalde				
Frankfort	Sudwest Deutscher Rundfunk Dienst	LP	470	11,500
Gleiwitz				11,500
Hamburg	Nordischer Rundfunk	EQ	395	11,500
Hanover			296	
Koenigsburg	Ostmarken Rundfunk	LP	403	11,500
Leipzig	Mitteldeutsche Rundfunk	MR	454	11,500
Munster			410	11,000
Munich	Deutsche Stunde in Bayern	WM	483	11,500
Norddeich		KAV	1,800	
Nuremberg	Relay		340	
Stettin	Relay (projected)			
Stuttgart	Suddeutsche Rundfunk	OKP	443	11,500
Waldenburg				11,500
HUNGARY:				
Budapest	Post office	MTI	950	*250
Do	do	IIB	950	*1,100
IRISH FREE STATE:				
Cork	Projected			
Dublin	do			
ITALY:				
Milan	Projected, Unione Radiofonica Italiana		384	1,600
Naples	do		392	1,600
Rome	Unione Radiofonica Italiana	IRO	426	1,600
LATVIA: Riga	Projected			*2,000
LITHUANIA:				
Kovdo	Lithuanian Sales Corporation			5
Do	Under construction			

1 Radio Belociana

2 Radio division.

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List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
NETHERLANDS:				
Amsterdam	W. Bommen	PX9	1,050	60
Do	Vas Dias Press office	PCFF	1,950	100
Bloemendaal	Church		340	100
Hilversum ¹	Nederlandsche Seintoellen Fabrik	HDO	1,050	1,000
Do. ²	Hilversum Draadloze Omroep	HDO	1,050	1,000
OSLO		OSLO	340-500	
NORWAY: Oslo				
POLAND: Warsaw				
PORTUGAL: Lisbon				
RUSSIA:				
Baku	Under construction			2,000
Chiva	do			2,000
Elisav	do			2,000
Erivan	do			2,000
Tiflis	do			2,000
Voronezh	do			2,000
Moscow	Popov		1,010	
Do	Trade Union		450	
Do	Lubovitch		385	
Do	Union of Soviet Workers		675	
Do	Comintern		1,450	115,000
Do	Comintern (under construction)		1,450	50,000
Leningrad				
Kiev				
SPAIN:				
Alcoy				
Barcelona	Radio Barcelona-Hotel Solon	EAJI	325	*1,500
Bilbao				
Do				
Cadix		EAJ3	360	*1,000
Do				*100
Cartagena		EBX	1,200	
Madrid	Under construction	EGC	1,650-2,200	*2,000
Do	do			
Do	Radio Iberica	RI	392	*1,500
Do	Radio Madrid	PTT	310	*1,000
Do	Radio Espana	EAJ2	380	
San Sebastian	Projected			
Seville	Radio Club	EAF5	350	240
Do	Radio Club (under construction)	EAF5	350	*1,000
Valencia	Radio Club (projected)			1,000
Do	Reina Victoria Hotel			
Zaragoza	Radio Club (projected)			
SWEDEN:				
Boden	Radjetjanst	SASE	2,500	
Falun	do			
Goteborg	do	SASE		
Jonkoping	Jonkoping Rundradiostation	SMZD	265	
Karlstad	Karlstad Rundradiostation	SMX(f)	355	
Malmo	Radjetjanst	SASC	270	*1,500
Stockholm	do	SASA	470-440	
Sundsvall	do	SASD	680	
Trollhattan	Trollhattans Rundradiostation	SMXQ	345	
Varberg	Varberg Radio Club (projected)			
SWITZERLAND:				
Basel	Under construction			
Geneva	International Esperanto Association (projected)			
Do	Colntrin	HB1	1,100	*300
Hoegg	Swiss Radio Association		515-650	*500
Kloten		HBK	1,500	
Lausanne	Champ de l'Air	HB2	780-1,100	*500
Zurich	Zurich University	ROZ	515-650	*500
UNITED KINGDOM:				
Birmingham	British Broadcasting Co.	5TT	479	1,000
Bournemouth	do	8HM	385	1,000
Daventry	do	5XX	1,600	10,000
Hull	do	6KH	335	150
Leeds-Bradford	do	2LS	345-310	150
Liverpool	do	6LV	315	150
London	do	2LO	365	2,000
Manchester	do	2ZY	378	1,000
Newcastle	do	5NO	408	1,000
Nottingham	do	5NG	220	150
Plymouth	do	5PY	338	150
Sheffield	do	6FL	301	150
Stoke-on-Trent	do	6ST	305	150
Cardiff	do	5WA	343	1,000

List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
UNITED KINGDOM—Contd.				
Swansea	British Broadcasting Co.	5SX	482	150
Aberdeen	do.	2HD	495	1,000
Dundee	do.	2DE	331	150
Edinburgh	do.	2FH	328	150
Glasgow	do.	5SO	422	1,000
Belfast	do.	2BR	435	1,000
YUGOSLAVIA:				
Belgrade	Cie. Generale de T. S. F.	HFF	1,525	*3,000
Rakovitza	do.		1,650	
Zagreb	Radio Club (under construction)			
ALASKA:				
Anchorage	Chovin Supply Co.	KFQD	280	100
Juneau	Alaska Electric Light & Power Co.	KFIU	236	10
CANADA:				
Nova Scotia—				
Glace Bay	Marconi	DO	3,000	
Halifax	do.	CFCF	440	
Do.	Radio Engineers	CHAC	400	500
Do.	Eastern Telegraph & Telephone Co.	CJCS	410	
New Brunswick—				
Moncton	Canadian National Railways	CNRA	313	1,000
St. John	Jones Electric Co.	CKCR	400	
Do.	Maritime Radio Corporation	CJCI	400	
Quebec—				
Bellevue	Sammelhaeck-Dickson (Ltd.)	CFCQ	450	40
Gouin Dam	Shawaningin Water & Power Co.	DW	1,500	
Iroquois Falls	Abitibi Power & Paper Co.	DS	1,590	
Mont Joli	Dr. J. L. P. Landry	CJCM	312	500
Montreal	University of Montreal	CFUC	400	
Do.	A. Cantore	CJCL	270	
Do.	Northern Electric Co.	CHYC	410	500
Do.	Canadian National Railways	CNRM	341	2,000
Do.	Bell Telephone Co.	CKCS		
Do.	La Presse Publishing Co.	CKAC	430	2,000
Do.	Deplus Freres	CJBC	420	
Do.	Marconi	CFCF	440	500
Quebec	Shawaningin Water & Power Co.	DX	1,900	
Do.	La Schiel Publishing Co.	CKCI	295	200
Do.	La Cie. d'Evenement	CFCJ	410	
Thetford Mines	Shawaningin Water & Power Co.	DY	1,900	
Victoriaville	do.	DV	1,900	
Ontario—				
Hamilton	Wilkenson Electric Co. (Ltd.)	CKLC	400	
Do.	Hamilton Spectator	CHCS	410	2,000
Do.	Wentworth Radio Supply Co.	CKOC	410	100
Do.	Jack V. Elliott (Ltd.)	CFUC	410	
Iroquois Falls	Abitibi Power & Paper Co.	CFCH	400	500
Kingston	Queens University	CFRO	450	1,500
Kitchener	The News Record (Ltd.)	CJCP	295	300
London	Charles Guy Hunter	CFCL	430	100
Do.	Free Press Printing Co.	CJOG	430	200
Do.	London Radio Shop	CHOO	410	
Do.	Radio Supply Co.	CKQC	410	
Do.	London Radio Co.	CFOW	430	500
Ottawa	Canadian National Railways	CKOH	435	
Do.	do.	CNRO	435	500
Do.	J. B. Booth, jr.	CHXC	400	1,200
Do.	Dr. G. M. Geldert	CKCO	600	200
Markham	Marconi	DQ	3,300	
Sudbury	Laurentide Air Service	CFCR	410	200
Thorold	D. J. Fendell	CFKO	295	
Toronto	Northern Electric Co.	CHIC	350	
Do.	Simons Agnew & Co.	CJCN	410	
Do.	Metropolitan Motors	CHVC	410	
Do.	Marconi	CHCB	440	
Do.	T. Eaton Co.	CJCD	410	100
Do.	Canadian National Railways (under construction)			
Do.	Jarvis Street Baptist Church	CJBC	312	
Do.	Toronto Radio Research Society	CHNC	350	200
Do.	Canadian National Railways	CNRT	400	2,000
Do.	Bell Telephone Co.	CFTC		
Do.	Evening Telegram	CJSC	430	500
Do.	Star Publishing & Printing Co.	CFCA	400	2,000
Do.	Canadian Ind. Tel. Co.	CKCE	450	2,000
Do.	Abitibi Power & Paper Co.	DT	1,590	
Twin Falls				
Manitoba—				
Winnipeg	Manitoba Free Press	CJCG	410	
Do.	Canadian National Railways	CNRW	450	2,000
Do.	Tribune Newspaper Co.	CJNC	400	

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List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
CANADA—Continued.				
Saskatchewan—				
Regina.....	Canadian National Railways.....	CNRR	420	2,000
Do.....	G. M. Bell and Leader Publishing Co.....	CKCK	425	2,000
Saskatoon.....	Canadian National Railways.....	CNRS	409	500
Do.....	International Bible Students Association.....	CFUC	409	.....
Do.....	The Electric Shop.....	CFQC	500	200
Alberta—				
Calgary.....	Albertan Publishing Co.....	CHBC	410	500
Do.....	Canadian National Railways.....	CNRC	440	1,000
Do.....	W. W. Grant Radio (Ltd.).....	CFNC	440	1,750
Do.....	Calgary Herald.....	CFAC	430	2,000
Do.....	E. Taylor.....	CJCY	420	.....
Do.....	Western Radio Co.....	CHCQ	400	.....
Do.....	G. Melrose Bell.....	CGAC	430	.....
Do.....	H. Birks & Sons.....	CFHC	440	1,000
Do.....	Hiley & McCormick.....	CHCM	440	1,000
Do.....	Radio Corporation of Calgary (Ltd.).....	CJCK	318	500
Do.....	P. Burns & Co.....	CKCX	440	1,000
Edmonton.....	Edmonton Journal.....	CJCA	450	500
Do.....	Canadian National Railways.....	CNRE	450	500
Do.....	Radio Supply Co.....	CFCK	410	250
Olds.....	Peruval Wesley Shookleton.....	CJCX	400	.....
British Columbia—				
Lulu Island.....	Canadian National Railways.....	CNRV	.....	.....
Nanaimo.....	Sparks Co.....	CFDC	430	50
Nelson.....	J. G. Bennett.....	CJBC	400	.....
New Westminster.....	Westminster Trust Co.....	CFXC	440	.....
Ocean Falls.....	Pacific Mills (Ltd.).....	CF	600-1,000	.....
Vancouver.....	Canadian Westinghouse Co. (Ltd.).....	CHOC	400	.....
Do.....	Canadian National Railways.....	.....	.....	.....
Do.....	First Congregational Church.....	CKYC	385	.....
Do.....	Victor W. Odum.....	CFYC	500	25
Do.....	Radio Specialties Co.....	CFQC	450	40
Do.....	Marconi.....	CFCD	440	.....
Do.....	Vancouver Merchants Exchange.....	CNCL	440	.....
Do.....	Daily Province.....	CKCD	410	2,000
Do.....	Sprott Shaw Radio Co.....	CJCE	400	150
Victoria.....	Western Canada Radio Supply Co.....	CHCE	400	20
Do.....	Centennial Methodist Church.....	CFCL	400	500
Do.....	Victoria City Temple.....	CFCT	410	500
COSTA RICA:				
San Jose.....	Government (under construction).....	.....	.....	.....
CUBA:				
Colbarian.....	Maria J. Alvarez.....	6EV	250	50
Camaguey.....	Pedro Nogueros.....	7AZ	225	10
Do.....	Salvador Rienda.....	7SR	350	500
Central Tuinicu.....	Frank H. Jones.....	6KW	300	100
Camajuan.....	Diego Iborra.....	6YR	200	20
Central Tuinicu.....	Frank H. Jones.....	6JK	275	100
Ciego de Avila.....	Eduardo V. Figueroa.....	7BY	275	20
Cienfuegos.....	Elijo Cabelo Ramirez.....	6JQ	275	10
Do.....	Jose Gaudure.....	6BY	300	100
Havana.....	Credito y Construcciones Co.....	2HP	250	100
Do.....	Julio Power.....	2JP	270	20
Do.....	Antonio A. Girard.....	2KX	150	5
Do.....	Frederick W. Burton.....	2CX	320	10
Do.....	Alberto S. Bustamante.....	2AB	225	10
Do.....	Cuban Telephone Co.....	PWX	400	500
Do.....	Jose Letro.....	2JL	275	5
Do.....	Ri P. de.....	2EP	355	400
Do.....	Humberto Gisquel.....	2CG	350	15
Do.....	Bernardo Barris.....	2BB	255	15
Do.....	Manuel y Guillermo Salas.....	2MG	350	20
Do.....	Mario Garcia Vales.....	2OK	300	100
Do.....	Oscar Collado Orta.....	2OL	300	100
Do.....	Salvador de la Torre.....	2BY	170	5
Do.....	Roberto E. Ramirez.....	2TW	250	20
Do.....	do.....	2UF	265	10
Do.....	Raoul Karmen.....	2RK	310	20
Do.....	George A. Lindenax.....	2PK	195	10
Matanzas.....	Leopoldo T. Figueroa.....	6EV	250	10
Nueva Gerona.....	Isla of Pines Telephone Co.....	8JQ	.....	20
Puerto del Rio.....	Antonio Sansola.....	1AZ	275	5
Sagua la Grande.....	Santiago Ventura.....	6HE	250	10
Santiago.....	Andres Vincent.....	8FU	225	15
Do.....	Alberto Barrio.....	8BY	250	100
Do.....	Guillermo Polanco.....	8H8	200	50

List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
MEXICO:				
Chihuahua	Telephone Company	CZF	325	250
Do.	Federal Military Command	FAM	450	1,000
Guanajuato	Radio Club-Degollado Theatre		280	10
Mazatlan	Custulo Llamas	CYR	475	250
Mexico City	Eitrian R. Gomez	CYA	300	500
Do.	Jose J. Reynosa (El Buen Tono)	CYB	275	500
Do.	Miguel S. Castro (La High Life)	CYH	375	100
Do.	Raoul Azefra (Universal Casa del Radio)	CYL	400	500
Do.	Martinez y Zafra	CYO	425	100
Do.	El Excelsior—Parker	CYX	325	500
Do.	Department of Education	CZE	350	500
Monterrey	Roberto Reyes	CYM	275	100
Oaxaca	Federico Zonilla	CYP	285	100
Puebla	Augustin del P. Zaena	CYU	312	100
Tampico	Cipriano Saguon	CYQ	322	100
Yucatan	Partido Socialista del Sureste	CYY	548	100
Porto Rico: San Juan	Radio Corporation of Porto Rico	WKAQ	340	500
SALVADOR: San Salvador	Projected			500
ARGENTINA:				
Buenos Aires	Argentine Association of Broadcasters	LOR	350-410	*500
Do.	Radio Nacional	LOY		*1,000
Do.	Francisco J. Brusa	B1		
Do.	Facultad de Ciencias Medicas	C1		
Do.	Departamento Nacional de Higiene	C3		
Do.	do	C2		
Do.	Sociedad Radio Telefonica	A1		
Do.	Radio Cultura	LOX	375	*500
Do.	Grand Splendid Theater	LOW		*1,000
Do.	Francisco J. Brusa	LOV		*1,000
Do.	Senores Bocel Hermanos	A11		
Tucuman	Radio Club			*100
BRAZIL:				
Bahia	Cia. Radiotelegraphica Brasileira (projected)			
Do.	Radio Sociedade do Bahia		250-450	*500
Bello Horizonte	National Telegraph Service			*500
Do.	Cia. Radiotelegraphica Brasileira (projected)			
Do.	Radio Sociedade de Minas Geraes		370	*500
Ceara				*50
Curitiba	Radio Club Paranaense (under construction)			
Goysana	Beneficent Raballo (projected)			
Pars	Radio Club de Pars (projected)			*50
Parnahyba	Soc. Algodoeira (projected)			*300
Parana	A. G. de Oliveira (projected)			
Penelo	Radio Sociedade Rio, Grandense	RSR	381	*50
Porto Alegre	Radio Club, Pernambuco		310	*300
Recife	Cia. Radiotelegraphica Brasileira (projected)			
Do.	Sociedade Algodoeira (projected)			
Do.	Tito de Araujo Firma Xavier (projected)		105	*500
Ribeiro Preto	Radio Club de Ribeiro Preto (projected)			
Rio de Janeiro	Radio Sociedade do Rio de Janeiro	SPE	380	
Do.	Radio Club de Brasil	SPE	312-325	*500
Do.	Cia. Radio telegraphica Brasileira (projected)			
Rio Grande do Sul	Sociedade Rio G. Radiocultura (projected)			
Sao Paulo	Radio Club de Sao Paulo		380-420	*100
Do.	Radio Educadora Paulista		350	*10
Do.	Radio Educadora Paulista (under construction)			*1,000
Do.	Cia. Radio telegraphica Brasileira (projected)			
CHILE:				
Santiago	Sociedade de Broadcasting de Chile	CRC	400-460	*800-250
Do.	Mercurio (projected)			
Valparaiso	Antonio Cornish Best	ACB	400	*50
ECUADOR: Guayaquil	El Telegrapho (projected)			
PERU: Lima	Peruvian Broadcasting Co. (Ltd.)	OAB	360	*1,500
URUGUAY:				
Montevideo	Crandon Institute			500
Do.	El Dia			
VENEZUELA: Caracas	Coronel Arturo Santana (projected)			
CEYLON: Colombo	Ceylon American Wireless Association			

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List of foreign broadcasting stations—Continued

City	Owner of station	Call signal	Wave length (meters)	Power (watts)
CHINA:				
Kowloon.....	Radio Communication Co. (under construction).			*50
Mukden.....	Government (projected)			
Peking.....	Government			*500
Shanghai.....	The Evening News			
Tientsin.....	Geshe Electric Road (projected)			*100
HONGKONG:				
Victoria.....	Radio Communication Co.			*10
Do.....	Hongkong Hotel Co.			*100
Do.....	Government (projected)			*1,500
INDIA:				
Bombay.....	Bombay Presidency Radio Club	2FV	400	*1,500
Calcutta.....	Radio Club of Bengal	2BZ	400	*500
Do.....		5AF	425	
Madras.....	Radio Club of Madras (projected)			
Rangoon.....	Radio Club of Burma (projected)			
JAPAN:				
Nagoya.....	Nagoya Radio Broadcasting Co.	JOCK	300	
Osaka.....	Osaka Radio Broadcasting Co.		385	500
Do.....	Osaka Radio Broadcasting Co. (projected)		385	1,500
Tokyo.....			375	1,000
KWANGTUNG LEASED TERRITORY:				
Dairen.....	Projected			
PHILIPPINE ISLANDS:				
Manila.....	Far Eastern Radio (Inc.)	KZRO	222	500
Do.....	F. Johnson Elser	KZUY	370	500
Do.....	Electrical Supply Co.	KZKZ	270	500
STRAITS SETTLEMENTS:				
Singapore.....	Projected			*100
AUSTRALIA:				
Adelaide.....	Central Broadcasting Co.	4CL	266	*5,000
Do.....	F. J. Hume	5DN	313	*500
Do.....	Marshall & Co.	5MC	273	*500
Brisbane.....	Queensland Government Bureau of Agriculture.	4QG	365	*1,000
Hobart.....	Associated Radio Co. (projected)	7EL	300	*3,000
Melbourne.....	Associated Radio Co.	8AR	364	*5,000
Do.....	Broadcasting Co. of Australia	3LO	371	*1,000
Do.....	Wangaratta Sports Depot	3HW	300	*100
Mildura.....	R. J. Egge	3EO	520	*100
Newcastle.....	Broadcasters Sydney (Ltd.) (projected)			
Do.....	H. A. Douglas	2HD	333	*50
Perth.....	Western Farmers (Ltd.)	2WF	1,050	*5,000
Sydney.....	Electrical Utilities Supply Co.	2UE	293	*250
Do.....	Birgin Electric Co.	2BE	346	*500
Do.....	A. W. A.	2WA	462	*500
Do.....	Farmer & Co. (Ltd.)	2FO	1,100	*5,000
Do.....	Labor Party (projected)			*3,000
Do.....	Broadcastings Sydney (Ltd.)	2BL	368	*1,800
HAWAII:				
Honolulu.....	Marion A. Mulrony	KGU	370	300
NEW ZEALAND:				
Auckland.....	Newcombe (Ltd.)	1YI	200	*800
Do.....	Auckland Radio Service	184	250	*200
Do.....	La Gloria Gramophone Co.	1YB	260	*50
Christchurch.....				*500
Dunedin.....	Otago University	4XO	140	
Do.....	British Electrical & Engineering Co.	4YA	310-370	*500
Do.....	Radio Supply Co.	4YQ	370	*500
Gisborne.....	Gisborne Radio Co.	2YM	335	*500
Wellington.....	Broadcastings (Ltd.)	2YB	275	*15
Do.....	Dominion Radio Co.	2YK	375	*500
Algeria: Algiers.....	Cofin & Fils	8DB	180-200	100
CANARY ISLANDS:				
Tenerife.....			130	*100
Santa Cruz.....	Projected			
EGYPT: Alexandria.....				
MOROCCO: Casablanca.....				
Radio Club de Maroc.....		CNO	230	*500
SENEGAL: St. Louis.....				
Radio Club Senegalaise (projected).....			300	*100
TUNISIA: Tunis.....				
French Army.....				
UNION OF SOUTH AFRICA:				
Cape Town.....	Cape Publicity Association	WAMG	400	*500
Durban.....	Town Council		350	*500
Grahamstown.....			400	
Johannesburg.....	Associated Scientific and Technical Societies.	JB	450	*800

STANDARD FREQUENCY STATIONS

As a result of measurements by the Bureau of Standards upon the transmitted waves of a limited number of radio transmitting stations, data are given in each month's RADIO SERVICE BULLETIN on such of these stations as have been found to maintain a sufficiently constant frequency to be useful as frequency standards. There may be many other stations maintaining their frequency just as constant as these, but these are the only ones among those observed. 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 (wave meters) and other apparatus by the procedure given in Bureau of Standards letter circular No. 92, "Radio signals of standard frequency and their utilization," and in Bureau of Standards letter circular No. 171, "Requirements, construction, and operation of apparatus for measurement of the frequencies of distant radio transmitting stations." A copy of either letter circular can be obtained by a person having actual use for it upon application to the Bureau of Standards, Department of Commerce, Washington, D. C.

Station	Owner	Location	Assigned frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since July 20, 1925
WQL	Radio Corporation of America.	Coram Hill, Long Island, N. Y.	17.13	8	52	<i>Per cent</i> 0.2	<i>Per cent</i> 0.5
NSS	United States Navy.....	Annapolis, Md.....	17.50	24	190	.2	.2
WCI	Radio Corporation of America.	Barnegat, N. J.....	17.95	6	31	.1	.1
WGG	do.....	Tuckerton, No. 1, N. J.	18.86	24	190	.1	.1
WII	do.....	New Brunswick, N. J.	21.80	6	36	.1	.1
WRT	do.....	do.....	22.60	4	16	.1	.4
WVA	United States Army.....	Annapolis, Md.....	100	5	64	.1	.4
WEAF	American Telephone & Telegraph Co.	New York, N. Y.....	610	8	68	.0	.0
WCAP	Chesapeake & Potomac Telephone Co.	Washington, D. C..	640	23	103	.1	.1
WBC	Radio Corporation of America.	do.....	640	20	91	.1	.3
WSB	Atlanta Journal.....	Atlanta, Ga.....	700	23	95	.2	.4
WGY	General Electric Co.....	Schenectady, N. Y..	790	26	136	.1	.0
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass....	900	16	51	.1	.2
KDKA	do.....	East Pittsburgh, Pa.	970	23	173	.1	.2

MEASUREMENT OF FIELD INTENSITY OF BROADCASTING STATIONS

The factor which determines the strength of signal produced in a radio receiving set by the waves from any transmitting station is the field intensity produced by the station. This field intensity is not determinable from a knowledge of the power of the transmitting station, and so the interference caused by a station at a given point is measured not by the station's power but by the field intensity which it produces.

During the past few months the Bureau of Standards has been making a study of the several methods hitherto used for the measurement of field intensities and is developing methods and apparatus suitable for such measurement for various purposes. A portable apparatus is being developed for the supervisors of radio so that they may be equipped to measure the field intensity of transmitting

With the advent of higher power broadcasting this summer the bureau has measured the field intensities produced at Washington by a number of the higher power stations. These measurements have shown that the effect of the higher power is to produce louder signals and to increase the radius of the small zone around the broadcasting station in which there is freedom from atmospheric disturbances ("static") and other interference. This gain is not proportional to the increase of power. The higher power does not materially increase the interference produced by the stations. The signal fluctuation (fading) at a distance is not reduced by higher power and limits the zone of satisfactory reception.

One of the greatest obstacles to good radio reception is fading. The Bureau of Standards in cooperation with about 40 other laboratories has been making graphical records of fading on prearranged schedules to study the changes in fading during the sunset period. Accurate knowledge of the sunset fading phenomena should throw light on the nature and causes of fading. These fading records give a comparative record of the variation of the field intensity but do not give actual values. Methods are being developed so that these fading records will give the values of the field intensities. Persons interested in participating in this cooperative program are invited to communicate with the Bureau of Standards, Department of Commerce, Washington, D. C.

REFERENCES TO CURRENT RADIO PERIODICAL 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 the professional radio engineers which have recently appeared in technical periodicals. 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," circular No. 138, a copy of which may be obtained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C. Further information about these lists, availabilities of previous lists, and of the several periodicals is contained in the extended statement preceding the early lists and published in the RADIO SERVICE BULLETIN prior to April, 1923, and also in May and September, 1923.

RR000.—Radio communication

- R030 Griffin, R. E. Ideal tuning in kilocycles. *Radio* (San Francisco), 7, pp. 24-26, August, 1925.
 R064 Todd, C. C. Useful charts for amateurs. *Popular Radio*, 8, pp. 221-226, September, 1925.

R100.—Radio principles

- R110 Alexanderson, E. F. W. A discussion on the physical conception of radio-wave propagation. *New York Herald-Tribune Radio Magazine*, p. 3, July 26, 1925.
 R112.0 Perrine, J. O. How radio dead spots are found by a wandering broadcast station (experiments carried on by A. T. & T. Co. and Bell Telephone Co.). *Popular Radio*, 8, pp. 207-211, September, 1925.
 R113 Free, E. E. How the air affects radio (transmission phenomena). *Popular Radio*, 8, pp. 190-208, September, 1925.
 R113.1 DuBiager, J. H. Concerning the nature of fading. *Radio News*, 7, p. 270, September, 1925.
 R113.3 Austin, L. W. A new phenomenon in sunset direction variations. *Proc. Inst. of Radio Engrs.*, 13, pp. 409-412, August, 1925.
 R113.9 Earth conductivity affects inclination of radio wave. *Popular Radio*, 8, pp. 251-253, September, 1925.
 R114 Diagramme des champs Électriques mesurés a Mendon pendant le dernier trimestre 1924. *L'Onde Électrique*, 4, pp. 252-253, June, 1925.
 R123 Watson, W. H. M. Underground radio (underground antennas). *Radio News*, 7, pp. 301-303, September, 1925.
 R124 Herzog, J. H. Radio apparatus. United States Patent No. 1548731, issued July 21, 1925.
 R125.0 Adam, M. La concentration des ondes courtes. *Radio-Électricité*, 6, pp. 270-272, July 25, 1925.
 R127 Über den Erdwiderstand von Antennen. *Jahrbuch der drahtlosen Telegraphie*, 23, pp. 149-150, 1925.
 R132 Amye, P. Les phénomènes de résistance négative dans les lampes a deux grilles. *L'Onde Électrique*, 4, pp. 297-305, July, 1925.
 R133 Mesoy, R. Generation of polyphase oscillations by means of electron tubes. *Proc. Inst. of Radio Engrs.*, 13, pp. 471-476, August, 1925.
 R134.75 Best, G. M. The modified Best superheterodyne (part I). *Radio* (San Francisco), 7, pp. 11-16, August, 1925.
 R134.8 Elder, F. R. Amplifying apparatus. United States Patent No. 1547152, issued July 21, 1925.
 R148.1 Sutton, G. W. Distortion in amplifiers. *Wireless World and Radio Review*, 17, pp. 156-159, August 5, 1925.
 R162 Anderson, J. E. Selectivity versus distortion in a superheterodyne. *Radio* (San Francisco), 7, pp. 27-29, August, 1925.
 R162 Round, H. J. Selectivity: A review of some of the problems involved. *Wireless World and*

R300.—Radio measurements and standardization

- R201.2 van Ryn, K. C. Measurements with the Numans oscillator. *Experimental Wireless* (London), 2, pp. 704-707, August, 1925.
- R204.6 Marcroft, J. H., and Turner, A. The shielding of electric and magnetic fields. *Proc. Inst. of Radio Engrs.*, 13, pp. 477-506, August, 1925.
- R230 Bercovitz, D. Die Weston thermo-instrumente für hochfrequenz. *Jahrbuch der drahtlosen Telegraphie*, 25, pp. 164-168, 1925.
- R260 Ramsey, R. R. Measurement of the voltage ratio of audio and radio frequency transformers. *QST*, 9, pp. 24-25, August, 1925.

R300.—Radio apparatus and equipment

- R300.5 Toomey, J. F. Trouble-indicating arrangement. United States Patent No. 1549817, issued August 18, 1925.
- R331 Bullimore, W. R. Manufacture of filaments for electric lamps, thermionic tubes, and the like. United States Patent No. 1548778, issued July 21, 1925.
- R331 Radu, J. W. Vacuum tube. United States Patent No. 1547870, issued July 29, 1925.
- R331 Housekeeper, W. G. Process of treating metal. United States Patent No. 1547783, issued July 28, 1925.
- R331 King, R. W. Electron-discharge device. United States Patent No. 1547760, issued July 28, 1925.
- R331 Hendry, W. F. Vacuum tube and method of manufacturing the same. United States Patent No. 1547812, issued July 28, 1925.
- R331 Housekeeper, W. G. Electrode for electron-discharge devices. United States Patent No. 1549283, issued August 11, 1925.
- R334 Warner, J. C. Electron-discharge apparatus. United States Patent No. 1548875, issued July 21, 1925.
- R334 Hull, A. W. Amplifying apparatus. United States Patent No. 1547154, issued July 21, 1925.
- R334 Scott-Taggart, J. Electron-discharge device. United States Patent No. 1548757, issued August 11, 1925.
- R334 Alexanderson, E. F. W. Signaling system. United States Patent No. 1549737, issued August 18, 1925.
- R340 Gibson, J. J. Vacuum tube contact. United States Patent No. 1549355, issued August 11, 1925.
- R341 Riley, J. A new neon filled rectifier tube. *Radio News*, 7, p. 293, September, 1925.
- R342 Hull, A. W. Amplifier. United States Patent No. 1547153, issued July 21, 1925.
- R343 Clayton, J. M. Plug-in coil receivers. *QST*, 9, pp. 11-14, August, 1925.
- R343 Farvand, C. L. A single-control receiver. *Radio Broadcast*, 7, pp. 620-622, issued September, 1925.
- R343 Livingstone, E. A. The De Forest D-17 receiver. *QST*, 9, pp. 16-19, August, 1925.
- R343 Bouak, Z. An all wave tuned radio frequency receiver (200 to 2,600 meters). *Radio Broadcast*, 7, pp. 581-585, September, 1925.
- R343.7 Yates, J. F. Vacuum tube. United States Patent No. 1548696, issued July 21, 1925.
- R344 White, W. C. System for producing oscillations. United States Patent No. 1544202, issued June 30, 1925.
- R344.3 Haynes, F. H. Telephony and C. W. (construction of a 100-meter, 10-watt transmitter). *Wireless World and Radio Review*, 17, pp. 185-190, August 12, 1925.
- R344.3 Wigge, H. Das Wechselstromdiagramm des Röhrensenders. *Jahrbuch der drahtlosen Telegraphie*, 25, pp. 154-163, 1925.
- R348 Jammer, J. S. Two-way repeater. United States Patent No. 1548009, issued August 4, 1925.
- R354 Fessenden, R. A. Apparatus for amplifying. United States Patent No. 1546440, issued July 21, 1925.
- R374 Davis, N. B. Crystal detector. United States Patent No. 1548408, issued August 4, 1925.
- R374 Schneider, F. Receiving device for electric waves. United States Patent No. 1549926, issued August 18, 1925.
- R374 Bonish, L. A. Detector. United States Patent No. 1550421, issued August 18, 1925.
- R376 Hanna, C. H. Design of telephone receivers for loud-speaking purposes. *Proc. Inst. of Radio Engrs.*, 13, pp. 437-463, August, 1925.
- R376 Curtis, A. S. The vibratory characteristics and impedance of telephone receivers at low-power inputs. *Bell System Technical Journal*, 4, pp. 403-408, July, 1925.
- R376 Discussion on "Some acoustic experiments with telephone receivers." *Jour. Inst. of Elec. Engrs. (London)*, 63, pp. 715-717, July, 1925.
- R377 McLaughlin, N. W. Recording wireless signals. *Wireless World and Radio Review*, 17, pp. 141-143, July 29, 1925.
- R377 Rottgardt, K. Radio transmission recording system. United States Patent No. 1543720, issued June 30, 1925.
- R381 Sorenson, C. F., and Satterholm, R. W. Holder for condensers. United States Patent No. 1546801, issued July 21, 1925.
- R381 Crocker, R. Variable condenser. United States Patent No. 1547412, issued July 28, 1925.
- R381 Lindberg, J. F. Electric condenser. United States Patent No. 1547886, issued July 28, 1925.
- R381 Bergen, A. B. Condenser plate system. United States Patent No. 1548515, issued July 28, 1925.
- R381 Jacobs, O. E. Variable condenser. United States Patent No. 1548891, issued August 11, 1925.
- R381 Jones, L. L. Condenser. United States Patent No. 1548832, issued August 18, 1925.
- R381 Dodge, W. W. Electrical condenser. United States Patent No. 1550016, issued August 18, 1925.
- R381 Harris, S. More about straight line frequency condensers. *Radio News*, 7, pp. 308-309, September, 1925.
- R381 Forbes, H. C. The straight line frequency variable condenser. *Proc. Inst. Radio Engrs.*, 13, pp. 507-512, August, 1925.
- R381 Straight line frequency condensers. *Popular Radio*, 8, pp. 262-265, September, 1925.
- R382 Chapple, H. J. B. The self capacity of inductance coils. *Experimental Wireless* (London), 2, pp. 716-719, August, 1925.
- R384.1 An oscillating wave meter. *Popular Radio*, 8, pp. 267-271, September, 1925.
- R384.1 Dye standard multivibrator wave meter. *Engineering* (London) 119, pp. 727-729, June 12, 1925.
- R386 Turner, P. K. Filters. *Experimental Wireless* (London), 2, pp. 673-683, August, 1925.

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R400.—Radio communication systems

- R402 Winters, S. R. Short wave work at Naval Research Laboratory. Radio (San Francisco), 7, p. 19, August, 1925.
- R403 Anderson, S. S., Clement, L. M., De Costanzo, G. C. Recent commercial development in short-wave transmitters and receivers (Coast Guard developments). Proc. Inst. of Radio Engrs., 13, pp. 418-430, August, 1925.
- R402 Marcroft, J. H. The march of radio: The increasing use of short waves. Radio Broadcast, 7, pp. 593-603, September, 1925.
- R410 Vreeland, F. K. Transmitting intelligence by radiant energy. United States Patent No. 1544018, issued June 30, 1925.
- R410 Farrand, C. L. Method of and apparatus for the reception of radiosignals. United States Patents Nos. 1516529 and 1547781, issued July 21, 1925.
- R410 Carlson, W. L. Method of and apparatus for receiving radiosignals. United States Patent No. 1547395, issued July 28, 1925.
- R412 Espenschied, Lloyd, Anderson, C. N., and Badley, A. Trans-Atlantic radio telephone transmission. Bell System Technical Journal, 4, pp. 459-507, July, 1925.
- R413 Mills, J. Electric control circuits. United States Patent No. 1548632, issued August 11, 1925.
- R422 Pedersen, P. O. Arc generator. United States Patent No. 1544162, issued June 30, 1925.
- R422 Clark, G. H. Radio signaling apparatus (arc). United States Patent No. 1549183, issued August 11, 1925.
- R422 Lee, A. G., and Old, A. J. The Leafield coupled arc. Jour. Inst. Elec. Engrs. (London), 63, pp. 697-714, July, 1925.
- R426 Round, H. J. Receiving system for wireless telegraphy and telephony. United States Patent No. 1546571, issued August 18, 1925.
- R430 McLaughlin, N. M. Interference (artifices and their functions in reducing disturbances). Wireless World and Radio Review, 17, pp. 84-87, July 15, 1925.
- R430 Radio inductive interference and its cure (by Radio Branch, Department of Marine and Fisheries, Canada). Radio Digest Illustrated, 14, p. 17, August 1; p. 18, August 8, 1925.
- R430 Redfern, O. A. Smelter interference elimination. Radio Journal, 6, p. 25, August, 1925.
- R431 Hall, R. K. Method of and means for translating sounds. United States Patent No. 1549195, issued August 11, 1925.
- R431 Humphries, L. R. E. High frequency signal receiving system. United States Patent No. 1549316, issued August 11, 1925.
- R431 Gage, E. G. Method of and means for separating desired from undesired electric currents. United States Patent No. 1550223, issued August 18, 1925.
- R431 Williams, W. J. The interference middle. QST, 9, pp. 30-32, August, 1925.
- R431 Hornet, P. C. Directional reception reduces interference. Radio News, 7, pp. 290-291, September, 1925.
- R460 Alexanderson, E. F. W. Radio receiving system. United States Patent No. 1549878, issued July 21, 1925.
- R495 Squier, G. O. Trec telephony and telegraphy. United States Patent No. 1549632, issued August 11, 1925.

R500.—Applications of radio

- R524.3 Culver, C. C. Tridimensional radio compass. United States Patent No. 1544133, issued June 30, 1925.
- R545 Stanley, M. E. Sidelights on the history of wireless from 1912 to present day (amateur progress). Radio News of Canada, 4, pp. 14-16, August, 1925.
- R570 Hammond, J. H. jr. Dual system of control for diphigible devices. United States Patent No. 1546578, issued July 21, 1925.
- R570 Hammond, J. H. jr. System of control by light waves. United States Patent No. 1548811, issued August 1, 1925.
- R582 Telegraphing pictures—American developments in telphotography. Wireless World and Radio Review, 17, pp. 203-206 issued August 12, 1925.
- R682 Arvin, W. B. See with your radio (Jenkins-Moore device). Radio News, 7, p. 278, September, 1925.

R800.—Nonradio subjects

- 531.83 Fay, R. D. Apparatus for sounding. United States Patent No. 1547374, issued July 28, 1925.
- 531.83 Fay, R. D. Apparatus for sounding. United States Patent No. 1547575, issued July 28, 1925.
- 535.3 Yerle, G.; Jounast, R., and Masny, R. Amplification of weak currents and their application, to photoelectric cells (with bibliography). Proc. Inst. of Radio Engrs., 13, pp. 461-470, August, 1925.
- 621.317.3 Sedlak, J. Switching device for radio sets. United States Patent No. 1544686, issued June 30, 1925.
- 621.327.4 Bazzoni, C. B. The Dunoyer-Toulon experiments (mercury arc lamp). Radio News, 7, pp. 274-275, September, 1925.
- 621.327.7 Kalenborn, A. S. X-ray apparatus. United States Patent No. 1547124, issued July 21, 1925.
- 621.327.7 Florsheim, E., and Liebel, G. H. Buckey diaphragm for scattered radiation and process of making the same. United States Patent No. 1547376, issued July 28, 1925.
- 621.327.7 Page, C. M. Method and apparatus for generating electronic disturbances. United States Patent No. 1547695, issued July 28, 1925.
- 621.327.7 Rentschler, H. C. Oscillation generator and joint operation thereof. United States Patent No. 1547684, issued July 28, 1925.
- 621.327.7 Coolidge, W. G. X-ray apparatus and method. United States Patents Nos. 1550595 and 1550597, issued August 18, 1925.
- 621.383.21 Brown, S. G. Electrical relay. United States Patent No. 1546470, issued July 21, 1925.

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