

DEPARTMENT OF COMMERCE

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION

Washington, June 30, 1926—No. 111

CONTENTS

	Page		Page
Abbreviations.....	1	Miscellaneous—Continued	
New stations.....	2	Compass station established in Manchuria.....	10
Alterations and corrections.....	4	Daylight saving time in foreign countries.....	10
Miscellaneous:		Air line distances.....	10
Additions to list of vessels equipped with		Nicaragua and other countries adhere to the	
radiocompass.....	9	International Radiotelegraph Convention.....	11
Change in position of Fire Island compass		Location of Imperial Beach (Calif.) radio-	
station.....	9	compass transmitter.....	11
New radiobeacons established.....	9	A unicontrol high-frequency radio direction	
Changes in radiobeacons.....	9	finder and its application to the United	
Distribution of weather information and fore-		States Coast Guard patrol service.....	11
casts by Great Lakes stations.....	10	Radio signal transmissions of standard fre-	
Interrupter panel installed at Hillsboro		quency, July to October.....	11
(Oreg.) station.....	10	Standard frequency stations.....	12
Radiotelegraph accounts.....	10	References to current radio literature.....	13

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.
	P.C. = Radiocompass station.
	F.S. = 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.
U. R. Corp.	= Universal Radio Corporation.
W. S. A. Co.	= Wireless Specialty Apparatus Co.
C. w.	= Continuous wave.
I. c. w.	= Interrupted continuous wave.
K. c.	= Kilocycles.
Fy.	= Frequency.
A. c.	= Alternating current.
V. t.	= Vacuum tube.
U. S. L.	= After operating company denotes that the change applies only to the List of Radio Stations of the United States.

NEW STATIONS

Commercial land stations, alphabetically, by names of stations

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

Station	Call signal	Wave lengths	Service	Hours	Station controlled by—
Highland Park, Mich. ¹	WBC	132.7.....	P	X	Howard P. Hardisty.
Icy Bay, Alaska ² ...	KFW	600, 700, 1,910.	P	X	General Petroleum Corporation of California.
Kanaiak, Alaska (near). ³	KGC	600, 875, 1,750.	FX	X	Associated Oil Co.
Nakoon, Alaska (Bristol Bay). ⁴	KJI	600, 725.....	P	X	Nakat Parking Corporation.
Skelly Camp, Tex. ⁵	KIH	1,569.....	FX	X	Skelly Oil Co.

¹ Loc. (approximately) O 83° 03' 00", N 42° 21' 00"; range, 200; system, composite, v. t. telephone and telegraph.

² Loc. (approximately) O 141° 30' 00", N 60° 00' 00"; range, 300; system, F. T. Co. arc.

³ Loc. (approximately) O 157° 30' 30", N 57° 42' 00"; range, 300; system, K. & C., 1,000.

⁴ Loc. (approximately) O 156° 45' 00", N 59° 15' 00"; range, 120; system, Lowenstein, 1,000.

⁵ Loc. O 100° 10' 02", N 33° 40' 06"; range, 600; system, composite, v. t. telegraph.

Commercial ship stations, alphabetically, by names of vessels

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

Name of vessel	Call signal	Range	Service	Hours	Owner of vessel	Station controlled by—
Ambridge ¹	KIKQ	8	PG	X	U. S. S. B.....	
Bohemia ¹	KGBK				Cecil B. De Mille Pictures Corporation.	R. C. A.
Brooks-Scanlon ²	KGBL	8	PG	X	Brooks-Scanlon Corporation.	I. W. T. Co.
Chelsea ³	KORC				J. F. Harris.....	
Daniel J. Morrell ⁴	KGBD		PG	X	Cambria S. S. Co.....	
Dorchester ¹	KGBG	8	PG	X	Merchants & Miners Transportation Co.	
Edward Y. Townsend ⁵	KGBE		PG	X	Cambria S. S. Co.....	
Fulcon ¹	KIND	8	PG	X	Atlantic & Caribbean Steam Navigation Co.	R. C. A.
Indians ¹	KGBL				Cecil B. De Mille Pictures Corporation.	Do.
Invader ⁶	KDWR	8	PG	X	Dan Lee (Ind.).....	Do.
John N. Stewart ¹	KGBJ	8	PG	X	Wilmington Transportation Co.	Owner of vessel.
La Merced ⁷	KGBH	8	PG	X	Columbia River Smoked Fish Co.	Do.
Polinetta ¹	KFIW				M. H. Whittier Co.....	Do.
Sachen ⁸	KGBB		P	X	Rowy B. Motnal.....	Do.
Samona ⁹	KGBF	8	PG	X	W. J. Hole.....	Do.
Tye ¹⁰	WPC	8	PG	X	Bellingham Tug & Barge Co.	Do.

¹ W. l., 600, 700.

² Range, 150; system, Cutting & Washington, 1,000; w. l., 600, 700, 800.

³ W. l., 600.

⁴ W. l., 718; rates, Great Lakes service, 4 cent per word.

⁵ Range, 150; system, R. C. A., 1,200; w. l., 600, 700.

⁶ Range, 300; system, F. T. Co., arc; w. l., 600, 700, 800, 1,800, 2,400.

⁷ W. l., 40, 600, 700.

⁸ Range, 200; system, composite v. t. telephone and telegraph; w. l., 22, 37, 120, 600.

⁹ Range, 50; system, composite v. t. telephone and telegraph; w. l., 600, 700.

¹⁰ Range, 100; system, K. & C., 1,000; w. l., 600, 700.

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
KDWR	Invader.....b	KGBJ	John N. Stewart.....b
KFIW	Polmettia.....b	KGBK	Bohemia.....b
KPW	Joy Bay, Alaska.....c	KGBL	Indiana.....b
KQBB	Sachem.....b	KGC	Kanatak, Alaska.....c
KQBC	Chelsen.....b	KIH	Skelly Camp, Tex.....c
KGBD	Daniel J. Marrell.....b	KIKQ	Ambridge.....b
KQBE	Edward Y. Townsend.....b	KJND	Falcon.....b
KQBF	Sumona.....b	KJI	Nakkeen, Alaska (Bristol Bay).....c
KQBG	Dorchester.....b	WBC	Highland Park, Mich.....c
KQBH	La Merred.....b	WPC	Type.....b
KQBI	Brooks-Seanlan.....b		

Government land stations, alphabetically, by names of stations

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

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Atlantic City, N. J. (section base 1) ¹	NIQF	110, 115, 130...	O	X	U. S. Coast Guard.
Fort Du Pont, Del.....	WUAA	825.....	O	X	U. S. Army.
Fort Lauderdale, Fla. (section base 5) ¹	NEFX	110, 115, 130...	O	X	U. S. Coast Guard.
Fort Riley, Kans.....	WYV	1,499.....	O	X	U. S. Army.
Hat Box Field, Okla. (Muskogee).....	WYN	1,499.....	O	X	Do.
Key West, Fla. ¹	NGK	110, 115, 130...	O	N	U. S. Coast Guard.
Love Field, Tex. (Dallas).....	WYO	1,499.....	O	X	U. S. Army.
Nantuxet, Mass. (section base 3) ¹	NUXB	110, 115, 130...	O	X	U. S. Coast Guard.

¹Range, 50; system, Western Electric Co. v. t. telephone and telegraph.

Government ship stations, alphabetically, by names of stations

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

Station	Call signal	Wave length	Service	Hours	Station controlled by—
Kenowis.....	WYAD	800, 700, 600...	O	X	U. S. Army

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
NEFX	Fort Lauderdale, Fla. (section base 5).....c	WYAD	Kenowis.....b
NGK	Key West, Fla.....c	WYN	Hat Box Field, Okla. (Muskogee).....c
NIQF	Atlantic City, N. J. (section base 1).....c	WYO	Love Field, Tex. (Dallas).....c
NUXB	Nantuxet, Mass. (section base 3).....c	WYV	Fort Riley, Kans.....c
WUAA	Fort Du Pont, Del.....c		

Special land stations, alphabetically, by names of stations

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

Station	Call signal	Station controlled by—
Detroit, Mich.	8XR	Detroit Edison Co.
Greenland (portable)	1XL	University of Michigan Greenland Expedition.
Los Angeles, Calif. (portable) ..	6XAF	Clarence B. Johnson, 6713 Yucca Street.
MU-1 (yacht, portable)	2XAO	A. H. Grebe & Co., Richmond Hill, N. Y.
Portland, Oreg.	7YG	Oregon Institute of Technology (Y. M. C. A.).
Washington, D. C.	3XK	Jenkins Laboratories, 1510 Connecticut Avenue.

Special land stations grouped by districts

Call signal	District and station	Call signal	District and station
1XL 2XAO	First district: Greenland (portable). Second district: MU-1 (yacht, portable).	6XAF	Sixth district: Los Angeles, Calif. (portable).
3XK	Third district: Washington, D. C.	7YG 8XR	Seventh district: Portland, Oreg. Eighth district: Detroit, Mich.

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 Bureau]

- AKUTAN, ALASKA.—W. I., 809, 675.
 ALPENA, MICH.—Service, P.
 BARNEGAT, N. J. (Tuckerton).—Read, Tuckerton, N. J.
 CORAM HILL, N. Y.—Read, Rocky Point, N. Y.
 CULVER CITY, CALIF.—W. I., 114.9.
 CUYO, P. I.—Hours, ship service 0.15 to 0.25 of each hour.
 DEARBORN, MICH.—Disregard notice in R. S. B. 110 relative to striking out all particulars.
 HAZLETON, PA.—W. I., 136.9.
 HILLSBORO, OREG. (Portland, Oreg.—KEK).—System, F. T. Co., 240 and 1,000 (two sets); w. l., 609, 706.
 HILO, HAWAII.—Service, PG; hours, 7.30 a. m.—5.30 p. m. and 7—8 p. m.; rates, 10 cents (52 centimes) per word.
 HYDER, ALASKA.—Hours, X.
 IRON MOUNTAIN, MICH.—W. I., add 715.
 L'ANSE, MICH.—W. I., add 715.
 LOS ANGELES, CALIF. (portable—KFV).—W. I., 146.3, 1660.
 LOS ANGELES, CALIF. (KYY).—W. I., 146.3, 1,660.
 LOS ANGELES, CALIF. (KZA).—Loc. (approximately) O 118° 20' 00", N 34° 10' 00"; w. l., 44.03.
 LOS ANGELES, CALIF. (portable—KZB).—W. I., 44.03.
 MACKINAC ISLAND, MICH.—W. I., 715, 875, 1,578.
 PORT LEBAN, P. I.—Read, Leban, P. I.
 ST. LOUIS, MO.—Owner of station, Inland Waterways Corporation.
 SAN DIEGO, CALIF. (KVU).—W. I., 144.8
 SHERBOGAN, WIS.—W. I., 715, 875, 1,764.
 SIGINAKA ISLAND, ALASKA.—System, spark coil, 300.
 UGANIK, ALASKA.—Loc. (approximately) O-153° 24' 00", N 57° 45' 00"; w. l., 400, 650.
 WILSONVILLE, PA.—W. I., 136.9.
 Strike out all particulars of the following-named stations: Guntersville, Ala.; Point Barrow, Alaska (KDZ); Cleveland, Ohio (WMI).

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 23, 1925, and to the International List of Radiotelegraph Stations, published by the Berne bureau]

- AGWIPOND.—W. l., 600, 706, 800.
 AMERICAN MERCHANT.—System, Navy-Marconi, 1,000; w. l., 600, 706, 800.
 AQUILLO.—Range, 150.
 ARAB.—Range, 200; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 1,800, 1,900, 2,000, 2,100, 2,400; owner of vessel, Hugh J. Chisholm, jr.
 ARCTIC.—Range, 300; system, Marconi, 1,000; w. l., 600, 706, 800; hours, N-X; station controlled by owner of vessel.
 ARGOSY.—System, Navy-Lowenstein, 1,000; w. l., 600, 706, 800.
 BALDBUTTE.—W. l., 600, 706, 800.
 BALDHILL.—System, Navy-W. S. A. Co., 1,000; w. l., 600, 706, 800; station controlled by I. W. T. Co.
 BAYONNE.—W. l., 600, 706, 800.
 BETTERTON.—W. l., 600, 706, 800.
 BIDWELL.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 BIRKENHEAD.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 CADDOPEAK.—W. l., 600, 706, 800.
 CAPE MAY.—Name changed to Maliko; w. l., 600, 706, 800.
 CASTLE TOWN.—System, Marconi, 1,000; w. l., 600, 706, 800.
 CHATHAM.—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.
 CITY OF LOWELL.—W. l., add 800.
 COLOMBIA.—System, F. T. Co. arc, c. w. and i. c. w.; w. l., 600, 706, 800, 1,800, 2,100, 2,400.
 COMMERCIAL PIONEER.—Range, 200; system, Navy-Marconi, 1,000; w. l., 600, 706, 800.
 COMMERCIAL TRAVELER.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800.
 COMMONWEALTH.—System, Lowenstein, 1,000.
 CONNEAUT.—Service, P; rates, none.
 CRAMPTON ANDERSON.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800, 900.
 CREST.—Range, 150; system, R. C. A., 1,000; w. l., 600, 706; rates, 8 cents per word; station controlled by owner of vessel.
 CRETAN.—Owner of vessel, Carl Pustau.
 CRISFIELD.—W. l., 600, 706, 800.
 CUBA.—W. l., 600, 706, 800.
 CUBONE.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 CURRIER.—System, Marconi, 1,000; w. l., 600, 706, 800.
 DANIEL, KERN.—W. l., 600, 706; owner of vessel, Bellingham Tug & Barge Co.
 DEUEL.—W. l., add 800.
 DILWORTH.—W. l., 600, 706, 800, 2,000, 2,100, 2,400.
 EASTERN GLADE.—W. l., 600, 706, 800, 2,000, 2,200, 2,400.
 EASTERN STATES.—System, R. C. A. v. t. telegraph and R. C., A. spark 1,000; w. l., add 1,800.
 EDNA CHRISTENSON.—W. l., add 800; station controlled by owner of vessel.
 E. G. CROSBY.—Station controlled by owner of vessel.
 EGREMONT.—W. l., 600, 706, 800.
 E. J. SADLER.—Range, 300; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 EVANGELINE.—Hours, N.
 E. W. SINCLAIR.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 FINLAND.—System, I. W. T. Co. arc and Marconi, 1,000; w. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
 F. J. LUCKENBACH.—System, Navy-Wireless Improvement Co., 1,000; w. l., 600, 706, 800.
 FOSS No. 21.—Range, 150; system, Navy-Lowenstein, 1,000, w. l., 600, 706, 800; service, PG; hours, X; rates, 8 cents per word; station controlled by owner of vessel.
 GEORGE PIERCE.—W. l., 600, 706, 800, 1,800, 2,100, 2,400.
 GLENPOOL.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 GOVERNOR COBB.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 800.
 GOVERNOR DINGLEY.—System, R. C. A. v. t. telegraph.
 GULFCOAST.—W. l., 600, 706, 800.
 GULFLIGHT.—W. l., 600, 706, 800.

- HALCYON.—W. l., 600, 706, 800.
 HAROLD WALKER.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
 HARVESTER.—W. l., 600, 706, 800.
 HENRY G. DALTON.—Range, 150; system, R. C. A., 1,000; w. l., 715, 800, 875.
 HOLLYWOOD.—System, Navy-Marconi, 1,000; station controlled by I. W. T. Co.
 HORACE X. BAXTER.—W. l., 600, 706, 800.
 HUMBOLDT.—W. l., 600, 706, 800.
 HUSSAR.—Range, 150; system, Marconi, 1,000; w. l., 600, 706, 800; rates, 8 cents per word; station controlled by I. W. T. Co.
 ILLINOIS (KFMC).—Owner of vessel, War Department, Engineering Corps.
 INDEPENDENCE.—System, Navy-Lowenstein, 1,000; w. l., 600, 706, 800.
 INNOKO.—W. l., 600, 706, 800.
 INTREPID.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900, 1,800, 1,900, 2,000, 2,100, 2,400.
 IOWA.—Owner of vessel, War Department, Engineering Corps.
 JACOB.—W. l., 600, 706, 800.
 JALAPA.—System, F. T. Co. arc and Marconi, 1,000; w. l., 600, 706, 800, 1,800, 1,900, 2,000, 2,100, 2,400.
 J. C. DONNELL.—W. l. 600, 706, 800.
 JEPHIA.—Name changed to Denali; w. l., 600, 706, 800, 1,800, 2,100, 2,400.
 JOSEPH SHEP.—W. l., 600, 706, 750, 800, 900.
 KEWAUNEE.—W. l., add 800.
 LAGONDA.—Range, 150; system, R. C. A., 1,000; w. l., 715, 800, 875; station controlled by R. C. A.
 LAKE BENBOW.—Range, 200; system, Navy-Marconi, 1,000; w. l., 600, 706, 800; owner of vessel, Ford Motor Co.; station controlled by R. C. A.
 LAKE HELEN.—Owner of vessel, Merchants & Miners Transportation Co.
 LEVIATHAN.—System, add Navy spark, 1,000.
 LORAIN.—W. l., 600, 706, 800.
 MACKINAC.—Owner of vessel, Pawtucket & New York Transportation Co.
 MANA.—Range, 300; system, Navy-Marconi, 1,000; w. l., 600, 706, 800; station controlled by F. T. Co.
 MANATAWNY.—System, Navy-Marconi, 1,000; w. l., 600, 706, 800.
 MANGA.—System, R. C. A. spark, 1,000 and Westinghouse v. t. telegraph; w. l., 600, 706, 800, 2,100, 2,400.
 MARGARET DOLLAR.—Station controlled by owner of vessel.
 MARORE.—W. l., 600, 706, 800.
 MELVILLE DOLLAR.—W. l., 600, 706, 800.
 MEXICO.—System, Marconi, 1,000.
 MINNESOTA.—Owner of vessel, War Department, Engineering Corps.
 MINNESOTAN.—System, Marconi, 1,000.
 MISSOURI.—Owner of vessel, War Department, Engineering Corps.
 MONTAUK.—System, Navy-W. S. A. Co., 1,000; w. l., 600, 706, 800.
 MONTICELLO.—Station, controlled by owner of vessel.
 MORRIS S. TREMAINE.—W. l., 715, 800, 875; service, PG; rates, Great Lakes service, 4 cents per word.
 MOUNT CLAY.—Station controlled by owner of vessel.
 MUNDELTA.—System, I. W. T. Co., 1,000; w. l., 600, 706, 800.
 MUNINDIES.—Owner of vessel, Munson S. S. Line.
 MUNMOTOR.—System, Navy-Lowenstein, 1,000.
 MUNWOOD.—Owner of vessel, Munson S. S. Line.
 New York (KUW).—W. l., add 450.
 NOMA.—Name changed to Vega; w. l., 600, 706, 800; owner of vessel, Nelson B. Worden; station controlled by I. W. T. Co.
 NORMAN BRIDGE.—System, R. C. A. v. t. telegraph.
 NORTH LAND.—W. l., add 200.
 NORWOOD.—W. l., 600, 706, 800.
 OAKRIDGE.—System, Marconi, 1,000; w. l., 600, 706, 800.
 OLYMPIC.—W. l., 600, 706, 800.
 ORAN.—System, Navy-Marconi, 1,000; w. l., 600, 706, 800.
 OREGON.—W. l., 600, 706, 800; owner of vessel, Independent Navigation Co.
 OTSEGO.—W. l., 600, 706, 800.
 PANUO.—System, Marconi, 1,000 w. l., 600, 706, 800.
 PAUL SHOFF.—W. l., add 800.
 PEACOCK.—W. l., 600, 706, 800.
 PENNSYLVANIA.—W. l., 600, 706, 800.
 PÈRE MARQUETTE 21.—W. l., add 715.

- PERE MARQUETTE 22.**—W. l., add 715.
POINT BONITA.—W. l., 600, 706, 800; station controlled by owner of vessel.
POINT FERMIN.—Owner of vessel, Swayne & Hoyt.
POINT SUR.—Range, 300; system, Navy-Marconi, 1,000; w. l., 600, 706, 800; station controlled by F. T. Co.
PRESIDENT ARTHUR.—Owner of vessel, Robert Collyer.
PRESIDENT GRANT.—Owner of vessel, Admiral Oriental Line.
PRESIDENT MADISON.—Owner of vessel, Admiral Oriental Line.
PRINCETON.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
PURITAN.—Range, 150; system, R. C. A., 1,000; w. l., 715, 875; rates, Great Lakes service, 4 cents per word.
REPUBLIC (KSN).—W. l., 600, 706, 800, 1,450, 1,800, 1,900, 2,000, 2,100, 2,400.
RICHARD HOLYOKE.—W. l., 600, 706, 800.
ROTARIAN.—W. l. 600, 706, 800; station controlled by R. C. A.
RUTH ALEXANDER.—W. l., add 800.
SALMON KING.—Range, 150; system, Navy-Marconi, 1,000; w. l., 600, 706, 800; station controlled by I. W. T. Co.
SANTA CRUZ.—W. l., add 800.
SANTA FLAVIA.—W. l., 600, 706, 800.
SANTA MARIA.—W. l., 600, 706, 800, 2,100, 2,400.
SEABORN.—W. l., add 1,900, 2,000; service, P.
SEATTLE SPIRIT.—W. l., 600, 706, 800.
SOUTH AMERICAN.—System, R. C. A. v. t. telegraph and R. C. A. spark, 1,000.
STEEL ELECTRICIAN.—Range, 300; w. l., 600, 706, 715, 750, 800, 875, 900.
STEELMAKER.—W. l., 600, 706, 800.
STEEL MARINER.—W. l., 600, 706, 800.
STEELORE.—W. l., 600, 706, 800.
SURICO.—W. l., 600, 706, 800.
TEXAS.—System, Marconi, 1,000; w. l., 600, 706, 800.
THE ANGELES.—W. l., 600, 706, 800.
TOTECO.—Range, 200; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
TRADER.—Owner of vessel, Thos. E. Moran.
WALTER A. LUCKENBACH.—System, Navy-K. & C., 1,000; and F. T. Co. arc; w. l., 600, 706, 800, 1,800, 2,100, 2,400.
WANDERER.—W. l., add 800.
W. C. TEAGLE.—System, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
WEST CHOPAKA.—W. l., 600, 706, 800, 2,100, 2,400.
WEST CONOB.—Range, 300; system, Navy-W. S. A. Co., 1,000; w. l., 600, 706, 800.
WEST CORUM.—W. l., 600, 706, 800.
WESTERN GLEN.—W. l., 600, 706, 800; hours, N.
WESTERN STATES.—System, R. C. A. v. t. telegraph and R. C. A. spark, 1,000; w. l., add 1,800; hours, N.
WEST NOHNO.—W. l., 600, 706, 800.
WINDING GULF.—Owner of station, Mystic S. S. Co.
WINFRED.—W. l., 600, 706, 800.
W. L. CONNELLY.—Range, 300; system, R. C. A. v. t. telegraph; w. l., 600, 706, 750, 800, 900.
W. S. RHEEM.—W. l., 600, 706, 800.
WYANDOTTE.—Service, P; rates, none.
WYNOKA.—Owner of vessel, Inland Waterways Corporation.
YUKON.—W. l., 600, 706, 800.
- Strike out all particulars of the following-named vessels: *Alliance, Albatross, Basco, Bayamo, Bennington, Burlington, Cape Henry, Durham, E. C. Pope, Facile, G. E. Roper, Glen White, Gratia, G. S. Allyn, Gypsum Queen, Holden Evans, Honnedaga, Kiowa, Lemuel Burrows, Leyte, Luzon, Marina, M. M. Davis, New York Central No. 18, Olga, Peralta, Pronto, Security, Sewalls Point, Standard (KXOI), Standard II, Sullana (KFXW), Sunlite.*

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

KDFU, read Denali; KPX, read Lebak, P. I.; KYO, read Vega; WAV, Dearborn, Mich.—reinstated; WCI, read Tuckerton, N. J.; WDOI, read Maliko; WQL, read Rocky Point, N. Y.; strike out all particulars following the call signals, KDAG, KDMJ, KDNL, KDZ, KDZY, KFHV, KPIP, KFTQ, KFXN, KFXW, KFYK, KFSN, KGX, KIGP, KIVD, KLV, KMIE, KMY, KPQ, KRL, KSA, KSIE, KSN, KULP, KUXZ, KXOI, KZAL, KZAN, KZAZ, KZBD, WDEU, WKH, WMI, WRV, WVEI, WZAU.

BROADCASTING STATIONS BY CALL SIGNALS

[Alterations and corrections to be made to the List of Radio Stations of the United States, edition of June 30, 1925, and list in Radio Service Bulletin No. 103, January 30, 1925]

- WBAL (Baltimore, Md.).—Read Glen Morris, Md. (near).
 WCAM (Camden, N. J.).—Owner of station, City of Camden.
 WDBZ (Kingston, N. Y.).—Owner of station, Kingston Radio Club (Boy Scouts of America, Ulster County Council).
 WGCP (Newark, N. J.).—Owner of station, May Radio Broadcast Corporation, 380 Central Ave.
 WHBD (Bellefontaine, Ohio).—Owner of station, Chamber of Commerce.
 WOKO (New York, N. Y.).—Changed to Peekskill, N. Y.; owner of station, Harold E. Smith.
 Strike out all particulars of the following-named stations: WEBD (Anderson, Ind.); WWI (Dearborn, Mich.); KFMW (Houghton, Mich.); WWAO (Houghton, Mich.).

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]

- BETHEL, ALASKA.—W. l., 275, 600.
 CAMP ALFRED VAIL, N. J.—Read Fort Monmouth, N. J.
 CAMP DEVENS, MASS.—W. l., 1,410.
 CAMP KNOX, KY.—W. l., 1,153.
 CHANUTE FIELD, ILL.—W. l., 1,500.
 CHICAGO, ILL. (WVT).—W. l., strike out 4,080.
 CIRCLE, ALASKA.—W. l., 2,800.
 FAIRFIELD, OHIO.—W. l., strike out 1,570.
 FIRE ISLAND, N. Y.—Loc. O 73° 12' 32", N 40° 38' 07".
 FORT BROWN, TEX.—W. l., 3,039.
 FORT CASEY, WASH.—W. l., 1,090.
 FORT D. A. RUSSELL, WYO.—W. l., 1,562.
 FORT DOUGLAS, UTAH.—W. l., strike out 2,776.
 FORT EGBERT, ALASKA.—W. l., 440.
 FORT ETHAN ALLEN, VT.—W. l., 1,090.
 FORT FRANK, P. I.—W. l., 480.
 FORT GIBBON, ALASKA.—W. l., 500.
 FORT GRANT, C. Z.—W. l., 420.
 FORT HOWARD, MD.—W. l., 1,350.
 FORT LEAVENWORTH, KANS.—W. l., strike out 1,381.
 FORT MILLS, P. I. (WUAG).—W. l., 1,350.
 FORT MILLS, P. I. (WUP).—W. l., 600.
 FORT RANDOLPH, C. Z.—W. l., 270.
 FORT ST. MICHAEL, ALASKA.—W. l., 360, 600.
 FORT SAM HOUSTON, TEX.—W. l., 4,915.
 FORT STOREY, VA.—Read Fort Story, Va.; w. l., 325.
 FORT TOTTEN, N. Y.—W. l., 1,100.
 FORTUNA, ALASKA.—W. l., 600.
 FORT WINT, P. I.—W. l., 600.
 FORT YUKON, ALASKA.—W. l., 600.
 GOVERNORS ISLAND, N. Y.—W. l., 1,544.
 HOT SPRINGS, ALASKA.—W. l., 545.
 IDITAROD, ALASKA.—W. l., 750, 4,100.
 IMPERIAL BEACH, CALIF.—Call signal changed to NPZ; loc. O 117° 07' 54", N 32° 35' 12".
 JUNEAU, ALASKA.—W. l., 2,250; service, FX; hours, X.
 KETCHIKAN, ALASKA.—W. l., 545, 1,874, 4,543; service, FX; hours, X.
 KINDLEY FIELD, P. I.—W. l., 450, 475.
 LUKE FIELD, HAWAII.—W. l., 1,090, 1,499, 2,998.
 MIDDLETOWN, PA.—W. l., 1,090, 1,499.
 NEW YORK, N. Y. (section base 2).—Read Staten Island, N. Y.
 NOME, ALASKA.—W. l., 600, 4,100.
 SCOTT FIELD, ILL. (BELLVILLE).—W. l., 1,499.
 TACOTNA, ALASKA.—W. l., 510.
 WEST MEMPHIS, ARK.—W. l., 600.

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, 1925, and to the International List of Radiotelegraph Stations, published by the Bureau]

Strike out all particulars of the following-named vessels: Pickering, Moccasin, S. C. 186, Wayanda.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS

NABD, read Staten Island, N. Y.; NPL, Imperial Beach, Calif.; call changed to NPZ; WUAE, read Fort Story, Va.; WUBA, read Fort Monmouth, N. J.; strike out all particulars following the call signals, NEFX, NIQF, NOME, NUXB.

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]

NEW YORK, N. Y. (2XY).—Owner of station, Broadcasting Co. of America. Strike out all particulars of the following-named stations: Albuquerque, N. Mex. (5YQ); Ann Arbor, Mich. (8XA); Buffalo, N. Y. (8XAW); Charlotte, N. C. (4XO); Cincinnati, Ohio (8XAH); College Station, Tex. (5XB); Corvallis, Oreg. (7XH); Erie, Pa. (8XC); Hanover, N. H. (1XAV); Houghton, Mich. (9XAW); Los Angeles, Calif. (6XAA); Metuchen, N. J. (2XAY); Memphis, Tenn. (5XBI); New York, N. Y. (2YT); Oklahoma, Okla. (5YY); Pensacola, Fla. (4XH); Philadelphia, Pa. (3XJ); Pontiac, Mich. (8XB); Potsdam, N. Y. (8XBH); Rutherford, Pa. (3XF); San Antonio, Tex. (5XY); San Jose, Calif. (portable-6XF); San Jose, Calif. (6XF); Seattle, Wash. (7YB); Stanford University, Calif. (6XBM); West Hartford, Conn. (1XW).

MISCELLANEOUS

ADDITIONS TO LIST OF VESSELS EQUIPPED WITH RADIOCOMPASSES

The following-named vessels have been equipped with a radiocompass (direction finder): Abanquez, A. C. Bedford, Atenas, Birkenhead, Caddo, Camden (KDKL), Cartago, Charles M. Everest, Charles Pratt, Coppename, E. J. Sadler, E. M. Clark, Esparta, F. Q. Barstow, Fred W. Weller, Geo. H. Jones, Glenpool, Heredia, H. H. Rogers, H. M. Flagler, J. A. Bostwick, James McGee, John Worthington, Joseph Seep, La Perla, Limon, Livingstone Roe, L. J. Drake, Metapan, M. F. Elliott, Olean, O. T. Waring, Parismina, Pastores, Paulsboro, Rochester, San Jose, San Mateo, Santa Marta, S. B. Hunt, Siraola, Standard (KIC), Suriname, Thomas H. Wheeler, Tivives, T. J. Williams, Turrialba, Vacoil, Vacuum, W. C. Teagle, W. H. Libby, W. H. Tilford, W. J. Hanna, Wm. G. Warden, Zacapa.

CHANGE IN POSITION OF FIRE ISLAND COMPASS STATION

The receiving loop of this station is now located in longitude 73° 12' 32", and the transmitter is in longitude 73° 13' 00". The list of "Commercial and Government radio stations of the United States," pages 104 and 106, respectively, should be changed accordingly.

NEW RADIOBEACON ESTABLISHED

A radiobeacon has been established on the Umatilla Reef Lightship. It will be operated only upon request by radio from vessels. The characteristic will be single dashes for 60 seconds, silent 90 seconds, transmitted on 600 meters for the first 15 minutes of each hour from 8 a. m. to 8.15 p. m., one hundred and twentieth meridian time, except when the signal is in operation. Call letters WWBP.

CHANGES IN RADIOBEACONS

The characteristics of the stations named hereunder will be changed about July 8.

Fire Island Lightship.—To sound every 180 seconds; groups of 2 dashes for 60 seconds, silent 120 seconds, thus:

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

Ambrose Channel Lightship.—To sound every 180 seconds; single dashes for 60 seconds, silent 120 seconds, thus:

----- etc.	Silent
60 seconds.	120 seconds.

Sea Girt Light Station.—To sound every 180 seconds; groups of 3 dashes for 60 seconds, silent 120 seconds, thus:

--- --- ----- etc.	Silent
60 seconds.	120 seconds.

Galveston Jetty Light Station.—This beacon will be changed about June 30, to every 180 seconds; single dashes for 60 seconds, silent 120 seconds, thus:

----- etc.	Silent
60 seconds.	120 seconds.

DISTRIBUTION OF WEATHER INFORMATION AND FORECASTS BY GREAT LAKES STATIONS

The list of stations published in Radio Service Bulletin No. 109, April 30, 1926, should be amended so as to show Rogers, Mich., working on 715 meters and Mackinac Island, Mich., on 875 meters.

INTERRUPTER PANEL INSTALLED AT HILLSBORO (OREG.) STATION

The Federal Telegraph Co. has installed a small $\frac{3}{4}$ -kilowatt interrupter panel at this station for use during the day and early evening in an endeavor to eliminate spark interference in Portland, Oreg., and vicinity.

RADIOTELEGRAPH ACCOUNTS

The Independent Society of Wireless Telegraphy, France, has ceded its radio operating service on board ships to the "Independent Society of Radioelectric Operations," 76 Route de Chalillon, at Malakoff (Seine). Note 8, page 310 of the International List of Radiotelegraph Stations, should be changed accordingly.

COMPASS STATION ESTABLISHED IN MANCHURIA

The bureau has been informed that a new radiocompass has been installed by the Dairen port authorities, on Lutin Rock, Dairen Bay, Manchuria. At present no other details are available.

DAYLIGHT-SAVING TIME IN FOREIGN COUNTRIES

The official time in Holland has been advanced one hour, effective May 15 to October 3.

Until a new regulation the summer season in Belgium will be established each year, beginning the third Saturday of April or, if this day coincides with the eve of Easter, it will begin the second Saturday, in order to terminate on the first Saturday of October. Consequently, during the night of the second or the third Saturday in April at 23 o'clock the time will be advanced 1 hour. The normal time will be reestablished during the night of the first Saturday in the month of October at 24 o'clock.

AIR LINE DISTANCES

The bureau has prepared a chart showing the "Air line distances in statute miles" between 50 cities of the United States. This chart may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 5 cents per copy. Remittance should not be forwarded to the bureau.

NICARAGUA AND OTHER COUNTRIES ADHERE TO THE INTERNATIONAL RADIOTELEGRAPH CONVENTION

Nicaragua, Syria, Lebanon, St. Pierre, and Miquelon have recently adhered to the International Radiotelegraph Convention of 1912.

LOCATION OF IMPERIAL BEACH (CALIF.) RADIOCOMPASS TRANSMITTER

The location of the transmitter at Imperial Beach (Calif.) radiocompass station, call signal now NPZ, is in longitude $117^{\circ} 07' 54''$, latitude $32^{\circ} 35' 12''$.

A UNICONTROL HIGH-FREQUENCY RADIO DIRECTION FINDER AND ITS APPLICATION TO THE UNITED STATES COAST GUARD PATROL SERVICE

The radio direction finder used on shipboard has for the past two or three years proven to be the greatest aid to navigation in fog yet devised. The Coast Guard asked the Bureau of Standards to design a special type of direction finder for use on the two hundred 75-foot patrol boats which have recently been added to the fleet. This special direction finder was to operate on a frequency of 2,100 kilocycles (143 meters), and consisted of a 4-turn 20-inch coil located over the pilot house and rotated from below. The coil is connected to the ship's superheterodyne receiving set through a special coupling unit. The balancing condenser ordinarily requiring adjustment during operation of the direction finder is operated automatically by means of a cam on the direction finder shaft. All tuning adjustments are locked at the 2,100 kilocycles position, as this frequency is the only one used.

This direction finder is described in a paper just issued by the bureau. This is Bureau of Standards Scientific Paper No. 525, A Unicontrol High-Frequency Radio Direction Finder, by F. W. Dunmore. A copy of this paper may be obtained for 5 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C.

RADIO SIGNAL TRANSMISSIONS OF STANDARD FREQUENCY, JULY TO OCTOBER

In the April Radio Service Bulletin there appeared a statement concerning the possible termination of the Bureau of Standards standard frequency transmissions from the Bureau's station WWV, Washington, D. C., and from station 6XBM, Stanford University, California. The California transmissions have been terminated, but the transmissions from station WWV will be continued once each month up to and including October. No decision has been made as to WWV transmissions after that date. It is possible that by that time a sufficient number of standard frequency stations will be listed in the Radio Service Bulletin, so that the range of frequencies heretofore included in the standard frequency transmissions will be sufficiently covered by the standard frequency stations.

These transmissions are of definitely announced frequencies and are for use by the public in standardizing frequency meters (wave meters) and transmitting and receiving apparatus. The transmissions are by continuous-wave radiotelegraphy. The signals have a slight modulation on high pitch which aids in their identification. A complete frequency transmission includes a "general call," a "standard frequency signal," and "announcements." The "general call" is given at the beginning of the 8-minute period and continues for about 2 minutes. This includes a statement of the frequency. The "standard frequency signal" is a series of very long dashes with the call letters (WWV) intervening. This signal continues for about 4 minutes. The "announcements" are on the same frequency as the "standard frequency signal" just transmitted and contain a statement of the frequency. An announcement of the next frequency to be transmitted is then given. There is then a 4-minute interval while the transmitting set is adjusted for the next frequency.

The signals can be heard and utilized by stations equipped for continuous-wave reception at distances within about 500 to 1,000 miles from the transmitting station. Information on how to receive and utilize the signals is given in Bureau of Standards Letter Circular No. 171, which may be obtained on application from the Bureau of Standards, Washington, D. C. Even though only a few points are received, persons can obtain as complete a frequency meter calibration as desired by the method of generator harmonics, information on which

is given in the Letter Circular. The schedule of standard frequency signals is as follows:

Schedule of frequencies in kilocycles

[Approximate wave lengths in meters in parentheses]

Eastern standard time	July 20	Aug. 20	Sept. 20	Oct. 20
10 to 10.08 p. m.	125 (2,400)	300 (1,000)	3,000 (100)	550 (545)
10.12 to 10.20 p. m.	133 (2,254)	315 (952)	3,300 (91)	630 (475)
10.24 to 10.32 p. m.	143 (2,097)	345 (869)	3,600 (83)	730 (411)
10.36 to 10.44 p. m.	155 (1,934)	375 (800)	4,000 (75)	850 (353)
10.48 to 10.56 p. m.	165.5 (1,800)	425 (705)	4,400 (68)	980 (306)
11 to 11.08 p. m.	205 (1,463)	500 (600)	4,900 (61)	1,130 (265)
11.12 to 11.20 p. m.	250 (1,153)	600 (500)	5,400 (55)	1,300 (231)
11.24 to 11.32 p. m.	315 (932)	666 (450)	6,000 (50)	1,500 (200)

STANDARD FREQUENCY STATIONS

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

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

Station	Owner	Location	Assigned frequency (kilocycles)	Period covered by measurements (months)	Number of times measured	Deviations from assigned frequencies noted in measurements	
						Average	Greatest since May 25, 1926
WCI	Radio Corporation of America.	Barnegat, N. J.	17.65	16	80	Per cent 0.1	Per cent 0.0
WGG	Do.	Tuckerton, No. 1 N. J.	18.80	34	251	.2	.2
WHI	Do.	New Brunswick, N. J.	21.80	14	111	.1	.1
WRT	Do.	do.	22.00	13	30	.1	.1
WVA	U. S. Army.	Annapolis, Md.	100.00	15	143	.2	.3
NAA	U. S. Navy.	Arlington, Va.	112.00	8	47	.2	.4
WEAF	American Telegraph & Telephone Co.	New York, N. Y. ...	610.00	18	126	.0	.0
WCAP	Chesapeake & Potomac Telephone Co.	Washington, D. C.	640.00	23	141	.1	.2
WRC	Radio Corporation of America.	do.	640.00	30	134	.1	.3
WBB	Atlanta Journal.	Atlanta, Ga.	700.00	33	148	.2	.2
WGY	General Electric Co.	Schenectady, N. Y.	700.00	36	172	.1	.0
WBZ	Westinghouse Electric & Manufacturing Co.	Springfield, Mass.	900.00	24	75	.1	.2

¹ Assigned frequency changed from 113 to 112 kilocycles on Apr. 1.

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.

R100.—Radio principles

- R110 Halliworth, J. The propagation of radio waves (results of study of received intensities of long wave stations). Jour. Inst. of Elec. Engrs. (London), 64, pp. 579-586; May, 1926.
- R110 Kruse, R. S. Polarized transmission (an interview with Doctor Alexanderson). QST, 10, pp. 9-16; June, 1926.
- R110 Alexanderson, R. F. W. Discussion on "Polarization of radio waves" by G. W. Pickard. Proc. Inst. of Radio Engrs., 14, pp. 397-398; June, 1926.
- R113 van der Pol, H., jr. The correlation of some recent advance in radio. Experimental Wireless (London), 3, pp. 338-343; June, 1926.
- R113 Austin, L. W. Preliminary note on proposed changes in the constants of the Austin-Cohen transmission formula. Proc. Inst. of Radio Engrs., 14, pp. 377-380; June, 1926.
- R113.5 Dashiell, B. F. Where summer static comes from (thunderstorms, etc.). Radio Broadcast, 9, pp. 232-235; July, 1926.
- R113.6 O'Neill, J. J. Bending of radio waves by storms. Radio (San Francisco), 8, pp. 8-11; June, 1926.
- R114 Watson-Watt, H. A. The directional recording of atmospherics. Jour. Inst. of Elec. Engrs. (London), 64, pp. 506-510; May, 1926.
- R120 All about aerials (good pointers given). Radio News, 8, pp. 24-28; July, 1926.
- R120 Lendenblad, N., and Brown, W. W. Main considerations in antenna design. Proc. Inst. of Radio Engrs., 14, pp. 291-322; June, 1926.
- R120 Kruse, R. S. Feeding the antenna. QST, 10, pp. 8-14; July, 1926.
- R125.1 Watson-Watt, H. A. An instantaneous direct-reading radiogoniometer. Jour. Inst. of Elec. Engrs. (London), 64, pp. 611-622; May, 1926.
- R125.1 Smith-Rose, R. L. The cause and elimination of night errors in radio direction findings. Experimental Wireless (London), 3, pp. 357-363; June, 1926.
- R125.6 Kolster, F. A. Radio signaling system. United States Patent No. 1587657, issued June 8, 1926.
- R134.75 Preston, C. W. A portable superheterodyne. Radio News, 8, pp. 46-47; July, 1926.
- R144 Rutterworth, S. High-frequency resistance. Wireless World and Radio Rev., 13, pp. 167-8; June 9, 1926.
- R171 Donnell, P. S. Radio interference from power lines. Radio (San Francisco), 8, pp. 31-32; June, 1926.

R200.—Radio measurements and standardization

- R201 New radio devices of fixed precision (fixed resistance, tube for measurement of wave length, etc.). Radio News, 8, p. 22; July, 1926.
- R201.2 Bonnar, E. H. W. Maintaining a constant reading on an ammeter in the filament battery circuit of a thermionic triode. Proc. Inst. of Radio Engrs., 14, pp. 327-331; June, 1926.
- R214 Clayton, J. M. Quartz crystal mountings. QST, 10, pp. 15-16; July, 1926.
- R269 Peck, A. P. Meters for radio reception sets. Radio News, 8, pp. 22-23; July, 1926.
- R270 Jensen, A. G. Portable receiving sets for measuring field strengths at broadcasting frequencies. Proc. Inst. of Radio Engrs., 14, pp. 333-344; June, 1926.
- R270 Diagramme des champs électriques mesurés a Meudon pendant le quatrième trimestre 1925. L'Onde Electrique, 4, pp. 223-226; May, 1926.

R300.—Radio apparatus and equipment

- R330 Rowe, G. C. B. Tubes within tubes (developed by Doctor Laewe). Radio News, 8, pp. 30-31; July, 1926.
- R331 Joustra, R. Les progrès récents dans la construction des lampes a plusieurs électrodes. L'Onde Electrique, 3, pp. 97-131; March, 1926.
- R334 Huppert, H. K. A departure in radio tube design (4-element tube). Radio News, 8, pp. 50-51; July, 1926.
- R342 Lynch, A. A quality amplifier. Radio Broadcast, 9, pp. 224-227; July, 1926.
- R342 Hurley, W. A. Alignment charts for selective amplifiers. Experimental Wireless (London), 3, pp. 344-348; June, 1926.
- R342 Harris, F. How should transformer curves be plotted (characteristic curves of audio-frequency amplifiers). Radio News, 8, pp. 53-53; July, 1926.
- R342.15 Smith-Rose, R. L. Intervalve transformers. Wireless World and Radio Review, 13, pp. 696-698 May 28, 1926.
- R342.15 Burke, C. T. Amplifier ins and outs. QST, 10, pp. 25-28; June, 1926.
- R342.15 Victorren, J. A. Radiofrequency apparatus (tuned radiofrequency transformers). United States Patent No. 1583028, issued June 15, 1926.
- R342.15 Some notes on intervalve couplings. Experimental Wireless (London), 3, pp. 350-357; June, 1926.
- R342.6 Harelline, L. A. Discussion on "The shielded neutrodyns receiver," by Dreyer and Manson. Proc. Inst. of Radio Engrs., 14, pp. 395-412; June, 1926.
- R342.7 Audio-frequency measurements. Experimental Wireless (London), 3, pp. 370-373; June, 1926.
- R343 Harty, I. W. Short-wave receiving sets. QST, 10, pp. 23-26; July, 1926.
- R343 Doran, M. An all-wave duplex receiver (20 to 20,000 meters). Radio (San Francisco), 8, pp. 27-29; July, 1926.
- R343.7 Orfeln, E. E. An inexpensive "B" eliminator. Radio (San Francisco), 8, pp. 19-20; July, 1926.

- R343.7 Holland, W. E. Sources of A, B, and C power for radio receivers. *Proc. Inst. of Radio Engrs.*, 14, pp. 345-372; June, 1926.
- R343.7 Cockaday, L. M. Four new combinations of units. (Raytheon power pack). *Popular Radio*, 10, pp. 230-31; July, 1926.
- R344.3 Wells, J. M., and Tillyer, E. D. A multistage crystal-controlled transmitter. *QST*, 10, pp. 29-32; June, 1926.
- R381 Hansman, A. T. An oscillator without battery or transformer (alternating current supply). *QST*, 10, pp. 43-44; June, 1926.
- R381 High-power transmitting condensers. *QST*, 10, p. 14; July, 1926.
- R381 Bliss, H. N. Method and apparatus for selective electrical tuning (condenser unit). United States Patent No. 1588438, issued June 15, 1926.
- R381 Miller, L. H., and Severance, M. W. Variable condenser. United States Patent No. 1589204, issued June 15, 1926.
- R381 Kent, A. A. Condenser. United States Patent No. 1588474, issued June 15, 1926.
- R382 Sowethy, A. J. M. Inductance coils quantitatively compared. *Experimental Wireless* (London), 3, pp. 303-306; June, 1926.
- R382 Handy, F. E. Transmitting coils. *QST*, 10, pp. 29-30; July, 1926.
- R383.1 Brackett, Q. A. Grid leak. United States Patent No. 1588519, issued June 15, 1926.
- R384.1 Short-wave wave meters. *QST*, 10, pp. 31-32; July, 1926.
- R384.1 Henney, K. Wave meters for the home laboratory. *Radio Broadest.*, 9, pp. 216-221; July, 1926.
- R377 Anderson, J. Amateur recording apparatus. *Wireless World and Radio Review*, 18, pp. 647-649; May 5, 1926.
- R386 Thorpe, H. B. Design of band pass filters for superheterodynes. *Radio* (San Francisco), 8, pp. 22-24; June, 1926.

R400.—Radio communication systems

- R402 Kruse, R. S. Progress and plans at 5 meters and below (circuits, etc.). *QST*, 10, pp. 34-37; July, 1926.
- R431 Oznes, M. Circuit arrangement for wireless signaling. United States Patent No. 1588047, issued June 8, 1926.
- R431 McCaa, D. Radio system (interference elimination). United States Patent No. 1589979, issued June 22, 1926.
- R469 Akers, M. K. Radio signaling system. United States Patent No. 1589344, issued June 22, 1926.

R500.—Applications of radio

- R520 Wireless on the polar airship—transmitting, receiving, and direction finding equipment of the *Norge*. *Wireless World and Radio Review*, 18, pp. 609-71; May 5, 1926.
- R520 Breckel, H. F. The air service radio laboratory (radio controlled airplanes; radio beacons, etc.). *Radio News*, 8, pp. 12-13; July, 1926.
- R550 List of broadcast stations in the United States. *Radio News*, 8, p. 29; July, 1926.
- R582 Picture transmission by the Ranger system. *Wireless World and Radio Review*, 18, pp. 686-88; May 26, 1926.
- R582 Fournier, L. The latest advance toward television. *Radio News*, 8, pp. 36-37; July, 1926.
- R582 Dinsdale, A. Television apparatus (Jenkin's system). *Wireless World and Radio Review*, 18, pp. 642-45; May 5, 1926.
- R592 Shaughnessy, E. H. The Rugby radio station of the British Post Office. *Jour. Inst. of Elec. Engrs.* (London), 44, pp. 683-713; June, 1926.

R800.—Nonradio subjects

- 528 Free, E. E. The great magnet that rules radio (earth magnetism). *Popular Radio*, 10, pp. 211-213, July, 1926.
- G21.382.04 Kelly, W. A. System for guiding vessels. United States Patent No. 1589098, issued June 22, 1926.

ADDITIONAL COPIES

OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.

AT

5 CENTS PER COPY

SUBSCRIPTION PRICE, 25 CENTS PER YEAR

▽