

RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION, DEPARTMENT OF COMMERCE

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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.
G. 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: PG=General public. PR=Limited public. P =Private. O =Government business exclusively.
Hours	=Hours of operation. N =Continuous service. X =No regular hours. m =a. m. (12 m=midday). s =p. m. (12s=midnight).
Rates	=Ship or coast charges in cents: c=cents. (The rates in the international list are given in francs and centimes.)
I. W. T. Co.	=Independent Wireless Telegraph Co.
R. C. of A.	=Radio Corporation of America.
S. O. R. S.	=Ship Owners' Radio Service.
Co.	=Company.
Corp.	=Corporation.
&	=And.
Do.	=Ditto.
C. w.	=Continuous wave.
V. t.	=Vacuum tube.

CERTIFICATE.

By direction of the Secretary of Commerce this publication is issued as an administrative report and is required for the proper transaction of the public business.

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, 1921, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	Wave lengths.	Service.	Hours.	Station controlled by—
Charleston, W. Va. ¹ ..	WMB	500, 550.	PR	X	Raleigh-Wyoming Coal Co.
Edwight, W. Va. ² ...	WCK	500, 550.	PR	X	Do.
Flagship division 1, Camp Eustis, Va. ³	WPF	300, 478, 600.	PR	X	U. S. Shipping Board.
Indianapolis, Ind. ⁴ ..	WLK	350.	PR	X	Hamilton Manufacturing Co.
Jersey City, N. J. ⁵ ...	WNO	300, 360, 600.	PR	X	Wireless Telephones Co. of Hudson County, N. J.
Los Altos, Calif. ⁶	KLP	300, 360, 600.	PR	X	Colin B. Kennedy Co.
Madison, Wis. ⁷	WHA	300, 360, 410, 485, 600.	PR	X	University of Wisconsin.
Mexia, Tex. ⁸	WFM	300, 475, 600.	PR	Continental Radio Telegraph Co.
Minneapolis, Minn. ⁹ ..	WLB	300, 410, 485.	PR	X	University of Minnesota.
Minneapolis, Minn. ¹⁰ ..	WLP	425.	PR	X	Northern States Power Co.
Pasadena, Calif. ¹¹ ...	KLB	300, 360, 600.	PR	X	J. J. Dunn & Co.
Pittsburgh, Pa. ¹²	WPB	350.	PR	X	Newspaper Printing Co.
Tampa, Fla. ¹³	WPD	300, 600, 1800.	PG	N	George C. Warner, Jr.
Teledo, Ohio ¹⁴	WDZ	350, 485.	PR	Marshall-Gerken Co.

¹ Loc. (approximately) 0.81° 37' 00", N. 38° 20' 00"; range, 50; system, Deforest (v. t., telephone and telegraph); rate, none.² Loc. (approximately) 0.81° 30' 00", N. 37° 45' 00"; range, 50; system, Deforest (v. t., telephone and telegraph); rate, none.³ Loc. (approximately) 0.76° 35' 00", N. 37° 08' 00"; range, 20; system, composite (v. t., telephone and telegraph); rate, none.⁴ Range, 200; system, composite (v. t., telephone and telegraph); rate, none.⁵ Loc. 0.74° 03' 30", N. 40° 43' 50"; range, 15; system, composite (v. t., telephone and telegraph); rate, none.⁶ Range, 50; system, composite (v. t., telephone); rate, none.⁷ Loc. (approximately) 0.80° 23' 00", N. 43° 05' 00"; range, 500; system, composite (v. t., telephone and telegraph); rate, none.⁸ Range, 300; system, Cutting & Washington, 1000; hours, 7.30 a. m.—11 p. m.; rate to Dallas, Tex., 24 c. per word; minimum, 30 c. for 10 words.⁹ Loc. 0.93° 14' 13", N. 44° 59' 21"; range, 600; system, composite (spark and v. t., telephone), 240; rate, none.¹⁰ Loc. (approximately) 0.93° 18' 00", N. 44° 59' 00"; range, 100; system, composite (v. t., telephone and telegraph).¹¹ Loc. 0.118° 03' 03", N. 34° 12' 59"; range, 20; system, composite (v. t., telephone); rate, none.¹² Range, 150; system, composite (v. t., telephone and telegraph); rate, none.¹³ Loc. 0.82° 27' 00", N. 27° 58' 00"; range, 300; system, Kilbourne & Clark, 1000; rate, ship service, 10 c. per word.¹⁴ Range, 300; system, composite (v. t., telephone and telegraph); hours, 8 a. m.—9.45 p. m.; rate, none.

NOTE—Stations having wave lengths of 360 and 485 meters are used for broadcasting news, concerts, etc.

Commercial ship stations, alphabetically by names of vessels.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1921, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Name of vessel.	Call signal.	Rates.		Service.	Hours.	Owner of vessel.	Station controlled by—
		North and South American service.	Trans-oceanic service.				
		Cents.	Cents.				
Delaware Sun.....	KDWQ	8	8	PG	X	Sun Co.	R. C. of A.
Peninsula State.....	KDWS	8	8	PG	N	U. S. S. B.	
W. S. Rheem.....	KDWP	8	8	PG	X	Standard Oil Co. of California.	
Invader.....	KDWR					J. Percival Jefferson...	Do.

Commercial land and ship stations, alphabetically by call signals.

[b=ship station; c=land station.]

Call signal.	Name.	Call signal.	Name.
KDWP	W. S. Rheem.....b	WHA	Madison, Wis.....c
KDWQ	Delaware Sun.....b	WLB	Minneapolis, Minn.....c
KDWR	Invader.....b	WLK	Indianapolis, Ind.....c
KDWS	Peninsula State.....b	WLP	Minneapolis, Minn.....c
KLB	Pasadena, Calif.....c	WMB	Charleston, W. Va.....c
KLP	Los Altos, Calif.....c	WNO	Jersey City, N. J.....c
WCK	Edwight, W. Va.....c	WPB	Pittsburgh, Pa.....c
WDZ	Toledo, Ohio.....c	WPD	Tampa, Fla.....c
WFM	Mexia, Tex.....c	WPF	Flagship division 1, Camp Eustis, Va.....c

Government land stations, alphabetically by names of stations.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1921, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	Wave lengths.	Service.	Hours.	Station controlled by—
Akutan, Alaska.....	KTK	O	X	Department of Interior, Bureau of Education.

Government ship stations, alphabetically by names of stations.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1921, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	Station controlled by—
Allegheny.....	NACZ	U. S. Navy.
Bayspring.....	NISZ	Do.
Cahokia.....	NITV	U. S. Coast Guard.
Eider.....	KOKJ	U. S. Bureau of Fisheries.
Mascoutin.....	NIVP	U. S. Coast Guard.
Kickapoo.....	NITX	Do.
Saukee.....	NIVQ	Do.

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.
KOKJ	Eider.....b	NITV	Cahokia.....b
KTK	Akutan, Alaska.....c	NITX	Kickapoo.....b
NACZ	Allegheny.....c	NIVP	Mascoutin.....b
NISZ	Bayspring.....b	NIVQ	Saukee.....b

Special land stations, alphabetically by names of stations.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1921.]

Station.	Call signal.	Wave lengths.	Station controlled by—
Ann Arbor, Mich.....	8XA	800, 375.....	University of Michigan.
Bridgeport, Pa.....	3XAE	255, 375.....	Diamond State Fiber Co., Ford Street.
Cincinnati, Ohio.....	8XAH	150 to 300.....	Ohio Mechanics Institute, Canal and Walnut Streets.
Cincinnati, Ohio.....	8XAJ	1650.....	Union Gas & Electric Co., Front and Rose Streets.
Columbus, Ohio.....	8ZAF	800, 375.....	Robert C. Bohannon, 1918 Indianola Avenue.
Davenport, Iowa.....	9YAP	800, 375, 410....	Saint Ambrose College.
Des Moines, Iowa.....	9YAO	800, 375.....	Des Moines University.
Hamilton, Ohio.....	8XAG	800, 225, 375....	Doran Brothers, Electric Co., 329 Terrace Avenue.
Neeah, Wis.....	9ZL	800, 375.....	Cornelius and William Quinn, 425 Sherry Street.
Newark, N. J.....	2XAI	Variable.....	Westinghouse Electric & Manufacturing Co., 95 Orange Street.
Peoria, Ill.....	9YAN	800, 375.....	Bradley Polytechnic Institute, Institute Place.
Salt Lake City, Utah.....	6ZV	800, 375.....	Julian G. McCollom, 1922 South Tenth E Street.
Springfield, Ohio.....	8XAK	800, 375.....	Wittenberg College.
State College, Pa.....	8XAI	800, 375.....	Pennsylvania State College.
Tallahassee, Fla.....	4ZG	800, 375.....	Georgia Railway & Power Co.
Washington, D. C.....	8XAF	700, 1100, 2500..	Elliott Woods, the Capitol.

Special land stations, grouped by districts.

Call signal.	District and station.	Call signal.	District and station.
2XAI	Second district: Newark, N. J.		
3XAE	Third district:		
3XAF	Bridgeport, Pa.	8XAI	Eighth district—Continued.
4ZG	Washington, D. C.	8XAJ	State College, Pa.
6ZV	Fourth district: Tallulah Falls, Ga.	8XAK	Cincinnati, Ohio.
	Sixth district: Salt Lake City, Utah.	8ZAF	Springfield, Ohio.
	Eighth district:		Columbus, Ohio.
8XA	Ann Arbor, Mich.	9YAN	Ninth district:
8XAG	Hamilton, Ohio.	9YAO	Peoria, Ill.
8XAH	Cincinnati, Ohio.	9YAP	Des Moines, Iowa.
		9ZL	Davenport, Iowa.
			Neeah, Wis.

ALTERATIONS AND CORRECTIONS.

COMMERCIAL LAND STATIONS.

ENSENADA, P. R.—Range, 400; system, Marconi, 480-1000; rate, ship traffic, 4 c. per word; coast station rate to San Domingo, 12 c. per word; for Government traffic, 6 c. per word.

NEW YORK, N. Y. (WDT).—Loc. (approximately) $0.74^{\circ} 00' 55''$; N. $40^{\circ} 22' 00''$.

PITTSBURGH, PA. (KQV).—Loc. (approximately) $0.80^{\circ} 20' 00''$, N. $40^{\circ} 00' 00''$; system, composite (v. t., telephone and telegraph), w. l., 360.

NEW YORK, N. Y. (KDKF).—Strike out all particulars.

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, 1921, and to the International List of Radiotelegraph Stations, published by the Berne bureau.]

ABBAROKA.—Station operated and controlled by I. W. T. Co.

AIRLIE.—Strike out all particulars.

AISNE.—Strike out all particulars.

ALDÉ.—Hours, X; station operated and controlled by I. W. T. Co.

AMERICA.—Navy-Liberty, 1000 and R. C. of A., v. t.; w. l., 300, 600, 1800.

- AMERICAN.—Rates, North and South American and transoceanic services, 8 c. per word.
- AQUARIUS.—U. S. Shipping Board owner of vessel.
- ARAGON.—Strike out all particulars.
- ARGONNE (KDKW).—Strike out all particulars.
- ARGUS.—Station operated and controlled by I. W. T. Co.
- ASHER J. HUDSON.—Station operated and controlled by I. W. T. Co.
- ASTMAHCO IV.—Range, 300; system, Kilbourne & Clark, 1000; w. l., 300, 450, 600; rates, North and South American and transoceanic services, 4 c. per word.
- BARRENFARK.—Correct orthography Barrenfork; range, 200; system, Navy-Simon, 1000.
- BELLEMINA.—Accounts settled by radio supervisor, U. S. Shipping Board, Norfolk, Va.
- BELVIDERE.—Station operated and controlled by I. W. T. Co.
- BENJAMIN BREWSTER.—Range, 300.
- BETTY R.—System, Deforest (v. t. telephone and telegraph); rates, none.
- BIRD CITY.—System, Navy-Wireless Specialty Apparatus Co., 1000; w. l., 300, 450, 600.
- BOOBYALLA.—Ocean Motorship Co. owner of vessel.
- BOSTON (KXS).—Strike out all particulars.
- CALLAO (KEQS).—Name changed to Ruth Alexander; station operated and controlled by R. C. of A.
- CAMBRAI.—Strike out all particulars.
- CANTIGNY.—Strike out all particulars.
- CARLTON.—Station operated and controlled by I. W. T. Co.
- CATHERINE.—Range, 150; system, Navy-Wireless Specialty Apparatus Co., 1000; w. l., 300, 450, 600.
- CHATEAU THIERRY.—Strike out all particulars.
- CHAUMONT.—Strike out all particulars.
- CHRISTABEL.—Strike out all particulars.
- COEUR D'ALENE.—Station operated and controlled by I. W. T. Co.
- COMMUNIPAW.—Strike out all particulars.
- CORSON.—Range, 300; w. l., 300, 450, 600.
- COYOTE.—Strike out all particulars.
- CULBURRA.—Ocean Motorship Co. owner of vessel.
- DAWNLITE.—Range, 150.
- DAYLITE.—Range, 150.
- DAYTON.—Strike out all particulars.
- DEWEY (KDNF).—Range, 300; system, R. C. of A., 1000; w. l., 300, 450, 600.
- DUNSYRE.—James Botts owner of vessel.
- EASTERN CLOUD.—System, Federal arc; w. l., 300, 600, 1800.
- EASTERN CROSS.—System, Navy R. C. of A., 1000; w. l., 300, 450, 600; hours, X; station operated and controlled by I. W. T. Co.
- EASTERN EXPORTER.—Station operated and controlled by I. W. T. Co.
- EDGECOMBE.—Strike out all particulars.
- EDISTO.—Strike out all particulars.
- ENSLEY CITY.—Range, 300; system, R. C. of A., 1000; w. l., 300, 450, 600.
- EQUATOR.—Range, 150; system, Kilbourne & Clark, 1000; w. l., 300, 450, 600; station operated and controlled by owner of vessel.
- EUGENE V. R. THAYER.—Range, 300; system, R. C. of A., 1000; w. l., 300, 600.
- EVELYN.—System, I. W. T. Co., 1000.
- FAIRMONT.—Name changed to Nebraskan.
- FEDERAL.—Station operated and controlled by R. C. of A.
- FRANKLIN (WFF).—Name changed to Nevadan.

- GEORGE G. HENRY.—Range, 300; system, R. C. of A., 1000; w. l., 300, 450, 600.
- GERTRUDE.—Station operated and controlled by I. W. T. Co.
- GLENORA.—Strike out all particulars.
- GOLD STAR (KDBD).—Strike out all particulars.
- HATTIE LUCKENBACH.—Range, 300; system, Kilbourne & Clark, 1000.
- HERA.—Strike out all particulars.
- H. M. STOREY.—Range, 300; system, R. C. of A., 1000; w. l., 300, 600.
- HUDSONIAN.—Strike out all particulars.
- HUMBOLDT.—Range, 150; system, R. C. of A., 1000; w. l., 300, 450, 600.
- J. A. MOFFETT, JR.—Range, 300; system, R. C. of A., 1000; w. l., 300, 450, 600; hours N.
- JOHN ENA.—James Botts owner of vessel.
- KAMESIT.—Station operated and controlled by I. W. T. Co.
- KAWEAH.—Strike out all particulars.
- KENOWIS.—W. l., 300, 450, 600.
- KERMOOR.—American Ship & Commerce Corporation owner of vessel.
- LAFOMO.—Station operated and controlled by I. W. T. Co.
- LAKE ELMFORD.—Range, 200; system, Navy, 1000; w. l., 300, 450, 600; station operated and controlled by I. W. T. Co.
- LAKE FILLMORE.—Station operated and controlled by I. W. T. Co.
- LAKE PRAZEE.—System, Navy-Simon, 1000; w. l., 300, 450, 600.
- LAKE STRYMON.—W. l., 300, 450, 600.
- LARAMIE.—Strike out all particulars.
- LEHIGH.—System, Navy-Wireless Specialty Apparatus Co., 1000; w. l., 300, 450, 600.
- LOKI.—Strike out all particulars.
- MANGORE.—Range, 150.
- MARGARET (KZO).—System, I. W. T. Co., 1000.
- MARNE (KDLV).—Strike out all particulars.
- MASUDA.—Station operated and controlled by I. W. T. Co.
- MATTOLE.—Strike out all particulars.
- MINNEKAHDA.—Range, 200 and 1000; system, I. W. T. Co. arc and I. W. T. Co. spark, 1000; w. l., 300, 450, 600, 1800; rate, North and South American and transoceanic services, 8 c. per word.
- MOONLITE.—Range, 200.
- MUNARGO.—Munargo S. S. Corporation owner of vessel.
- NEABSCO.—Strike out all particulars.
- NELSON.—Range, 300.
- NIOBE.—Strike out all particulars.
- OURCQ.—Strike out all particulars.
- PANAMAN.—W. l., 300, 450, 600; rate, North and South American and transoceanic services, 8 c. per word.
- PAWNEE (KDGO).—Strike out all particulars.
- PAWNEE (WLU).—Range, 200; system, Telefunken, 1000; w. l., 300, 600; hours, X.
- PENNSYLVANIA.—W. l., 300, 600.
- PINE TREE STATE.—Range, 300; system, Federal arc and Wireless Specialty Apparatus Co. spark, 1000; w. l., 300, 450, 600, 1800.
- RAPIDAN.—Strike out all particulars.
- ROANOKE.—Range, 200; system, I. W. T. Co., 1000; w. l., 300, 600.
- RUTH.—Call signal KZQ.
- RUTH E. MERRILL.—Ruth E. Merrill Corporation owner of vessel.
- SANTA INEZ.—Thomas Crowley owner of vessel.
- SANTA LEONORA.—Strike out all particulars.
- SANTA RITA (WBR).—Andrew F. Mahony owner of vessel.
- SANTA RITA (WTG).—Strike out all particulars.
- SAPPHIRE.—Strike out all particulars.

- SEANNOCK.—Strike out all particulars.
 SHICKSHINNY.—System, Navy, 1000.
 SCHOHARIE.—System, Navy-Wireless Specialty Apparatus Co., 1000.
 SOMME.—Strike out all particulars.
 SPOKANE.—Range, 150.
 ST. ANTHONY.—Station operated and controlled by R. C. of A.
 STANDTOW No. 1.—Strike out all particulars.
 ST. MIHIEL.—Strike out all particulars.
 STEEL NAVIGATOR.—Station operated and controlled by R. C. of A.
 SWIFTEAGLE.—Swift eagle Oil Transport Co. owner of vessel.
 SWIFTSURE.—Swiftsure Oil Transport Co. owner of vessel.
 THALA.—Strike out all particulars.
 TIPPECANOE.—Strike out all particulars.
 TOLO.—Strike out all particulars.
 TOTECO.—International Petroleum Co. owner of vessel.
 TOURS.—Strike out all particulars.
 WALTER HARDCASTLE.—Name changed to W. L. Connelly.
 WEST CALUMET.—W. l., 300, 450, 600.
 WEST CELINA.—System, Navy-Lowenstein, 1000.
 WEST CHATALA.—Station operated and controlled by I. W. T. Co.
 WEST CHOPAKA.—Range, 300; system, Federal arc; w. l., 300, 600, 1800.
 WEST CRESSY.—System, Navy-Marconi, 1000; w. l., 300, 450, 600; hours, X.
 WESTERN MAID.—Station operated and controlled by I. W. T. Co.
 WEST FARALON.—Range, 300; system, Federal arc; w. l., 300, 600, 1800; rate, North and South American and transoceanic services, 8 c. per word.
 WEST GOTOMSKA.—Station operated and controlled by I. W. T. Co.
 WEST KEDRON.—Station operated and controlled by I. W. T. Co.
 WHEATON.—Strike out all particulars.
 WICO.—Strike out all particulars.
 WISLA.—Louis Millsaps owner of vessel.
 W. J. HANNA.—Range, 300; system, R. C. of A., 1000; w. l., 300, 450, 600.
 WM. G. WARDEN.—Range, 300; system, R. C. of A., 1000.
 WOTAN.—Strike out all particulars.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

- KEQS, read Ruth Alexander; KIJD, read Battenfork; KQB, read W. L. Connelly; KXT, read Nebraskan.
 WFF, read Nevadan; strike out all particulars following the call signals, KDBD, KDFO, KDFF, KDGA, KDGB, KDGC, KDGD, KDGE, KDHW, KDJN, KDKE, KDKF, KDKW, KDKZ, KDLI, KDLV, KDMF, KDNB, KDNC, KDUS, KEKV, KILG, KIML, KIQQ, KNN, KNP, KOB, KOE, KOKL, KOSG, KPO, KUBC, KUCL, KUKB, KUSV, KUTN, KUXL, KXS, KXUU, WBEI, WMUA, WQOI, WQUE, and WTG.

GOVERNMENT LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

- ANNAPOLIS, MD. (NZO).—Strike out all particulars.
 BAR HARBOR, ME. (Otter Cliffs).—Loc. $0.68^{\circ} 11' 47''$, N. $44^{\circ} 18' 49''$.
 EUREKA, CALIF.—Rate, effective March 1 next, will be 10 c. per word.
 KANAKANAK, ALASKA.—Strike out all particulars.
 MEMPHIS, TENN.—Loc. (approximately) $0.90^{\circ} 03' 00''$, N. $35^{\circ} 09' 00''$; range, 500; system, Wireless Specialty Apparatus Co., 1000; w. l., 600, 756, 952, 1200, 1500, 1900; service, 0; hours 8 a. m.—5 p. m.

- NEW ORLEANS, LA. (WYDC).—Range, 500; system, Navy-Kilbourne & Clark; w. l., 600, 1832; service, 0; hours, N.
- NORFOLK, VA.—Service, PG; rate, ship to shore, 10 c. per word.
- ST. LOUIS, MO.—Loc. (approximately) $0.90^{\circ} 15' 00''$, N. $38^{\circ} 38' 00''$, range, 500; system, Wireless Specialty Apparatus Co., 1000; w. l., 600, 756, 952, 1200, 1500, 1900; service, 0; hours 8 a. m.—5 p. m.

GOVERNMENT SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

- B-1.—Strike out all particulars.
- B-2.—Strike out all particulars.
- B-3.—Strike out all particulars.
- BATON ROUGE.—Range, 350; system, R. C. of A., 1000; w. l., 450 600, 900, 1100; service, 0; hours, X.
- CAIRO.—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- MEMPHIS (WYDJ).—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- NATCHEZ.—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- NEW ORLEANS (WYDH).—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- ST. LOUIS (WYDG).—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- VICKSBURG (WYDE).—Range, 350; system, R. C. of A., 1000; w. l., 450, 600, 900, 1100; service, 0; hours, X.
- YACONA.—Call signal changed to NJM.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

- NUDP read NJM; strike out all particulars following the call signals, KGU, NXH, NXI, and NXJ.

SPECIAL LAND STATIONS, BY NAMES OF STATIONS.

- AMES, IOWA (9YI).—W. l., 200, 375.
- DALLAS, TEX. (5ZC).—W. l., 200, 250, 350, 375.
- LOS ANGELES, CALIF. (6XQ).—W. l., 375, 1600, 2000.
- MANITOWOC, WIS. (9ZI).—Strike out all particulars.
- NEW ROCHELLE, N. Y. (2ZK).—W. l., 200, 375.
- PHILADELPHIA, PA. (3XV).—W. l., 200, 250, variable.
- PITTSBURGH, PA. (8XM).—Strike out all particulars.
- SAN FRANCISCO, CALIF. (6XC).—Strike out all particulars.
- URBANA, ILL. (9XJ).—W. l., 200, 275, variable.

MISCELLANEOUS.

BROADCASTING.

Because of the rapid development of radio broadcasting during the last three months, the value of such service to the public, and the limitation of wave lengths which can be assigned for this service, it has been found necessary to take precautions to protect the broadcasting service from interference. It was decided first to regulate broadcasting by the larger stations by requiring special authority to do so on special wave lengths. It later became apparent that some restriction must be placed on amateur stations, and the privilege of amateur broadcasting was tempo-

rarily withdrawn pending the adoption of a plan which would be acceptable to the amateurs engaged in radiotelegraphic communication.

Two plans have been suggested: First, the use of 200 meters between certain hours each day, and, second, the use of the wave length of 175 or 225 meters for broadcasting only. If the second plan is agreed upon with the wave length of 175 meters, this authority could be given in the ordinary amateur licenses. The use of 225 meters will require special licenses.

The Bureau would like to have any practical suggestions from radio inspectors and amateurs which will be helpful in reaching a satisfactory solution of this question.

RATES FOR COAST STATIONS OF RADIO CORPORATION OF AMERICA.

Marine.

[For radiograms to and from ships via coast stations: Coast tax of R. C. A. stations, 10 cents per word, to which is added the land line rate, as follows (to these coast stations and forwarding charges is added the ship tax, which varies from 4 to 8 cents per word, depending upon nationality and system of radio control).]

State.	WNY— New York City, WLC— New London, Conn., WCC— Chatham (Cape Cod), Mass., WCY— Cape May, N. J., WSC— Siasconset, Mass.	State.	WNY— New York City, WLC— New London, Conn., WCC— Chatham (Cape Cod), Mass., WCY— Cape May, N. J., WSC— Siasconset, Mass.
	Per word.		Per word.
Alabama.....	\$0.07	Nevada.....	\$0.11
Alaska.....	.43	New Brunswick.....	.06
Alberta.....	.11	Newfoundland.....	.12
Arizona.....	.11	New Hampshire.....	.04
Arkansas.....	.07	New Jersey.....	.03
British Columbia.....	.11	New Mexico.....	.09
California.....	.11	New York:	
Colorado.....	.09	New York City.....	.03
Connecticut.....	.03	Other offices.....	.04
Delaware.....	.04	North Carolina.....	.06
District of Columbia.....	.04	North Dakota.....	.09
Florida:		Nova Scotia.....	.06
Key West.....	.11	Ohio.....	.05
Other offices.....	.07	Oklahoma.....	.09
Georgia.....	.07	Ontario.....	.06
Idaho.....	.11	Oregon.....	.11
Illinois.....	.06	Pennsylvania:	
Indiana.....	.06	Philadelphia.....	.03
Iowa.....	.07	Other offices.....	.04
Kansas.....	.07	Prince Edward Island.....	.08
Kentucky.....	.06	Quebec.....	.06
Labrador.....	.13	Rhode Island.....	.04
Louisiana.....	.07	Saskatchewan.....	.11
Maine.....	.05	South Carolina.....	.07
Manitoba.....	.09	South Dakota.....	.09
Maryland.....	.04	Tennessee.....	.06
Massachusetts.....	.04	Texas.....	.09
Mexico:		Utah.....	.09
Classes A and C.....	.19	Vermont.....	.04
Class B.....	.08	Virginia.....	.05
Michigan.....	.06	Washington.....	.11
Minnesota.....	.07	West Virginia.....	.05
Mississippi.....	.07	Wisconsin.....	.07
Missouri.....	.07	Wyoming.....	.09
Montana.....	.09	Yukon.....	.53
Nebraska.....	.07		

RATES FOR COAST STATIONS OF RADIO CORPORATION OF AMERICA—continued.

Transocean.

[Radiograms from New York to Europe.]

Country.	Per word.	Country.	Per word.
Great Britain.....	\$0. 18	Germany.....	\$0. 25
France.....	. 20	Greece.....	. 35
Italy.....	. 26	Holland.....	. 25
Austria.....	. 28	Norway.....	. 24
Belgium.....	. 23	Poland.....	. 32
Bulgaria.....	. 32	Portugal.....	. 31
Danzig.....	. 27	Spain.....	. 27
Denmark.....	. 25	Sweden.....	. 26
Finland.....	. 29	Switzerland.....	. 25

HOURS OF PHILIPPINE COAST STATIONS.

THE GOVERNMENT OF THE PHILIPPINE ISLANDS,
DEPARTMENT OF COMMERCE AND COMMUNICATIONS, BUREAU OF POSTS,
MANILA, December 14, 1921.

Administrative Order No. 35.

Subject: Hours for the exchange of radiograms between ship and shore stations.

Paragraph numbered 2 of Administrative Order No. 20 of this Bureau, dated July 26, 1921, requires "the operators of all coastal stations * * * during the hours the station is in operation to 'listen in' at intervals of not less than one hour and for a period of not less than two minutes, with the receiver tuned to receive this wave length (600 meters), for the purpose of determining if any distress signals or messages are being sent." Effective January 1, 1922, coastal stations of this Bureau shall exchange radiograms with ship stations in accordance with the following schedule:

Station.	Ship schedule. ¹	Regular office hours.
Batangas (KPC).....	From 00 to 10 of every hour.....	7 a. m. to 8 p. m.
Amuguis (KPB).....	From 15 to 25 of every hour.....	8 a. m. to 5.30 p. m.
San Jose (KIY).....	From 30 to 40 of every hour.....	Do.
Cullion (KPJ).....	From 45 to 55 of every hour.....	Do.
Dollo (KPM).....	From 00 to 10 of every hour.....	7 a. m. to 8 p. m.
San Francisco (KPY) (Camotes).....	From 15 to 25 of every hour.....	8 a. m. to 5.30 p. m.
Cuyo (KIX).....	do.....	Do.
Puerto Princesa (KIV).....	From 30 to 40 of every hour.....	Do.
Cebu (KPI).....	From 45 to 55 of every hour.....	7 a. m. to 8 p. m.
Zamboanga (KIW).....	From 00 to 10 of every hour.....	Do.
Isabela de Basilan (KPN).....	From 15 to 25 of every hour.....	8 a. m. to 5.30 p. m.
Jolo (KIL).....	From 30 to 40 of every hour.....	Do.
Malangas (KPV).....	do.....	Do.
Malita (KPW).....	From 45 to 55 of every hour.....	Do.
Davao (KIP).....	From 00 to 10 of every hour.....	Do.
Malabang (KIZ).....	From 15 to 25 of every hour.....	7 a. m. to 8 p. m.

¹ The meaning of the above figures is explained by the following examples: "Batangas (KPC), from 00 to 10 of every hour," means that Batangas shall exchange radiograms with ships during the first 10 minutes of each hour the station is open; thus 7 a. m. to 7.10 a. m., 8 a. m. to 8.10 a. m., 9 a. m. to 9.10 a. m., etc. "Cebu (KPI), from 45 to 55 of every hour," means that Cebu shall exchange radiograms with ships at 45 minutes past each hour the station is in operation; thus 7.45 a. m. to 7.55 a. m., 8.45 a. m. to 8.55 a. m., 9.45 a. m. to 9.55 a. m., etc.

NOTE.—The call letters shown above are the new ones assigned by the U. S. Commissioner of Navigation effective Jan. 1, 1922.

The first 2 minutes of each of the 10-minute periods shown above shall be devoted by the respective, coastal stations to "listen in" for ship signals at 600 meters wave length and the rest to the exchange of radiograms should there be any. Should there be no message to be transmitted to or received from any ship, the coastal station shall go ahead with its regular schedule with other coastal stations.

Should the exchange of radiograms not be finished within the prescribed 10-minute period, the coastal station operator may extend the period until all radiograms shall have been transmitted, provided that such procedure shall, in his judgment, not delay other business too long; otherwise the ship station shall be advised that the exchange of radiograms may be resumed on the next hour.

Paragraph 4 of Administrative Order No. 20 of July 26, 1921, applies to all coastal stations of this Bureau, except Batangas, Zamboanga, and Isabela de Basilan, which shall continue to use until further orders their transmitting wave lengths of 2700, 1250, and 200 meters, respectively.

JOSE TOPACIO, Director of Posts.

Approved.

DIONISIO JAKOSALEM,

Secretary of Commerce and Communications.

DECEMBER 15, 1921.

HYDROGRAPHIC INFORMATION BY RADIO.

1. The Hydrographic Office and the Naval Communication Service are prepared, on and after November 10, 1921, to collect and distribute hydrographic information by naval radio. The cooperation of owners, operators, radio companies controlling installations on board vessels, and masters is necessary to make this new undertaking a success. In return greater protection will be afforded mariners than ever before.

In addition to distributing hydrographic information by radio, the Hydrographic Office will publish, as at present, in the Daily Memorandum, Hydrographic Bulletin, or Notice to Mariners confirmation of hydrographic information distributed by radio.

2. *Expense.*—The naval radio stations will make no charge for reception of messages containing hydrographic information, provided such messages are checked "Govt. Hydro.," and will arrange to furnish this information to the nearest branch hydrographic office free. *The ship sending charge, if any, will have to be borne by the sending vessel.* Any other expenses in connection with the receipt and distribution of this information will be borne by the Hydrographic Office.

3. *Procedure.*—Vessels cooperating in this service should transmit messages in plain English direct to United States naval radio stations, as follows:

Atlantic Ocean.

North of latitude $42^{\circ} 00' N.$, to Boston Naval Radio Station. Call letters, NAD.

Between latitude $39^{\circ} 30' N.$ and $42^{\circ} 00' N.$, to New York Naval Radio Station. Call letters, NAH.

Between latitude $38^{\circ} 30' N.$ and $39^{\circ} 30' N.$, to Philadelphia Naval Radio Station. Call letters, NAI.

Between latitude $33^{\circ} 00' N.$ and $38^{\circ} 30' N.$ (including entrance to Chesapeake Bay), to Norfolk Naval Radio Station. Call letters, NAM.

Chesapeake Bay (except entrance), to Norfolk (NAM) or Baltimore Naval Radio Station. Call letters, NBZ.

South of latitude $33^{\circ} 00' N.$ and northeast of line joining Cape Sable, Fla., and Cay Piedras, Cuba, to Charleston Naval Radio Station. Call letters, NAO.

Gulf of Mexico.

Between the line joining Cape Sable, Fla., and Cape Piedras, Cuba, and the line joining Ship Shoal Light, La., and Cape Catoche, Yucatan (including Yucatan Channel), to New Orleans Naval Radio Station. Call letters, NAT.

In the Gulf of Mexico west of the line joining Ship Shoal Light, La., and Cape Catoche, Yucatan, to Galveston Naval Radio Station. Call letters, NKB.

Caribbean Sea.

In the Caribbean Sea, report to naval radio station, Colon. Call letters NAX.

Pacific Ocean.

Between the Equator and latitude $20^{\circ} 00' N.$ to Balboa Naval Radio Station. Call letters, NBA.

Between latitude $30^{\circ} 00' N.$ and $42^{\circ} 00' N.$, to San Francisco Naval Radio Station. Call letters, NPG.

Between $42^{\circ} 00' N.$ and $46^{\circ} 00' N.$, to North Head Naval Radio Station. Call letters, NPE.

North of latitude $46^{\circ} 00' N.$ (including Puget, Vancouver, and Queen Charlotte Sounds, and Alaskan waters), to Seattle Naval Radio Station. Call letters, NVL.

Great Lakes.

Lake Ontario and the St. Lawrence River above Montreal, to Buffalo Naval Radio Station. Call letters, NNZ.

Lake Erie, Lake Huron, and Georgian Bay, to Cleveland Naval Radio Station. Call letters, NRH.

Lake Michigan, to Chicago Naval Radio Station. Call letters, NUR.

Lake Superior and the waters connecting this lake with Lake Michigan, Lake Huron, and Georgian Bay, to Duluth Naval Radio Station. Call letters, NUX.

4. These naval radio stations stand continuous watch and are prepared to receive hydrographic messages at any time. Vessels should transmit information as soon as they are in normal radio range of the radio station. Vessels are requested to inform the Hydrographic Office if they have any trouble in "raising" a station or transmitting the hydrographic message.

5. *Preparation of message.*—In preparing information for transmission it is desired that messages be concise as consistent with exactness and clearness. The order of the message will be in the order of the importance of the items. To promote uniformity, the following order of subjects is recommended:

- (a) Derelicts and sunken wrecks.
- (b) Mines.
- (c) Ice.
- (d) Aids to navigation adrift.
- (e) Floating rafts, logs, wreckage.
- (f) Misplaced buoys in harbor fairways or approaches.
- (g) Other items considered sufficiently important to broadcast.

NOTE.—It is not intended to forward information by radio unless danger to a vessel is involved either from collision or a resulting inadequacy of aids to navigation.

6. *Confirmation.*—Vessels are requested to forward by first mail to the branch hydrographic office concerned a confirmation copy of the radio message sent.

7. *Distribution of information.*—The latest available hydrographic information of each zone will be distributed from its assigned radio stations as follows:

(a) *Boston* is assigned the zone south of the forty-fifth parallel and the northeast of a line joining *Point Judith* and *Nantucket Shoal Light Vessel* and north of the parallel passing through *Nantucket Shoal Light Vessel* (at present lat. $40^{\circ} 37' 02''$ N.). Schedule, 11 a. m. and 5 p. m. Broadcasted by Boston Radio Station.

(b) *New York* is assigned the zone included between the parallel $42^{\circ} 00'$ N. and $33^{\circ} 30'$ N. It is to be noted that this intentionally overlaps the Boston zone. Schedule, 10.30 a. m. and 5 p. m. Broadcasted by New York Radio Station.

(c) *Philadelphia* is assigned the zone included between lat. $39^{\circ} 30'$ N. and lat. $38^{\circ} 30'$ N. Schedule, 10.45 a. m. and 5 p. m. Broadcasted by Philadelphia Radio Station.

(d) *Norfolk* is assigned the zone included between $38^{\circ} 30'$ N. and $33^{\circ} 00'$ N., the entrance to Chesapeake Bay, Hampton Roads, Newport News, and Norfolk. Schedule 10.45 a. m. and 4 p. m. Broadcasted by Norfolk Radio Station.

(e) *Baltimore* is assigned Chesapeake Bay except Newport News and Norfolk. It is to be noted that this overlaps with Norfolk on Hampton Roads and the entrance to Chesapeake Bay. Schedule 10.30 a. m. and 4 p. m. Broadcasted by Baltimore Radio Station.

(f) *Savannah* is assigned the zone south of $33^{\circ} 00'$ N. and northeast of a line joining *Cape Sable, Fla.*, and *Cay Piedras, Cuba*. Schedule, 10.30 a. m. and 6 p. m. Broadcasted by Charleston Radio Station. Savannah will furnish hydrographic information to Charleston by special delivery letter, except important information, which will be sent by land wire.

(g) *New Orleans* is assigned the zone included between the line *Cape Sable, Fla., Cay Piedras, Cuba,* and the line *Ship Shoal Light, La., and Cape Catoche, Yucatan.* This includes the Yucatan Channel. Schedule, 11 a. m. and 5 p. m. Broadcasted by New Orleans Radio Station.

(h) *Galveston* is assigned that part of the *Gulf of Mexico* west of the line *Ship Shoal Light, La., and Cape Catoche, Yucatan.* Schedule, 11.30 a. m. and 6 p. m. Broadcasted by Galveston Radio Station.

(i) *The Chief Hydrographer, Panama Canal Zone,* is requested to cover the *Caribbean Sea* and the *Pacific Ocean* approaches to the *Panama Canal.* Schedule for Colon and Balboa, 5 a. m. and 1 p. m. Broadcasted by Colon and Balboa on different wave lengths immediately after radio time signals.

(j) *San Francisco* is assigned the zone included between lat. $33^{\circ} 00' N.$ and lat. $42^{\circ} 00' N.$ Broadcasted by San Francisco Radio Station. Schedule will be arranged later and office informed.

(k) *Portland* is assigned the zone included between $42^{\circ} 00' N.$ and $46^{\circ} 00' N.$ Broadcasted by North Head Radio Station. Schedule will be arranged later and office informed.

(l) *Seattle* is assigned the zone north of $46^{\circ} 00' N.,$ including *Vancouver* and *Queen Charlotte Sounds* and *Alaskan* waters. Broadcasted by Seattle Radio Station. Schedule will be arranged later and office informed.

(m) *Buffalo* is assigned *Lake Ontario* and the *St. Lawrence River* above *Montreal.* Schedule, 10.45 a. m. and 5 p. m. Broadcasted by Buffalo Radio Station.

(n) *Cleveland* is assigned *Lake Erie, Lake Huron,* and *Georgian Bay.* Schedule, 11 a. m. and 5.30 p. m. Broadcasted by Cleveland Radio Station.

(o) *Chicago* is assigned *Lake Michigan.* Schedule, 10.45 a. m. and 5 p. m. Broadcasted by Chicago Radio Station.

(p) *Duluth* is assigned *Lake Superior* and the waters connecting this lake with *Lake Michigan, Lake Huron,* and *Georgian Bay.* Schedule, 10.45 a. m. and 4.45 p. m. Broadcasted by Duluth Radio Station.

8. The following are the wave lengths used in transmitting hydrographic information to vessels at sea:

Station.	Wave length.	Station.	Wave length.
Boston.....	1,620 arc	Galveston.....	1,513 arc
New York.....	1,832 arc	Buffalo.....	1,200 arc
Philadelphia.....	1,948 arc	Cleveland.....	1,080 arc
Norfolk.....	1,851 arc	Chicago.....	1,200 arc
Baltimore.....	700 arc	Duluth.....	1,200 arc
Charleston.....	2,250 arc	Colon.....	1,620 arc
New Orleans.....	1,832 arc	Balboa.....	10,110 cw

Wave lengths for San Francisco, Portland, and Seattle, will be forwarded later.

RADIO COMPASS STATIONS, GERMANY.

The machine damage sustained by the *List* and *Borkum* radio compass stations has been repaired and the stations are again functioning. Position of *List* radio compass station, lat. $55^{\circ} 00' 12'' N.,$ lon. $8^{\circ} 23' 12'' E.$ Position of *Borkum* radio compass station, lat. $53^{\circ} 34' 50'' N.,$ lon. $6^{\circ} 44' 42'' E.$ —From *Hydrographic Bulletin, Jan. 11, 1922.*

BROADCASTING WEATHER REPORTS BY RADIOPHONE.

The radio station of the Post Office Department, Washington, D. C., call signal 'WWX', is broadcasting daily, except Sundays and holidays, weather reports for the

following-named States by radiophone at 10 a. m. and 9.50 p. m. on 1160 meters: District of Columbia, Maryland, Virginia, West Virginia, east Pennsylvania, west Pennsylvania, and Ohio.

In order to make the reception easy, each word will be spoken and then spelled. Duration of these reports will probably average 10 minutes for each schedule.

LAG IN UNITED STATES NAVAL RADIO TIME SIGNALS.

Experiments conducted by the United States Naval Observatory during the last year for the determination of lag at radio stations sending time signals show the following results:

	Lag.
Annapolis.....	.08 second (constant).
Arlington.....	.09 second (constant).

Experiments are to continue with Key West for a more accurate determination of the lag of that station, the best known value of which is 0.28 second.—*From Hydrographic Bulletin, Jan. 25, 1922.*

List of Navy radio stations sending time signals, corrected to February, 1922.

Station.	Call letter.	Wave length.	Type.	When sent (seventy-fifth meridian time).
		<i>Meters.</i>		
Annapolis, Md.....	NSS	17,145	Arc.....	11.55 a. m. and 9.55 p. m.
Arlington, Va.....	NAA	2,850	Spark...	Do.
Balboa, Canal Zone.....	NBA	10,110	Arc.....	4.55 a. m. and 12.55 p. m.
Boston, Mass.....	NAD	1,620	Spark.....	11.55 a. m. (except Sundays and holidays). ¹
Cavite, P. I.....	NPO	5,200	Arc.....	8.55 a. m. and 9.55 p. m.
Do.....	NPO	2,700	Spark...	Do.
Charleston, S. C.....	NAO	2,250	do.....	11.55 a. m. (except Sundays and holidays). ¹
Colon, Canal Zone.....	NAX	1,620	do.....	4.55 a. m. and 12.55 p. m.
Eureka, Calif.....	NPW	2,650	do.....	2.55 p. m.
Great Lakes, Ill.....	NAJ	1,988	do.....	11.55 a. m.
Key West, Fla.....	NAR	1,988	do.....	11.55 a. m. and 9.55 p. m.
New Orleans, La.....	NAT	1,832	do.....	11.55 a. m.
Newport, R. I.....	NAF	1,908	do.....	Do. ¹
New York, N. Y.....	NAH	1,832	do.....	11.55 a. m. (except Sundays and holidays). ¹
Norfolk, Va.....	NAM	1,851	do.....	Do. ¹
North Head, Wash.....	NPE	2,700	do.....	2.55 p. m.
Pearl Harbor, Hawaii.....	NPM	11,500	Arc.....	6.55 p. m.
Do.....	NPM	2,250	Spark.....	Do.
San Diego, Calif.....	NPL	9,800	Arc.....	2.55 p. m.
Do.....	NPL	1,988	Spark.....	Do.
San Francisco, Calif.....	NPG	4,650	Arc.....	12.55 a. m. and 2.55 p. m.
Do.....	NPG	1,908	Spark.....	Do.

¹ Sends only if NAA breaks down.

INTERNATIONAL ICE OBSERVATION AND ICE PATROL SERVICE.

For the purpose of carrying on the International Ice Observation and Ice Patrol Service provided for by the International Convention for the Safety of Life at Sea, London, 1913-14, the United States Coast Guard cutter *Seneca* has been detailed for this service and will leave New York about February 5, proceeding to the Grand Banks of Newfoundland to locate the ice fields and positions of the icebergs, keeping in touch with the situation, making such observations as practicable on the quantities of ice, its kind, extent, and drift, and obtain any other information that may seem to be of value.

The object of the patrol is primarily to ascertain the location and progressive movement of the limiting lines of the regions in which icebergs and field ice exist in the vicinity of the Grand Banks of Newfoundland and the dissemination of the information so ascertained for the guidance and warning of navigators, and coordinately with

these primary duties, in making oceanographical and meteorological observations as will form a contribution toward the knowledge of the causes why the limiting lines assume their observed locations.

During the period of ice observations the *Seneca* will be the only vessel employed on this duty, but when the ice has moved southward so as to make a constant patrol necessary the United States Coast Guard cutters *Tampa* and *Modoc*, radio call letters NITC and NIVD, respectively, will be detailed for that purpose. The experience of previous years has shown that a continuous ice patrol should be established about April 1 and should continue throughout the season of dangerous ice conditions.

Upon getting in touch with the ice the *Seneca* will send a report daily to the branch hydrographic office, New York City, at 4 a. m., seventy-fifth meridian time, addressed "Hydrographic, New York." An endeavor will be made to communicate the message direct to coast radio stations. If unable to communicate with any of these stations the message will be relayed through any vessel within reach.

The ice information will be given in as plain and concise English as practicable, and will state the following:

- (a) Ice (berg or field).
- (b) Date.
- (c) Time (seventy-fifth meridian).
- (d) Latitude.
- (e) Longitude.
- (f) Other data as may be necessary.

While on this duty, the patrol vessel will endeavor by means of daily radio messages to keep ships at sea advised of the limits of the ice fields, etc.

The *Seneca's* radio call letters are NRE. She will use a wave length of 600 meters when communicating with passing vessels.

The radio messages from the patrol ships will be given publicity immediately upon their receipt by the branch hydrographic office, New York, and by the Hydrographic Office, Washington, D. C.

The work of the United States Coast Guard cutters engaged on ice patrol duty will be greatly facilitated if the principal transatlantic steamship companies would instruct the masters of their vessels to report the following data by radio to the patrol vessels:

(a) Icebergs or obstructions sighted, giving date, time, latitude, longitude, and direction of drift, if an iceberg, together with the temperature of the water at the time.

(b) Temperature of sea water every four hours at the surface and at the bottom in junction when between latitudes 39° N. and 48° N., and longitudes 53° W. and 44° W., when bound either east or west, and giving the latitude and longitude, course, and speed at time of each observation. This data will facilitate the plotting of a temperature curve which will be useful in locating the branches of the Labrador Current.

—From *Hydrographic Bulletin*, February 1, 1922.

FREE MEDICAL ADVICE TO SHIPS BY RADIO.

You are advised that arrangements have been made with the Radio Corporation of America whereby the Public Health Service will furnish free medical advice to ships at sea through coastal stations of the corporation.

The following hospitals have been designated to furnish the service in question to the following coastal stations that will receive the calls for advice, and which will make requests for the same upon the hospitals indicated opposite each:

Coastal stations.

Chatham, Mass. (WCC).
Siasconset, Mass. (WSC).
New York City (Bush Terminal) (WNY).

Hospitals designated to furnish information.

U. S. Marine Hospital No. 70, 67 Hudson Street,
New York, N. Y. (alternates, hospitals 38, 43, 61).

Coastal stations.

Cape May, N. J. (WCY).

San Francisco, Calif. (KPH).

NOTE.—The radio station of the Seamen's Church Institute, call letters KDKF, has been discontinued. This station furnished free medical advice at one time.

Hospitals designated to furnish information.

U. S. Veterans' Hospital No. 49, Grays Ferry Road and Twenty-fourth Street, Philadelphia, Pa. (alternate, U. S. Veterans' Hospital No. 56, Fort McHenry, Baltimore, Md.).

U. S. Marine Hospital No. 19, Fourteenth Avenue and Lake Street, San Francisco, Calif. (alternate, U. S. Veterans' Hospital No. 24, Palo Alto, Calif.).

—Submitted by Public Health Service.

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