

# RADIO SERVICE BULLETIN

ISSUED MONTHLY BY BUREAU OF NAVIGATION, DEPARTMENT OF COMMERCE

Washington, August 2, 1920—No. 40

## CONTENTS.

	Page.		Page.
New stations:		Alterations and corrections—Continue 1.	
Commercial land stations, by names.....	2	Government land stations, by names.....	5
Commercial ship stations, by names.....	2	Government ship stations, by names.....	5
Commercial land and ship stations, by call signals.....	3	Government land and ship stations, by call signals.....	5
Government land stations, by names.....	3	Special land stations, by names.....	5
Government ship stations, by names.....	3	Miscellaneous:	
Government land and ship stations, by call signals.....	3	Operator's license canceled.....	6
Special land stations, by names.....	4	Radio compass stations now in commission.....	6
Abbreviations.....	4	Change in wave length of Canadian radio compass stations.....	6
Alterations and corrections:		New list of radio stations of the United States.....	6
Commercial ship stations, by names.....	4	Admiralty notice to mariners.....	6
Commercial land and ship stations, by call signals.....	5		

DEPARTMENT OF COMMERCE,  
BUREAU OF NAVIGATION,  
Washington, August 1, 1919.

*To collectors of customs, radio inspectors, and others concerned:*

This publication, which was discontinued during the war, is issued monthly by the Bureau of Navigation, Department of Commerce, and distributed to the United States officers engaged in or concerned with the enforcement of the radio laws for their guidance and instruction, and to those concerned with the operation of Government and commercial radio stations for their information.

The Radio Service Bulletin supersedes the quarterly supplements to the List of Radio Stations of the United States and contains information concerning Government, commercial, and special stations only.

The Bulletin contains tables of new stations, alterations, and corrections under headings, so that the List of Radio Stations of the United States and the List of Radiotelegraph Stations published by the international bureau at Berne, may be brought up to date. Additions, alterations, and corrections should be entered in these two publications promptly on receipt of the Bulletin.

Amendments to or changes in the Radio Laws and Regulations of the United States (edition of Aug. 15, 1919) are printed in this Bulletin in such a manner that they may be clipped and pasted in their proper places in that publication.

Items of general interest concerning the enforcement of the radio laws are printed in the Bulletin from time to time, as occasion warrants.

E. T. CHAMBERLAIN,  
*Commissioner of Navigation.*

Approved:  
WILLIAM C. REDFIELD,  
*Secretary of Commerce.*

HE 8677  
A3  
2d set

## 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, 1920, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	Wave lengths.	Service.	Hours.	Station controlled by—
Rockland, Me.	WST	300,000	PG	N	East Coast Fisheries Co.

## COMMERCIAL SHIP STATIONS, ALPHABETICALLY BY NAMES OF VESSELS.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1920, 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.				
Agwimoon	KDBC			PG	X	Atlantic, Gulf & West Indies Lines.	
Antinous	KDAX			PG	X	Nafra Co.	
Apus	KDBZ			PG	X	do.	
Cananova	KDBN			PG	X	Cananova S. S. Corp.	I. W. T. Co.
Chester Kiwanis	KDBP	4	4	PG	X	U. S. Shipping Board.	
City of Fort Worth	KDAW	4	4	PG	X	do.	
Dartford	KDAV	4	4	PG	X	U. S.-Mex. Oil Corp.	R. C. of A.
De Kalb	KDBX	4	4	PG	N	U. S. Shipping Board.	
Depero	KDBA	4	4	PG	X	do.	
Durango	KDBT	4	4	PG	X	do.	S. O. R. S.
Eagle	KDBF					Wm. K. Vanderbilt, Jr.	
Eastern Exporter	KDAZ	4	4	PG		U. S. Shipping Board.	
Eastern Importer	KDBY	4	4	PG		do.	I. W. T. Co.
Edris	KDBG				X	Thos. H. Ince.	Owner of vessel.
Forest King	KDBH			PG		Forest King Co.	
Gold Star	KDBD	4	4	PG	X	U. S. Shipping Board.	
Haymon	KDBU	4	4	PG	X	do.	
Hybert	KDCA	4	4	PG		do.	
Independence Hall	KDCG	4	4	PG	X	do.	
James Otis	KDCD	4	4	PG	X	do.	
Maude F.	KDBK			P	X	E. D. Burge.	Owner of vessel.
Meton	KDBM	4	4	PG	X	U. S. Shipping Board.	I. W. T. Co.
Mobile City	KDCE			PG	N	U. S. Steel Products Co.	
New Rochelle	KDCI	4	4	PG	N	U. S. Shipping Board.	S. O. R. S.
Pachet	KDCB	4	4	PG	N	do.	
Panhandle State	KDAB	4	4	PG	N	do.	
Pomona	KDAT	4	4	PG	X	do.	R. C. of A.
Rock Island	KDND	4	4	PG	X	do.	Do.
Rotarian	KDCF	4	4	PG	X	do.	
Santa Isabel	KDBV			PG	X	American & Cuban S. S. Line.	
Sapulpa	KDCB	4	4	PG	X	U. S. Shipping Board.	
Sawokla	KDBW	4	4	PG	X	do.	
Shelter Island	KDCC	4	4	PG	X	do.	
Siskiyoun	KDAS			PG	X	E. K. Wood Lumber Co.	
Snoqualmie	KDBO	4	4	PG	X	U. S. Shipping Board.	
Steel Worker	KDBJ			PG	N	U. S. Steel Products Co.	
Sunewco	KDBR			PG	X	Submarine Boat Corp.	
Sursilco	KDBS			PG	X	do.	
Sutorpco	KDBQ			PG	X	do.	
Tolosa	KDAY	4	4	PG	N	U. S. Shipping Board.	
Topa Topa	KDBB	4	4	PG	X	do.	
Trinity	KDBI	4	4	PG	N	do.	
West Camargo	KDBL	4	4	PG	X	do.	

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

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

Call signal.	Name.	Call signal.	Name.
KDAR	Panhandle State.....	KDRP	Chester Kiwanis.....
KDAS	Siskiyou.....	KDRQ	Sutorpeo.....
KDAT	Pomona.....	KDRR	Suneweo.....
KDAV	Dartford.....	KDRS	Surailco.....
KDAW	City of Fort Worth.....	KDRT	Durango.....
KDAX	Andinos.....	KDRU	Haymon.....
KDAY	Tolosa.....	KDBV	Santa Isabel.....
KDAZ	Eastern Exporter.....	KDBW	Sawokla.....
KDBA	Depere.....	KDBX	De Kalb.....
KDBB	Topa Topa.....	KDBY	Eastern Importer.....
KDBC	Agwimoon.....	KDBZ	Apus.....
KDBD	Gold Star.....	KDCA	Hybert.....
KDBF	Eagle.....	KDCB	Sapulpa.....
KDBG	Edris.....	KDCC	Shelter Island.....
KDBH	Forest King.....	KDCD	James Otis.....
KDBI	Trinity.....	KDCE	Mobile City.....
KDBJ	Steel Worker.....	KDCF	Rotarian.....
KDBK	Maude F.....	KDCG	Independence Hall.....
KDBL	West Camargo.....	KDCH	Pachet.....
KDBM	Meton.....	KDCI	New Rochelle.....
KDBN	Cananova.....	KIND	Rock Island.....
KDBO	Snoquahmie.....	RST	Rocklaw, Me.....

GOVERNMENT LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1920, and to the International List of Radiotelegraph Stations published by the Berne bureau.]

Station.	Call signal.	Station controlled by—
Fort Stevens, Oreg.....	NPE	

GOVERNMENT SHIP STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1920.]

Name of ship.	Call signal.	Name of ship.	Call signal.
Barry.....	NUQP	Montana.....	NISJ
Decatur.....	NUQV	North Carolina.....	NISK
Hull.....	NUQT	Paul Jones.....	NUQN
Lawrence.....	NUQQ	Perry.....	NUQS
MacDonough.....	NUQR	South Dakota.....	NISG

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.
NISG	South Dakota.....	NUQQ	Lawrence.....
NISJ	Montana.....	NUQR	MacDonough.....
NISK	North Carolina.....	NUQS	Perry.....
NUQN	Paul Jones.....	NUQT	Hull.....
NUQS	Barry.....	NUQV	Decatur.....
NUQP	Barry.....		

## SPECIAL LAND STATIONS, ALPHABETICALLY BY NAMES OF STATIONS.

[Additions to the List of Radio Stations of the United States, edition of June 30, 1920, only.]

Station.	Call signal.	Station controlled by—
Chicago, Ill.....	9YE	Tilden Technical High School.
Evanston, Ill.....	9YH	Evanston High School.

## 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. (12m=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. For approximate purposes, 1 franc equals 20 cents and 5 centimes equal 1 cent.)  
 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.  
 Corpn. =Corporation.  
 & =And.

## ALTERATIONS AND CORRECTIONS.

## 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, 1920, and to the International List of Radiotelegraph Stations, published by the Berne bureau.]

- AGWISUN.—Station operated and controlled by I. W. T. Co.  
 ASOTIN.—Station operated and controlled by I. W. T. Co.  
 AVALON.—Wilmington Transportation Co. owner of vessel.  
 CAYO MAMBI.—Cayo Mambi S. S. Corporation owner of vessel; station operated and controlled by I. W. T. Co.  
 CHAMPION.—Name changed to Montauk.  
 CIRCINUS.—Green Star S. S. Corporation owner of vessel.  
 CORVUS.—Green Star S. S. Corporation owner of vessel.  
 D'ARBONNE.—Name changed to Warwick.  
 DARDEN.—U. S.-Mex. Oil Corporation owner of vessel.  
 E. G. CROSBY.—Name changed to Pilgrim.  
 ENSELY CITY.—Correct name Ensley City.

RADIO SERVICE BULLETIN.

HANCOCK COUNTY.—Station operated and controlled by I. W. T. Co.

HENRY COUNTY.—U. S. Shipping Board owner of vessel.

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

LAKE FEODORA.—Station operated and controlled by I. W. T. Co.

LAKE HARMINIA.—Station operated and controlled by R. C. of A.

MOOSITAUKE.—Station operated and controlled by R. C. of A.

NEMAHA.—Station operated and controlled by R. C. of A.

PANUO (KMM).—Sinclair Navigation Co. owner of vessel.

PYLOS.—Station operated and controlled by R. C. of A.

SAINTE FRANCIS.—Name changed to San Francisco.

SANTA MALTA.—Atlantic & Pacific S. S. Co. owner of vessel.

VALLONIA.—Station operated and controlled by R. C. of A.

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

Strike out all particulars of the following-named vessels:

Astoria.	Fishers Island.	Rock Island Bridge.
Carib (KMIA).	Lake Frampton.	Roman.
Domingo Nazara I.	Madison.	Staten Island.
Elkwater.	Nanshon.	Wisteria.

COMMERCIAL LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

KESX, *read* Warwick; KIXV, *read* Montauk; KRT, *read* San Francisco; KURS, *read* Pilgrim; and KUZS, *read* Ensley City. Strike out all particulars following the call signals: KILS, KMIA, KOG, KOJN, KORN, KUMD, KUPZ, KUTL, KUVX, WCU, WRIL, and WRL.

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, 1920.]

INGLEWOOD, CALIF.—Call changed to NPX.

Strike out all particulars of the following-named stations:

Corfu, Greece.	New Orleans, La. (NJK).
Boston, Mass.	New York, N. Y.
Fire Island, N. Y. (NAG).	

GOVERNMENT 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 July 1, 1920.]

U. N. TRUXTUN.—*Read* Truxtun.

YALE.—Strike out all particulars.

GOVERNMENT LAND AND SHIP STATIONS, ALPHABETICALLY BY CALL SIGNALS.

NWR, *read* NPX; and NUQK *read* Truxtun. Strike out all particulars following the call signals: NAD, NAG, NAH, NBC, NJK, and NOQ.

SPECIAL LAND STATIONS, BY NAME OF STATIONS.

SAVANNAH, GA.—3YB changed to 4YB.

Strike out all particulars of the following-named stations:

Los Altos, Calif., 6XY.  
Oakland, Calif., 6XC.  
San Francisco, Calif., 6XO.

**MISCELLANEOUS.****OPERATOR'S LICENSE CANCELED.**

License No. 17736 issued at New York has been canceled on account of the holder of the license violating section 5 of the act of August 13, 1912, and Article VI of the service regulations of the International Convention.

**RADIO COMPASS STATIONS NOW IN COMMISSION.**

The Bureau has been advised by the Director of Naval Communications that the stations at Bar Harbor, Me., and Princes Neck, R. I., are now open for radio compass bearings. The details for these stations appear in the Radio Service Bulletin for June, 1920, No. 38.

**CHANGE IN WAVE LENGTH OF CANADIAN RADIO COMPASS STATIONS.**

The following report was received from the Director, Government Radio Service, Ottawa, Canada:

On and after the 1st of August, 1920, the Canadian radiotelegraph direction finding stations at Chebucto Head, Nova Scotia, Canso, Nova Scotia, and Cape Race, Newfoundland, will use the wave length of 800 meters exclusively for transmission and reception.

It will be necessary for all ships to have their transmitters adjusted to transmit on 800 meters if they desire to obtain bearings from the above stations.

All use of the wave length of 600 meters by Canadian direction finding stations will be discontinued after the 1st of August, 1920.

**NEW LIST OF RADIO STATIONS OF THE UNITED STATES.**

The List of Radio Stations of the United States for June 30, 1920, will be ready for distribution about October 1. This publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C. The price of the new edition will be published in a future edition of this pamphlet.

The following notice received from London is printed for the information of radio operators and masters of vessels:

**ADMIRALTY NOTICE TO MARINERS.**

[No. 838 of the year 1920.]

**WIRELESS DIRECTION FINDING STATIONS.**

*Former Notice.*—No. 363 of 1920.

1. Wireless direction finding (D.F.) stations are stations set up ashore equipped with receiving apparatus which enables them to ascertain the direction from which wireless signals transmitted by another station emanate.

2. The accuracy with which bearings can be taken depends on the conditions outlined below; but, although in general the bearings taken by a station within the sector over which it is designed to work can generally be considered accurate to within two degrees, the administrations controlling these stations can not accept any responsibility for the consequences of a bearing being inaccurate.

3. It is, however, pointed out that if at least three D.F. stations can be employed and if they are so situated as to give intersecting bearings, considerable reliance can be placed upon the result of 3 simultaneous bearings thus obtained, provided that the "triangle of error" (sometimes called the "cocked hat") formed by the intersection of the bearings is small.

4. In order to obtain the greatest possible degree of accuracy, it is important that the ship should not transmit with too much power. Signals should, however, be fairly strong and clear; great care must be taken to keep the note and strength steady, and to pay strict attention to spacing.

5. It must be borne in mind that it is impossible for the majority of existing D.F. stations to distinguish between a bearing and its reciprocal (*i.e.*, there is always a possible error of 180°), and that bearings are often unreliable at night and in very bad weather, also when the direction runs roughly parallel with the coast line.

6. The methods of asking for and giving bearings and the waves to be used will shortly be standardised by International agreement; and the particulars of the D.F. stations will eventually appear in the International List of Radiotelegraph Stations. Meanwhile, each country is publishing regulations governing the use of its own D.F. stations as set out below.

7. It should be noted that there are two principal systems of D.F. stations at present in use, *viz.*—

(a) Where each D.F. station is fitted with transmitting and receiving gear and works independently of others.

(b) Where several D.F. stations (all of them usually near a harbour entrance or difficult passage) are linked together by special land telegraph lines, being thus controlled by one station which alone is fitted with transmitting apparatus. The controlling station in such cases is not necessarily a D.F. station, but may be an ordinary coast station.

REGULATIONS FOR CANADIAN AND NEWFOUNDLAND D.F. STATIONS.

8. The following independent D.F. stations are established —

Station.	Call Signal.	Range (miles).	Lat. N.			Long. W.		
			°	'	"	°	'	"
Chebucto Head.....	YAV	250	44	30	01	63	31	20
Canso.....	VAX	100	45	19	24	60	58	25
Cape Race.....	VAZ	250	46	39	10	53	05	05

9. These stations keep watch and take bearings on the 600-metre wave.

10. A ship requiring a bearing should call the D.F. station required, and transmit a government message requesting the bearing.

*Example.*—A ship S.S. "Nonsuch" call sign [XYZ], calls up Chebucto Head in the ordinary way and, on receiving "K" (go on), makes the message as follows—

"Call" S Radio Nonsuch 1, 5, 10 (day of month) 10.50 M (time)=Officer in charge Chebucto Head=Request bearing=Master+XYZ

11. The D.F. station will then acknowledge receipt of the message and, if not ready to take the bearing at once, will direct the ship to wait.

12. When ready to take the bearing, the D.F. station will make "K" (go on), whereupon the ship will make the figure "2" 30 times, commencing with the "Call" and ending with the "Cross" and her own call signal.

13. If the D.F. station is not satisfied with the bearing, it will make the "repeat" sign (?) and the ship will again make the figure "2" as above, but only 20 times.

14. In default of such request for a repetition, the D.F. station does not transmit until it is ready to give the bearing. To do so, the station calls the ship and sends (as a government message) the TRUE bearing of the ship from the station in degrees from 0° to 359°, the angles being measured from true north (0°) clockwise through true east (90°), true south (180°), and true west (270°).

REGULATIONS FOR D. F. STATIONS IN THE UNITED STATES.

15. The following U. S. Naval D. F. stations are now in operation for the purpose of furnishing bearings to vessels in the Western Atlantic. Stations marked \* are in continuous operation in foggy weather only.

The stations given in the former Notice, which are not included in the following list, are to be expunged from the charts.

Station.	Call Signal.	Latitude, N.	Longitude, W.
Bar Harbor, Me.	NBD	44 18 36	68 11 27
Gloucester, Mass.	NAD	42 35 19	70 41 08
*Deer Island, Mass.	NAD	42 21 15	70 57 30
Surfside, Nantucket, Mass.	NBS	41 14 42	70 05 56
Montauk, Long Island, N. Y.	NAH	41 03 09	71 57 27
Fire Island, N. Y.	NAH	40 38 07	73 12 32
Sandy Hook, N. J.	NAH	40 28 12	74 01 06
Mantoloking, N. J.	NAH	40 01 30	74 03 10
Cape May, N. J.	NSD	38 56 41	74 53 10
Bethany Beach, Del.	NSD	38 32 45	75 03 21
Hog Island, Va.	NCZ	37 22 36	75 42 37
Cape Henry, Va.	NCZ	36 55 16	75 59 51
Cape Hatteras, N. C.	NDW	35 14 22	75 31 42
Cape Lookout, N. C.	NAN	34 36 13	76 32 15
North Island, N. C.	NZW	33 13 21	79 11 06
*Morris Island, S. C.	NAO	32 41 36	79 53 17

16. Where two or more of the foregoing D. F. stations have the same call signal it indicates that they are connected by telegraph to and under the control of a central control station, the call signal being the call of the central control station. When a request for bearings is made the central control station invariably answers with a bearing from each of the D. F. stations under its control.

17. The following signals have been authorized and will be used until further notice:

Signal.	Meaning.
---------	----------

QTE?..... What is my true bearing?

QTE..... Your true bearing is ---- degrees from ---- D. F. station.

18. To obtain bearings, the D. F. station should be called on 800 metres in the usual manner, and the call followed by the signal "QTE?", meaning "What is my true bearing?" When told by the D. F. station to "K" (go ahead), the ship's operator should follow the procedure outlined below:

(a) Transmit the ship's call signal for 30 seconds.

(b) Make dashes, each dash 5 seconds long, for one minute, with the ship's call signal after each dash.

(c) Terminate with the signal "K" (go ahead).

19. If satisfactory bearings are obtained, the operator at the D.F. station will call the vessel in the usual manner and reply "QTE" followed by the true bearing in degrees (0 to 359) spelled out in words, and the name of the D.F. station from which the bearing was obtained; otherwise a repetition of the test will be requested.

20. The ship's operator should acknowledge receipt of the bearings by answering the D.F. station in the usual manner and repeat, in numerals, the bearings received. This procedure enables all stations concerned to check the bearings.

21. All United States Naval D.F. stations keep watch and transmit on 800 metres for merchant vessels, and this wave-length should be used for calling and answering and carrying on all communication with these stations.

22. In order that the operation of shore D.F. stations may be checked up,      a brief report should be forwarded to the Director Naval Communications, Navy Department, Washington, D. C., containing:

(a) Name of ship.

(b) Name of D.F. station.

(c) Date and G.M.T. at which wireless bearing was given.

(d) Bearing given by D.F. station.

(e) Estimated position of ship at above time and date by methods other than wireless.

(f) The probable degree of accuracy of the estimated position.

(g) Weather conditions at above time.

(h) Remarks, if any.

(i) Signature of master or responsible navigating officer.



REGULATIONS FOR D.F. STATIONS IN THE UNITED KINGDOM.

23. The following D.F. stations are established:

Station.	Call Signal.	Lat. N.			Long. W.		
		°	'	"	°	'	"
Peterhead.....	BVL	57	33	30	1	49	05
Berwick.....	BVG	55	41	48	1	53	40
Framborough.....	BVN	54	07	05	0	04	58
Amlwch <sup>2</sup> .....	BXV	53	24	28	4	18	20
Rhyl <sup>2</sup> .....	BZW	53	15	20	3	28	50
Lizard.....	BVY	49	59	07	5	12	18
Carnsore.....	BVZ	52	11	50	6	21	00
Larne.....	BXJ	54	51	15	5	48	15
Seaview <sup>3</sup> .....	BXK	55	22	00	7	19	25

NOTES:  
<sup>2</sup> Rhyl is not fitted with transmitting apparatus and is controlled by Amlwch.  
<sup>3</sup> Seaview is not fitted with transmitting apparatus and is controlled by Malin Head (GMH), which keeps watch on 600 metres.

24. All the above D. F. stations keep watch and take bearings on the 450 metres wave (see note). Except as shown in the notes they all work as independent stations and can transmit, as well as receive, on 450 metres.

Note.—Ships with Marconi apparatus can adjust their transmitting gear very nearly to this wave (using reduced power) by cutting out half the primary transmitting condenser and adjusting the A. T. I. till the earth lamp shows maximum current in the aerial. The primary slider should be "all in."

25. The actual procedure to be adopted by ships requiring bearings will depend upon what stations are concerned. It should be observed that if the stations to be called do not all keep watch on the same wave (e. g., Malin Head and Larne), bearings should be asked for separately. If on the other hand the stations to be called all keep watch on the same wave (e. g., Lizard and Carnsore), they should be called up together and the bearings taken in one operation. If, however, two or more stations are linked by special land lines (e. g., Amlwch and Rhyl), only one of them should be called up. In such cases, however, the ship must specify in the preliminary signal the D. F. stations which are required to supply bearings.

26. The following abbreviations are to be used:—

Signal.	Meaning.
QTE?... ..	"What is my true bearing from you (or from —)?"
QTE .....	"Your true bearing from me (or from —) was — degrees."

27. The ship calls the station or stations on the appropriate wave, making "QTE?" in conjunction, if necessary, with the call signals of the stations from which bearings are required and also (if the call is NOT made on 450 metres) by the figures "450," signifying that the ship will shift to 450 metres for the taking of the bearing. The ship then awaits instructions.

Example 1.

A ship whose call signal is XYZ requires bearings from Amlwch (BXV) and Rhyl (BZW).  
 The ship, having first shifted to 450 metres, calls Amlwch thus:—

CT BXV BXV de XYZ QTE BXV BZW?

She then awaits instructions.

Example 2.

The ship requires a bearing from Seaview (BXK). The ship has to use 600 metres to call Malin Head (GMH).  
 She calls on 600 metres, thus:—

CT GMH GMH de XYZ QTE BXK? 450.

She then gets ready to shift to 450 metres and awaits instructions.

28. The station or stations called then make the necessary arrangements and, when ready, answer in alphabetical order of their call signals (if more than one was originally called) and make "K" (go on) preceded by "450" if 450 had been made in the original call.

*Example 1.*

Amlwch, in Example 1 above, warns Rhyl by land line and, when both are ready, makes on 450 metres:—

CT XYZ de BXV K

*Example 2.*

Malin Head, in Example 2 above, warns Seaview by land line and then makes on 600 metres:—

CT XYZ de GMH 450 K

Malin Head then shifts to 450 metres so as to be ready to give the result when received by wire from Seaview.

29. On receiving "K," the ship, having shifted transmitting wave to 450 metres (if not already done), then makes her own call signal for 45 seconds and awaits the result.

*Example 1.*

The ship, in Example 1 above, makes on 450 metres:—

CT BXV de XYZ XYZ XYZ, &c. (for 45 seconds) XYZ

*Example 2.*

The same as Example 1. reading GMH for BXV.

30. The station or stations then reply (in alphabetical order if more than one) either asking the ship to repeat (?) or giving the result. The result is given by the signal QTE followed as necessary by the call signal and by a group of three figures (000 to 359) indicating the true bearing from 0° to 359°, reckoned as in paragraph 14, of the ship from the station. Several bearings can be combined into one message, each bearing immediately following the call signal of the station which took it. The time of handing in is always expressed in Greenwich mean time for all messages giving bearings to merchant ships.

*Example 1.*

Rhyl, in Example 1 above, is not satisfied with the bearing and informs Amlwch. Amlwch makes on 450 metres:—

CT XYZ de BXV?

The ship at once complies by making on 450 meters:—

CT BXV de XYZ XYZ XYZ, &c. (for 45 seconds) XYZ

Rhyl is then satisfied that the bearing is 340° and informs Amlwch, while Amlwch finds that its own result is 37°. Amlwch therefore makes on 450 metres:—

CT XYZ XYZ de BXV 1 9.45 M (time)=QTE BZW 340 BXV 037+BXV

*Example 2.*

Seaview, in Example 2 above, gets a satisfactory bearing of 329° and informs Malin Head. The latter makes on 450 metres:—

CT XYZ XYZ de GMH 2 10.46 S (time)=QTE BXK 329+GMH

*Example 3.*

Had the ship merely asked Lizard (BVY) for a bearing, Lizard, finding it to be 246°, would make on 450 meters:—

CT XYZ XYZ de BVY 1 7.6 M (time)=QTE 246+BVY

31. The ship, on receiving the result, acknowledges receipt in the ordinary way, and makes the "end of work" sign. This sign is then repeated by the station or stations concerned. It is important that the "end of work" sign should not be omitted since it not only indicates that the operation is finished, but it also shows that all concerned are about to resume watch on their normal wave.

REGULATIONS FOR FRENCH D. F. STATIONS.

32. The following D. F. stations are established:—

Station.	Call Signal.	Lat. N.			Long.		
		°	'	"	°	'	"
Le Havre.....	FFU	49	31	30	0	07	00 E.
Bernières.....	UHN	49	20	00	0	25	00 W.
Cherbourg.....	FFC	49	36	32	1	36	00 W.
Tréguier.....	FQC	48	50	08	3	13	56 W.
Ouessant—Pen ar Roch <sup>1</sup> .....	FHY	48	26	27	5	05	33 W.
Brest—Guipavas.....	FHA	48	27	00	4	26	30 W.
Brest—Capucins <sup>2</sup> .....	HUD	48	19	12	4	34	48 W.
Pointe du Raz.....	FFU	48	02	22	4	43	52 W.
Lorient.....	FFJ	47	44	05	3	20	45 W.
Chémoulin <sup>3</sup> .....	FCH	47	14	06	2	17	54 W.
Rochefort—Soubise.....	HOB	45	56	00	1	00	00 W.
Barre de l'Adour.....	FLO	43	31	40	1	31	20 W.
Casablanca—Chetaba <sup>3</sup> .....	FCH	33	35	21	7	34	10 W.

NOTES. \*Chémoulin closed pending transfer to Ville-ès-Martin, near St. Nazaire, of which further Notice will be given. Chémoulin station is to be expunged from the charts.

<sup>1</sup> Ouessant—Pen ar Roch answers FFF.

<sup>2</sup> Brest—Capucins answers FFK.

<sup>3</sup> Casablanca—Chetaba answers CNP.

33. The regulations for French D. F. stations are similar to those for the United Kingdom.

REGULATIONS FOR ITALIAN D. F. STATIONS.

34. The following D. F. station is established:—

Station.	Call Signal.	Lat. N.			Long. E.		
		°	'	"	°	'	"
Murano.....	IRM	45	27	40	12	21	22

NOTE.—The above station cannot answer the calls from ships, but is in direct communication by telegraph with the W/T station Carbonera (ICZ).

35. Vessels wishing to obtain bearings from Murano D.F. station must call up Carbonera station, and the latter, having obtained the required information from Murano, will duly transmit it to them. The bearings are True, and are given in degrees from 0° to 359°.

36. The procedure is as follows:—

A ship whose call signal is ABC wishes a bearing.

On a wave of 600 metres she will signal:—

CT ICZ ICZ de ABC QTE ?

Carbonera will answer:—

CT ABC de ICZ AS

Carbonera then wires Murano; when ready, Carbonera replies:

CT ABC de ICZ K 6

ABC after 30 seconds signals:—

CT ICZ de ABC ABC ABC &c., for 45 seconds.

37. If dissatisfied with the bearing, Murano through Carbonera will ask the ship to repeat.

Carbonera signals:—

CT ABC de ICZ UD

ABC repeats the signal as given above.

38. When satisfied with the bearing, which is assumed to be 170°, at 9.45, Murano will transmit it by telegraph to Carbonera, whence it is passed to the ship as follows:—

CT ABC de ICZ de IRM 9.45 M BT QTE 170 AR ICZ

ABC acknowledges receipt:—

CT ICZ de ABC R SK

REGULATIONS FOR GERMAN D.F. STATIONS.

39. The following D.F. stations on the German North Sea Coast are established. The stations belong to the State Marine but are also available for public use:—

Station.	Call Signal.	Lat. N.	Long. E.
*Wilhelmshaven.....	KAN	53 31 00	8 09 30
List.....	VBD	55 00 12	8 23 12
Nordholz.....	MNF	53 47 06	8 38 30
Borkum.....	FNR	53 34 55	6 40 54

\* Control station.

40. (a)—A ship (call sign ABC) requiring a bearing from each of the three stations, the following procedure is to be employed:—

CT	KAN	KAN	KAN	DE	ABC	AR		
CT	ABC	ABC	ABC	DE	KAN	AR	K	
CT	KAN	DE	ABC	BT	QTE	AR		
CT	ABC	DE	KAN	VE	AS			
CT	FNR	FNR	FNR	MNF	MNF	MNF		
	VBD	VBD	VBD	DE	KAN	BT		PEILUNG (Bearing)
	600 m — WELLE		ABC					
	(metre wave)							
CT	ABC	DE	KAN	BT	BITTE VV	GEBEN	AR	
					(Please send V's)			
CT	KAN	DE	ABC	BT	V's . . . . .	ABC	AR	
CT	FNR	MNF	VBD	DE	KAN	AR	K	
CT	KAN	DE	FNR	BT	PEILUNG	ABC . . .	GRAD	
					(Bearing)		(Degrees)	
	FNR	1018	AR					
	Similarly MNF and VBD pass their bearings to KAN							
CT	FNR	MNF	VBD	DE	KAN	VE		
CT	ABC	DE	KAN	BT	PEILUNG	1018 ?	AR	K
					(Have you received Bearing)			
CT	KAN	DE	ABC	VE	VE	AR	SK	
CT	ABC	DE	KAN	VE	SK			
CT	FNR	MNF	VBD	DE	KAN	SK		

(b)—A ship (call sign ABC) requiring her position to be obtained by means of bearings from the three stations, the following procedure is to be employed:—

With the exception that QTF is substituted for QTE the procedure is as in (a) above until the three stations have passed the bearings to KAN.

KAN then makes to ABC:—

CT	ABC	DE	KAN	BT	IHR	STANDORT	NACH	FUNK		
							(your position by means of			
PEHLUNG	UM	1018	IST	—	GRAD	—	MIN	—	SEK	NORD-
hearings	at		is		degrees		minutes		seconds	north
BREITE	—	GRAD	—	MIN	—	SEK	OST-LÄNGE	AR	K	
		degrees		minutes		seconds	east)			

The procedure is then as in the last 3 lines of (a) above.

41. NOTE.—Mid-European time is used, the hours and minutes being expressed in four figures from 0000 to 2359.

Note.—This Notice is a revision of the former Notice quoted above.

*Admiralty, London.*

*22nd May 1920.*

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

