

25
M.O. 329

AIR MINISTRY

METEOROLOGICAL OFFICE

DECODE

FOR USE WITH THE INTERNATIONAL
CODE FOR

Wireless Weather Messages from Ships

ADOPTED BY THE INTERNATIONAL
METEOROLOGICAL CONFERENCE
1929 AND 1935

Fifth Edition

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WORLD WIDE SYSTEM OF VOLUNTARY SELECTED SHIPS ROUTINE WIRELESS WEATHER REPORTS

(1) For the purpose of aiding navigation, in accordance with Article 35, para. (c), of the International Convention for Safety of Life at Sea, 1929, Merchant Shipping (Safety and Load Line Conventions) Act, 1932, First Schedule, and to assist the meteorological services of the world with weather intelligence, it is intended that there shall be an agreed number of regularly reporting ships, termed Selected Ships, of all nations, distributed over all oceans, working voluntarily under their national state meteorological institutions.

At present the number agreed upon is 1,000 of all nations.

(2) In order that this work may be fairly distributed amongst the different national merchant navies, and to prevent congestion in wireless communication, it is intended that each national meteorological service should maintain in voluntary service a number of Ships on the register of their own country as Selected Ships, in accordance with their proportion of the world's tonnage of steam and motor vessels of over 100 tons.

(3) Selected Ships are broadly divided into two types, "A" and "B".

"A" Selected Ships are ships fitted for long range W.T. transmission (Type A.1, C.W. apparatus) mostly mail steamers sailing and arriving at dates fixed by advertised programmes.

"B" Selected Ships are ships fitted for shorter range W.T. transmission (Type A.2, I.C.W. apparatus) including passenger and cargo liners sailing according to an advertised programme, as well as a number of vessels whose movements are not advertised and may vary from voyage to voyage.

(4) It is necessary that observations reported by wireless telegraphy should synchronize. The International times of observation for weather telegraphy at sea are 0000, 0600, 1200 and 1800 hours G.M.T.

(5) It is necessary that weather reports made for the information of all ships and the meteorological services of the different countries should be in one code, simple and concise, giving only essential information.

Selected Ships use the International Ships' Wireless Weather Telegraphy Code.

British Selected Ships

(6) When British ships become regular voluntary observing ships to the Meteorological Office, London, their Commanders volunteer to carry out the duties of Selected Ships when required.

The names of all British observing ships are published in a fleet list at the end of the "Marine Observer," corrected monthly by supplement.

(7) Selected Ships are selected from this list, according to their sailing schedules and trades to provide distribution, and according to their wireless apparatus to ensure efficient communication.

(8) When observing ships are detailed as Selected Ships, their commanders are specially notified; and each Selected Ship is identified by a number placed before her name in the fleet list published in the "Marine Observer."

(9) Nearly all British ships carrying W.T. are capable of receiving on medium wave and this is not subject to skip, whereas far fewer can receive short wave and it is subject to skip.

(10) A fairly long range without skip being desirable, at present medium wave, C.W. is more satisfactory, and British "A" Selected Ships are at present confined to ships so fitted.

Times of Observation

(11) The times of observation given in section (4) are the same for all longitudes. International wireless watch keeping periods are fixed according to each zone.

(12) Many Selected Ships only have one officer in each watch. The first essential for safe navigation is a good look out kept by the officer of the watch, as well as the lookout man. The officer of the watch is responsible for meteorological observations, and the accuracy of reports. If the officer of the watch at night goes into the lighted chart house to read meteorological instruments and record them, not only does he leave his post of lookout, but he returns to the bridge momentarily blinded.

(13) Wireless meteorological reports are not asked for in British Selected Ships during the hours of darkness in which there is only one officer in each watch.

The times of observation indicated in the Schedule which follows in section (20) are those which generally fall during daylight in the different zones, and at these times all British Selected Ships are requested to record observations for reporting by wireless.

(14) In certain parts of the world "A" Selected Ships having two officers in each watch are requested to record observations at all four times, and report them to certain meteorological services.

Communication

(15) In order that communication may be effective (that is, that the reports may reach as many ships as possible as well as the appropriate meteorological centres), British Selected Ships work a time schedule for transmitting their reports and use prescribed wave lengths, both when addressing specified stations or all ships.

(16) Generally Selected Ships address their reports to specified centres (on the appropriate wave length) when within range of coast stations appointed to receive weather reports in this service, through such stations.

When not within range of such stations, or when those stations indicate that the reports are not desired ashore, to C.Q.

(17) It cannot be too strongly emphasized that these reports are intended for all ships; and therefore particularly when reports are not desired ashore, in parts of the world where stations are not appointed to receive these reports, the routine report should be made to C.Q.

(18) Great importance is attached to the S.O.S. periods of silence. Therefore the times of transmission for "A" Selected Ships are fixed to commence immediately at the end of the appropriate S.O.S. silence period.

This allows a sufficient interval from the time of observation for recording and coding the observations carefully, and sending the coded messages from the bridge to the wireless house.

(19) Usually the times of commencement of transmission for "A" and "B" Selected Ships are fixed at 18 minutes and 30 minutes respectively after observation time; but for ships with only one W.T. operator in certain zones, special commencing periods are fixed to accord with wireless watch.

(20) The schedule which follows indicates the times of observation, and commencement of times of transmission for both "A" and "B" Selected Ships in the different zones.

It will be noted that against some of the observation times there are two times of commencement of periods for transmitting. The second of these times, where two occur, is for single operator ships to report, in cases where they would not be keeping wireless watch following the observation hour. It should be remembered that a large proportion of "Selected Ships" carry two or three operators, and they should use the earlier periods for transmission, also repeating for the benefit of ships with one operator during the second period.

Schedule

All times are G.M.T.

| Zones between Greenwich Meridians. | FIRST WEATHER REPORT. | | | SECOND WEATHER REPORT. | | |
|------------------------------------|------------------------|---|---|------------------------|---|---|
| | Times of observations. | Times of reporting by Type A1 (C.W.) Ships. | Times of broadcasting by Type A2 (I.C.W.) and Type B (Spark) Ships. | Times of observations. | Times of reporting by Type A1 (C.W.) Ships. | Times of broadcasting by Type A2 (I.C.W.) and Type B (Spark) Ships. |
| 30° W.-30° E. | 0600 | { 0618 0818 } | 0830 | 1200 | 1218 | 1230 |
| 30° E.-80° E. | 0600 | { 0618 0818 } | { 0630 0830 } | 1200 | 1218 | 1230 |
| 80° E.-160° E. | 0000 | 0018 | 0030 | 0600 | { 0618 0818 } | 0830 |
| 160° E.-140° W. | 0000 | 0018 | 0030 | 1800 | { 1818 2018 } | 2030 |
| 140° W.-70° W. | 0000 | 0018 | 0030 | 1800 | { 1818 2018 } | { 1830 2030 } |
| 70° W.-30° W. | 1200 | 1218 | 1230 | 1800 | { 1818 2018 } | 2030 |

In working this schedule, Selected Ships should be careful not to jam each other.

It may be advantageous for Selected Ships—beyond the region of the Eastern North Atlantic, regulated by roll calls, and when not reporting to a shore station—when in W/T communication previous to reporting time to arrange the order in which they will transmit their weather reports to CQ at the next scheduled time.

(21) For "A" Selected Ships the wave length to be used in reporting to shore stations is specified in a list of stations detailed to receive coded weather reports from "A" Selected Ships, published in the latest number of the "Marine Observer." In the Eastern North Atlantic, where there is great congestion of wireless traffic, British Selected Ships work in accordance with roll calls for the day, broadcast from the specified W/T stations for the information of all shipping, particulars of which are given in the detailed list of wireless stations above mentioned.

In parts of the world where there are not stations detailed to receive reports from "A" Selected Ships, they make their reports to CQ on 2100 metres.

(22) "B" Selected Ships should use 600 metres wave length throughout the service in all parts of the world.

The names of stations detailed to receive weather reports from "B" Selected Ships are given in a list following that for "A" Selected Ships in the latest number of the "Marine Observer."

(23) The lists of stations referred to in (21) and (22) are copied from the "Marine Observer" in the Admiralty List of Wireless Signals for the general information of all British shipping, and are kept up to date by Notice to Mariners.

(24) In order that all ships should know when Selected Ships make their reports, and be able to decode them, this pamphlet is published for general use, and jamming and confusion have been much reduced.

All are asked to help in maintaining the success of this voluntary scheme.

(25) No communication charges are made to the ship for Selected Ships' routine wireless weather reports broadcast to all ships, or addressed to meteorological centres specified in the lists in the last number of the "Marine Observer," and which are copied in the Admiralty List of Wireless Signals, and kept up to date by Notice to Mariners. Wireless weather reports addressed by ships to meteorological centres not conforming to these instructions may be liable to charges.

(26) The number of messages required for this service is comparatively small, when effectively organized.

Relaying on wave lengths specified in (21), (22), and in the lists of stations in the "Marine Observer" (that is to say, wave lengths used for Selected Ship weather reporting) should not be resorted to.

Every endeavour should be made for the reports in areas in which International W/T link or collective ships, such as the French *S.S. Cuba*, are working, to reach those ships, who will relay them to special shore stations for the information of meteorological centres on a special short wave (long range).

The main object of this system is to make one transmission serve as many ships as possible and the appropriate meteorological centre with the information reported.

(27) While there is congestion in the Eastern North Atlantic and Selected Ships and other British ships are therefore indicated by roll call to report, in other parts of the world there may often be insufficient Ships to provide an adequate service of routine reports.

In the regions of heavy weather on the less frequented routes of the Southern Ocean, and particularly in the Hurricane regions during the Hurricane season, British ships other than Selected Ships are asked to assist in this service.

This will be dealt with in (34).

Observation and Coding

(28) Guidance in observing and recording meteorological elements will be found in the "Marine Observer's Handbook."

(29) The code, and full guidance for its use in Selected Ships, is given in the January number of the "Marine Observer" each year.

Brief Instructions for the Guidance of British Selected Ships

(30) The work of "A" and "B" Selected Ships is interdependent.

It is essential that observing officers should be conversant with communication as well as being skilled in observation, and the application of the meteorological information; and that wireless operators should be conversant with the general purpose and application of the information communicated as well as skilled in this system of communication.

It is therefore essential that all concerned should be familiar with the whole scheme.

The following brief instructions are intended to assist the Commanders of Selected Ships in regulating the work under their command.

All Selected Ships

(31) **Observing Officers.**—At the times indicated for observation see (20), carefully enter your observations in the record of synchronized observations.

Code these observations.

If the message is to be broadcast to **C.Q.** the weather information may be conveniently abbreviated to the four universal groups of figures; and instead of using supplementary groups, information of Ice or Set and Drift of current may be given briefly in plain language.

If the message is to be sent to a meteorological centre, ascertain from the list in the latest "Marine Observer" (copied in the Admiralty List of Wireless Signals) what groups are desired, and make out the message accordingly.

Write out the message and address carefully to **C.Q. Weather** or the specified meteorological centre for the part of the world given in the lists in the latest number of the "Marine Observer." Send it to the wireless operator just before the commencement of the S.O.S. period following the observation time.

Example. For Meteorological centre.—From **GMLJ.** to **GKU.** Weather London 20506, 13106, 18603, 88660, 35x08, 54528, 65825.

Example. For all ships.—C.Q. Weather 13167, 55106, 00000, 16979. Current from 15N. 52E. to 16N. 54E. 58 degrees one knot Dalgoma.

“ A ” Selected Ships

(32) **Wireless Operator.**—Consult the list of stations detailed to receive reports in the “ Marine Observer ” (copied in the Admiralty List of Wireless Signals).

In the Eastern North Atlantic, when on the roll call transmit the weather report to **GKU.** accordingly on the appointed wave length, following the order of the roll call at the schedule time. The reports for 0000 and 1800 hours G.M.T. should be made as soon as convenient after the silence period.

In parts of the world where the message is addressed to a meteorological centre call the station detailed in the “ Marine Observer ” (copied in the Admiralty List of Wireless Signals) at schedule time, *see* (20), and on the wave length specified, and transmit the report, which will be acknowledged in the ordinary way, remembering that this message is intended for ships within range as well as the shore station.

The message will be addressed to **C.Q.** in parts of the world where there is no station detailed. Send it out at schedule time on 2100 metres.

Make your transmissions as above with due consideration to circumstances.

“ B ” Selected Ships

(33) **Wireless Operator.**—If the message is addressed **C.Q.,** broadcast it at or following schedule time given in (20) on 600 metres. When in range of stations indicated in the list as detailed to receive wireless weather reports from “ B ” Selected Ships, and the message is addressed to a meteorological centre, make it to the appropriate station.

In the Eastern North Atlantic when on the roll call of **GMH.** or **GCK.,** transmit the weather report to that station on 600 metres wave length, following the order of roll call and at schedule time.

British Ships' Wireless Weather Reports in Parts of the World where there are not sufficient Selected Ships to provide an adequate Service

(34) Under Article 34 of the Convention for Safety of Life at Sea, the master of every ship meeting a dangerous tropical storm, is bound by law to report to ships in the vicinity, and to the first point of the coast with which he can communicate (*see* the Marine Observer's Handbook, Sixth Edition, page 106).

In addition to this, the voluntary service of routine reports is particularly desirable in all parts of the world ; and where there are not sufficient Selected Ships to provide an adequate service, all British ships fitted with wireless telegraphy are asked to assist in the service.

This applies particularly to the regions of heavy weather in the Southern Ocean, and to regions of tropical revolving storms.

As far as possible the International Ships' Wireless Weather Telegraphy Code should be used and the procedure for Selected Ships should be carried out. British ships which are not Selected Ships should only make routine wireless weather reports to the shore through stations which have been detailed to receive weather reports without charge to the ship. Notification of these stations is made in the lists referred to in the “ Marine Observer ” ; and these lists are copied in the Admiralty List of Wireless Signals, for general information, and kept up to date by Admiralty Notices to Mariners.

With a view to stimulating this supplementary service of making weather reports in the Selected Ship service, when and where there are not Selected Ships, a Supplementary List of British Weather Reporting Ships is being made.

Only British ships suitably fitted with wireless telegraphy, and who have been visited by the Merchant Navy Agents to the Meteorological Office, and whose masters have then undertaken to perform this service, are included in this list, which is not published, but which is sent for information to stations making a roll call.

Notes for the special guidance of masters of British ships which are not Selected Ships will be found on page 26.

Additional Local Reports

(35) If for local reasons, British ships are asked locally to report weather at times other than those of the routine times for British Selected Ships, they are requested to do so if convenient ; but British Selected Ships, and British ships carrying on the service where there are not Selected Ships, should in such cases also report at the routine times laid down, so that there may always be a service of routine weather reports made at schedule times for the benefit of navigation.

In regions, where for local reasons observations are desired to be reported additional to those specified in the schedule on page 5 by ships at sea to meteorological centres ashore, Notices to Mariners, specifying a special time of observation, will be published through the appropriate State nautical authority.

These reports should be made in the International Ships' Wireless Weather Telegraphy Code.

The following optional additional observation times for reports to shore stations have been notified:—

| | | |
|------------------|--|-------------|
| GREAT BRITAIN | For one operator ships only in the Eastern North Atlantic, when reporting to Weather London, and on the roll calls for Malin Head or Valentia, usually during the summer months, 16th April to 15th October inclusive, but occasionally at other times of the year when specially desired. | 2100 G.M.T. |
| INDIA | .. For the stations named in the lists bordering the Arabian Sea. | 0300 G.M.T. |
| HONG KONG | For the stations named in the lists bordering the China Sea and Western North Pacific. | 2200 G.M.T. |
| FIJI .. | .. For Suva, when in range of that station and between Longitude 160° E. and 140° W. | 2000 G.M.T. |

DECODING OF SHIPS' WIRELESS WEATHER REPORTS

Any ship intercepting a wireless message from a ship commencing "C.Q. Weather" or "Weather London" or preceded by the word "Weather," containing numbers in five-figure groups, may decode the message according to the new International Code.

The messages will be in one of the four following forms:—

Key Letters

- (1) YQLLL 111GG DDFww PPVTT
- (2) YQLLL 111GG DDFww PPVTT 3C_LC_MC_HN t_dKdWN_L
d_sfabb
- (3) YQLLL 111GG DDFww PPVTT 6KdCN t_dd_sAWC_H
- (4) YQLLL 111GG DDFww PPVTT 9SKdW CNN_LAt_d

The meaning of the symbols is given in the key on page 12, in which they are arranged alphabetically. The message as received will consist of five-figure groups, the first two of which refer to Day, Position and Time, the remaining groups giving the meteorological elements observed. It will be seen by reference to the key to the symbol letters, that while in many cases a single figure suffices to express a meteorological element, in some cases two figures are required, for example in the case of barometric pressure. Latitude and longitude, in the first two groups, each require three figures. The figures in a group are always in the same sequence, denoted by the symbols of the specimen forms given above.

In all four forms of message the first four groups are identical; these are termed the universal groups and are never omitted. A message in form No. 2 contains supplementary groups, distinguished by the figure 3 at the beginning of the fifth group. A message in form No. 3 contains supplementary groups distinguished by the figure 6 at the beginning of the fifth group and a message in form No. 4 contains supplementary groups distinguished by the figure 9 at the beginning of the fifth group. A message may be shortened by the omission of the last group or groups, but the order of the groups will always be maintained, and the form of the message after the first four groups can always be identified by the first figure of the fifth group. The number of groups in a message is thus never less than four nor more than seven.

Navigational Information

Information of observed set and drift of Current, Ice, and Navigational Dangers may be added after the figure groups, as necessary, in plain language.

Key to Symbol Letters

- A = Amount and characteristic of barometric tendency expressed by a single figure. (See Table IX.)
- a = Characteristic of barometric tendency during the period of three hours preceding the time of observation. (See Table X.)
- bb = Amount of barometric tendency during the three hours preceding the time of observation expressed in units of 1/5th of a millibar. (See Table XI.)
- C = Form of predominating cloud. (See Table XVI.)
- C_H = Form of Upper (Cirrus) Cloud. (See Table XV.)
- C_L = Form of Low Cloud. (See Table XIII.)
- C_M = Form of Middle Cloud. (See Table XIV.)
- DD = Direction of the wind (True) near the surface. (See Table III.)
- d = Direction (True) from which swell comes. (See Table IV.)
- d_s = Direction of Ship's course on scale (0-8). (See Table IV.)
- F = Force of the wind on the Beaufort Scale. (Forces above 9 are reported as 9, with the actual force in a word at the end.) (See Table V.)
- f = Speed of ship in knots. (See Table XXI.)
- GG = Greenwich Mean Time of observation (06 = 6 a.m., 12 = noon, &c.).
- K = Swell in the open sea. (See Table XIX.)
- LLL = Latitude in degrees and tenths, the tenths being obtained by dividing the number of minutes by 6 and neglecting the remainder.
- lll = Longitude in degrees and tenths, the tenths being obtained as for Latitude LLL.
- N = Total amount of sky covered with cloud. (See Table XVII.)
- N_L = Amount of Low Cloud. (See Table XVII.)
- PP = Pressure in whole millibars (initial 9 or 10 omitted). The values refer to sea level and include all corrections for index error, temperature and gravity. (See Table VIII.)
- Q = Octant of globe in which ship is situated. (See Table II.)
- SK = Sea and Swell by the Douglas Scale. (See Table XX.)
- TT = Temperature of the air in whole degrees Fahrenheit.
- t_d = Difference between Air and Sea Temperature. (See Table XVIII.)
- V = Visibility or distance at which objects can be seen in daylight (or at which lights can be seen at night). (See Table XII.)

W = Past weather—the weather in the interval preceding the time of observation. (See Table VII.)

ww = The actual weather at the time of observation. (See Table VI.)

Y = Day of the week. (See Table I.)

In order to facilitate the decoding of messages, a sheet similar to that shown on page 14, should be ruled up.

Write the figures of the messages in the order received down the column, taking great care to put the first figure of the fifth group in its proper place, so that the supplementary groups may be correctly decoded.

| Key Letter. | Group No. | Name of Element and Table No. for decoding figures. | Message as Recd. | Message decoded. | Message as Recd. | Message decoded. | Message as Recd. | Message decoded. |
|----------------|-----------|--|------------------|------------------|------------------|------------------|------------------|------------------|
| Y | 1 | Day of Week .. Table I | | | | | | |
| Q | | Octant of Globe.. Table II | | | | | | |
| LLL | | Latitude | | | | | | |
| III | 2 | Longitude | | | | | | |
| GG | | G.M. Time of Observation .. | | | | | | |
| DD | | True direction, Wind Table III | | | | | | |
| F | 3 | Force of Wind .. Table V | | | | | | |
| ww | | Present Weather Table VI | | | | | | |
| PP | | Barometer (Absolute) Table VIII | | | | | | |
| V | 4 | Visibility.. Table XII | | | | | | |
| TT | | Temperature of Air | | | | | | |
| | | | | | | | | |
| | 3 | Distinguishing Figure of Supplementary Group | 3 | | 3 | | 3 | |
| C _L | 5 | Lower Cloud .. Table XIII | | | | | | |
| C _M | | Middle Cloud .. Table XIV | | | | | | |
| C _H | | Upper Cloud .. Table XV | | | | | | |
| N | | Total Amount of Cloud Table XVII | | | | | | |
| t _d | 6 | Difference of Air and Sea Temperature Table XVIII | | | | | | |
| K | | Swell .. Table XIX | | | | | | |
| d | | True Direction of Swell Table IV | | | | | | |
| W | | Past Weather .. Table VII | | | | | | |
| N _L | 7 | Amount of Low Cloud Table XVII | | | | | | |
| d _s | | Course of Ship .. Table IV | | | | | | |
| f | | Speed of Ship .. Table XXI | | | | | | |
| a | | Characteristic of Barometric Tendency .. Table X | | | | | | |
| bb | | Amount of Barometric Tendency Table XI | | | | | | |
| | 6 | Distinguishing Figure of Supplementary Group | 6 | | 6 | | 6 | |
| K | 5 | Swell .. Table XIX | | | | | | |
| d | | True Direction of Swell Table IV | | | | | | |
| C | | Predominating Cloud Table XVI | | | | | | |
| N | | Total Amount of Cloud Table XVII | | | | | | |
| t _d | 6 | Difference of Air and Sea Temperature .. Table XVIII | | | | | | |
| d _s | | Course of Ship .. Table IV | | | | | | |
| A | | Change of Barometer in last 3 hours .. Table IX | | | | | | |
| W | | Past Weather .. Table VII | | | | | | |
| C _H | | Upper Cloud .. Table XV | | | | | | |
| | 9 | Distinguishing Figure of Supplementary Group | 9 | | 9 | | 9 | |
| SK | 5 | Sea and Swell, Douglas Scale Table XX | | | | | | |
| d | | True Direction of Swell Table IV | | | | | | |
| W | | Past Weather .. Table VII | | | | | | |
| C | | Predominating Cloud Table XVI | | | | | | |
| N | 6 | Total Amount of Cloud Table XVII | | | | | | |
| N _L | | Amount of Low Cloud Table XVII | | | | | | |
| A | | Change of Barometer in last 3 hours .. Table IX | | | | | | |
| t _d | | Difference of Air and Sea Temperature .. Table XVIII | | | | | | |
| | | Ship of Origin | | | | | | |

DECODE TABLES FOR W.T. WEATHER REPORTS FROM SHIPS AT SEA TO ALL SHIPS AND SHORE STATIONS

Day and Position

Table I

Y.—Day of the Week

Code Figure.

1 = Sunday.

2 = Monday.

3 = Tuesday.

4 = Wednesday.

Code Figure.

5 = Thursday.

6 = Friday.

7 = Saturday.

Table II

Q.—Octant of the Globe

Code Figure.

Longitude.

0

0° W. — 90° W.

1

90° W. — 180° W.

2

180° E. — 90° E.

3

90° E. — 0° E.

5

0° W. — 90° W.

6

90° W. — 180° W.

7

180° E. — 90° E.

8

90° E. — 0° E.

North Latitude.

South Latitude.

Compass

Table III

DD.—Compass Table for Wind Direction to points

| Code Figures. | True Direction. | Code Figures. | True Direction. |
|---------------|-----------------|---------------|-----------------|
| 00 | Calm. | 17 | S. by W. |
| 01 | N. by E. | 18 | S.S.W. |
| 02 | N.N.E. | 19 | S.W. by S. |
| 03 | N.E. by N. | 20 | S.W. |
| 04 | N.E. | 21 | S.W. by W. |
| 05 | N.E. by E. | 22 | W.S.W. |
| 06 | E.N.E. | 23 | W. by S. |
| 07 | E. by N. | 24 | W. |
| 08 | E. | 25 | W. by N. |
| 09 | E. by S. | 26 | W.N.W. |
| 10 | E.S.E. | 27 | N.W. by W. |
| 11 | S.E. by E. | 28 | N.W. |
| 12 | S.E. | 29 | N.W. by N. |
| 13 | S.E. by S. | 30 | N.N.W. |
| 14 | S.S.E. | 31 | N. by W. |
| 15 | S. by E. | 32 | N. |
| 16 | S. | | |

Table IV

| d and d _s .—Compass Table to Half Cardinal Points | | | | | | | True Direction. |
|--|----|----|----|----|----|----|-----------------------------------|
| Code Figures. | | | | | | | |
| 0 | .. | .. | | | | | No Sea or Swell or Ship hove to. |
| 1 | .. | .. | | | | | N.E. |
| 2 | .. | .. | .. | .. | .. | .. | E. |
| 3 | .. | .. | .. | .. | .. | .. | S.E. |
| 4 | .. | .. | .. | .. | .. | .. | S. |
| 5 | .. | .. | .. | .. | .. | .. | S.W. |
| 6 | .. | .. | .. | .. | .. | .. | W. |
| 7 | .. | .. | .. | .. | .. | .. | N.W. |
| 8 | .. | .. | .. | .. | .. | .. | N. |
| 9 | .. | .. | | | | | No observation or no information. |

Wind

Table V

F.—Wind Force, Beaufort Scale

| Code Figures. | | | | | | Beaufort Number. |
|---------------|----|-----------------|----|----|----|------------------|
| 0 | .. | Calm | .. | .. | .. | Nought |
| 1 | .. | Light airs | .. | .. | .. | One |
| 2 | .. | Light breeze | .. | .. | .. | Two |
| 3 | .. | Gentle breeze | .. | .. | .. | Three |
| 4 | .. | Moderate breeze | .. | .. | .. | Four |
| 5 | .. | Fresh breeze | .. | .. | .. | Five |
| 6 | .. | Strong breeze | .. | .. | .. | Six |
| 7 | .. | Moderate gale | .. | .. | .. | Seven |
| 8 | .. | Fresh gale | .. | .. | .. | Eight |
| 9 | .. | Strong gale | .. | .. | .. | Nine |
| 9 | .. | Whole gale | .. | .. | .. | Ten |
| 9 | .. | Storm | .. | .. | .. | Eleven |
| 9 | .. | Hurricane | .. | .. | .. | Twelve |

When force 10, 11 or 12, figure 9 transmitted, words "gale," "storm" or "hurricane" respectively, added at end of the message.

Weather

Table VI

ww.—Present Weather

00-19 Abbreviated description of sky and special phenomena.

- *00 Cloudless.
- *01 Partly cloudy.
- *02 Cloudy.
- *03 Overcast.
- 04 Low fog, whether on land or at sea.
- *05 Haze (but visibility greater than 2,000 metres).

* Used by British ships for reporting weather. The other numbers also are used for reporting weather by coast stations and some foreign ships.

Table VI—continued

ww.—Present Weather—continued

- 06 Dust devils seen.
- *07 Distant lightning.
- *08 Mist.
- 09 Fog at a distance, but not at the station (or ship).
- *10 Precipitation within sight.
- *11 Thunder, without precipitation at the station.
- 12 Dust storm visible, but not at the station.
- *13 Ugly, threatening sky.
- *14 Squally weather.
- *15 Heavy squalls
- *16 Waterspouts seen } in last three hours.
- 17 —
- 18 —
- 19 —

20-29 Precipitation in last hour but not at time of observation.

- *20 Precipitation (rain, drizzle, hail, snow or sleet)
 - 21 Drizzle
 - 22 Rain
 - 23 Snow
 - 24 Sleet
 - 25 Rain shower(s).
 - 26 Snow shower(s).
 - 27 Hail or rain and hail shower(s).
 - 28 Slight thunderstorm.
 - 29 Heavy thunderstorm.
- } other than showers.
- } In last hour but not at time.

30-39 Dust storms and storms of drifting snow (visibility less than 1,000 metres).

- *30 Dust or sand storm.
 - 31 Dust or sand storm has decreased.
 - 32 Dust or sand storm no appreciable change.
 - 33 Dust or sand storm has increased.
 - 34 Line of dust storms.
 - 35 Storm of drifting snow.
 - 36 Slight storm of drifting snow
 - 37 Heavy storm of drifting snow
 - 38 Slight storm of drifting snow
 - 39 Heavy storm of drifting snow
- } generally low.
- } generally high.

* Used by British ships for reporting weather. The other numbers also are used for reporting weather by coast stations and some foreign ships.

Table VI—continued

ww.—Present Weather—continued

40-49 Fog or thick dust haze (visibility less than 100 metres).

- *40 Fog.
 - *41 Moderate fog in last hour.
 - *42 Thick fog in last hour.
 - 43 Fog, sky discernible
 - 44 Fog, sky not discernible
 - 45 Fog, sky discernible
 - 46 Fog, sky not discernible
 - 47 Fog, sky discernible
 - 48 Fog, sky not discernible
 - *49 Fog in patches.
- } has become thinner during last hour.
 } no appreciable change during last hour.
 } has begun or become thicker during last hour.

50-99 Precipitation at time of observation.**50-59 Drizzle** (precipitation consisting of numerous minute drops).

- *50 Drizzle.
 - 51 Intermittent
 - 52 Continuous
 - 53 Intermittent
 - 54 Continuous
 - 55 Intermittent
 - 56 Continuous
 - *57 Drizzle and fog.
 - *58 Slight or moderate
 - *59 Thick
- } slight drizzle.
 } moderate drizzle.
 } thick drizzle.
 } drizzle and rain.

60-69 Rain.

- *60 Rain.
 - 61 Intermittent
 - 62 Continuous
 - 63 Intermittent
 - 64 Continuous
 - 65 Intermittent
 - 66 Continuous
 - *67 Rain and fog.
 - *68 Slight or moderate
 - *69 Heavy
- } slight rain.
 } moderate rain.
 } heavy rain.
 } rain and snow.

70-79 Snow.

- *70 Snow or sleet.
 - 71 Intermittent
 - 72 Continuous
 - 73 Intermittent
 - 74 Continuous
- } slight snow in flakes.
 } moderate snow in flakes.

* Used by British ships for reporting weather. The other numbers also are used for reporting weather by coast stations and some foreign ships.

Table VI—continued

ww.—Present Weather—continued

70-79 Snow—continued

- 75 Intermittent
 - 76 Continuous
 - 77 Snow and fog.
 - 78 Granular snow (frozen drizzle).
 - 79 Ice crystals.
- } heavy snow in flakes.

80-89 Shower(s).

- *80 Shower(s).
 - 81 Shower(s) of slight or moderate
 - 82 " heavy
 - 83 " slight or moderate
 - 84 " heavy
 - 85 " slight or moderate
 - 86 " heavy
 - 87 " granular snow.
 - *88 " slight or moderate
 - *89 " heavy
- } rain.
 } snow.
 } rain and snow.
 } hail, or rain and hail.

90-99 Thunderstorm.

- *90 Thunderstorm.
 - 91 Rain at time
 - 92 Snow or sleet at time
 - 93 Thunderstorm, slight, without hail or soft hail, but with rain or snow
 - 94 " slight, with soft hail
 - 95 " moderate, without hail, but with rain (or snow)
 - 96 " moderate, with soft hail
 - 97 " heavy, without hail, but with rain (or snow)
 - 98 " combined with dust storm
 - 99 " heavy, with hail
- } thunderstorm during last hour, but not at time of observation.
 } at time of observation.

Table VII

W.—Past Weather

Code Figure.

- 0 Fair (clear or slightly clouded).
- 1 Variable sky.
- 2 Mainly overcast.
- 3 Sandstorm or duststorm, or storm of drifting snow.
- 4 Fog or thick dust haze (visibility less than 5 cables).
- 5 Drizzle.
- 6 Rain.
- 7 Snow or sleet.
- 8 Showers.
- 9 Thunderstorm.

* Used by British ships for reporting weather. The other numbers also are used for reporting weather by coast stations and some foreign ships.

Barometer

Table VIII

PP.—Decode Table for corrected barometer readings in millibars and inches.

| Code Figs. | Mb. | In. | Code Figs. | Mb. | In. | Code Figs. | Mb. | In. | Code Figs. | Mb. | In. |
|------------|-----|-------|------------|-----|-------|------------|------|-------|------------|------|-------|
| 25 | 925 | 27.32 | 60 | 960 | 28.35 | 95 | 995 | 29.38 | 25 | 1025 | 30.27 |
| 26 | 926 | 27.35 | 61 | 961 | 28.38 | 96 | 996 | 29.41 | 26 | 1026 | 30.30 |
| 27 | 927 | 27.38 | 62 | 962 | 28.41 | 97 | 997 | 29.44 | 27 | 1027 | 30.33 |
| 28 | 928 | 27.41 | 63 | 963 | 28.44 | 98 | 998 | 29.47 | 28 | 1028 | 30.36 |
| 29 | 929 | 27.44 | 64 | 964 | 28.47 | 99 | 999 | 29.50 | 29 | 1029 | 30.39 |
| 30 | 930 | 27.46 | 65 | 965 | 28.50 | 00 | 1000 | 29.53 | 30 | 1030 | 30.42 |
| 31 | 931 | 27.49 | 66 | 966 | 28.53 | 01 | 1001 | 29.56 | 31 | 1031 | 30.45 |
| 32 | 932 | 27.52 | 67 | 967 | 28.56 | 02 | 1002 | 29.59 | 32 | 1032 | 30.48 |
| 33 | 933 | 27.55 | 68 | 968 | 28.59 | 03 | 1003 | 29.62 | 33 | 1033 | 30.51 |
| 34 | 934 | 27.58 | 69 | 969 | 28.62 | 04 | 1004 | 29.65 | 34 | 1034 | 30.53 |
| 35 | 935 | 27.61 | 70 | 970 | 28.65 | 05 | 1005 | 29.68 | 35 | 1035 | 30.56 |
| 36 | 936 | 27.64 | 71 | 971 | 28.67 | 06 | 1006 | 29.71 | 36 | 1036 | 30.59 |
| 37 | 937 | 27.67 | 72 | 972 | 28.70 | 07 | 1007 | 29.74 | 37 | 1037 | 30.62 |
| 38 | 938 | 27.70 | 73 | 973 | 28.73 | 08 | 1008 | 29.77 | 38 | 1038 | 30.65 |
| 39 | 939 | 27.73 | 74 | 974 | 28.76 | 09 | 1009 | 29.80 | 39 | 1039 | 30.68 |
| 40 | 940 | 27.76 | 75 | 975 | 28.79 | 10 | 1010 | 29.83 | 40 | 1040 | 30.71 |
| 41 | 941 | 27.79 | 76 | 976 | 28.82 | 11 | 1011 | 29.86 | 41 | 1041 | 30.74 |
| 42 | 942 | 27.82 | 77 | 977 | 28.85 | 12 | 1012 | 29.89 | 42 | 1042 | 30.77 |
| 43 | 943 | 27.85 | 78 | 978 | 28.88 | 13 | 1013 | 29.92 | 43 | 1043 | 30.80 |
| 44 | 944 | 27.88 | 79 | 979 | 28.91 | 14 | 1014 | 29.94 | 44 | 1044 | 30.83 |
| 45 | 945 | 27.91 | 80 | 980 | 28.94 | 15 | 1015 | 29.97 | 45 | 1045 | 30.86 |
| 46 | 946 | 27.94 | 81 | 981 | 28.97 | 16 | 1016 | 30.00 | 46 | 1046 | 30.89 |
| 47 | 947 | 27.97 | 82 | 982 | 29.00 | 17 | 1017 | 30.03 | 47 | 1047 | 30.92 |
| 48 | 948 | 28.00 | 83 | 983 | 29.03 | 18 | 1018 | 30.06 | 48 | 1048 | 30.95 |
| 49 | 949 | 28.03 | 84 | 984 | 29.06 | 19 | 1019 | 30.09 | 49 | 1049 | 30.98 |
| 50 | 950 | 28.05 | 85 | 985 | 29.09 | 20 | 1020 | 30.12 | 50 | 1050 | 31.01 |
| 51 | 951 | 28.08 | 86 | 986 | 29.12 | 21 | 1021 | 30.15 | 51 | 1051 | 31.04 |
| 52 | 952 | 28.11 | 87 | 987 | 29.15 | 22 | 1022 | 30.18 | 52 | 1052 | 31.07 |
| 53 | 953 | 28.14 | 88 | 988 | 29.18 | 23 | 1023 | 30.21 | 53 | 1053 | 31.10 |
| 54 | 954 | 28.17 | 89 | 989 | 29.21 | 24 | 1024 | 30.24 | 54 | 1054 | 31.13 |
| 55 | 955 | 28.20 | 90 | 990 | 29.24 | | | | | | |
| 56 | 956 | 28.23 | 91 | 991 | 29.26 | | | | | | |
| 57 | 957 | 28.26 | 92 | 992 | 29.29 | | | | | | |
| 58 | 958 | 28.29 | 93 | 993 | 29.32 | | | | | | |
| 59 | 959 | 28.32 | 94 | 994 | 29.35 | | | | | | |

NOTE.—It will be seen that the code figures may represent two values of barometric pressure, but this only takes place with a very high or a very low barometer, so that recipients of a message will be able to decide which value is intended.

Table IX

A.—Barometric Tendency

| Code Figure | Description |
|-------------|---|
| 0 | Barometer steady. (The barometer has not fallen or risen more than $\frac{1}{2}$ millibar in 3 hours.) |
| 1 | Barometer rising slowly. (The barometer has risen 1 to $1\frac{1}{2}$ millibars (.03-.04 in.) in last 3 hours.) |
| 2 | Barometer rising. (The barometer has risen 2 to $3\frac{1}{2}$ millibars (.06-.10 in.) in last 3 hours.) |
| 3 | Barometer rising quickly. (The barometer has risen 4 to 6 millibars (.12-.18 in.) in last 3 hours.) |
| 4 | Barometer rising very rapidly. (The barometer has risen over 6 millibars (.18 in.) in last 3 hours.) |
| 5 | Barometer falling slowly. (The barometer has fallen 1 to $1\frac{1}{2}$ millibars (.03-.04 in.) in last 3 hours.) |
| 6 | Barometer falling. (The barometer has fallen 2 to $3\frac{1}{2}$ millibars (.06-.10 in.) in last 3 hours.) |
| 7 | Barometer falling quickly. (The barometer has fallen 4 to 6 millibars (.12-.18 in.) in last 3 hours.) |
| 8 | Barometer falling very rapidly. (The barometer has fallen over 6 millibars (.18 in.) in last 3 hours.) |

Barograph

Table X

a.—Characteristic of changes of the Barometer in the last three hours (Adapted for British Ships)

| Code Figure | Description of Changes | Net result, Barometer |
|-------------|---|------------------------------|
| 0 | Barometer rising at first, then falling by a smaller or like amount. | same or higher. |
| 1 | Barometer rising at first, then steady or rising less quickly. | |
| 2 | Barometer unsteady; but generally rising or stationary. | |
| 3 | Barometer steady or rising. | |
| 4 | { Barometer falling or steady at first, then rising by the same or larger amount. Barometer rising, at an increasing rate. | Net result, Barometer lower. |
| 5 | Barometer falling at first, then rising by a smaller amount. | |
| 6 | Barometer falling at first, then steady or falling quickly. | |
| 7 | Barometer unsteady, but falling. | |
| 8 | Barometer falling. | |
| 9 | { Barometer steady or rising at first, then falling by a larger amount. Barometer falling, at an increasing rate. | |

NOTE.—These changes are generally only given by ships which have special barographs on board.

For illustration of these characteristic changes and guidance, see "Marine Observers' Handbook."

Table XI

bb.—Amount of Rise or Fall of the Barometer in the last three hours
(In fifths of Millibars)

| Code Figs. | Amount of Rise or Fall. | | Code Figs. | Amount of Rise or Fall. | | Code Figs. | Amount of Rise or Fall. | | Code Figs. | Amount of Rise or Fall. | |
|---------------|----------------------------|-----|---------------|----------------------------|-----|---------------|----------------------------|-----|---------------|----------------------------|-----|
| | Mbs. | In. | | Mbs. | In. | | Mbs. | In. | | Mbs. | In. |
| 01 | 0.2 | .01 | 23 | 4.6 | .14 | 45 | 9.0 | .27 | 67 | 13.4 | .40 |
| 02 | 0.4 | .01 | 24 | 4.8 | .14 | 46 | 9.2 | .28 | 68 | 13.6 | .41 |
| 03 | 0.6 | .02 | 25 | 5.0 | .15 | 47 | 9.4 | .28 | 69 | 13.8 | .41 |
| 04 | 0.8 | .02 | 26 | 5.2 | .16 | 48 | 9.6 | .29 | 70 | 14.0 | .42 |
| 05 | 1.0 | .03 | 27 | 5.4 | .16 | 49 | 9.8 | .29 | 71 | 14.2 | .43 |
| 06 | 1.2 | .04 | 28 | 5.6 | .17 | 50 | 10.0 | .30 | 72 | 14.4 | .43 |
| 07 | 1.4 | .04 | 29 | 5.8 | .17 | 51 | 10.2 | .31 | 73 | 14.6 | .44 |
| 08 | 1.6 | .05 | 30 | 6.0 | .18 | 52 | 10.4 | .31 | 74 | 14.8 | .44 |
| 09 | 1.8 | .05 | 31 | 6.2 | .19 | 53 | 10.6 | .32 | 75 | 15.0 | .45 |
| 10 | 2.0 | .06 | 32 | 6.4 | .19 | 54 | 10.8 | .32 | 76 | 15.2 | .46 |
| 11 | 2.2 | .07 | 33 | 6.6 | .20 | 55 | 11.0 | .33 | 77 | 15.4 | .46 |
| 12 | 2.4 | .07 | 34 | 6.8 | .20 | 56 | 11.2 | .34 | 78 | 15.6 | .47 |
| 13 | 2.6 | .08 | 35 | 7.0 | .21 | 57 | 11.4 | .34 | 79 | 15.8 | .47 |
| 14 | 2.8 | .08 | 36 | 7.2 | .22 | 58 | 11.6 | .35 | 80 | 16.0 | .48 |
| 15 | 3.0 | .09 | 37 | 7.4 | .22 | 59 | 11.8 | .35 | 81 | 16.2 | .49 |
| 16 | 3.2 | .10 | 38 | 7.6 | .23 | 60 | 12.0 | .36 | 82 | 16.4 | .49 |
| 17 | 3.4 | .10 | 39 | 7.8 | .23 | 61 | 12.2 | .37 | 83 | 16.6 | .50 |
| 18 | 3.6 | .11 | 40 | 8.0 | .24 | 62 | 12.4 | .37 | 84 | 16.8 | .50 |
| 19 | 3.8 | .11 | 41 | 8.2 | .25 | 63 | 12.6 | .38 | 85 | 17.0 | .51 |
| 20 | 4.0 | .12 | 42 | 8.4 | .25 | 64 | 12.8 | .38 | 86 | 17.2 | .52 |
| 21 | 4.2 | .13 | 43 | 8.6 | .26 | 65 | 13.0 | .39 | 87 | 17.4 | .52 |
| 22 | 4.4 | .13 | 44 | 8.8 | .26 | 66 | 13.2 | .40 | | | |

Visibility

Table XII

V.—Visibility

| Code Figure | |
|----------------|--|
| 0 | Dense fog. Objects not visible at 50 yards. |
| 1 | Thick fog. Objects not visible at 1 cable. |
| 2 | Fog. Objects not visible at 2 cables. |
| 3 | Moderate fog. Objects not visible at $\frac{1}{2}$ mile (nautical). |
| 4 | Mist or haze, or very poor visibility. Objects not visible at 1 mile (nautical). |
| 5 | Poor visibility. Objects not visible at 2 miles (nautical). |
| 6 | Moderate visibility. Objects not visible at 5 miles (nautical). |
| 7 | Good visibility. Objects not visible at 10 miles (nautical). |
| 8 | Very good visibility. Objects not visible at 30 miles (nautical). |
| 9 | Excellent visibility. Objects visible at more than 30 miles (nautical). |

Clouds

Table XIII

C_L.—Form of Low Cloud
Form of Cloud

| Code Figure | |
|----------------|--|
| 0 | No low clouds. |
| 1 | Cumulus of fine weather. |
| 2 | Cumulus (Large, without anvil). |
| 3 | Cumulonimbus. |
| 4 | Stratocumulus (spread from Cumulus). |
| 5 | Stratus or Stratocumulus (in layer). |
| 6 | Scud. |
| 7 | Cumulus and Stratocumulus of fine weather. |
| 8 | Cumulus, large (or Cumulonimbus) and Stratocumulus. |
| 9 | Cumulus, large (or Cumulonimbus) and Scud. |

Table XIV

C_M.—Form of Middle Cloud
Form of Cloud

| Code Figure | |
|----------------|--|
| 0 | No middle cloud. |
| 1 | Altostratus, typical thin. |
| 2 | Altostratus, typical thick (Sun or Moon invisible) or Nimbostratus. |
| 3 | Altostratus or high Stratocumulus, single layer. |
| 4 | Altostratus, in bands, decreasing. |
| 5 | Altostratus, in bands, increasing. |
| 6 | Altostratus, spread out from Cumulus. |
| 7 | Altostratus with Altostratus; or Altostratus with parts resembling Altostratus. |
| 8 | Altostratus Castellatus (Altostratus in ragged fragments). |
| 9 | Altostratus in several layers, generally with fibrous veils and chaotic appearance of sky. |

Table XV

C_H.—Form of Upper Cloud (Cirrus Cloud)
Form of Cloud

| Code Figure | |
|----------------|--|
| 0 | No upper clouds (cirrus type). |
| 1 | Cirrus, fine, not increasing: scarce. |
| 2 | Cirrus, fine, not increasing: plentiful, but not a continuous layer. |
| 3 | Cirrus, anvil. |
| 4 | Cirrus, fine, increasing. |
| 5 | Cirrus or Cirrostratus increasing, below 45° altitude. |
| 6 | Cirrus or Cirrostratus increasing, and reaching above 45° altitude. |
| 7 | Cirrostratus, veil covering whole sky. |
| 8 | Cirrostratus, not increasing, and not covering whole sky. |
| 9 | Cirrocumulus predominating, and a little Cirrus. |

Table XVI

C.—Predominating Form of Cloud

| Code Figure | Form of Cloud |
|-------------|---------------------------|
| 1 | Cirrus. |
| 2 | Cirrostratus. |
| 3 | Cirrocumulus. |
| 4 | Alto cumulus. |
| 5 | Altostratus. |
| 6 | Stratocumulus. |
| 7 | Nimbostratus. |
| 8 | Cumulus or Fractocumulus. |
| 9 | Cumulonimbus. |
| 0 | Stratus or Fractostratus. |

Table XVII

N. and N_L.—Amount of Cloud

| Figure | Proportion of Sky covered, in tenths |
|--------|---|
| 0 | 0. |
| 1 | Less than 1. |
| 2 | 1. |
| 3 | 2 to 3. |
| 4 | 4 to 6. |
| 5 | 7 to 8. |
| 6 | 9. |
| 7 | More than 9, but with openings. |
| 8 | 10, completely covered. |
| 9 | Sky obscured by fog, duststorm or other phenomenon. |

Temperatures

Table XVIII

t_a .—Difference between Air and Sea Surface Temperatures

| Code | Temperature Difference between Air and Sea Surface Temperature |
|----------|--|
| Figure 0 | Air Temperature higher than Sea Temperature More than 9° Fahrenheit. |
| 1 | 6° to 9° „ |
| 2 | 3° to 6° „ |
| 3 | 1° to 3° „ |
| 4 | 0° to 1° „ |
| 5 | Air Temperature lower than Sea Temperature 0° to 1° Fahrenheit. |
| 6 | 1° to 3° „ |
| 7 | 3° to 6° „ |
| 8 | 6° to 9° „ |
| 9 | More than 9° „ |

Swell

Table XIX

K.—Swell

| | |
|--------|-------------------------------------|
| Code | |
| Figure | |
| 0 | No swell. |
| 1 | Low swell, short or average length. |
| 2 | Low swell, long. |
| 3 | Moderate swell, short. |
| 4 | Moderate swell, average length. |
| 5 | Moderate swell, long. |
| 6 | Heavy swell, short. |
| 7 | Heavy swell, average length. |
| 8 | Heavy swell, long. |
| 9 | Confused swell. |

Douglas Sea and Swell Scale

Table XX

SK.—Sea and Swell

| SEA. | | | SWELL. | | | | | | | | | |
|------|-------------------|----|-----------|-------------------|-------|-----------|----------|-------|--------|----------|-------|-----------|
| | | | No Swell. | Low. | | Moderate. | | | Heavy. | | | Confused. |
| | | | | Short or Average. | Long. | Short. | Average. | Long. | Short. | Average. | Long. | |
| | | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | Calm | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | |
| 1 | Smooth | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| 2 | Slight | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | |
| 3 | Moderate | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | |
| 4 | Rough | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | |
| 5 | Very rough | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | |
| 6 | High | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | |
| 7 | Very high | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | |
| 8 | Precipitous | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | |
| 9 | Confused | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | |

Speed

Table XXI

f.—Speed of Ship

| Code Figure | Speed in Knots |
|-------------|---------------------|
| 0 | Ship stopped. |
| 1 | 1 to 3 knots. |
| 2 | 4 to 6 " |
| 3 | 7 to 9 " |
| 4 | 10 to 12 " |
| 5 | 13 to 15 " |
| 6 | 16 to 18 " |
| 7 | 19 to 21 " |
| 8 | 22 to 24 " |
| 9 | More than 24 knots. |

NOTES FOR THE GUIDANCE OF MASTERS OF BRITISH SHIPS

(Not Selected Ships)

Section (34) of the World Wide System of Voluntary Selected Ships Routine Wireless Weather Reports indicates the desirability of all British Shipmasters assisting in this voluntary service, *where and when desirable*.

This is the more necessary in the regions and seasons of tropical revolving storms, and particularly in those regions traversed by few ships.

It is very desirable that throughout the British Merchant Navy, masters, mates, and W.T. operators should be familiar with this system.

It is desirable that the master or officer of the watch should be kept informed by the wireless operator of the weather reports made by ships in range, so that he may determine if it is necessary to make a report at the next schedule time for communication.

When it is considered desirable to make a weather report, observations should be made and noted at the appropriate time indicated in Section (20) on page 5.

For this purpose it will be found convenient to keep a sheet at the end of the ship's log book, or where convenient, ruled as shown at A on page 28.

If the "Marine Observers' Handbook" is available it should be followed in making and recording the observations. If not, by following the ordinary practice of seamen little difficulty will be found in recording the observations.

Great care should be taken in correcting the barometer, and the weather should be logged according to the Beaufort Notation, which is as follows:—

| | | | |
|----|---|----|---|
| b | Blue sky (not more than a quarter covered). | o | Overcast sky (whole sky covered with one impervious cloud). |
| bc | Sky partly cloudy (between one-quarter and three-quarters covered). | p | Passing showers. |
| c | Generally cloudy (not less than three-quarters covered). | q | Squalls. |
| d | Drizzle, or fine rain. | r | Rain. |
| e | Wet air without rain falling. | rs | Sleet, <i>i.e.</i> , rain and snow together. |
| f | Fog. | s | Snow. |
| fe | Wet fog. | t | Thunder. |
| g | Gloomy. | tl | Thunderstorm. |
| h | Hail. | u | Ugly, threatening sky. |
| kq | Line Squall. | v | Unusual visibility. |
| l | Lightning. | w | Dew. |
| m | Mist. | z | Dust haze; the turbid atmosphere of dry weather. |

The Decode tables include the visibility, and the Beaufort scale of wind force.

Having recorded the weather observations as above, they should be coded. For this purpose the Decode tables may be used, only those starred numbers in Table VI, for Present Weather, being used to report the weather recorded by the Beaufort notation.

A sheet ruled in the form shown at B on page 28 will be found of assistance in coding the reports.

To communicate the report follow the procedure indicated for Selected Ships, *see* (33) page 8. Generally the first four groups only are advocated for the use of ships which are not Selected Ships.

The message should be addressed Weather C.Q., or to the appropriate address indicated in the lists of W.T. stations appointed to receive reports from British Selected Ships in all parts of the world, which are given in the "Marine Observer," and which as before stated, are copied in the Admiralty List of Wireless Signals for the information of masters of British ships and all concerned.

For sample of completed message ready to send, *see* (31) page 8, which contains the observations entered on page 28.

Record of Synchronized Weather Observations

A.

| Year 1933 | | | Ship's position | | Wind at time of observation | | | Barometer | | | Air Temperature | Weather by Beaufort notation at time of observation | Visibility by scale | Remarks Ice or derelicts sighted, unusual phenomena |
|-----------|--------------|-------------|-------------------------------|------------|-----------------------------|-----------|-------|---------------------|-----------------------------------|---------------------------|-----------------|---|---------------------|--|
| Month | Day of month | Day of week | G.M. time of observation hour | Latitude | Longitude | Direction | Force | Uncorrected reading | Atmospheric pressure at sea level | True atmospheric pressure | | | | |
| March | 5th | Sun. | 0 6 12 18 | 16° 41' N. | 55° 05' E. | Calm | 0 | 30.156 | 82 | 29.999 | 79 | b | 9 | |

Ocean Current Observations

| Year 1933, month | From | | To | | Position | | | | Set direction true | Drift nautical miles | Remarks |
|---------------------|------|----------|-----|-----------|------------|------------|------------|------------|--------------------------|----------------------------|----------|
| | Day | A.T.S. | Day | A.T.S. | From | | To | | | | |
| | | | | | Latitude | Longitude | Latitude | Longitude | | | |
| March | 4th | 6.0 p.m. | 5th | 5.35 a.m. | 15° 23' N. | 52° 21' E. | 16° 24' N. | 54° 28' E. | N. 58° E. | 11.5 | 1.0 knot |

Form for Coding Messages

| Date <i>not to be transmitted</i> | Address to which sent | Universal groups | | | | | | | | | | | | Set and drift of current, ice, derelicts, etc. | Call sign to which sent, and wave length | G.M. time sent |
|--|-----------------------------|------------------|---|-----|---------|----|----|---------|----|----|---------|----|--|--|--|----------------------|
| | | Group 1 | | | Group 2 | | | Group 3 | | | Group 4 | | | | | |
| | | Y | Q | LLL | III | GG | DD | F | ww | pp | V | TT | | | | |
| | | 1 | 3 | 167 | 551 | 06 | 00 | 0 | 00 | 16 | 9 | 79 | | | | |
| March 5th | Weather | | | | | | | | | | | | Current from 15 N. 52 E. to 16 N. 54 E. 58 degrees 1 knot. | CQ 600m. | | |

TO DECODE REPORTS OF WEATHER OBSERVATIONS CONTAINED IN WIRELESS WEATHER BULLETINS FOR SHIPPING

Information of Weather observed at coast stations, when included by means of figures in weather shipping bulletins, may be decoded with the Decode Tables of the International Code given above for wireless weather messages from ships; but the arrangement of the groups is different, and varies with different countries.

In the Weather Shipping Bulletins for the British Isles, Holland, Germany, and Sweden, the key for the groups is:—

I_nAPPV DDFww

I_n signifies the number of the station.

The following are the stations with their distinguishing numbers, for which reports of weather observations are given in the British Weather Shipping Bulletin:—

| Distinguishing Number. | Station. |
|------------------------|----------------------------|
| 1 | Stornoway |
| 2 | Malin Head |
| 3 | Valentia |
| 4 | Holyhead |
| 5 | Scilly |
| 6 | Guernsey |
| 7 | Dungeness |
| 8 | Yarmouth |
| 9 | Tynemouth |
| 0 | Wick |
| Foreign 1 | Reykjavik (Iceland) |
| 2 | Thorshavn (Faroe Islands). |

When there is a change in the stations used in the British Weather Shipping Bulletin the name of the new station is indicated instead of the number, until the change becomes permanent, and has been notified by Notice to Mariners.

For the names of stations and their distinguishing numbers used in the Weather Shipping Bulletins of other countries, it is necessary to refer to the Admiralty List of Wireless Signals.

In the Weather Shipping Bulletins for Mauritius, the United States of America, and for the coast of Chile the key for the groups is:—

DDFww PPVTT

preceded by the name of the station in the case of Mauritius, while for the United States of America and Chile the stations are distinguished by initial letters given in an initial group for each five stations.

In the Weather Shipping Bulletin for the coasts of South Africa the key for the groups is :—

IICAK DDFww PPVTT

For India and Ceylon it is :—

IICKW DDFww PPVTT

For Hong Kong it is :—

IIIAW DDFww PPVTT

For New Zealand it is :—

IIIAS DDFww PPVTT

For the South Pacific Islands it is :—

IIICW DDFww PPVTT

Thus great care is necessary in using the appropriate decode tables for coast station reports.

For information and guidance as to the use in navigation of the observations received in ships at sea, Mariners are referred to a Handbook of Weather, Currents, and Ice for Seamen, M.O.379, published by H.M. Stationery Office, price 4s. 0d.

