

M.O. 206 (1913).

# METEOROLOGICAL OFFICE, LONDON.

## CODES OF SIGNALS

ADOPTED AND RECOMMENDED

BY THE

INTERNATIONAL METEOROLOGICAL COMMITTEE,

1910-1913,

FOR

## STORM WARNINGS,

TOGETHER WITH A

## LIST OF THE MARITIME WEATHER SIGNALS

AT PRESENT IN USE IN THE

## VARIOUS COUNTRIES OF THE GLOBE.

(FOURTH EDITION, 1913.)

PUBLISHED BY THE AUTHORITY OF THE METEOROLOGICAL COMMITTEE.

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## MARITIME WEATHER SIGNALS.

### COUNTRIES, &c., INCLUDED IN THE LIST.

#### EASTERN ATLANTIC AND MEDITERRANEAN REGION.

PAGE.				PAGE.			
L.	N.	W.	§	L.	N.	W.	§
†Sweden.	7	—	—	*†Belgium.	10	—	—
*†Norway.	7	—	—	†Great Britain and Ireland.	10	—	—
*†Denmark.	8	19	25	*France.	10	—	26
*†Russia.	8	—	—	*†Spain.	11	—	—
*†Germany.	9	—	25	†Portugal.	11	—	26
*†Holland.	9	—	—	*†Italy.	11	—	—

#### WESTERN ATLANTIC AND EASTERN PACIFIC REGION.

†Canada.	12	—	—	†Trinidad.	13	—	—
†United States.	12	—	—	†Uruguay.	14	—	27
Mexico.	13	19	27	Chili.	14	—	28
Cuba.	13	—	—				

#### WESTERN PACIFIC REGION.

†China (Zi-ka-wei).	14	20	28	Cochin China,			
†Hong Kong.	15	22	—	Annam, and			
†Japan.	15	23	—	Gulf of Tong			
				King.	—	23	—
				†Philippine Islands.	16	23	—

#### INDIAN OCEAN REGION.

†India (except R. Hugli).	16	24	28	†Mauritius	17	—	—
†River Hugli.	17	24	—	Réunion.	17	24	—

#### AUSTRALASIAN REGION.

†Australia—General.	18	—	—	†New Zealand.	18	—	28
†New South Wales.	18	—	—				

\* Information has been received that in the countries marked \* the local day signals recommended by the International Meteorological Committee, Berlin Meeting, 1910, (see p. 5), are already in use.

† The information in this Summary with reference to the countries marked † is taken from official letters received since April, 1912.

§ L. = Local storm signals. N. = Non-local storm signals. W. = Weather signals.



## NOTICES TO DIRECTORS OF METEOROLOGICAL INSTITUTES.

(1) It is proposed to issue a corrected edition of this list every year.

(2) Directors of Meteorological Institutes who have not already done so, are invited to forward information as to the period during which the Signals remain hoisted, in the absence of any notice to lower or alter the signal.

(3) Directors of Institutes are invited to send notification to *The Director of the Meteorological Office, South Kensington, London, S.W.* :—

(a) of any changes introduced into the practice of their respective countries ;

(b) of their intention of adopting any special form of signals ;

(c) of any corrections or additions to this list.

24th April, 1913.

Codes of Signals adopted and recommended by the International Meteorological Committee, 1910-1913, for Storm Warnings, together with a list of the maritime weather signals at present in use in the various countries of the globe.

## SECTION I.—CODES OF SIGNALS ADOPTED AND RECOMMENDED BY THE INTERNATIONAL METEOROLOGICAL COMMITTEE, 1910-1913, FOR STORM WARNINGS.

A. LOCAL STORM SIGNALS.—The following system of local day signals was adopted by the International Meteorological Committee at their ninth meeting in Berlin, 1910, for use by day :—

*Apparatus* :—

2 cones.

*Information given* :—

Single cone, point upward.—Gale commencing with wind in the N.W. quadrant.

Single cone, point downward.—Gale commencing with wind in the S.W. quadrant.

Two cones, one above the other, both points upward.—Gale commencing with wind in N.E. quadrant.

Two cones, one above the other, both points downward.—Gale commencing with wind in S.E. quadrant.

Two cones, with their bases together.—Hurricane.

The distance between two cones hoisted in vertical line should be the same as the length of the slant side of the cones.

The decision as to international local night signals was postponed.

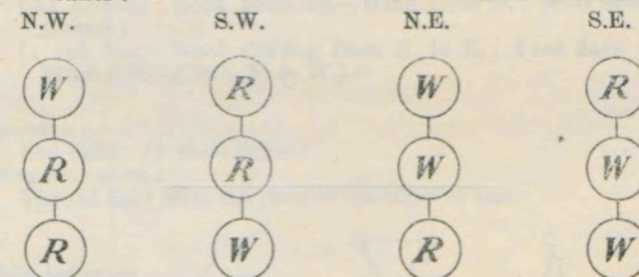
At the tenth meeting of the Committee, held at Rome in 1913, the following international night storm signals were adopted and recommended :—

Note.— (R) = Red light.

(W) = White light.

(i) For countries using three lanterns :—

For a gale commencing with wind in the following quadrants :—

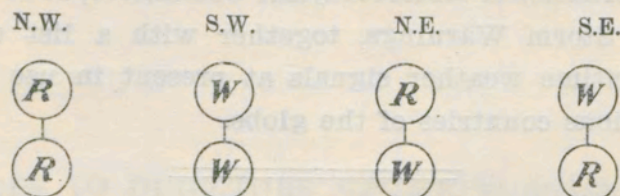


The lanterns should be not less than 2 metres apart, 4 metres covering the whole signal.



## (ii) For countries using two lanterns :—

For a gale commencing with wind in the following quadrants :—



The lanterns should be not less than 2 metres apart (generally 4 metres or 15 feet).

The following resolutions with regard to night signals were also adopted at Rome, with reference to the resolutions of the Commission for Maritime Meteorology and Storm Warnings printed in the Report of the meeting of that Commission, which was held in London in September, 1912 :—

The Committee is of opinion—

- (1) That it is not desirable to reopen the question of the scheme of day signals which was approved at the Berlin meeting in 1910, but it is desirable to place on record that the adoption of a scheme of signals as international does not preclude the adoption by individual organisations of other signals in addition, which do not form part of the international code.
- (2) With regard to the code of night signals, it appears that the proposal of three red lanterns in a vertical line as a signal for a hurricane is open to objections. The Committee therefore refer back that proposal for further consideration by the Commission.

Objections have also been made to the use of a single red lamp as a storm signal on the ground that it is liable to be misunderstood. The Committee are therefore unable to adopt it as an international signal, though they see no objection to its use in those cases in which no confusion is likely to arise.

B. NON-LOCAL STORM SIGNALS.—The following resolution was adopted at the Rome meeting :—

It appears that the Committee is not yet in a position to approve of any definite proposals of non-local storm signals as an international scheme.

## SECTION II.—LOCAL STORM SIGNALS.

## EASTERN ATLANTIC

AND

## MEDITERRANEAN REGION.

## SWEDEN.

## DAY.

Apparatus :—

1 cone, 2 balls hoisted at mast-head.

Information given :—

Cone, point up.—Gale between N. and E.

Cone, point down.—Gale between S. and W.

Ball.—Gale expected (no direction signified).

Cone, point up, over ball.—Storm between N. and E.

Ball, over cone, point down.—Storm between S. and W.

2 balls, vertical.—Storm expected (no direction signified).

[Note.—Gale = 7-9 Beaufort. Storm = 10-12 Beaufort.]

## NIGHT.

[None.]

Duration of Signal :—

Until dusk of the same day as that upon which the message is received.  
Messages are despatched not later than 1 p.m.

## NORWAY.

## DAY.

The International Signals (no hurricane signal) (see p. 5).  
Also the following :—

Apparatus :—

1 ball. [2 red flags.]

Information given :—

Ball.—Disturbance in neighbourhood.

(At Arendal : Cone, point up.—Wind from N. ; point down.—Wind from S.)

[1 red flag.—Wind shifting from N. to E. ; 2 red flags, vertical.—Wind shifting from N. to W.]

## NIGHT.

Apparatus :—

Red light. [4 white lights.]

Information given :—

The red light takes the place of the cones or ball.

White lights :—



N. to W.



S. to W.



N. to E.



S. to E.



## DENMARK.

DAY.

The International Signals (no hurricane signal) (*see* p. 5).

Also the following :—

Apparatus :—

1 ball, 2 red flags.

Cones of the international signals, ball and light (*see* below) shown at one end of a yard, flags at the other end.

Information given :—

1 ball.—Disturbance, consult the telegrams.

1 red flag.—Wind will veer.

2 red flags.—Wind will back.

NIGHT.

Apparatus :—

1 red light.

Information given :—

The light is shown instead of any of the day signals (cones or ball).

Duration of Signal :—

All signals are hoisted upon receipt of telegraphic order from the Meteorological Institute at Copenhagen, and are shown until the receipt of an order for hauling down. The respective telegraph stations can, if necessary, be kept open at night for the expedition of storm-warning telegrams.

[At Thorshavn on the Faroe Islands

1 green flag at day

1 green light at night

} is hoisted during telegraphic interruption.]

## RUSSIA.

DAY.

The International Signals (*see* p. 5).

NIGHT.

Apparatus :—

4 red lights ; triangular frame.

Information given :—



Gale commencing with wind in N.W. quadrant.



S.W.



N.E.



S.E.

## GERMANY.

DAY.

The International Signals (no hurricane signal) (*see* p. 5).

Also the following :—

Apparatus :—

Ball, 2 red flags, suspended at yard arm.

Information given :—

Ball.—Atmospheric disturbance existing, consult the telegram.

Supplementary information :—

1 red flag.—Wind will veer. } Never hoisted at the same time as the  
2 red flags.—Wind will back. } ball.

Where there is only one arm, the flags are hoisted directly below the cones of the international signals. Where there are two arms, the flags are suspended from one and the cones from the other.

NIGHT.

Apparatus :—

1 red light.

Information given :—

1 red light.—The red light takes the place of the day signals.

Duration of Signal :—

From time of receipt of telegram till dusk of the day following that of issue of the telegram ; unless (1) an order to prolong the signal is received, in which case it is kept up until the next following evening, or (2) a gale is still blowing at the expiry of the term, when the signal is kept up until the gale subsides.

## NORDDEICH.

Every warning issued by the Deutsche Seewarte which relates to the German North Sea coast, and other parts of the North Sea, is telegraphed to Norddeich, Wilhelmshaven, and promptly issued three times in succession by wireless telegraphy from there. The issue is repeated *slowly* at the end of the next following wireless weather report (*see* p. 30), which follows immediately after the time signals at 1 h. p.m. M.E.T. and 11 h. p.m. M.E.T.

Similarly, warnings affecting the Baltic region are telegraphed to Bülk, and issued by wireless from there three times in succession immediately upon receipt. The issue is repeated *slowly* at 1 p.m. or 11 p.m. according as the message is received before or after 1 p.m.

The warnings give in about 15 words (German) the cause of the danger and the appropriate storm signal, together with the winds to be expected, in case the storm signal alone does not fully convey that information.

In case communication from Norddeich is interrupted, the warnings are forwarded to Cuxhaven for issue by wireless telegraphy in the same form.

## HOLLAND.

DAY.

The International Signals (no hurricane signal) (*see* p. 5).

Also the following :—

Apparatus :—

1 ball, 2 black flags, suspended at yard-arms.

Information given :—

Ball.—Be alert ! A disturbance exists ; no certainty that it will affect our coasts or cause a whole gale.

1 black flag.—Wind veering.

2 black flags.—Wind backing.

The flags are hoisted only in connexion with the cones of the international signals.



## NIGHT.

*Apparatus :—*  
Red light.

*Information given :—*

The red light takes the place of the cones or ball.

*Duration of signal :—*

Till 8 p.m. on the second day after that on which the signal is received, unless the signal is replaced by another, or lowered, by instruction. An order for prolonging a signal holds good until 8 p.m. on the second day after its receipt.

## BELGIUM.

## DAY.

The International Signals (no hurricane signal) (*see* p. 5).

## NIGHT.

[None.]

## GREAT BRITAIN AND IRELAND.

## DAY.

*Apparatus :—*

Cone hoisted at yard-arm or mast-head.

*Information given :—*

Expectation of strong wind or gales from North or East, backing through North (point upward), from South or East veering through South to North-West (point downward).

## NIGHT.

*Apparatus :—*

Three lanterns of any colour, preferably red, and cross-bar.

*Information given :—*

Same as by day. A triangle of lanterns replaces the cone.

*Note.*—Night signals are exhibited at very few stations in the British Isles. At some stations the cone is hoisted where it is illuminated by artificial light.

*Duration of signal :—*

From time of receipt of telegram till 8 p.m. of the following day. Orders to prolong or lower the signal are despatched, if necessary.

It is intended to introduce the international system of day signals (*see* p. 5) for the year 1914 and to initiate the international system of night signals with 3 lanterns (*see* p. 5).

## FRANCE.

## DAY.

The International signals (*see* p. 5).

## NIGHT.

[None.]

## SPAIN.

The Spanish Minister of Marine has inaugurated the following system of storm signals. They are on trial at present :—

## DAY.

The International signals (*see* p. 5).

## NIGHT.

The International signals with two lanterns (*see* p. 6).

## PORTUGAL.

## DAY.

*Apparatus :—*

Cone hoisted at yard-arm or mast-head.

*Information given :—*

Expectation of strong winds or gales from N.W. to S.E. veering by N. (cone point up) ; from S.E. to N.W. veering by S. (cone point down).

## NIGHT.

*Apparatus :—*

Three lanterns of any colour, preferably red, and cross bar.

*Information given :—*

Same as by day. A triangle of lanterns replaces the cone.

*Duration of signal :—*

For 48 hours from time of receipt of telegram, unless fresh instructions are issued. Whenever a signal is lowered, a telegram intimating the fact is forwarded to the observatory.

## ITALY.

## DAY.

The International signals (*see* p. 5).

## NIGHT.

*Apparatus :—*

2 white lights, 1 red light, suspended in vertical line, 4 metres apart.

*Information given :—*

Hurricane.—White over red over white.

Gales from E. to W. through S.—White over white over red.

Gales from E. to W. through N.—Red over white over white.

*Duration of signal :—*

From time of receipt of telegram till sunset of the day following that of issue, unless an order is received to lower, to keep hoisted, or to substitute another signal. The lanterns forming the night signals are kept lighted all night.



# WESTERN ATLANTIC AND EASTERN PACIFIC REGION.

## CANADA.

### DAY.

#### Apparatus :—

Cone, drum.

#### \*Information given :—

Cone, point down.—Gale, at first from easterly direction.

Cone, point up.—Gale, at first from westerly direction.

Drum, above cone, point down.—Heavy gale at first from easterly direction.

Drum, below cone, point up.—Heavy gale, at first from westerly direction.

### NIGHT.

#### Apparatus :—

Red light, white light.

#### \*Information given :—

Red light.—Gale or heavy gale at first from an easterly direction.

White above red light.—Gale or heavy gale at first from a westerly direction.

#### Duration of Signal :—

From time of receipt of telegram until an order to lower is received ; unless (1) telegraphic communication is interrupted, when the agent uses his discretion as to keeping up or lowering the signal, if at least 30 hours have elapsed since the issue of the warning ; and (2) a gale is blowing at the time when the order to lower is received, in which case the signal may remain hoisted until the gale abates.

*Note.*—Canada proposes in due course to adopt the international day signals (see p 5.).

\* The information printed above refers to signals displayed on Lakes Superior, Erie, or Ontario. For signals displayed on Lake Huron or in the Georgian Bay, the words "Easterly" and "Westerly" of the above description are to be altered to "Southerly" and "Northerly" respectively.

## UNITED STATES OF AMERICA.

### DAY.

#### Apparatus :—

2 red flags with black centre, and red or white pennant displayed at masthead one above the other.

#### Information given :—

Pennant.—Moderately strong winds.

Flag.—Markedly violent storm.

Combination of flag and pennant indicates quadrant from which the wind may be expected, and also whether the centre is approaching or receding.

N.W.	S.W.	N.E.	S.E.
White pennant over flag.	Flag over white pennant.	Red pennant over flag.	Flag over red pennant.

Storm centre has passed.

Storm centre approaching.

Two red flags.—Expectation of a very dangerous storm or hurricane.

### NIGHT.

#### Apparatus :—

Red light and white light.

#### Information given :—

Red light.—Indicates easterly winds.

White light below red.—Westerly winds.

No night hurricane warnings.

#### Duration of Signal :—

Signals remain displayed for twenty-four hours from the time specified in the order to hoist, change, or continue them, and no longer, unless a subsequent telegram is sent ordering them down.

## MEXICO.

### DAY.

#### Apparatus :—

Two square red flags with square black centres.

#### Information given :—

The flags hoisted vertically indicate that a hurricane is in the vicinity.

### NIGHT.

#### Apparatus :—

2 white lights, 3 red lights.

#### Information given :—

2 red lights, vertical.—Strong wind between N.E. and N.W.

2 white lights, vertical.—Strong winds between S.E. and S.W.

White over red.—Strong winds between N.E. and S.E.

White under red.—Strong winds between N.W. and S.W.

3 vertical red lights.—Hurricane in vicinity.

#### Duration of Signal :—

Day signals remain hoisted from time of receipt of message until sunset or receipt of fresh instructions. Night signals remain in place until daylight.

## CUBA.

### DAY.

[Same as United States of America, p. 12.]

### NIGHT.

[None.]

## TRINIDAD. (PORT OF SPAIN.)

### DAY.

#### Apparatus :—

Red flag, with black square in centre, hoisted at masthead (used only during the hurricane season).

#### Information given :—

Cyclone approaching.

### NIGHT.

[None.]



## URUGUAY.

## DAY.

*Apparatus :—*

Red burgee at masthead.  
Cone, drum at yard-arm.

*Information given :—*

- (a) Red burgee.—Bad weather.
- (b) Red burgee, cone point down.—Southerly winds, strong
- (c) Red burgee, cone point up.—Northerly winds, strong.
- (d) Red burgee, drum over cone, point down.—Southerly gale.
- (e) Red burgee, drum below cone, point up.—Northerly gale.

## NIGHT.

*Apparatus :—*

Six red lights.

*Information given :—*

- Red light at masthead.—Same as (a).
- Red light at masthead, 3 lights in  $\nabla$  point down, at yard-arm.—Same as (b).
- Red light at masthead, 3 lights in  $\Delta$ , point up, at yard-arm.—Same as (c).
- Red light at masthead, 1 light below 4 lights in square  $\nabla$ .—Same as (d).
- Red light at masthead, 1 light over 4 lights in square  $\Delta$ .—Same as (e).

## CHILI.

## DAY.

*Apparatus :—*

Two black balls.

*Information given :—*

The signal denotes that a storm is expected.

## NIGHT.

[None.]

## WESTERN PACIFIC REGION.

## CHINA.

## SHANGHAI (ZIKAWEI).

## DAY.

*Apparatus :—*

Drum, Cone, Ball, Diamond.

*Information given :—*

- (a) Cone, point down.—Bad weather expected here and to the Southward.
- (b) Ball.—Bad weather expected here and to the Eastward.
- (c) Diamond.—Bad weather expected here and to the Northward.
- (d) Drum over Cone point down.—Bad weather imminent ; danger here and to the South.
- (e) Drum over Ball.—Bad weather imminent ; danger here and to the East.
- (f) Drum over Diamond.—Bad weather imminent ; danger here and to the North.

## NIGHT.

*Apparatus :—*

Red light.

*Information given :—*

The light is exhibited when danger is imminent.

*Duration of Signal :—*

The signal is valid for twenty-four hours from the time of receipt of warning message unless modified by subsequent instructions.

## HONG KONG.

## DAY.

*Apparatus :—*

Drum, ball, cone, coloured *black*, displayed at mast-head.  
In addition, a black cross is used, and bombs are fired.

*Information given :—*

- Cone, point up.—Typhoon to N. of Hong Kong, less than 300 miles distant.
- Cone, point up, over drum.—Typhoon to N.E. of Hong Kong, less than 300 miles distant.
- Drum.—Typhoon to E. of Hong Kong, less than 300 miles distant.
- Cone, point down, over drum.—Typhoon to S.E. of Hong Kong, less than 300 miles distant.
- Cone, point down.—Typhoon to S. of Hong Kong, less than 300 miles distant.
- Cone, point down, over ball.—Typhoon to S.W. of Hong Kong, less than 300 miles distant.
- Ball.—Typhoon to W. of Hong Kong, less than 300 miles distant.
- Cone, point up, over ball.—Typhoon to N.W. of Hong Kong, less than 300 miles distant.
- Three explosive bombs, at intervals of 10 seconds, and a black cross hoisted above the appropriate local signal indicate that the wind may increase to full typhoon force at any moment.

## NIGHT.

*Apparatus :—*

Two red lights ; two green lights ; bombs.

*Information given :—*

- Three lights, vertical, green, red, green.—Typhoon believed to be less than 300 miles distant.
- Three lights, vertical, red, green, red.—Wind may be expected to increase to full typhoon force at any moment. This signal will be accompanied by three explosive bombs, as by day.

*Duration of Signal :—*

The day signals are hoisted and lowered on receipt of telephonic instructions. They are also lowered at sunset and re-hoisted at sunrise without fresh instructions. Night signals are shown at three stations.

## JAPAN.

## DAY.

*Apparatus :—*

Red ball, red drum, red cone, hoisted at the head of a signal mast.

*Information given :—*

- Red ball.—Expectation of strong winds or gales.
- Red drum.—Expectation of a rain or snow storm.
- Red cone, point up.—Expectation of a cyclonic storm of dangerous intensity.



## NIGHT.

*Apparatus :—*

- Red light instead of red ball.
- Green light instead of red drum.
- Red light above green instead of red cone.

*Information given :—*

The same as by day.

*Duration of Signal :—*

From time of receipt of telegram or telephone message until instructions to lower are received.

## PHILIPPINE ISLANDS. (MANILA OBSERVATORY.)

*Note.*—The information is telegraphed from Manila by means of a word code.

## DAY.

*Apparatus :—*

Ball, cone, square flag (of any colour).

*Information given :—*

- (a) Ball over cone, point up.—Typhoon likely to be dangerous.
- (b) Cone, point up.—Typhoon very near, passing to N., strong gales from N.W. to S.W.
- (c) Cone, point down.—Typhoon very near, passing to S., strong gales from N.E. to S.E. (less severe than last, generally).
- (d) Ball.—Typhoon centre very near; dangerous gales and heavy squalls.
- (e) Flag over ball.—Storm wave; high tides and floods.

## NIGHT.

*Apparatus :—*

3 white lights, 3 red lights.

*Information given :—*

- 3 white lights = (a).
- Red between 2 white lights = (b).
- 1 white light over 2 red lights = (c).
- 1 white between 2 red lights = (d).
- 3 red lights = (e).

} Lights in vertical line only.

*Duration of Signal :—*

From time of receipt of instructions until order to lower is received (one, two, or three days later).

## INDIAN OCEAN REGION.

## DAY.

## INDIA (EXCEPT RIVER HUGLI).

*Apparatus :—*

Cone\*, drum, ball.

*Information given :—**Danger Signals.*

- (a)\* Cone, point down.—Centre of slight to moderate cyclonic storm will pass considerably to Southward.
- (b)\* Cone, point up.—Centre of slight to moderate cyclonic storm will pass considerably to Northward.
- (c) Drum.—Centre of slight to moderate cyclonic storm will cross the coast over or near the station.

*Great Danger Signals.*

- (d)\* Cone, point down over ball.—Centre of cyclonic storm of great intensity will cross coast considerably to Southward.
- (e)\* Cone, point up over ball.—Centre of cyclonic storm of great intensity will cross coast considerably to Northward.
- (f) Drum over ball.—Centre of cyclonic storm of great intensity will cross coast over or nearly over station.

## NIGHT.

*Apparatus :—*

3 red lights, 1 white light.\*

*Information given :—*

- \*Red over white = (a).
- \*White over red = (b).
- Red over red = (c).
- \*Red over red over white = (d).
- \*White over red over red = (e).
- Red over red over red = (f).

[*Note.*—Some of the Signals classed as "Non-Local" (p. 24) give also "Local" information.

\* Excluded from the system adopted at very small ports of the Arabian Sea, at which only native coasting craft harbour.

## RIVER HUGLI.

## DAY.

*Apparatus :—*

Drum.

*Information given :—*

Drum.—Cyclonic storm of great intensity is approaching mouth of the Hugli, and will probably advance to Calcutta. Probably a storm-wave.

## NIGHT.

*Apparatus :—*

Two lights at yard-arm.

*Information given :—*

Two lights placed vertically indicate the early approach of a cyclonic storm to Bengal coast or to port of Calcutta if the signal be hoisted there.

[*Note.*—Some of the Signals classed as "Non-Local" (p. 24) give also "Local" information.

## MAURITIUS.

## DAY.

*Apparatus :—*

White flag with three horizontal blue stripes, red flag, ball, gun.

*Information given :—*

White flag with three horizontal blue stripes, with ball above; accompanied by gun shot.—Gale of wind may be expected, on account of the near approach of a storm centre.

Red flag with ball above, accompanied by a gun shot.—Hurricane may be expected.

## NIGHT.

*Apparatus :—*

Blue light, gun.

*Information given :—*

Blue light, accompanied by gun shot.—Hurricane may be expected.

*Duration of signal :—*

The signals are exhibited above the Port Office and repeated at Fort George. They remain hoisted until all danger is passed.

## REUNION.

(Some of these, marked with \*, are to some extent "non-local" in character.)

## DAY.

*Apparatus :—*

2 cones, ball, drum ("square").



*Information given :—*

- Cone, point up.—Cyclone expected.  
 2 cones, vertical, points up.—Cyclone approaching from N.E.  
 \*2 cones, vertical, points together.—Cyclone likely to pass considerably to Northward of island.  
 2 cones, vertical, bases together.—Cyclone likely to pass a short distance to Northward of island.  
 \*Cone, point up, above ball.—Cyclone will pass to Southward, travelling from N.E. to S.W.  
 \*Cone, point down, above ball.—Cyclone will pass to Southward, travelling from N.W. to S.E.  
 \*2 cones, vertical, points down.—Cyclone will pass to Westward from N. to S.  
 \*Ball, over cone, point up.—Cyclone will pass to Eastward.  
 \*Ball, over cone, point down.—Cyclone, which has gone to N., appears to have recurved, travelling from N.W. to S.E.  
 Drum ("square").—Barometer rising; danger over.

NIGHT,

[None.]

## AUSTRALASIAN REGION.

## AUSTRALIA—GENERAL.

Local storm and weather signals are exhibited in all the Australian capitals, also at Launceston, Tasmania; Newcastle, New South Wales; Fremantle, West Australia; and Port Adelaide, South Australia. Arrangements have also been made for the display of storm signals at 21 lighthouses on the coast of Australia and Tasmania. The Flag code signals of the United States of America Weather Bureau are used (*see p. 12*). *See below* for additional signals in use in New South Wales.

## NEW SOUTH WALES.

DAY.

*Apparatus :—*

Diamond, drum, hoisted at one of four yard-arms extending in the four cardinal directions from the signal-mast.

*Information given :—*

- Drum.—Heavy sea.  
 Diamond over drum.—Gale with clear weather.  
 Drum over diamond.—Gale with thick weather and rain.

The direction from which the gale is expected is indicated by hoisting the signals to the appropriate yard-arm.

The approach of southerly bursters is signalled from the Post Office tower at Sydney by means of flags during the day, a white flag with the initial letters representing the names of coastal towns being changed as the bursters reach the different coastal ports. A red light is exhibited at night in the lantern of the Post Office tower for the same purpose.

## NEW ZEALAND.

DAY.

*Apparatus :—*

Black cone, black drum, red pennant.

*Information given :—*

- Cone, point up.—Strong winds or gales from northward (N.E. changing by N. to W.).  
 Cone, point down.—Strong winds or gales from westward (N. changing by W. to S.W.).

- Cone, point up, above drum.—Strong winds or gales from Eastward (N. changing by E. to S.E.); cyclone approaching ("Black North-Easter").  
 Cone, point down, above drum.—Strong winds or gales from E. changing by S. to S.W.  
 Cone, point down, below drum.—Strong winds or gales from W. changing by S. to S.E.  
 Drum.—Strong winds or gales from S. changing by E. to N.  
 Red pennant below any signal between 8 a.m. and noon indicates that the signal belongs to the forecast of previous day.  
 Red pennant hoisted alone.—No forecast has been received.  
 No red pennant indicates that the forecast belongs to day on which it was hoisted.

NIGHT.

[None.]

## SECTION III.—NON-LOCAL STORM SIGNALS.

## EASTERN ATLANTIC AND MEDITERRANEAN REGION.

## DENMARK.

DAY.

*Apparatus :—*

Flags.

*Information given :—*

Locality of storm indicated by colour of flag.

Force of wind indicated by shape of flag.

Square flag = 7 to 9 } Beaufort.  
 Triangular flag = 10 to 12 }

The signals are shown and removed after receipt of telegraphic order direct from the respective stations, and they are only shown after 8 a.m.

## WESTERN ATLANTIC AND EASTERN PACIFIC REGION.

## MEXICO.

DAY.

*Apparatus :—*

- (a) Square red flag with square white centre.  
 (b) Square yellow flag with square red centre.  
 (c) Triangular white flag with black triangle in centre.  
 (d) Triangular black flag with white triangle in centre.

*Information given :—*

- (a) = Hurricane in West Indies.  
 (b) = Bad weather inside Gulf of Mexico.  
 (c) = Bad weather to Northward.  
 (d) = Bad weather to Southward.

NIGHT.

[None.]

*Duration of signal :—*

Until receipt of instructions to lower, or until dusk.



## WESTERN PACIFIC REGION.

CHINA.

SHANGHAI (ZIKAWEI).

DAY.

*Typhoons and Continental Depressions.**Apparatus:—*

Cones, balls, diamonds, squares.

*Information given:—*

Three "symbols" at one yard-arm show the position of the centre.

Two "symbols" at the other yard-arm show the direction of motion of the centre.

One "symbol" at masthead shows the time at which the warning was issued from Zi-ka-wei.

The region under observation is divided up into six districts, and different places in a district are indicated by three figures according to a code. The first figure is the number of the district, and the other two are selected from the numbers 1, 2, 3, 4, 5, 6. Each of these numbers has a definite "symbol" as follows:—

1 = 2 = 3 = 4 = 5 = 6 =

S.E. region. S.W. region. S. central region. N. central region. N. and N.E. region. Continental depressions

Thus, three of these symbols at one yard-arm give the position of the centre. The direction of motion of the typhoon centre is shown as follows:—

= N. = N.N.E. = N.E. = E.N.E.

= E. = E.S.E. = S.E. = S.S.E.

= S. = S.S.W. = S.W. = W.S.W.

= W. = W.N.W. = N.W. = N.N.W.

= Recurving. = Forming. = Steady or slow.

= Splitting in two.

= Filling up.

= Exceptional intensity.

= Unknown.

These are hoisted at the other yard-arm. The time "symbol" code is as follows:—

= This afternoon.

= This morning.

= Yesterday afternoon.

= Yesterday morning.

These are hoisted at the masthead.

*Gales.**Apparatus:—*

Cones, balls, diamonds, squares.

*Information given:—*

Two "symbols" at one yard-arm showing the general direction of the wind.

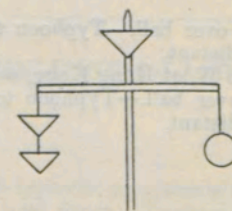
One "symbol" at the other yard-arm showing the district threatened.

One "symbol" at masthead showing time of issue of warning from Zi-ka-wei.

The codes for districts (1-6), and time are given above.

The code used for direction of wind is the same as that given above for "direction of motion" of a typhoon centre.

For example, "gale from south threatening district 2, warning issued this afternoon," would be—



Localities of gales are also signalled by a separate code.

NIGHT.

*Typhoons and Continental Depressions.**Apparatus:—*

3 Red lights (R); 2 White lights (W); Triangular frame

*Information given:—*

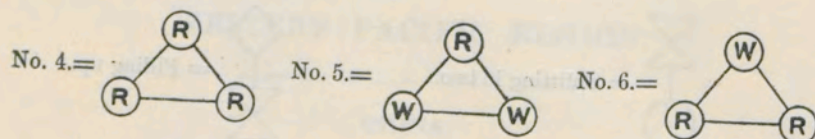
The district (1-6) in which the typhoon is situated is the only information signalled. The code is as follows:—

No. 1. =

No. 2. =

No. 3. =



*Apparatus :—*

3 White lights in triangle.

*Information given :—*

3 White lights in triangle, point up.—Gale expected on coast, N. of the 30th parallel.

3 White lights in triangle, point down.—Gale expected on coast, S. of the 30th parallel.

*Duration of signal :—*

The signal is valid for twenty-four hours from the time of receipt of warning message, unless modified by subsequent instructions.

*Gales.*

## HONG KONG.

(The signals are only hoisted when the information given is considered to be of importance to the colony or to shipping leaving the harbour.)

## DAY.

*Apparatus :—*

Drum, ball, cone, coloured red, displayed at mast-head.

*Information given :—*

Cone, point up.—Typhoon to N. of Hong Kong, more than 300 miles distant.

Cone, point up, over drum.—Typhoon to N.E. of Hong Kong, more than 300 miles distant.

Drum.—Typhoon to E. of Hong Kong, more than 300 miles distant.

Cone, point down, over drum.—Typhoon to S.E. of Hong Kong, more than 300 miles distant.

Cone, point down.—Typhoon to S. of Hong Kong, more than 300 miles distant.

Cone, point down, over ball.—Typhoon to S.W. of Hong Kong, more than 300 miles distant.

Ball.—Typhoon to W. of Hong Kong, more than 300 miles distant.

Cone, point up, over ball.—Typhoon to N.W. of Hong Kong, more than 300 miles distant.

## NIGHT.

*Apparatus :—*

Three green lights.

*Information given :—*

Three lights, vertical : green, green, green.—Typhoon believed to be more than 300 miles distant.

## DAY.

*Apparatus :—*

Cone.

*Information given :—*

The hoisting of the cone at certain stations announces the existence of a depression somewhere in the China Sea, and indicates that one of the above more complete signals is hoisted in the harbour.

## NIGHT.

[None.]

*Duration of signal :—*

The day signals are hoisted and lowered upon receipt of telephonic instructions. They are also lowered at sunset and rehoisted at sunrise without fresh instructions. Night signals are shown at three stations.

*Note.*—Day signals, as used in China, see p. 20, are also shown at Hong Kong. They are hoisted on receipt of a telephonic message and lowered at sunset. They are not rehoisted until fresh instructions are received.

## JAPAN.

## DAY.

*Apparatus :—*

Drums, cones, and balls, coloured red. Exhibited on two yard-arms or mast-head.

*Information given :—*

Position of centre, direction of progressive motion, speed of the centre, depth of centre, the hour (6 a.m., 2 p.m. or 10 p.m.) at which the centre was located. The Code used is similar to the Non-Local Signal Code of China (p. 20).

## NIGHT.

*Apparatus :—*

Two or three lights.

*Information given :—*

Position of centre.

*Duration of signal :—*

From time of receipt of telegraphic instructions until that of receipt of an order to lower.

## COCHIN CHINA, ANNAM, AND GULF OF TONG KING.

The system of Typhoon and Storm warning signals in use on the coast of China has been established with slight additions to the code numbers at certain semaphore stations in this district.

When the signals are made, a red flag with a white star in the centre is hoisted at the mast-head during the day and replaced by a red light at night.

## PHILLIPINE ISLANDS.

## DAY.

*Apparatus :—*

Drum, cone.

*Information given :—*

(f) Drum.—Distant typhoon, movements uncertain.

(g) Cone, point up, over drum.—Typhoon distant, passing to Northward ; strong winds from W. to S.

(h) Cone, point down, under drum.—Typhoon distant, passing to Southward ; strong winds from E. to S. (not so strong as in last case).\*

## NIGHT.

*Apparatus :—*

2 white lights, 2 red lights.

*Information given :—*

White and white = (f)	} Lights in vertical line only.
White and red = (g)	
Red and red = (h)	

*Duration of Signal :—*

From time of receipt of instructions to hoist until order to lower is received (one, two, or three days later).

\* This remark within the brackets refers only to Manila or to such places as Manila open to the S.W.



## INDIAN OCEAN REGION.

## INDIA (EXCEPT RIVER HUGLI).

DAY.

*Apparatus* :—\*Square flag W of International Code.  
Ball.*Information given* :—

\*In Bay of Bengal—Square flag W.—Disturbed, squally weather in Bay of Bengal.

\*In Arabian Sea—Square flag W.—Disturbed, squally weather off West Coast of India

or advance of cyclonic storm across the Peninsula from Bay of Bengal.

Ball.—Cyclonic storm has formed which will probably reach the station, but is still a considerable distance away

\*or storm has formed on Arabian Sea at some distance from coast, and will cross tracks of vessels outward bound from West Coast.

NIGHT.

*Apparatus* :—

Red light.

*Information given* :—

The light is equivalent to the ball.

\* Excluded from the system adopted at very small ports of the Arabian Sea, at which only native coasting craft harbour.

## RIVER HUGLI.

DAY.

*Apparatus* :—

2 balls, 2 cones, 1 drum.

*Information given* :—

Ball over ball.—Disturbed weather in N. of Bay of Bengal.

Ball.—Cyclonic storm in Bay of Bengal some distance away.

Cone, point up.—Cyclonic storm of great intensity will pass northwards early to W. of Chittagong and E. of Saugor Island.

Cone, point down.—Cyclonic storm of great intensity will pass northwards early to W. of Saugor and N. of False Pt.

2 cones, point to point.—Small cyclonic storm in Bay of Bengal will cross shore of bay S. of line joining Chittagong and False Pt.

2 cones, base to base.—Small cyclonic storm will cross shore N. of line joining Chittagong and False Pt.

Ball below cone, point up.—Small storm will pass northwards to the E. of Saugor and W. of Chittagong.

Ball below cone, point down.—Small storm will pass northwards to the W. of Saugor and N. of False Pt.

Ball below drum.—Small storm approaching Saugor.

NIGHT.

*Apparatus* :—

3 lights at yard-arm.

*Information given* :—

3 lights placed vertically indicate the existence of a cyclonic storm in N. part of Bay of Bengal.

## REUNION.

[Some of the local signals, p. 17.]

## SECTION IV.—WEATHER SIGNALS AND SEMAPHORES.

## EASTERN ATLANTIC

AND

## MEDITERRANEAN REGION.

## DENMARK.

## SEMAPHORE AT SKAGEN (the Skaw).

*Apparatus* :—

12 semaphore signals consisting of six arms at each side of a mast.

2 discs, with pointers like clock faces, marked H and A, one on each side of the mast.

*Information given* :—

Wind direction and force prevailing at each of two stations, Hanstholm and Anholt, one on each side of the signalling station. The arms and disc on either side of the mast refer to the station on that side.

Number of arms indicate force of wind on Beaufort's scale.

1 arm	=	forces 1 and 2
2 arms	=	" 3 " 4
3 " "	=	" 5 " 6
4 " "	=	" 7 " 8
5 " "	=	" 9 " 10
6 " "	=	" 11 " 12

Pointers of discs indicate direction of wind, N being at the top.

The signals are shown from sunrise to sunset.

*Note*.—When the uppermost arm is shown obliquely upwards, it indicates that no information can be given.

## WIND SIGNAL AT HELSINGÖR (Elsinor).

The direction and force of the wind at Anholt is given on the pilot house in Helsingör harbour by means of a pointer and three white discs on a dark ground.

Number of discs indicate force of wind on Beaufort's scale.

1 disc	=	forces 1—3
2 discs	=	" 4—6
3 " "	=	" 7—12

Pointer indicates direction of wind, N being at the top.

Calm is indicated by the pointer down and no disc shown.

Pointer up and no discs indicates that wind-signals cannot be given.

NIGHT.

[None.]

## GERMANY.

DAY.

*Apparatus* :—

12 semaphore stations on the North Sea are each provided with a mast having six arms on each side of it, and 8 semaphore stations on the Baltic are each provided with a mast having four arms on each side. On each side of every mast is also a disc, with pointers like a clock face.



*Information given :—*

Wind direction and force prevailing at each of two stations, one on each side of the signalling station. The arms and disc on either side of the mast refer to the station on that side.

Number of arms indicate force of wind on Beaufort's scale.

- 1 arm = forces 1 and 2.
- 2 arms = forces 3 and 4.
- 3 arms = forces 5 and 6.
- 4 arms = forces 7 and 8.
- 5 arms = forces 9 and 10.
- 6 arms = forces 11 and 12.

On the Baltic four arms are used for all the forces 7 to 12.

Pointers of discs indicate direction of wind, N. being at the top, and East at the right hand ; as seen, in the Baltic when passing to sea ; in the North Sea, when looking from sea.

Place referred to is indicated by its initial letter hoisted below the disc. The semaphores face the sea, and the information given is telegraphed from two stations, one on each side of the signalling station, at three definite hours a day, besides occasional telegrams in cases of stronger changes of wind at either station.

An apparatus of another kind is in use at some stations on the shore of the Baltic for signalling information as to wind received by telegraph from two recording stations. The direction and force of the wind are shown by inserting in a frame fixed to the top of a high wooden post one or two large letters for wind direction and equally large figures for wind force.

NIGHT.

[None.]

## FRANCE.

DAY.

*Apparatus :—*

- 1 flag
  - 1 burgee
  - 1 pennant
- } any colour.

*Information given :—*

Flag.—Doubtful weather, barometer inclined to fall.  
 Burgee.—Foul weather, heavy sea, barometer falling.  
 Pennant.—Better weather, barometer rising.  
 Flag over burgee.—Port entrance dangerous.  
 [Flag under burgee.—Lifeboat coming out.]

NIGHT.

[None.]

## PORTUGAL.

Weather in Bay, Straits of Gibraltar, and at Madeira signalled gratis at certain semaphore stations, when requested by passing vessels.

*Apparatus :—*

Flags of international code or by semaphore (distant signals) when the colours or flags cannot be distinguished.

*Information given :—*

State of weather as per last report.

# WESTERN ATLANTIC AND EASTERN PACIFIC REGION.

## MEXICO.

DAY.

*Apparatus :—*

- (a) Square yellow flag with white square in centre.
- (b) Square white flag with red square in centre.
- (c) Square red flag with black square in centre.
- (d) Square blue flag.
- (e) Red pennant.
- (f) White pennant.
- (g) Blue pennant.

*Information given :—*

- (a) Denotes wind velocity under 18 miles per hour.
- (b) Denotes wind velocity, 18–36 miles per hour.
- (c) Denotes wind velocity over 36 miles per hour.
- (d) over (a) (b) or (c) denotes wind direction N.N.E.—N.N.W.
- (d) under (a), (b) or (c) denotes wind direction S.S.E.—S.S.W.
- (e) over (a), (b) or (c) denotes wind direction N.N.E.—E.N.E.
- (e) under (a), (b) or (c) denotes wind direction S.S.E.—E.S.E.
- (f) over (a), (b) or (c) denotes wind direction N.N.W.—W.N.W.
- (f) under (a), (b) or (c) denotes wind direction S.S.W.—W.S.W.
- (g) over (a), (b) or (c) denotes wind direction E.N.E.—E.S.E.
- (g) under (a), (b) or (c) denotes wind direction W.N.W.—W.S.W.

NIGHT.

[For strong winds (direction and force) see under "Local" Storm Signals, p. 13.]  
*Note.*—At meteorological observatories and lighthouses, local signals (p. 13) or weather signals are hoisted at one extremity of the yard arm, the non-local signals (p. 19) being hoisted at the other extremity. At the Offices of Harbour Pilots, the place of the non-local signal may be taken by a port signal, consisting of a ball, cone, or drum.

*Duration of Signal :—*

From receipt of notice until order to hoist new signal is received, the day signal being replaced by a night signal when such a signal exists.

## URUGUAY.

DAY.

*Apparatus :—*

- Pennant, blue and white vertical,
  - Green flag,
  - Pennant, black.
- } at masthead.

*Information given :—*

- Pennant, blue and white.—Good weather.
- Flag.—Changeable
- Pennant, black, above the other weather signals.—Temperature is rising.
- Pennant, black, below the other weather signals.—Temperature is falling.

NIGHT.

*Apparatus :—*

- White light,
  - Green light,
- } at masthead.

*Information given :—*

- White light.—Good weather.
- Green light.—Changeable.

*Note.*—Readings of barometer, thermometer, and wind force and direction are signalled by means of the International Code.—Information regarding probable sudden changes of temperature is also signalled.



## CHILI.

## DAY.

*Apparatus :—*

White pennant with red circle in middle.  
Black ball.

*Information given :—*

Pennant above black ball.—Fair weather.  
Ball.—Rain.  
Ball above pennant.—Variable weather.

## NIGHT.

[None.]

## WESTERN PACIFIC REGION.

## CHINA.

*Weather at Sea and at Shanghai.*—The probable strength of the wind on the coast, and probabilities of fair, unsettled, or bad weather for the ensuing 24 hours are signalled by means of coloured flags.

*Weather at Gutzlaff.*—The direction and force of the wind at Gutzlaff at 9 a.m. and 3 p.m. are signalled by means of flags, and a blue pennant is hoisted separately when fog is reported at Gutzlaff.

*Barometric pressure.*—The reading in inches at 4 p.m. reduced to sea-level and corrected is signalled by means of flags, the first figure being omitted.

## INDIAN OCEAN REGION.

## INDIA (EXCEPT RIVER HUGLI).

[Daily from 1st April to 14th January.]

*Apparatus :—*

Weather in Bay of Bengal is shown by the flags of the International Code, and for this purpose the bay is divided into four sections.

The upper flag indicates weather in section 1.

The 2nd flag indicates weather in section 2.

The 3rd flag indicates weather in section 3.

The 4th flag indicates weather in section 4.

*Information given :—*

This refers to—

- (a) Weather.
- (b) Wind force.
- (c) Wind direction (normal, abnormal or cyclonic).
- (d) State of the sea.

There are 18 signals, represented by the letters B, C, D, F, G, H, J, K, L, M, N, P, Q, R, S, T, V, W.

## AUSTRALASIAN REGION.

## NEW ZEALAND.

*Apparatus :—*

Signals of International Flag Code.

*Information given :—*

Information as to moderate weather will be indicated in reply to inquiry, if the meteorological conditions permit.

## SECTION V.—METEOROLOGICAL INFORMATION TRANSMITTED BY RADIOTELEGRAPHY FROM STATIONS IN NORTH-WEST EUROPE.

Although non-local storm signals as used, for example, in China are almost unknown in Europe, masters of ships, who have at their disposal the necessary receiving apparatus, can obtain by wireless telegraphy daily information on the general meteorological situation, as it affects European waters, and other particulars from four different sources, as follows :—

- (a) The Eiffel Tower, Paris.
- (b) Norddeich, Wilhelmshaven.
- (c) Cleethorpes, Lincolnshire (British Admiralty).
- (d) Any British wireless station (Post Office).

An outline of the information supplied in each case is given below. It will be seen that the information is largely of the same character as that signalled from semaphore stations in China, and other countries where an elaborate system of non-local storm signals is in operation.

## (a.) EIFFEL TOWER, PARIS.

Every day a meteorological radio-telegram is issued *slowly* from the Eiffel Tower immediately after the time signal at 10 h. 49 m. a.m. G.M.T. The information, which is supplied by the Bureau Central Météorologique, gives, in code, observations of atmospheric pressure, direction and force of the wind, and state of the sea, at the following six stations :—Reykjavik (Iceland), Valencia (Ireland), Ushant or Ouessant (France), Corunna (Spain), Horta (Azores), St. Pierre and Miquelon (Newfoundland).

The observations from the first five stations are those made at 7 h. a.m. or 8 h. a.m. G.M.T. of the same day; for the last station they are those made at 8 h. p.m. of the preceding day. The stations are denoted respectively in the message by their initials (R, V, O, C, H, S).

The meteorological information for each station is given in a group of figures made up as follows :—

The first two figures indicate in millimetres the value of the atmospheric pressure at sea level and corrected for gravity, the figure in the hundreds place (7) being suppressed. The next two figures give the direction of the wind, the fifth its force, and the sixth the state of the sea (sea disturbance is not given for Reykjavik and St. Pierre and Miquelon).

The code for direction of wind is that used generally for European Weather Telegraphy, e.g., 02=N.N.E., 08=E., 16=S., 24=W., 32=N.

The code for wind force extends from 0 to 9, of which 0 to 8 correspond with the Beaufort Scale from 0 to 8, and 9 denotes Beaufort forces 9, 10, 11, or 12.

The code for sea disturbance is the usual 0 to 9 code as used for weather telegraphy (0=calm, 9=tremendous).

When any observation is lacking, the corresponding figures are replaced by letters "x."

Each group of figures is preceded by the letter denoting the station to which it refers.

At the end of the six groups are given in French brief remarks on the general situation, having special regard to the position of centres of high and low pressure.

Example of telegram :—

"BCM R48167 V742013 O753211 C680411 H73xx01 S62162 anti-cyclone Europe centrale beau temps général dépression ouest Irlande allant vers Est."

The translation of the coded groups is as follows :—

"Bureau Central Météorologique—Reykjavik, pressure 748 mm., wind South—7 (Beaufort); Valencia, pressure 774 mm., wind, South-West—1 (Beaufort), Sea slight, &c., &c."



## (b.) NORDDEICH, WILHELMSHAVEN.

Every morning at 11 h. a.m. M.E.T. the Deutsche Seewarte telegraphs a weather report to Norddeich, Wilhelmshaven, to be issued *slowly* by wireless telegraphy immediately after the daily time signal at 1 h. p.m. M.E.T. The report contains on the average not more than 25 words giving a conspectus of the distribution of pressure over Europe as observed at 8 h. a.m. M.E.T., by means of a specification of the positions of the most important barometric maxima and minima. Information about wind conditions over the North Sea and the Baltic, and a forecast relating particularly to the winds which are to be expected complete the message.

If communication from Norddeich is interrupted, the reports are forwarded to Cuxhaven for issue by wireless telegraphy in the same way.

## (c) CLEETHORPES.

A report on the general meteorological situation at 7 h. a.m. G.M.T. and a forecast for the seas around the British Isles from the Shetlands to the Bay of Biscay, is prepared each morning in the London Meteorological Office at 9 h. to 9 h. 30 m. a.m. and transmitted by the British Admiralty to its radio-telegraphic station at Cleethorpes in Lincolnshire. It is thence issued at 10 h. a.m. G.M.T. by wireless telegraphy primarily for the use of H.M. ships in home waters.

A similar message, based upon observations made at 6 h. p.m. G.M.T., is transmitted by radio-telegraphy from Cleethorpes at 10 h. p.m. G.M.T. The report describes the positions and intensities of the principal regions of high and low pressure, with occasional notes on the changes in progress. The forecast refers mainly to direction and force of wind, weather, and state of the atmosphere in respect of fog.

The following is an example :

"Barometer highest 30.3 ins. and upwards over Norway, Denmark, and the eastern part of the North Sea. Lowest 29.1 ins. and less in a depression off Western Iceland. Secondary disturbance with readings below 29.9 ins. to westward of Ireland.

Forecast : Freshening Easterly winds in Channel. Fair generally but some rain mouth Channel. Light to moderate Southerly and South-Westerly winds North Sea, with fair weather and a slight sea. Freshening South-Easterly winds all western coasts with cloudy weather, rain in places.

## (d) SUPPLY OF INFORMATION THROUGH THE BRITISH POST OFFICE.

Ships equipped for wireless telegraphy can obtain information as to the local weather conditions prevailing at various wireless telegraph stations and Lloyds' signal stations in the British Isles by signalling to the nearest wireless station in the British Isles for the required information. They can also obtain (1) information as to the state of the weather in various parts of the Eastern Atlantic, the United Kingdom, and the Continent ; (2) weather forecasts for any part of the British coasts, by wireless telegraphy through the Post Office Coast Stations from the Meteorological Office. For these services certain charges are made, for which the ship owner is held responsible.

NOTE.—The time at which the meteorological information is transmitted from the Eiffel Tower will eventually be changed, so as to follow the new time signal which will be made at 10 h. a.m. G.M.T. according to the scheme approved by the Conference Internationale de l'Heure at its meeting in Paris, 1912. At the same time the message will be considerably increased by the addition of observations from other meteorological stations. As this publication goes to press (July 11, 1913) the time at which the change will be made has not been fixed.

The following is the list of stations for the transmission of time signals which will probably be in operation from July, 1913 :—

	Hours.	G.M.T.
Paris ...	0	10
San Fernando (Brazil) ...	2	16
Arlington (U.S.A.) ...	3	17
Manila ...	4	—
Mogadiscio (Somali) ...	4	—
Timbuctoo... ..	6	—
Norddeich ...	12	22
Massowah (Erythrea) ...	18	—
San Francisco ...	20	—

The wave length recommended is 2,500 metres.



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The ninth volume, published in 1884, was the first of a series of volumes which have since been published, and which have been the subject of much notice and discussion. The tenth volume, published in 1885, was the first of a series of volumes which have since been published, and which have been the subject of much notice and discussion.

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