

Marine (1897) Department.

No. 100

G.O., No. 871 *mar*

DATED 14 October 1897

11/10/97

[Despatch Abstract.]

Storm Signals, Letter from the Secy of India forwarding a modified scheme of — for the Indian Coast Ports (except those in the river Hooghly) ordered to be published in the Port Office and Marine St. Gazette and the modified scheme ordered to be introduced immediately on publication.

150 of

H. W. 100

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

From F. G. SLY, Esq., C.S., Under Secretary to the Government of India, Department of Revenue and Agriculture (Meteorology), to the Secretary to the Government of Madras, Marine Department, dated Simla, 28th September 1897, Cir. No. 26—45-8.

In continuation of the endorsement from this department, No. 1719—45-1, dated the 18th July 1896, I am directed to forward a modified scheme of storm signals for the Indian coast ports (except those in the river Hooghly) which has been approved by the Government of India, and to request that, with the permission of the Governor in Council, they may be brought into use at once and published in the local gazette for general information.

ENCLOSURE.

Proposed uniform system of storm signals for the Indian Coast ports except those on the river Hooghly.

In accordance with the request of the Government of India we have carefully considered the uniform system of storm signals proposed by the Meteorological Reporter to the Government of India in his letter, No. 456 S., dated 11th June 1896, to the Revenue and Agricultural Department, and also the various suggestions that have been made by the authorities to whom the proposals were sent for the favour of opinion and criticism. We have the honour to submit the following revised system in final recommendation for the consideration of the Government of India and hope they will be judged worthy of adoption. The chief point we have endeavoured to keep in view is to make the system as simple as possible consistent with giving as full warning and information by storm signals as is desirable in the present state of meteorological observation and science in India.

The following gives the uniform system of storm signals and their significance that we propose for adoption at all ports in India, with the exception of those in and near the mouth of the river Hooghly :—

DAY SIGNALS.

I.—CAUTIONARY SIGNAL.

Bay of Bengal.

The square flag *W* of the International Code, hoisted on the storm signal staff as a cautionary signal, indicates the existence of disturbed squally weather in the Bay of Bengal which may be the first stage in the formation of a cyclonic storm, and which, if it develops, is likely to affect that part of the coast on which the port is situated.

The disturbed conditions may pass away without developing into a cyclonic storm, in which case the cautionary signal will be taken down as soon as it is certain that stormy weather will not shortly follow. If, however, the disturbed weather be the first indication of the probable formation or approach of a cyclonic storm, the cautionary signal will be followed by one of the ordinary storm signals, indicating the probable position, character and track of the approaching storm.

Arabian Sea.

The square flag *W* of the International Code, hoisted on the storm signal staff as a cautionary signal, indicates the existence of disturbed weather off some part of the West Coast of India in the neighbourhood of the port or ports at which the signal is hoisted; or the advance of a cyclonic storm across the Peninsula from the Bay of Bengal which may hence shortly cross the Western Ghâts and give squally or stormy weather in the Arabian Sea.

The disturbed conditions may in either case pass away without giving stormy cyclonic weather to the West Coast ports or to the adjacent parts of the Arabian Sea, in which case the cautionary signal will be taken down as soon as it is certain that stormy weather will not shortly follow. If, however, the disturbed weather be the first indication of the probable formation or approach of a cyclonic storm, this cautionary signal will be followed by one of the ordinary storm signals, indicating the probable position, character and track of the approaching storm.

II.—WARNING SIGNAL.

A ball indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it. The same



signal will also be hoisted at the larger and more important ports on the West Coast of India to indicate that a storm has formed in the Arabian Sea at some distance from the coast and will shortly cross one or other of the tracks of vessels leaving these ports, but is not likely to give the

ports bad weather. The Port officers, when instructed to hoist the warning signal, will also be informed of the object of the signal so as to communicate its full purport to masters of vessels about to leave the port.

III.—DANGER SIGNALS.

- (1) A cone apex downwards indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (2) A cone apex upwards indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the north of the port.



- (3) A drum indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



In order to indicate that a cyclonic storm in the sea area near a port is of great intensity, a ball is added to (and placed underneath) the corresponding danger signal. The following shows the proposed great danger signals and their significance :—

IV.—GREAT DANGER SIGNALS.

- (1) A cone apex downwards and ball below indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (2) A cone apex upwards and ball below indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the north of the port.



- (3) A drum with a ball below indicates that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.



The following gives the night signals corresponding to the day signals named above, together with a statement of their significance :—

NIGHT SIGNALS.

I.—CAUTIONARY SIGNAL.

None.

II.—WARNING SIGNAL.

A red light (corresponding to day warning signal) indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it.



III.—DANGER SIGNALS.

- (i) A red light vertically above a white light corresponds to day signal No. 1 and indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (ii) A red light vertically below a white light corresponds to day signal No. 2 and indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the north of the port.



- (iii) Two red lights in a vertical line correspond to day signal No. 3 and indicate that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



IV.—GREAT DANGER SIGNALS.

- (i) Two red lights with a white light below arranged in a vertical line correspond to day great danger signal No. 1 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (ii) Two red lights with a white light above in a vertical line correspond to day great danger signal No. 2 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the north of the port.



- (iii) Three red lights in a vertical line correspond to day great danger signal No. 3 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.



In the above are given the day and night series of storm signals, proposed for general adoption at the storm warning stations on the coasts of India.

It will be observed that there is no night cautionary signal included in the series. We are of opinion that a night cautionary signal is unnecessary and also that the day cautionary signal should be employed only at ports frequented by ocean-going steamers.

We are also of opinion that it is desirable the signals should be as simple as possible, and consider that the system of night signals suggested by the Director, Indian Marine, is much better from this standpoint than the second system as proposed by Mr. Eliot and have hence adopted that system for our proposed series of night signals. The system of night signals we suggest is, it will be seen, a linear arrangement of lights and is not liable to be mistaken in any position of the lights. A triangular arrangement may, under certain conditions, appear only as two lights and may hence give a false indication.

In the instructions which we received from the Government of India, it was requested that we should take into careful consideration certain remarks and criticisms of the Collector of Salt Revenue, Bombay. These remarks are as follows:—

“That the signal stations under the control of the Salt Revenue Department on the coast of the Bombay Presidency are in each case in charge of the staff employed at the lighthouse. The men, although carefully trained for their particular duties, and fairly intelligent, are more or less illiterate, and it is desirable that directions given to them should be as few and as simple as possible. The steamers which visit the coast ports during the monsoon months are few in number. At present all of them belong to one Bombay Company, and any warnings which may be received in Bombay are communicated to them by the Company's agents at the ports which they enter. The principal use of the signals is to warn the country crafts, which swarm along the coast, of the approach of danger. It is therefore of the first importance that the system employed should be simple, and that no change which is not absolutely necessary should be made in any system to which the native seamen have become accustomed.”

“The new system which is now proposed by the Meteorological Reporter is no doubt theoretically more perfect than the one now in use on the coast. But instead of the 5 day and 3 night signals, we shall have either 8 day and 2 night signals or 8 day and 9 night signals. In my opinion this elaboration is, so far as the small coast stations are concerned, unnecessary and likely to do more harm than good. The men in charge may, in course of time, be taught to use the correct signals, but the masters of country vessels will certainly be bewildered, and may possibly disregard the signals altogether as some new freak which poor men cannot be expected to understand.”

“I doubt whether the advantages resulting from uniformity will compensate for the confusion which will be caused by a change of system. The masters of steamers are presumably acquainted with the system used in the different ports which they visit, and are not likely to be misled by the differences which exist. On the other hand, the masters of country vessels will be slow to realize that there has been any change, and still slower to appreciate the meaning of the new signals. For instance, the ball which it is now proposed to use for the day warning signal has been used for many years on this coast to denote the approach of the coasting steamers, and it will be long before the people who have become accustomed to it will take it for anything else.”

With reference to the remarks of the Collector of Salt Revenue, we have first to state that we consider it to be of primary importance that as full and effective warning of storms as practicable should be given to the larger ports, and that it would never be tolerated by the various interests concerned that the system of storm signals should be cut down so as to suit the very limited intelligence of the masters of country vessels.

On the other hand, we agree with him that it is desirable the storm signals used at small ports, frequented only by country vessels or small coasting steamers, should be made as simple as possible. This can easily be done by using only a selection of the uniform series of storm signals given above, suited to the exigencies of these ports. In fact, they only require to be warned of storms likely to affect them directly. This can be done by the use of the following three day and the corresponding night signals shown below:—

DAY SIGNALS.

I.—WARNING SIGNAL.

A ball indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it.



II.—DANGER SIGNAL.

A drum indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



III.—GREAT DANGER SIGNAL.

A drum with a ball below indicates that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.



CORRESPONDING SYSTEM OF NIGHT SIGNALS.

I.—WARNING SIGNAL.

A red light (corresponding to day warning signal) indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it.



II.—DANGER SIGNAL.

Two red lights in a vertical line correspond to day signal No. 2 and indicate that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



III.—GREAT DANGER SIGNAL.

Three red lights in a vertical line correspond to day (great danger) signal No. 3 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.

It will be seen that these signals are the same as in the larger series and only include those indicating the approach of a storm to the immediate neighbourhood of the port.

It would depend upon the local authorities concerned whether the smaller or the larger series of storm signals were adopted, and their decision would be communicated to the Meteorological Reporter to the Government of India, Simla, who would frame his warnings to the respective ports in accordance with the wishes of the local authorities as sanctioned by the Local Governments.

We also desire to take this opportunity of suggesting that whenever a cyclonic storm is known to be in existence in the Arabian Sea, and is likely to cross the usual tracks of steamers between Aden and Bombay or Aden and Kurrachee, information to that effect should be telegraphed by the Simla Meteorological office to the Port Officer, Aden, for communication to the Commanders of mail and other steamers leaving that port for either Bombay or Kurrachee.

BOMBAY,
26th July 1897.

(Signed) T. H. HEMING, Comdr., R.N.,
In charge, Marine Survey of India.
(") GEORGE WILSON, Comdr., R.I.M.,
Port Officer, Bombay.
(") JOHN ELIOT,
Metl. Reporter to the Govt. of India.

ORDER—No. 871, Marine, dated 14th October 1897.

Ordered to be published in the Fort St. George and Maritime District Gazettes. The modified scheme of signals will be introduced immediately on publication.

(True Extract.)

(Signed) W. B. DEWINTON,
Ag. Secretary to Government.

To the Superintendent, Government Press.
" the Presidency Port Officer.
" Collectors of Maritime Districts.

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Marine (1897) Department.

CURRENT No. 1313

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No. 871 Marine d/14th October 1897

Ordered to be published in the Fort St. George and Maritime District Gazettes - The Order modified scheme of signals will be introduced immediately on publication.

From

The Under Secretary to the Government of India

Rev. & Agricultural Dept. (Meteorology)
Cir. No. 26-48-8

W. B. Dewinton
14.10.97 Dated 28th September 1897

Received

Registered

Enclosures one

Spare copies

The Supt. Govt. Press
P. S. O.
Collectors of Maritime Districts
R. S.

SUBJECT.

Storm Signals

Forwarding a modified scheme of — for the Indian Coast Ports, which has been approved by the Government of India, requesting that they may be brought into use at once and published in the Local Gazette for general information.

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F. G. SLY, Esq., C.S.,
Under-Secretary to the Government of India,

The Secretary to the Government of Madras.

Simla, the 28th September 1897.

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No. 575-8
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 May 3
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 file.

Your most obedient Servant,

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Under-Secretary to the Government of India.

1897.

File No. 45 of
1896.

GOVERNMENT OF INDIA.
DEPARTMENT OF REVENUE AND AGRICULTURE.

Serial No. 8.

METEOROLOGY.

To

THE LOCAL GOVERNMENTS.

Circular No. 26—45-8.

Dated Simla, the 28th September 1897.

SUBJECT.

Modified scheme of storm signals for the Indian Coast Ports except those in the river
Hooghly.

2 8/2

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I—CAUTIONARY SIGNAL.

Bay of Bengal.

The square flag *W* of the International Code hoisted on the storm signal staff as a cautionary signal indicates the existence of disturbed squally weather in the Bay of Bengal which may be the first stage in the formation of a cyclonic storm, and which, if it develops, is likely to affect that part of the coast on which the port is situated.

The disturbed conditions may pass away without developing into a cyclonic storm, in which case the cautionary signal will be taken down as soon as it is certain that stormy weather will not shortly follow. If, however, the disturbed weather be the first indication of the probable formation or approach of a cyclonic storm, the cautionary signal will be followed by one of the ordinary storm signals, indicating the probable position, character and track of the approaching storm.

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II.—WARNING SIGNAL.

A ball indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it. The same signal will also be hoisted at the larger and more important ports on the West Coast of India to indicate that a storm has formed in the Arabian Sea at some distance from the coast and will shortly cross one or other of the tracks of vessels leaving these ports, but is not likely to give the ports bad weather. The port officers when instructed to hoist the warning signal will also be informed of the object of the signal so as to communicate its full purport to masters of vessels about to leave the port.

III.—DANGER SIGNALS.

- (1) A cone apex downwards indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (2) A cone apex upwards indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port, and that its centre will probably cross the coast considerably to the north of the port.



- (3) A drum indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



In order to indicate that a cyclonic storm in the sea area near a port is of great intensity, a ball is added to (and placed underneath) the corresponding danger signal. The following shows the proposed great danger signals and their significance:—

IV.—GREAT DANGER SIGNALS.

- (1) A cone apex downwards and ball below indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



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- (II) A red light vertically below a white light corresponds to day signal No. 2 and indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast considerably to the north of the port.



- (III) Two red lights in a vertical line correspond to day signal No. 3 and indicate that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



IV.—GREAT DANGER SIGNALS.

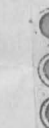
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It will be observed that there is no night cautionary signal included in the series. We are of opinion that a night cautionary signal is unnecessary and also that the day cautionary signal should be employed only at ports frequented by ocean-going steamers.

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II.—DANGER SIGNAL.

A drum indicates that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



III.—GREAT DANGER SIGNAL.

A drum with a ball below indicates that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.



CORRESPONDING SYSTEM OF NIGHT SIGNALS.

I.—WARNING SIGNAL.

A red light (corresponding to day warning signal) indicates that a cyclonic storm has formed, which will probably advance to that part of the coast on which the port is situated, but is still at a considerable distance from it.



II.—DANGER SIGNAL.

Two red lights in a vertical line correspond to day signal No. 2 and indicate that a cyclonic storm (probably of slight to moderate intensity) is affecting the port and that its centre will probably cross the coast over or near to the port.



III.—GREAT DANGER SIGNAL.

Three red lights in a vertical line correspond to day (great-danger) signal No. 3 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast over or near to the port.



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BOMBAY;

July 26th, 1897.

T. H. HEMING, *Commander, R.N.,*

In charge, Marine Survey of India.

GEORGE WILSON, *Commander, R.I.M.,*

Port Officer, Bombay.

JOHN ELIOT,

Meteorological Reporter to the Government of India.