

Marine (1897) Department.

G.O., No. 1016 *mar*

DATED ^a 11 December 1897

[Despatch Abstract.]

By clone Code: Letter from the P.P. Officer
forwarding proof of the revised — examined
and revised ~~and~~ recorded with reference
G.O. No. 811 *mar* of 17.9.97.

28/12/97

11/12/97

the Government of India

[illegible]

FURTHER PAPERS.							
G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

the Government of India a

Forwarding proof of the revised cyclone code examined and revised as required.

Note there is a file awaiting the issue of the revised Code

BACK PAPERS.

FURTHER PAPERS.

No. Date.

629 28 14.10.97
50 811. 12-13 8 12-9-97

No. Date.

Appendix to G.O., No. 811, Marine, dated 17th September 1897.

MADRAS CYCLONE CODE.

CHAPTER I.

GENERAL ARRANGEMENTS IN CONNECTION WITH THE HOISTING OF STORM SIGNALS AT MADRAS AND COAST PORTS.

1. The arrangements for the communication to the Presidency Port Officer, to the Deputy Port Conservator, Madras, and to the several coast Port officers, of information respecting the formation, growth and course of cyclonic storms, necessary for their guidance in hoisting the storm signals, are carried out by the Meteorological Reporters at Simla and Calcutta under the general direction of the Meteorological Reporter to the Government of India.

2. The Madras ports included in this storm-warning system are as follows:—

A.—Ports on the Coromandel Coast.

Gopalpur.	Cocanada.	Porto Novo.
Calingapatam.	Masulipatam.	Negapatam.
Bimlipatam.	Madras.	Pamban.
Vizagapatam.	Cuddalore.	Tuticorin.

B.—Ports on the Malabar Coast.

Cannanore.	Mangalore.	Calicut.
Tellicherry.	Cochin.	Beypore.

3. The Meteorological Reporter to the Government of Bengal (Calcutta) supplies the information and works the system for those ports classed as belonging to the Coromandel Coast, and the Assistant Meteorological Reporter for India (Simla) for the Malabar Coast ports as defined above. These officers also afford information respecting the first indications of bad weather in the Bay of Bengal and the Indian Ocean to the Presidency Port Officer, to the Deputy Port Conservator and to the Chief Engineer for Irrigation, Madras.

4. As soon as the existence and probable course of a cyclonic storm in the Bay of Bengal or the Indian Ocean has been ascertained by the Meteorological Reporter of Calcutta or Simla, the Deputy Port Conservator, Madras, Port officers of the ports likely to be affected by the storm and the Chief Engineer for Irrigation, Madras, will be informed and warned by the Reporter appointed to give such warnings to his port. The warning signal should usually be hoisted immediately after the receipt of this information. The Meteorological Reporter will continue to keep the Deputy Port Conservator, Madras, and Port officers of the warned ports acquainted with the growth, progress, course and other features of the storm, which will be useful as a guide to these officers in hoisting, when necessary, the danger signal. The danger signal should be hoisted as soon as the Deputy Port Conservator, Madras, or the Port officer, considers it advisable to warn the shipping that a cyclone is approaching either the port itself or the coast in the near vicinity. By these arrangements, the Meteorological Reporters will transmit information and warnings direct to the Presidency Port Officer and Deputy Port Conservator at Madras and the Port officers of Gopalpur, Bimlipatam, Vizagapatam, Cocanada, Masulipatam, Negapatam, Tuticorin, Mangalore, Cochin, Calicut and Tellicherry. At the remaining ports, viz., Calingapatam, Cuddalore, Porto Novo, Cannanore and Beypore, where the signals will be hoisted by the Port Conservators, the Port officers under whom they are immediately placed will instruct them by urgent telegram to hoist the warning and danger signals at the same time that they hoist them at their own ports. By this arrangement information respecting bad weather and direction relating to the hoisting of storm signals will be communicated to the—

Port Conservator of Calingapatam—By the Port Officer of Gopalpur.
Port Conservators of Cuddalore and Porto Novo—By the Port Officer of Negapatam.
Port Conservator of Beypore—By the Port Officer of Calicut.
Port Conservator of Cannanore—By the Port Officer of Tellicherry.

5. Copies of all telegrams despatched to the Deputy Port Conservator at Madras and to Port officers relating to the approach of cyclonic storms, will be sent at the same time to the Presidency Port Officer, Madras, in order that he may be kept fully acquainted with the weather information and instructions communicated by the Meteorological Reporters to the Port officers subordinate to him.

6. The duties of the Meteorological Reporters at Simla and Calcutta are confined solely to furnishing as definite, full, and early information as possible of the character, position, course, probable time of approach, and varying phases of cyclonic storms, to the Port officers of all ports to which the cyclone will probably cause dangerous weather and a high sea. The responsibility of hoisting and taking down the storm signals rests solely with the Port officers at coast ports,

and at Madras with the Deputy Conservator of the Port. These officers will usually be guided mainly by the information received from the Meteorological Reporter, but if that information be insufficient or be delayed in transmission, or if telegraphic communication be suspended by breaks in the lines, they will then be guided by the indications of the barometer, force of the wind, state of the sea, and general aspect of the weather. The Deputy Conservator of the Port of Madras should also place himself in communication with the Meteorological Reporter to the Government of Madras or the Government Astronomer; both these officers should afford him full information.

7. The storm signals to be employed are of two kinds—one for day use and the second for use at night. They are as follows:—

1st—Day Signals.

7. The Storm Signals to be exhibited at the ports specified in para 2, above (with the exception of Porto Novo, Panthan, Tuticorin, Beypore and Kundapur) are those specified in Appendix A.
(a) At Kundapur, Panthan, Tuticorin, Beypore and Kundapur the Storm Signals to be exhibited are those specified in Appendix B.

warning or danger signal but between it and the flagstaff in the case of a storm to the north or south of the port, and by these balls being hoisted over the warning or danger signal when the storm is expected to pass over the port; thus, one small ball will indicate a storm of slight intensity, two small balls a storm of considerable intensity.

10. In order to facilitate and expedite the working of these arrangements, the Telegraph Department has granted the privilege of "Precedence urgency" to telegrams referring to stormy weather and the hoisting of storm signals between the Meteorological Reporter of Calcutta and the following officers and Meteorological Superintendents:—

Cocanada.
Gopalpur.

Masulipatam.
Madras.

Negapatam.
Vizagapatam.

The names of other officers will be added to this list as found necessary for the proper working of the system.

11. The Deputy Port Conservator at Madras and all Port officers noting the appearance of suspicious weather before the receipt of any telegrams from the Meteorological Reporter in connection (or co-operating) with them, should communicate the information without delay to that officer.

12. The Deputy Port Conservator at Madras and all Port officers receiving telegrams from the Meteorological Reporters during a storm should send a brief statement, after the cyclone has passed away, of the telegrams received from the reporters and of the exact times when they were delivered by the telegraph officers, &c., in order that the Meteorological department may exercise an effective check over this part of the working of the system and secure the necessary rapidity of telegraphic communication required for the proper working of the system.

CHAPTER II.

GENERAL ARRANGEMENTS TO BE MADE AT MADRAS ON THE "WARNING" OR "DANGER" OR "Great D" SIGNALS BEING DISPLAYED AT THE GAFF OF THE PORT FLAGSTAFF, THAT IS, WHEN THE STORM IS EXPECTED TO PASS OVER THE PORT ITSELF.

1. These signals will be repeated at the Port flagstaff.
2. All arrangements in connection with the safety of the shipping will be made by the Deputy Port Conservator upon whom solely the responsibility will rest.
3. When either of these storm signals is hoisted at or lowered from the Gaff of the flagstaff, the fact is to be communicated as soon as practicable by the Deputy Conservator of the Port to the undermentioned officials, viz.:—
The Secretary to Government, Marine Department, when in Madras.

The Private Secretary to His Excellency the Governor, should His Excellency be in Madras.

The Presidency Port Officer.
The Secretary, Harbour Trust Board.
The Commissioner of Police, through the Deputy Commissioner of Police.
The Executive Engineer, St. Thomas' Mount.
The Collector of Chingleput.
The Chief Commissariat Officer and Commissariat Storekeeper-General.
The Assistant Adjutant-General, Madras District, Fort St. George.
The President, Madras Municipality.
The Government Telephone Exchange.

4. The Government telephone exchange will be kept open day and night, whilst the signals are hoisted.

5. The life-saving apparatus of Port and Pier Traffic Departments will be kept ready for immediate use.

6. Should the Deputy Port Conservator require any assistance from the following departments, it will be given at once upon that officer applying for same:—
Police Boat establishment (on application to the Deputy Commissioner of Police).
Harbour Engineer and Pier Traffic establishments (on application to Chairman, Harbour Trust Board).

7. On the "Danger" signals being hoisted, the Commissioner of Police will place at the disposal of the Deputy Port Conservator two mounted orderlies, and keep fifty men available at the beach for duty.

CHAPTER III.

WRECK ARRANGEMENTS.

1. Should wreck occur, or the Deputy Conservator deem the same imminent, the following signal will be hoisted:— *2 balls vertically* By day—*a cone, apex down.* By night—*2 white lights vertically* ~~a red light~~.

2. Should the Deputy Port Conservator consider that there will be danger to life, he will inform the following officers and departments:—
The Port Surgeon.
The Resident Surgeon, General Hospital. | The Ordnance Department.
The Commissariat and Transport Department.

3. Upon receipt of this information the Port Surgeon taking with him a portion of his establishment and medicines and surgical appliances will immediately proceed to the scene of wreck and render all assistance possible.

4. The Resident Surgeon, General Hospital, will make preparations to receive sick and wounded. The Ordnance Department will comply with any requisitions from the Deputy Port Conservator to provide tents for ship-wrecked people and men to pitch them.

5. The Commissariat and Transport Department will be prepared to comply with any requisitions from the Deputy Port Conservator to supply trollies, dandies, blankets, towels, brandy, water and other medical comforts, &c., and send a sufficient number of men to look after the trollies and to carry the dandies.

6. In the event of a working party being required from the troops in garrison they will be supplied by the Assistant Adjutant-General, Madras, upon application from the Deputy Port Conservator.

POLICE DEPARTMENT.

7. On the Inspector of Marine Police seeing the wreck signal, or being informed by the Deputy Conservator of the Port of imminent danger of wrecks occurring, he will promptly send intelligence to the Deputy Commissioner of Police, who will immediately increase that division to such an extent as may be practicable at the time.

8. The entire Police force pending the arrival of the Commissioner will be under the Deputy Commissioner, who will consult the Deputy Conservator of the Port on the spot as to where the services of his men are likely to be emergently required, and will issue whatever detailed orders may be requisite.

9. The Police will be mainly restricted to their own proper duties, i.e., the maintenance of order; protecting personal or other property washed on shore; supervising the conveyance of the shipwrecked crews and passengers to the nearest shelter, and to hospital if necessary; bringing back the hammocks, doolies and sick-carts; guarding or removing the dead, &c. They are not to be employed in hauling ropes or recovering wreckage or cargo, save in emergent circumstances when other labour is not available.

10. The Commissioner of Police will see that duties are so apportioned as to enable the men to be relieved from the reserves as frequently as circumstances may render requisite.

11. All officers and men will be in uniform.

the Government of

Proposed uniform system of storm signals for the India 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 Ghats 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.

the Govt.

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.

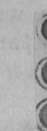
- (I) Two red lights with a white light below arranged in a vertical line correspond to day great danger signal No. 1 and indicate that a cyclonic storm of great intensity is affecting the port and that its centre will probably cross the coast considerably to the south of the port.



- (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 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;

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.

1897.

File No. 45 of
1896.

Serial No. 8.

GOVERNMENT OF INDIA.

DEPARTMENT OF REVENUE AND AGRICULTURE.

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.

Circular No. 26—45-8.

FROM

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

TO

Dept. of Rev. & Agr.
Meteorology.

Simla, the 28th September 1897.

SIR,

IN continuation of the endorsement from this Department No. 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} ~~His Honour the Lieutenant-Governor~~ they may be brought into use at once and published in the Local Gazette for general information.

I have the honour to be,

SIR,

Your most obedient Servant,

F. G. SLY,

Under-Secretary to the Government of India.

Heading.

No. 422
380

PRESIDENCY PORT OFFICE,
Madras, 29th October 1897.

From

Commander A. A. Street, R.N.
PRESIDENCY PORT OFFICER,
Madras,

To

THE SECRETARY TO GOVERNMENT,
MARINE DEPARTMENT,
Chennai.

SIR,

With reference to Marine Department Memo -
randum n^o 627 E, dated 14th October 1897, (Enclosures
herewith returned) I have the honor to forward
proof of the revised Cyclone Code examined
and revised as required.

2. I have added Mundapur to the list
of ports included in the Storm warning
System as a large number of native
craft visit that port; the information
required for hoisting signals at that port
to be communicated by the Port Officer,
Mangalore.

3. The wreck signal required for
Madras Port has been altered from a
cone

627 E
14. Oct 97

come to two balls, and from one red
to two white lights.

I have the honor to be,

Sir,

Your obedient servant,

H. A. Threl

Commander, R. I. M.,

Perry: Port. Officer.

File