

VOL. III. No. 28.

THE MARINE OBSERVER.

APRIL 1926.

## TABLE OF PRINCIPAL CONTENTS.

	PAGE	
Observation and Distribution of the Work ... ..	55	Lithographic Illustrations after page 68.
The Marine Observer's Log (with illustrations) ... ..	56	Weather Charts IX to XI, Noon (A.T.S.) April 25th-27th, 1925, North Pacific.
Wireless and Weather in the North Pacific ... ..	62	Weather Chart XII, Morning of April 4th, 1925, Eastern North Atlantic.
Local Winds—II ... ..	63	Ice Chart of the Southern Hemisphere, 1902-1925, April, May and June, and explanation.
Weather Signals, France :—		Charts of Wind and Fog at Coast Stations, Great Britain and Ireland : and Wind, Fog and Mist, S.W. Approaches to Great Britain and Ireland, April.
II. Wireless Weather Signals, Bulletins ... ..	65	Chart showing Mean Sea Surface Temperatures, North Atlantic for month of April, computed from all available sources during the period 1855 to 1917.
III. Wireless Time Signals ... ..	67	
IV. Visual Storm Warnings ... ..	68	

## OBSERVATION AND DISTRIBUTION OF THE WORK.

IN "Work of the Year," in the June Number last year we stated :

"The Pacific stands in great need of investigation, and now that after five years post war work the Corps of Voluntary Marine Observers has been so well re-established it is intended to fill more vacancies occurring from time to time in the Fleet List of 500 ships by accepting the offers of ships in the Pacific."

Since then the distribution has been somewhat improved and it has been found necessary in a few cases to withdraw the equipment lent for keeping the Meteorological Log to ships, not trading to the Pacific, in order that more may be equipped in that Ocean.

Steamers in the Australian and New Zealand trades via Panama or homeward via Cape Horn and vessels trading to the West Coast of America via Panama provide a considerable amount of valuable data from the N. and S. Pacific but they do not traverse certain parts of these Oceans.

In order that all parts of the North and South Pacific Oceans should come under the observation of the British Voluntary Corps, agencies were established in 1921 at Sydney, N.S.W., Hong Kong

and Vancouver, and through them the aid of a number of ships stationed in the Pacific has been enlisted. More, however, are desired and the routes upon which regular observation is required to be increased or established are those passing across the Oceans through the Trade Wind Belts, such as from ports on the East Coast of Australia to the South Sea Islands or West Coast of South America; between Hong Kong and Californian Ports and Honolulu, and from Vancouver to New Zealand or Australia via Tahiti or Fiji. There are already sufficient regular observers on the northern route from Vancouver to Hong Kong and on the route Hong Kong to Sydney.

Recently Captain WILLIAMS at Sydney, Lieutenant-Commander HARVEY at Hong Kong, and Mr. SHEARMAN at Vancouver have been requested to equip a small number more ships for keeping the Meteorological Log; and Captain TWENTYMAN, Harbour Master at Suva, Fiji, has been asked to pass on likely marine observers calling at Suva to these Agents. Those wishing to undertake the keeping of a Meteorological Log in British ships stationed in the Pacific would do well to lose no time in applying to the agents, for the vacancies are few. Marine Observers in ships trading from Home ports to the

Pacific keeping Form 911 who wish to keep a Meteorological Log should notify the agents at Home ports or the Meteorological Office; a limited number will be required in the near future.

Without prejudicing the annual review of the work done and to be attempted, which will, as usual, be the subject of my note in the June Number, it is well to say a few words as to the progress and purpose of the work, for the very last thing desired is to give any possible discouragement by the steps taken to improve the geographical distribution of observation with official instruments and the Meteorological Log.

The fact is that it is seriously recognised that Meteorological Charts upon the best possible plan and of uniform scale and symbols for all Oceans are required for the future efficiency of British Marine Meteorology; and the HOLLERITH system has proved its efficiency.

A very thorough examination of the available data has been made and a scheme worked out for making such charts, but with financial depression and need for stringent economy it cannot be set in full motion at present.

The examination showed that the data extracted and compiled—an enormous quantity—for constructing the published charts of the South Atlantic and West Coast of South America, China Sea and Indian Ocean, Red Sea, Mediterranean and Southern Ocean Atlases, in fact about half the navigable world, were preserved so that they could in part be used for making new Charts on one scale.

The North Atlantic and Pacific Oceans therefore now require the greatest amount of attention we can give them with Meteorological Logs, official instruments and the HOLLERITH system; while at the same time maintaining sufficient observation and extraction for the remaining Oceans for the purpose of bringing the averages required for new charts up to date for scientific International Meteorology and many other purposes, at the same time stimulating interest in Wireless and Weather in all the Seven Seas.

Thus those Marine Observers who are asked to surrender the Meteorological Log and official instruments and to keep in place Ship's Meteorological Report Form 911 with the ship's instruments, will realise that this is in the general interests of all concerned. With the decrease in work of recording, it is hoped that they will redouble their efforts in reaping results by the application of Wireless

and Weather as an aid to Navigation and in making contributions to this Journal.

Ships keeping Form 911 which have a Mercurial Barometer of which the index error is known are now indicated on the Fleet List for the convenience of all concerned and they have been invited to make plain language reports to "All Ships" in standard form, giving observations synchronising with those of the nearest country.

So that reports with reliable barometric pressure may be expected by all ships from some 250 regular Marine Observers spread out along all the main trade routes of the world, and if the Commanders are so minded it may not be long before there will be sufficient synchronised data at least once a day with which to make a simple Weather Chart at sea in any part of the World navigated by the British Corps of Voluntary Marine Observers.

We must always remember that the Meteorological Log is the backbone of the work. It is necessary to slightly reduce the number of ships keeping this Log, for past experience has proved the folly of asking for these observations simply for the sake of collecting them; the number is governed very largely by that which can be effectively handled in the Marine Division.

Those Marine Observers who keep the Meteorological Log set the standard for the whole of our Corps, and it is hoped that being reduced in number they will realise their responsibility to the British Corps, and do their utmost to continue to raise the standard which they have already placed at such a high level of efficiency.

It is intended to maintain the number of ships regularly observing at a maximum number of 500, and vacancies in future will only be allotted to British ships, the HOLLERITH system making the data available to Foreign Services.

Marine Observers are doing more than is generally realised for Empire communication for it is the knowledge which their work begets that provides information which is indispensable in economical and safe navigation; the Marine Division can only play a comparatively small, though very necessary, part in the actual work, by encouraging, organising, guiding, and compiling results on paper; that the Marine Division is doing its utmost in this will be proved in the "Work of the Year."

MARINE SUPERINTENDENT.

### THE MARINE OBSERVER'S LOG.

It is hoped that these pages will be filled each month with a selection of the contributions of Mariners in manuscript, or remarks from the Logs and Reports of regular Marine Observers.

Responsibility for statements rests with the Contributor.

### WIRELESS AND WEATHER AS AN AID TO NAVIGATION.

By C. B. ROCHE, CHIEF OFFICER, P. & O.S.N. COMPANY.

IN the article on "Wireless and Weather," which appeared in the December Number of THE MARINE OBSERVER, the views of all interested in the scheme outlined as to times of observation and transmission of weather reports at sea, are invited.

As one of those who has taken considerable interest in the subject, I venture to append the following:—

The main reason why more than just a few ships do not broadcast reports to "All Ships" is owing to the fact that the majority of shipping does not look out for these reports.

The proposal to have definite times set apart in zones of longitude, would go a long way to remedy this, also regulating the traffic.

Having made the errors shown in THE MARINE OBSERVER, Volume II, Number 18, page 95, I can appreciate the need of synchronisation, as non-synchronisation was the cause of an entirely false chart.

There can be no doubt as regarding the use of weather signals in navigation that unless observations synchronize, the navigator will get an entirely false representation of distribution of barometric pressure, wind and weather.

Therefore the sooner Greenwich Mean Times are adopted for observations for the purpose of reporting weather by Wireless in all parts of the Globe, and we have the organisation outlined in the December Number, the sooner will seamen co-operate.

The article mentions that the British Weather Bulletin is applicable

with very small modification to all coasts and the hope is expressed that other countries will follow this example in adopting a uniform bulletin for shipping.

All seamen interested will, I am sure, endorse this view.

Regarding the principles put forward in Volume II, No. 24, suggesting world-wide systemization of equi-distant observations, G.M. Times and times for transmission of Weather reports by selected ships at sea in 15° Longitude Zones, the following comments have been received:—

Captain R. L. DANIEL, Marine Superintendent, Royal Mail Steam Packet Company:—

Considers it to be in the interests of shipping and those interested in Wireless Meteorological intercourse.

Captain G. BYERS, a Commander in the service of the China Navigation Company, a Marine Observer of long standing in the China Seas:—

Considers that any scheme which makes for uniformity in the transmitting of Weather Reports either by Wireless or visual signals will be a great help to the Mercantile Marine and others generally, and a great step in the right direction. All over the world we seem to have far too many different codes in action which necessitates a great deal of extra work for Masters and Officers, also leaves many loop-holes for errors, take China Zi-ka-wei and Japan, neighbouring countries whose codes are quite different from each other.

Commodore Sir JAMES CHARLES, K.B.E., C.B., R.D., R.N.R., R.M.S., *Aquitania*, a ship that probably transmits and receives as many

wireless messages as any afloat, is of opinion that under the selected system and with full co-operation of shore stations this method will be as suitable to this ship as the one at present in use.

Captain H. L. SERGEANT, M.B.E. (late Royal Engineers), Wireless Superintendent, Cunard Company:—

Considers from the point of view of big ships using the North Atlantic Tracks, which he likens to little post offices, that it is not necessary or desirable to rigidly lay down any definite rule as to times of transmissions.

Captain Sir FRANKE B. S. NOTLEY, K.B.E., R.N.R., Marine Superintendent, Peninsular and Oriental Steam Navigation Company:—

Is of opinion that it would most certainly be in the general interests of shipping and seamen if such a system could be adopted.

The idea of observation for wireless reports fixed by equi-distant Greenwich Mean Times is undoubtedly a very sound one and this appears to me to provide the key for overcoming traffic difficulties, for the periods within an hour of these times for Zones for Transmission fixed by Longitude would make it possible for a maximum number of ships to receive the reports without losing time for ordinary messages which, as you will readily understand, means revenue to the Wireless Companies.

Captain W. M. ISDALE, Marine Superintendent, British India Steam Navigation Company:—

Supports the idea of equi-distant G.M. Times of observation, for there can be no doubt that particularly in tropical cyclones without

synchronisation ships may obtain an entirely false impression. As to times being set apart shortly after observation times for transmission and reception governed by 15° Longitude Zones it appears that if these can be restricted to not more than four per day, and if not longer than say, a quarter of a hour's duration each, not only will the information broadcast by carefully selected ships be made more generally available, but this voluntary imposed restriction on Weather Reporting by Wireless will be beneficial to ordinary traffic which, as you know, means money to the Wireless Companies.

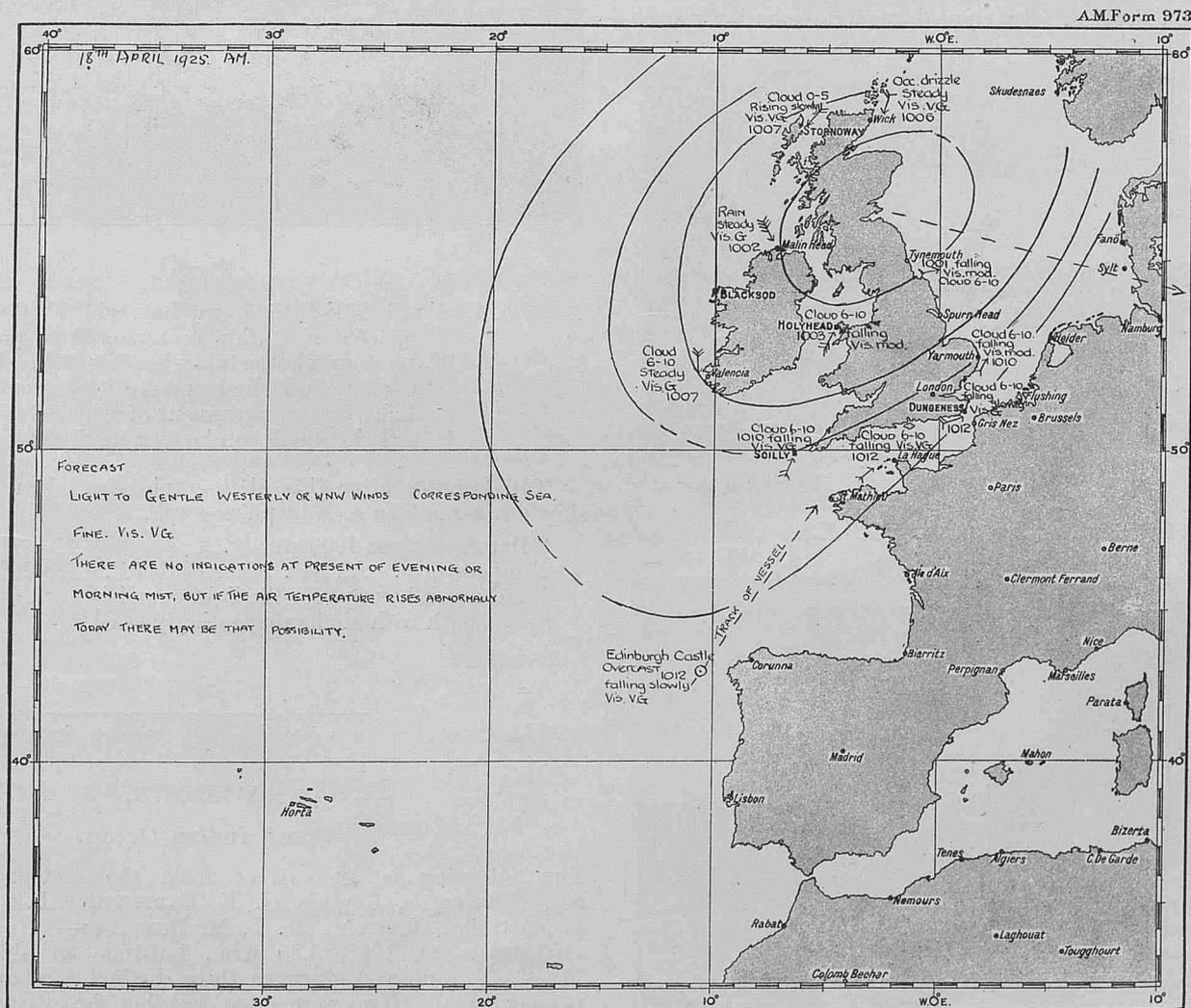
In our ships, which are mainly in the Indian Trade, improvements in the practical application of the "Laws of Storms" by means of Wireless communication will be welcome, and I wish the scheme outlined in principle as the result of the views of Commanders and Officers working with you in a voluntary capacity, success.

Lieutenant W. E. ALLEN, R.N.R., 2nd Officer, Cable Ship *Stephan* writes on behalf of Commander G. F. CARLTON, O.B.E., R.N.R:—

"I am in entire agreement with the scheme outlined in THE MARINE OBSERVER, Volume II, No. 24, pp. 189, 190, which will bring about the conditions suggested in paragraph two in our article 'Ships Wireless Weather Reports as an aid to Navigation,' Vol. II, No. 17."

More expressions of opinion upon the principles suggested in the December MARINE OBSERVER for organised voluntary Weather Wireless Telegraphy at sea or alternative suggestions by Marine Observers and others experienced in Weather Work in Navigation at sea are desired. Special attention is invited in this connection to the Chapter on "Time," page 39, No. 3, Vol. I.

WEATHER CHART MADE AT SEA.



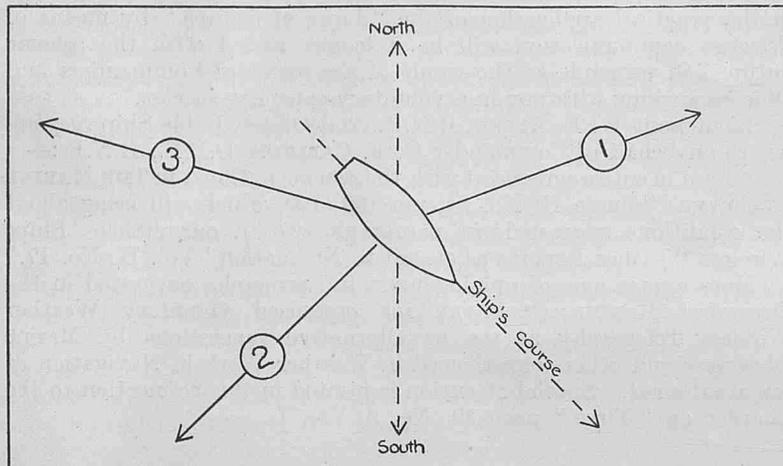
Weather Chart and forecast, Morning, 18th April, 1925, by Mr. C. S. Keen, 4th Officer, R.M.S. "Edinburgh Castle," Commander H. Strong, R.N.R.

## CLOUD PHOTOGRAPHS.

## Indian Ocean.

THE accompanying series of cloud photos have been received from the R.M.S. *Orsova*, Captain C. G. MATHESON, D.S.O., R.D., R.N.R., Colombo to Fremantle, taken by Mr. C. S. DODGSON, 4th Officer, the following notes being given:—

“April 26th, 1925, in Latitude  $3^{\circ} 30' N$ . Longitude  $82^{\circ} 07' E$ . Three cloud photographs were taken at sunset; all were taken within a period of three minutes on bearings as shown in diagram.

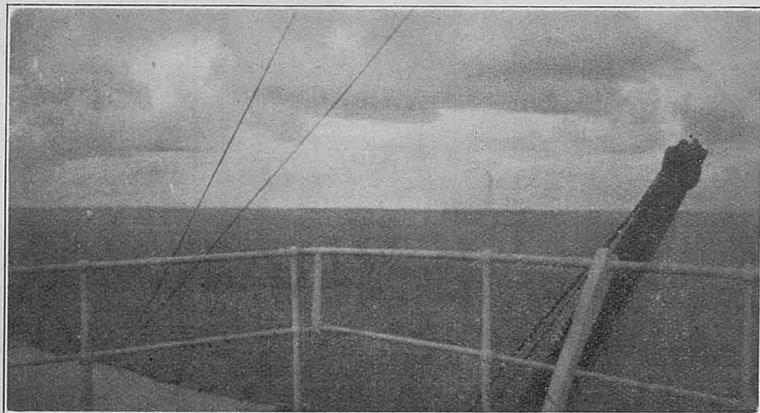


Lower clouds are moving moderate from south and upper clouds slowly from south and south-west.

Barometer was steady, 1009.5.

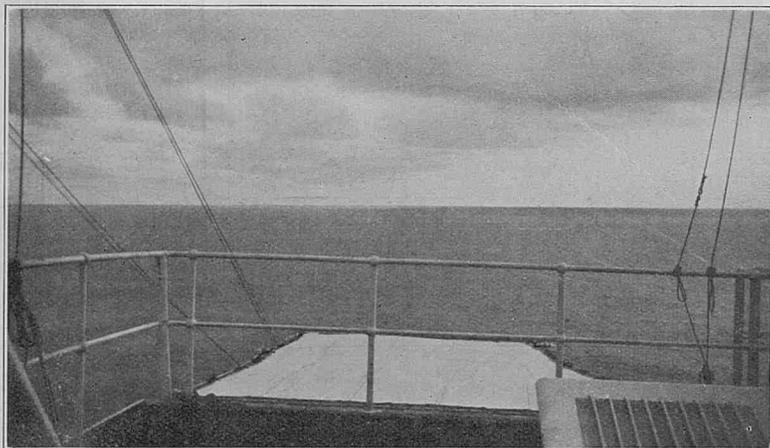
Temperatures. Air, dry bulb  $84^{\circ} F$ ., wet bulb  $78^{\circ} F$ . Sea,  $84^{\circ} F$ .

Wind was south, Force 3. Sea rippled, moderate southerly swell.



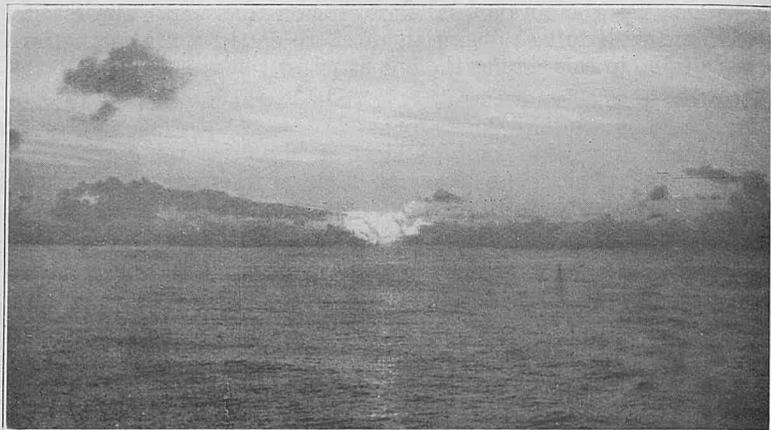
No. 1.

“No. 1. Flat bottom Cumulus (bearing E.N.E.).



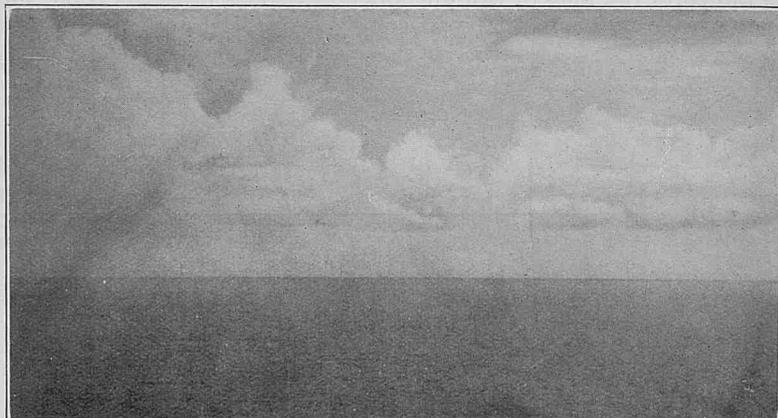
No. 2.

“No. 2. Cumulus and Nimbus with a certain amount of Stratus in the distance (bearing S.W.).



No. 3.

“No. 3. Taken directly facing where the sun had set, it having just dipped below the horizon, Cumulus and Stratus and Cirro-Stratus.



No. 4.

“No. 4. April 27th, 1925, in Latitude  $1^{\circ} 00' S$ ., Longitude  $85^{\circ} 58' E$ . Ship's course, as in previous diagram; photograph was taken bearing S.W. Cumulus, Cu-Nb, Stratus and Nimbus were very prominent, also some light Cirrus, movement of which was undeterminable. A light squall can be seen on the water 5 miles distant.

“10 minutes after this photograph was taken a squall skirted ship but cannot be seen in photograph.

“Barometer was 1009 steady.

Temperatures. Air  $84^{\circ}$ . Wet Bulb  $78^{\circ}$ . Sea  $84^{\circ}$ .

Wind was nil except for the light squall from the southward.

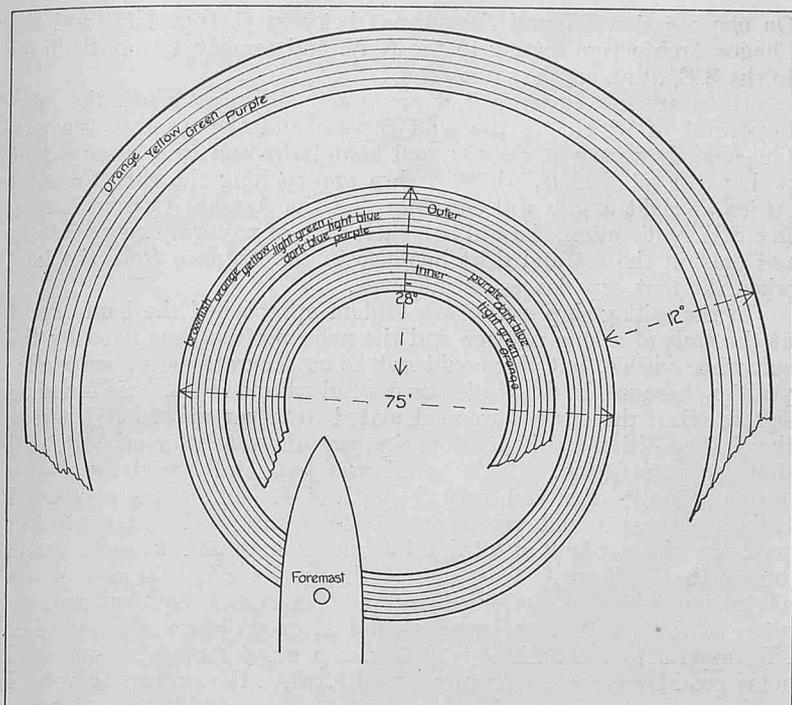
Sea smooth with moderate southerly swell.”

## RAINBOWS.

## South Indian Ocean.

THE following is an extract from the Meteorological Log of S.S. *Frankenfels*, Captain G. E. CARTMER, O.B.E., North Shields to Australia, Observer, Mr. L. M. BURFITT:—

“April 3rd, 1925, 3.30 p.m., Latitude  $38^{\circ} 42' S$ ., Longitude  $73^{\circ} 47' E$ . (approx.) observed three distinct rainbows ahead during passing squall. Two were close together the altitude of the upper limb of the outside one was  $28^{\circ}$ , its diameter  $75^{\circ}$ , and its lower limb touched the ship's sides abreast the foremast, except for the breadth of the vessel it would have been a complete circle. The colours of the outer one showed up with exceptional brilliancy being brownish,



orange, yellow, light green, light blue, dark blue and purple respectively. In the inner rainbow the colours visible were purple, dark blue, light green, orange. At an angle of  $12^\circ$  from the outer one of these two was a third rainbow in which only the orange, yellow, green and purple were plainly visible."

### SANDSTORM.

#### In the Suez Canal.

THE following is an extract from the Meteorological Report of S.S. *Malda*, Captain T. N. GRAY, London to Beira, Observer, Mr. R. F. WEATHERSEED:—

"April 2nd 1925. 8 a.m. Barometer 29.80" falling. Temperature  $65^\circ$  F. Sky nearly overcast with Cirrus haze and Cirrus clouds. Dead calm. Ship passing through Suez Canal.

"11 a.m. Light southerly breeze sprang up, haze in south-east.

"Noon, Barometer 29.60" falling. Temperature  $71^\circ$ , southerly breeze stiffening. Hills to S.E. obscured by haze.

"12.40 p.m. Strong southerly breeze reaching gale force at times. Ship in Suez Bay about to anchor. Weather continued squally.

3.30 p.m. Wind veered to S.W. visibility bad. Sandstorm commenced. Vessel at anchor.

"4 p.m. Barometer 29.43", temperature  $79^\circ$ , visibility bad.

"4.15 p.m. Weather thickened, temperature  $82^\circ$ . Weather continued squally at gale force with wind veering between S.S.W.—W.S.W. Barometer 29.40". Visibility very bad.

"5.45 p.m. Wind backed to N. by W. Visibility improving. Storm clearing. Temperature falling,  $79^\circ$ .

"6.15 p.m. Wind shifted N.N.W. Atmosphere clear of sand.

"8 p.m. Barometer 29.68". Temperature  $67^\circ$ , fresh N.N.W. breeze. Light shower of rain.

"8.45 p.m. Weather fine and clear. Visibility good."

THE following is an extract from the Meteorological Log of S.S. *Matheran*, Captain F. F. COLUMBINE, Liverpool to Calcutta, Observer, Mr. R. E. GARTSIDE:—

"April 2nd 1925. Experienced a severe sandstorm in the Canal between the Bitter lakes and Suez from 1 p.m. until 7 p.m. The barometer fell rapidly and the atmosphere was filled with fine sand which rendered the sun invisible and it was impossible to see more than 100 feet. The wind veered suddenly from S. to W. with a force of 8 and then veered to the N.W. when it commenced to moderate and the barometer began to rise again."

### PHOSPHORESCENCE.

#### Off the Coast of Brazil.

THE following report has been received from S.S. *Saint Patrick* Captain E. W. BEARPARK, Paranagua to Para, Brazil:—

"Whilst making for Atalaia Point, North Brazil, to pick up the River Para pilot, an unusual phenomenon was observed.

"Shortly after 8 p.m. on the 18th April, 1925, at which time Atalaia Point light (Latitude  $0^\circ 35' S.$ , Longitude  $47^\circ 19' W.$ ) was bearing  $218^\circ$ , true, distance ten miles, what appeared to be either breakers or tide rips was observed from the port beam to ahead. At the time the steamer was heading in a westerly direction and clear of all known dangers, but nevertheless she was stopped and a cast of the lead taken which showed fifteen fathoms. The steamer proceeded ahead again, and shortly afterwards, what had appeared to be like breakers now appeared like a white sandy beach studded with innumerable twinkling lights, and stretching from the port beam to ahead and thence to about four points on the starboard bow. The lead was kept continually in use, and after steaming ahead for about half an hour it was observed that the phenomenon was caused by phosphorescence in the water. The night was extremely dark, and as the steamer approached the phosphorescence-laden water, an absolutely defined line was observed between this latter and the ordinary water. To all appearances it seemed that the steamer was running on to a sandy beach, as from the distance the water also appeared light muddy looking. Upon entering the phosphorescence-laden water the night took on an appearance similar to what it would be if there had been a full moon, as the water was 'alive with lights,' and the disturbance in the water caused by the steamer's progress caused the sea, in the vicinity of the disturbance, to become a very pronounced beautiful light green in appearance which was brilliantly illuminating; this was particularly noticeable around the bow wave and the wash from the propeller.

"The vessel steamed through the phosphorescence for about half an hour, then through an absolutely defined line again into ordinary water, and shortly afterwards the pilot was embarked. Upon questioning the pilot he stated that the phenomenon was of very rare occurrence in that part of the world, although the writer has had a similar experience off Cape Guardafui, at the entrance to the Gulf of Aden.

"The above phenomenon was quite distinct from the ordinary experiences of phosphorescence-laden water which are frequently met with, at least so far as the writer's experience is concerned."

### TENDENCY OF WIND TO CHANGE WITH THE TIDE IN THE NORTH CHANNEL.

DURING two years 1915 and 1916 in the North Channel in the Larne Flotilla of Drifters when the whole of our energies were devoted to patrolling, netting and sweeping those waters to counter the enemy submarine offensive; and when, though sea, wind and tide often influenced operations, it was not possible to make scientific meteorological observation and investigation, we noticed that the wind, especially when from the southward, often freshened on the flood so much that it seemed there was some relationship.

With a view to enquiry this information was communicated to several Marine Observers serving in vessels using the North Channel requesting information, and the following remarks have now come to hand from Captain E. S. S. SIMPSON, Scottish Fishery Cruiser *Vigilant*:—

"Since I received your letter I have paid great attention to the wind from the southward on flood tide. For the last month, in the above area, I have asked the opinion of over three hundred fishermen (local) and a number of coasting schooner masters (local) and they nearly all agree with myself, that, the impression you formed (that the wind, especially when from the southward often freshened on the flood tide so much that it seemed there was some relationship) is quite correct. The fisherman and local schooner masters state, that if it is blowing from the southward with the flood tide they wait to see the top of the flood (*i.e.*, High Water) before making a start, expecting it to take off, shift, or less wind (although the sea may be more confused) at the first of the ebb; if it does not take off during the ebb it will blow harder when the flood comes away again and increase throughout the flood."

For the purpose of further investigation observations of wind,

sea and air temperature recorded hourly, together with an estimate of the set and drift of the tidal stream, are desirable in the absence of self-recording instruments. As similar phenomena in many parts of the world are referred to amongst seamen, Marine Observers are invited to forward information regarding wind and tidal phenomena in all parts of the world, supported by recorded observations when possible.

### DERELICT BARGE.

#### Drift in the South Indian Ocean.

WITH reference to the photograph and reports published on page 3, Vol. III, No. 25, Lieutenant P. M. VAN RIEL, R.H.M. of the Dutch Meteorological Office, informs us that the dredging hopper, *H.A.M. 79*, owned by HOLLANDSCHE AANNEMING-MAATSCHAPPIJ, The Hague, was lost from a tow near East London on June 19th, 1924, in Latitude 33° S., Longitude 28° E.

Thus, when sighted by S.S. *Barrabool*, Captain R. BIDWELL, on January 24th, 1925, in Latitude 39° 10' S., Longitude 82° 00' E., this derelict had drifted with wind, sea and current, S. 83° E., 3,220 miles, or at the rate of not less than 14.7 miles per day.

### CURRENT.

#### On the Cape of Good Hope Route.

THE following is an extract from the Meteorological Report of S.S. *Kia Ora*, Captain A. MCINTOSH, Liverpool to Cape Town, Observer, Mr. A. E. LOCKHART, 3rd Officer:—

“Between Noon, 18th April, 1925, Latitude 2° 06' S., Longitude 8° 10' W., and Noon, 19th April, Latitude 5° 56' S., Longitude 5° 28' W., the log appeared to be running slow and the rotator was sighted twice during the 24 hours. At midnight another log was towed from aft, and at noon on the 19th they both registered the same and we found a strong southerly set instead of the anticipated westerly set experienced on previous voyages. Wind S.E., force 5-6.”

### CURRENT.

BY CAPTAIN J. F. RUTHVEN, FORMERLY COMMODORE OF THE ORIENT LINE, A MARINE OBSERVER OF MANY YEARS STANDING.

In fixing the position of a ship by D.R. Current is the most uncertain element with which the navigator has to deal, but it is proper that he should make the best allowance possible for it from his own experience and the information furnished by the Current Charts, which will certainly give him what a *majority* of his predecessors found in the same locality without being any guarantee for the present.

On one occasion I found the current between C. Guardafui and the Chagos Archipelago setting to the N.W. and exactly 12 months later to the S.E. at about the same rate.

There are few currents that are practically permanent, the most important of which are the Gulf Stream and the Agulhas Current, but even they vary in velocity and boundaries and to a lesser extent perhaps in set. Thus, whilst a ship approaching the S.E. Coast of Africa at right angles will certainly find the Agulhas Current setting in a S.W'y direction, she will in a succession of voyages find variations not only in the set and drift but also in the distance from the land when she first experiences its influence.

In the sailing ship era vessels seldom approached the land except at the ends of a long passage and the noon position was fixed by the sun when visible, but this could not be as accurate as a good stellar position, because the longitude was dependent upon D.R. from forenoon sights; then the current was calculated from the difference between the D.R. position (without of course any allowance for current) and that by observation. If the wind was foul and especially if also unsteady in direction and force the path of the ship frequently varied both in direction and velocity, and the course and distance made good was the *resultant* of all the different courses and distances made during the 24 hours. This, one of the very earliest lessons in the navigation school is simplified by the Traverse Table, but appeals more to the eye if done by construction, or projection. Now what only applies to the path of a sailing ship when she has a foul wind holds good for *current* even in a steamer, when the current is worked say from noon to noon, and if the reverse process could be gone through and the resultant current for the 24 hours be represented by the *actual* currents that had been experienced, it would often form a more complicated traverse than the reader sees in any work on navigation. This, however, would be impossible, because whilst any set of forces can only have one resultant, the number of sets of forces that could produce this resultant is infinite, or to put it in more navigational language there is no limit to the number of tracks between the two points.

Of course, the fluctuations in set and drift are more frequent near land than in the open ocean, where it may vary little, except periodically over a considerable area. Even then it would generally be more accurate to calculate current from A.M. stars to P.M. stars and vice-versa, than from Noon to Noon; whilst near land where variation is probable and frequent fixes are obtainable it would be more accurate and informative to ascertain the current between each successive pair of positions.

The Gulf Stream gets credit for more effect on the climate of N.W. Europe than its volume warrants. Its velocity in the Straits of Florida is but the outward and visible sign of a general if gentle set to the N.E. of the tropical surface water in the neighbourhood of the W. Indies.

## WEATHER REPORTS AND FORECASTS AND THEIR AID IN SHIP SALVAGE OPERATIONS.

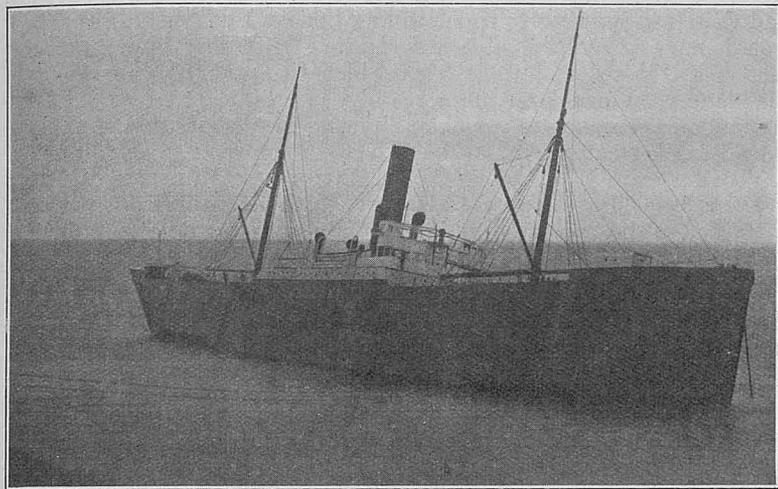
BY CAPTAIN C. G. BONNER, V.C., D.S.C., LATE LIEUTENANT R.N.R., SALVAGE OFFICER, LEITH SALVAGE AND TOWAGE COMPANY AND JOINT MARINE AGENT TO THE METEOROLOGICAL OFFICE AT LEITH.

THE boon which has been conferred on the shipping fraternity generally through the ever increasing efficiency of the method of broadcasting weather reports, forecasts and Gale Warnings by Wireless Telegraphy and Telephony, is probably appreciated by none more than those of us engaged in the hazardous operations of Ship Salvage. During the salvage of a vessel in any exposed position, the weather possibilities, first, last, and all the time, weigh heavily on the minds of those responsible for the carrying out of the operations. It can readily be understood that much time, money, and unnecessary risk can now be avoided by a careful study of the weather reports and forecasts, whose warnings of an expected gale from an exposed quarter in many cases give time to save, or secure salvage plant, make scuttling arrangements, and evacuate the salvage gang from the wreck. The towage of the salvaged vessel after refloated often in a very leaky and crippled condition to the nearest port at which she may be dry-docked, sometimes a distance of two hundred miles, is again greatly assisted by a forecast of the weather, and it would seem foolish to commence the tow of a crippled vessel without first obtaining the latest forecasts if at all possible, either by W/T. if available, or failing that, by a wire

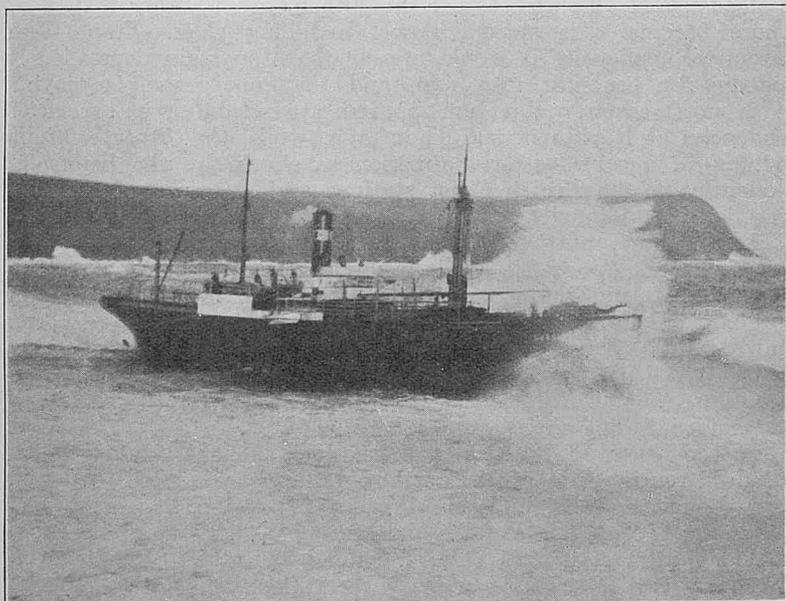
to “Weather” London, from the nearest Post Office. That is now seldom necessary for the “Weather Shipping” Bulletin gives complete information for the British Coasts twice daily. As one who has been engaged in the superintendence of salvage operations during the past seven years, principally on the East Coasts of England and Scotland, I can testify to the great assistance of the weather Forecasts in many of my Firm's salvage undertakings, and I now propose to give a brief sketch of three cases in which the assistance of the weather forecasts were of striking value.

At the salvage of the Danish Steamer *Kentucky*, stranded in a small Bay some 3 miles South of Duncansby Head, the vessel being badly holed and full of water in all compartments, her main deck awash at High Water, and exposed to all easterly weather, we were able, thanks to forecasts from Cullercoats W/T. Station, to remain confidently on board with 40 men and carry on salvage work almost continuously from 30th December, 1920, until the vessel was refloated on March 9th, 1921. Our only means of escape, had bad weather come in from the eastward, which would undoubtedly have broken the vessel up, being by means of a wire stretched from the bow of

the vessel to the cliffs. Had we not had the assurance of westerly weather from the weather forecasts, our own judgment (there is not time to make Weather Charts during salvage operations usually) would undoubtedly have caused us to leave the ship on several occasions, particularly at night, when a confused sea and the threatening appearance of the weather indicated the likelihood of bad weather setting in from the eastward. To have abandoned the vessel for even a few hours, especially during the last six weeks of the operations, would have resulted in the undoing of much of our work, as the engine-room, which took much hard work to pump dry and get under control, would have again been flooded and the operations much protracted, and in all probability resulted in complete failure, as easterly weather set in very shortly after this vessel was refloated.



"Kentucky" ashore Skirza Head, taken at Low Water, 3rd January, 1921.

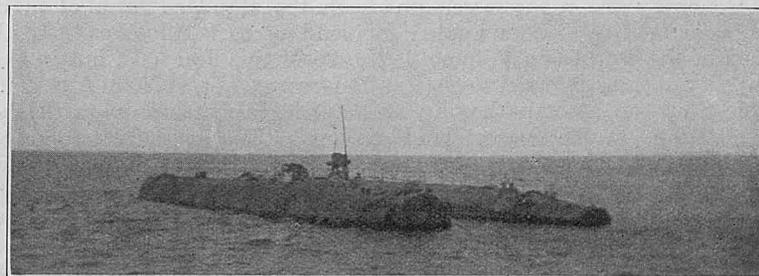


The "Curslack" ashore Windwick Bay, South Ronaldshay.

At the Salvage of the German Steamer *Curslack*, which vessel had been driven up high on the rocks in Windwick Bay, South Ronaldshay, and was found to need 9 inches more water than H.W.S.T. give normally, when in her lightest possible trim, in order to refloat her.

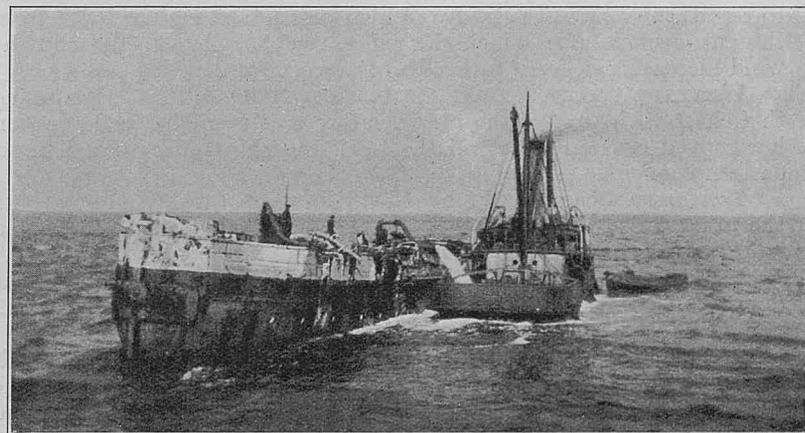
In this case all preparations were made for pumping the vessel dry and heaving her off, in readiness for the spring tides of January 1925. Owing to anti-cyclonic conditions the tides did not approach their normal height throughout these springs, and three days after the highest spring tide, when we had decided to abandon operations until the next springs, a forecast predicting heavy S.W. gales and a rapidly falling barometer encouraged us to hold on for another attempt, the result being entirely satisfactory, the tide making that day being one of the highest remembered in the South Orkneys and giving us ample water to refloat the vessel.

In conclusion, the recent raising and refloating of H.M.S. *Dolphin* sunk in 48 feet of water in the centre of the Firth of Forth and exposed to wind and sea from every direction, light winds and a smooth sea were imperative, before the vessel could be secured to lifting camels.



"Dolphin" slung under "LS 2" and "LS 3," old submarines converted into camels, being towed inshore, 11.20 a.m., 16th September, 1925.

In this case the vessel had to be lifted four times in order to bring her main deck above the water, and though a considerable time elapsed between preparations for slinging being made and the actual lifting, we were saved many fruitless journeys and much expense by the weather reports and forecasts.



"Dolphin,"  $\frac{1}{2}$  mile off Fisherow being pumped out, 11 a.m., 18th September, 1925.

Note.—Plates produced by Lithographic process, including Charts and other large diagrams, will be found in each number after "Weather Signals."

## WIRELESS AND WEATHER IN THE NORTH PACIFIC.

PREPARED IN THE MARINE DIVISION BY J. HENNESSY,  
SENIOR NAUTICAL ASSISTANT.

IN Volume 2, No. 20 of this Journal, in the introductory note to "Wireless Telegraphy and Tropical Revolving Storms," by the Marine Superintendent, it was mentioned that the data message broadcast by Tokio Observatory, Japan, was having a valuable influence upon the application of Wireless and Weather as a self aid to the navigator.

S.S. *Tyndareus*, Captain H. W. SLATER, when on passage from Vancouver, B.C., to Yokohama, Japan, records on the page specially ruled for the purpose in recent editions of the Meteorological Log, a great many wireless reports addressed to all ships which were received, as well as those sent by her, indicating that the practice of broadcasting weather reports by ships to all ships is probably growing more in the North Pacific than in any other ocean.

Generally the reports were made in the standard form of plain language message recommended for sending to "All ships" in all parts of the world (see Volume 3, No. 25 of this Journal), but in the majority of cases referred to observations were taken at Noon Apparent Time Ship, no attempt having been made to synchronise with the observations of the nearest land stations. This article is intended to show how the system can be improved by adhering to the suggestions made in the serial chapters of "Wireless and Weather an Aid to Navigation," which have reached comparatively few ships in the North Pacific Trade.

From the reports entered in *Tyndareus's* meteorological log the following charts are made:—

WEATHER CHART NO. IX, APRIL 25TH. 1200 A.T.S. shows *Tyndareus* to be situated on the northern edge of an anti-cyclone, steaming W.N.W. 13 knots; she is experiencing light W.N.W. wind, with a slowly rising barometer.

West of the anti-cyclone there is an area of comparatively low pressure, in which there are fresh winds as shown by *Tamaha's* observations. With the exception of *Tyndareus* no other ship reports her barometer tendency, course and speed, so little can be obtained from the chart of any probable change in the pressure distribution during the next twenty-four hours.

*Tyndareus* proceeding on her course will expect her barometer to rise as she crosses the wedge of high pressure extending N.W. from the anti-cyclone, after which she will expect her glass to fall and the wind increasing in force to back to the southward.

WEATHER CHART NO. X, APRIL 26TH 1200 A.T.S. Comparing this chart with that of the previous day it is seen that a depression has moved east and that all the reporting ships are situated in its eastern semicircle.

*Tyndareus* steaming W. by N. 13 knots is quickly approaching the inner storm field and with a rapidly falling barometer her wind will gradually increase to gale force.

WEATHER CHART NO. XI, APRIL 27TH. 1200 A.T.S. shows the depression to be centred in Latitude 53° N., Longitude 155° W., and to have greatly intensified during the past twenty-four hours.

All reporting ships are experiencing heavy weather, the winds being strongest in the S.E. quadrant of the storm. The value of the barometer tendencies which were reported on this day is minimised owing to the reporting ships not adding their course and speed, but in the case of *Tyndareus*, *Alabama Maru* and *Hakushika Maru* this can be approximately obtained by comparing their positions on yesterday's chart with those of to-day.

From the barometer tendencies it is seen that north of the centre the "ship" reporting the wind east force 8 has a falling glass, while *Star of Shelland's* barometer, to the north and in rear of the centre, is rising, south of centre the barometers of *Hakushika Maru* and *Tyndareus* are falling, while those of the "unnamed ship" and *Alabama Maru* are rising. It would therefore appear that the depression is moving in a north-easterly direction, and *Tyndareus*, steaming on a N. 85° W. course 8 knots, will expect her wind to veer to the N.W. and gradually decrease in strength with improving weather conditions.

In making the above charts all the ships' reports recorded in *Tyndareus's* log were not plotted on account of some containing the uncorrected barometer reading. When interchanging Wireless Weather messages between ships it is essential that the corrected barometer reading be included, or it is better not sent, otherwise it may possibly mislead the navigator constructing a weather chart.

The observations used for the above charts referring to Noon Apparent Time Ship do not synchronise with those of the land stations, and therefore the reports from land stations are not included. These would have given valuable information regarding the barometer tendencies at coast stations from which the probable movement of the depression could be more readily ascertained and would have allowed an extension of the isobars showing the distribution of pressure over a much greater area.

To illustrate this, CHART NO. XII FOR THE MORNING OF APRIL 4TH has been drawn for the Eastern North Atlantic from the data contained in the "Weather Shipping" Bulletin broadcast to shipping, and from ships' meteorological logs and reports.

From this chart it is seen that a large depression is centred South of Iceland and that a secondary is centred in about Latitude 44° N., Longitude 33° W. This depression and secondary influence the weather over the Eastern North Atlantic from Iceland to the Azores and from the east coast of Great Britain to about Longitude 40° W. The coast stations report moderate to strong winds, while ships to the west and south-west of Ireland are experiencing moderate to strong gales.

At the northern coast stations, it is seen that the barometer is rising slowly and falling quickly at Reykjavik and Thorshavn, respectively. Over the British Isles the barometer is falling at all stations with the exception of Tynemouth and Yarmouth, where it is steady; and all ships east of the 20th meridian, other than *Aba*, whose barometer is steady, report a falling glass. From these barometer tendencies it would appear that the main depression is splitting or has split into two, and that one centre is moving in a north-easterly direction as indicated from the barometer tendencies at Reykjavik and Thorshavn, while the other centre is moving in a south-easterly direction as shown by the barometer tendencies at the British Coast stations and ships east of the 20th meridian.

In the S.W. portion of the chart the secondary indicated by *Culebra's* and *Spectator's* winds is moving in an easterly direction. *Culebra* abaft the line of trough and steaming N. 60° E. 8 knots in approximately the same direction as the general line of the isobars, and also in the same direction as the secondary, reports a steady barometer, while *Spectator* situated before the line of trough and steaming N. 65° E. 12 knots, is being overhauled by the secondary and notes a falling glass.

In the North Pacific ships' observations should be taken at the standard routine time of observation of the nearest land. When in west Longitude the bulletins broadcast by the San Francisco, California, W/T station at 0330 and 1700 G.M.T., giving observations taken at 0100 and 1300 G.M.T., should be taken advantage of. When in east Longitude ships' observations should synchronise with those broadcast by the Tokyo Observatory at 0010, 0600 and 1110 G.M.T., giving observations taken at 2100, 0300 and 0900 G.M.T., respectively.

The data contained in these messages include observations taken at coast stations and when combined with reports exchanged between ships, a very complete chart can be drawn from which a fairly reliable forecast of the weather likely to be experienced during the next twenty-four hours can be made.

For chart showing Greenwich Times of Shore observations all countries, see page 14, Volume III, No. 25 of this Journal.

For full instructions on drawing Weather Charts see "Wireless and Weather an Aid to Navigation," Volume I of this Journal, Chapter III for North Latitude and Chapter VII for South Latitudes.

## LOCAL WINDS—II.

## West Coast of Central and North America.

## General.

THE winds which prevail on the West Coast of Central America are partly under the influence of the easterly trade winds of the Atlantic, which blow across the intervening land, and partly under the influence of the S.E. Trade winds of the South Pacific system, which after blowing across the Equator become transformed into a S.W. monsoon.

Both blow rather irregularly, with varying geographical limits, and are interrupted by calms and occasional squalls and gales, and near the coast may be partly masked or replaced entirely by daily alternations of land and sea breezes.

Further north, on the coasts of Mexico, United States, and British Columbia, the winds depend on two main factors:—

(1) The permanent high pressure area of the North Pacific, situated between the coasts of California and Oregon, and the Hawaiian Islands, its latitude varying with the seasons.

(2) The low pressure area extending polewards from the northern edge of this anti-cyclone, and which is subject to the passage of cyclonic depressions travelling eastward or north-eastward.

These depressions cause great temporary variations in the direction and force of local winds, the actual direction depending on whether the centre passes north or south of a given position.

## Costa Rica and Nicaragua.

The year is divided into two definite seasons; the fine season lasting from November to April, and the wet season from May to October. The winds vary with the season, but are modified by locality, inasmuch as during the fine season the prevailing winds generally blow at about a right angle to the direction of the coast line.

The daily periodical land and sea breezes are fairly general, but at places where the N.E. trade wind from the Atlantic can blow through the gaps in the mountain ranges, there is during the day a breeze off the land instead of a sea breeze.

From December to April, the most frequent winds are generally N.E'ly (N.N.E. to E.) and are known as "Papagayos." They are accompanied by fine clear weather, and often reach the force of a strong wind, and sometimes gale force.

The "Papagayos" blow most frequently and strongest in January and February, often lasting three or four days, and occasionally a week, without interruption except for a weakening between 7 a.m. and 10 a.m. They reach their greatest force in the evening and early part of the night. During these prolonged "Papagayos" the sea breeze from S.W. is usually absent, and only sets in again with the weakening of the N.E'ly wind.

During this fine season a light sea breeze usually sets in about 10 a.m. from the S.E., veering in the afternoon to S.W. or W., and blowing until 6 or 8 p.m., when the wind usually shifts through N. to E., and blows throughout the night, falling calm at about 8 a.m.

Towards the end of the dry season, the prevailing N.E'ly winds give way to a period of calms, lasting two or three weeks; during this time Cumulus clouds form about noon over the mountains, but disappear during the night without producing rain. This period ushers in the rainy season, during the greater part of which strong S.W'ly. to W'ly winds predominate, accompanied by heavy rains. These winds are known as "Temporales," and sometimes reach gale force, bringing a heavy sea with them. They are particularly prevalent during July and August.

During this season, the coast is also liable to very violent squalls from the land, accompanied by heavy thunder and vivid lightning, which are called "Chubascos." These thunderstorms are especially prevalent during the month of May, sometimes occurring day after day. They are heralded by the formation of dark heavy clouds over the mountains soon after noon. These gradually become thicker and lower, and at about 4 p.m. the S.W. sea breeze flies round through N. to E.N.E. with the breaking of the storm. They usually last until about 8 p.m., followed by a light land breeze. The wind in these storms frequently reaches force 8, and at times force 10.

Towards the end of May, the "Chubascos" become less severe and less frequent, but again become most violent at the change of the seasons in October.

The sea breeze usually blows fresh from S.W. to W. during the rainy season, setting in about 10 a.m., and lasting until evening. During the night a light land breeze prevails, but dies away to calm before daybreak, remaining calm until the setting in of the sea breeze again at 10 a.m.

## San Salvador and Guatemala.

The fine and rainy seasons on these coasts coincide with those of Costa Rica and Nicaragua, and the winds experienced are also very similar.

In the Gulf of Fonseca, from October to February, strong northerly winds may be expected, sometimes lasting over a week, and entirely interrupting all communication by boats in the roadstead of La Union. In the intervals when these northerly winds are not blowing, light changeable winds from all directions prevail.

From the end of February to the beginning of May, land and sea breezes blow regularly. The land breezes are light and blow from 10 p.m. to 9 a.m. from N.E. to N.N.W. The sea breezes, which set in at 11 a.m. and last until 8 p.m., blow fresh from S. to S.W. At this time of the year, the atmosphere is very hazy over the land, which is often only visible a few miles distant.

During the rainy season, May to October, the weather is variable, and heavy squalls occur from the east, with rain; but when the weather is settled, light variable winds prevail from N.E. and N.N.E.

After passing the Gulf of Fonseca, during the fine season, the "Papagayos" become more northerly in direction the further north one proceeds up the coast, until in the Gulf of Tehuantepec they sometimes merge in the "Northers" of that region.

The land and sea breezes are regular during this season. The sea breeze sets in about 10 a.m. from S.S.E., gradually veering to W., and dying away about 9 p.m. A short interval of calm is succeeded by a light land breeze from N. to N.E. which lasts until 8 a.m.

The wet season is marked by bad stormy weather from the same quarter as on the Nicaraguan coast, namely S. and S.W.

## Mexico.

On the West Coast of Mexico, between Tehuantepec and Mazatlan, the fine season lasts from December to May inclusive and the rainy season from June to November.

During the fine season, particularly from December to April, the Gulf of Tehuantepec is subject to violent northerly winds, blowing in squalls from N. to N.N.E., which have the local name of "Tehuantepecers." These squalls originate in the "Northers" of the Gulf of Mexico, which cross the Isthmus, and blow through the gap between the Mexican and Guatemalan Mountains, raising a very short high sea. They are felt up to a distance of 100 miles from the coast, the barometer affording no indication of their approach. In the rainy season, these "Northers" are not experienced.

Nowhere is the weather more uniformly fine and uninterrupted as on the coast between Tehuantepec and Acapulco, during the fine season. A regular sea breeze sets in about noon, beginning from S.S.W. to W.S.W., freshening and becoming more westerly as the afternoon progresses. It then gradually fades away to a calm by dusk, and is followed by a land breeze, which is, however, more irregular in its direction and force.

Between Acapulco and San Blas, so called land and sea breezes blow, which are not always regular. In the day the direction is between W. and N.W., and at night N.E., but frequently the change in direction of the wind between day and night does not amount to more than 4 points.

Where the coast takes a northerly trend, at Point Tejuapan, one meets the northerly winds which blow from the Gulf of California, and are found fairly steady for some miles from the coast.

During the rainy season, June to November, along the whole of the coast from Tehuantepec to Mazatlan, the weather is very bad, with a prevailing wind from S.S.W. Gales and strong breezes from S.E. to S.W. constantly occur, whilst squalls, associated with thunder and lightning, with heavy and almost incessant rain, characterise the season throughout.

Violent and dangerous hurricanes, known as "Cordonazos,"

occasionally visit this coast, usually at intervals of several years, and generally in early October, but they may occur at any time from the middle of June until early in November. These hurricanes, which are of short duration usually commence from S.E. The wind quickly veers to S.W. reaching a maximum force, accompanied by heavy rain, thunder and lightning, and bringing a very high sea. The wind then gradually veers to N.W., and decreases, while the weather clears.

Owing to the generally threatening appearance of the weather on this coast every evening during the bad season, it is almost impossible to foretell the coming of these hurricanes, unless they occur late in the season, when the weather has already commenced to clear.

#### Gulf of California.

The peninsula of Lower California forms a natural barrier between the weather of its western or Pacific coast line and that experienced in the Gulf of California.

The prevailing winds in the Gulf, from November to May, are from the N.W.; during the remainder of the year, S.E. winds prevail. The former are fresh throughout, and at the upper end of the Gulf, during December to February, often strong, and are accompanied by fine, cool weather.

The S.E'ly winds, from May to October, bring rainy weather, and not infrequently it appears stormy. During this season, S.E. gales may be expected at any time below Guaymas, and occasionally a "Cordonazo" towards the end of the season.

At La Paz, situated at the S.W. extremity of the Gulf, from November to May, a sea breeze from N.N.W. to N. sets in about 11 a.m., weak at first, but freshening in the afternoon. This lasts until sundown, and is followed by a light land breeze from S., known locally as a "Coromell," which persists until 9 or 10 a.m., when it falls calm. During the remainder of the year, S.E. to S.W. winds prevail, day and night.

#### Lower California.

Almost the whole of the west coast of Lower California is extremely barren, the land being high and precipitous. It has few ports, and is very little frequented by shipping, and its meteorological conditions are little known.

The prevailing winds along the coast throughout the year are from the N.W. and they may be said to blow steadily from that direction for eight months of the year, March to October. The only change is that in the summer the winds appear more westerly in the mornings, and veer northward as the day advances.

During the remaining months, November to February, winds from S.E. to S.W. are frequent, with occasional S.E. gales (especially over the northern half of the coast) which bring considerable rain. These gales give warning of their approach by the appearance of heavy clouds in the S.E., with a swell from the same quarter. At the breaking up of the gales, the wind veers to S.W., sometimes blowing quite hard for a few hours, and then comes from N.W., with fine weather.

Heavy "Northerners," blowing from N. to N.E., for one to three days, are liable to occur in December and January.

Near Cape San Lucas, strong S.E. gales, of short duration, occur during the summer months, sometimes extending as far north as Magdalena Bay.

The weather is clear and pleasant during the greater part of the year. Rain is most frequent between May and October; fog occurs at all seasons, but chiefly during the summer, in the night or early morning.

#### California and Oregon.

In the summer, when the Pacific anticyclone reaches its most northerly latitude, and pressure over the continent is relatively low, there is, off the whole west coast of the United States a, fairly constant N.W'ly. wind of moderate strength. In winter, when the anticyclone has moved southward and is somewhat weaker, while pressure on the continent is high, and low near the Aleutian Islands, the N.W'ly. winds are frequently replaced by S.E. to S.W. winds and gales, especially northward of San Francisco. These simple conditions are in places modified owing to the mountainous nature of the coast, and to local causes.

From San Diego to San Francisco, the prevailing wind along the coast, nearly all the year round, is N.W. to W.N.W., changing to W. in valleys opening on to the coast. In winter, from November to

March, this coast is subject to the same S.E'ly. gales as the coast of Lower California, but they are more frequent here, and blow with greater force, sometimes lasting for 2 days.

The wind very rarely blows off the land, except in the region of Santa Barbara Channel, and at San Pedro, where a local and exceptional wind of considerable strength, called the "Santa Ana," blows from the eastward.

Off Conception Point, gales and strong winds, mostly from N.W. (N. to W.) are so frequent as to obtain for it the appellation of the "Cape Horn of California." These "Northerners" frequently blow with great force, especially in the winter, when they sometimes last from 1 to 5 days, without a cloud to be seen until they moderate. It is at this point where first appears one of the characteristic features of the Californian Coast, namely the frequent and dense fogs which for more than half the year render navigation difficult.

At San Francisco, where the coast mountains are cut through by the Golden Gate, the wind in summer sets in from S.W. to W.S.W. at about 10 a.m. and increases in strength to force 5-6 during the afternoon. It begins to die away at sunset to force 1-2, and during the night it is frequently calm. This wind, entering through the Golden Gate, spreads out fanwise over the Bay of San Francisco, and penetrates far into the interior. When the breeze is very strong, it is a sure sign of unusually hot weather inland.

A dense fog often exists outside the Golden Gate, and when this is so, the wind will, at its height, regularly bring it in; and as during the day the heated land can at times only partly dissipate the fog, it frequently envelopes the whole bay and city by sunset.

During the winter season, November to March, the before-mentioned S.E. gales are frequently experienced, which, working round to S.W., and often ending at N.W., raise an ugly cross sea. During heavy "South-Easters," the sea breaks clean across the bar at the entrance to San Francisco.

Northward from San Francisco to Cape Flattery, as a general rule the N'ly. to N.W'ly. are still the prevailing winds, and are very constant from June to September or October. Northward of Cape Mendocino, in winter and spring, S.W'ly. winds are almost as prevalent as the N.W'ly.

Hard gales from all quarters may, however, be expected on this coast at all seasons, but especially during the winter and equinoctial months. These gales generally commence from S.E. to S.W., with a falling barometer, and bring thick rainy weather. After blowing for some hours from these quarters, they fly round to the northward through west, with little if any warning except an increase of rain, and blow harder than before. The further north we go the harder blow these gales in winter.

During the winter and early spring E'ly. and N.E'ly. winds are more frequent than at other seasons.

#### British Columbia.

Vancouver Island and the adjacent coastal regions occupy a position analogous to that of the south-western portion of the British Isles. The latitude of the two countries is nearly the same, and each is situated on the eastern side of a great ocean, and on the western edge of a continent, while their position with regard to the regions of mean high and low barometric pressure is also similar.

In the summer months, the North Pacific anticyclone is most intense and occupies its most northern position, while the Aleutian low pressure is least intense. In the winter months, the conditions are reversed; the anticyclone occupies a more southerly position, and is less intense, while the Aleutian low pressure is deeper. It follows from this that the prevailing winds over the neighbouring ocean are, in summer, from N.W., corresponding to its position on the north-easterly edge of an anticyclone while in winter and until April or May, they are from S.W., corresponding to the south-easterly edge of a cyclone.

On the coast and inland channels, these prevailing winds, in winter, are diverted chiefly to S.E., owing to the lie of the land and the coastal mountains and to the more southerly tracks of the low pressure areas. The actual direction of the wind at any particular time or place is dependent on the passage of these depressions from seaward. British Columbia lies even more directly in the track of depressions, than do the British Isles in the track of the corresponding Atlantic depressions, and the resulting bad weather is often very severe particularly in the more northerly coastal regions.

Gales are more numerous and of greater intensity from October to April than in the summer months. They usually spring up gradually

from E. or E.S.E., veering to the southward, with a falling barometer and associated with rain and thick dirty weather. The S.E. gale seldom lasts for more than 12 to 18 hours unless the fall of the barometer is very great. When the barometer becomes stationary, the wind shifts to S.W., often suddenly and with violent squalls, and the barometer commences to rise. The wind usually blows from S.W. for 12 to 24 hours, with clear weather, and then veering more westerly blows itself out. The violence of the gale depends on the extent of the barometer gradient.

S.W. winter gales also occur without being preceded by S.E. gales in the ordinary manner, and are accompanied by heavy banks of clouds, with passing showers of rain, and sometimes snow. In such a case the barometer seldom falls, it either remains stationary, when the gales may be expected to continue longer, or rises slowly, when the wind will gradually subside and fine weather follow.

A fine N'y. or N.E'y. wind frequently occurs at intervals during December to February; it is always accompanied by a high barometer (above 1,016 mb. 30.00 ins.) and at such times a continuance for several days of clear cold weather may be expected. The barometer on these occasions may sometimes rise as high as 1,040 mb. (30.71 ins.) and fine weather will then probably last a fortnight or more.

The N.W. wind blows with great regularity during June, July and August, but the strength depends greatly upon local circum-

stances. Down the channels which lie in a N.W. and S.E. direction, with high land on both shores, they frequently blow with great strength. The wind usually begins at sunrise, increases in strength throughout the day until about 3 p.m. and then gradually dies away towards sunset. The nights as a rule are calm; but if the wind prevails only slightly from the N.W. during the night, it will probably blow hard from that quarter on the following day.

In September and the early part of October the winds are very uncertain; and there is generally a good deal of calm gloomy weather.

Within Juan de Fuca Strait the wind usually assumes either a westerly or easterly direction, that is, up or down the Strait. During summer the prevailing winds from N.W. or S.W. take a direction up the Strait, while the S.E. gales of winter blow fairly out, causing a heavy cross sea at the entrance, on meeting the heavy south-westerly swell there.

On the northern stretches of the coast of British Columbia, and in S.E. Alaska, during the months November to April, northerly gales occur, with increasing frequency as we progress northward. They generally commence from the N.E., accompanied by snow and rain, and back through N. to N.W., from which quarter they moderate with clearing weather.

(To be continued.)

WEATHER SIGNALS.

II.—WIRELESS WEATHER SIGNALS.

WIRELESS WEATHER BULLETINS.

FRANCE.

“International Collective Reports.” C.W. Issue. European and North African Land Stations’ Observations only.

Paris—Eiffel Tower W/T station, approximate Latitude 48° 51' N. Longitude 2° 18' E., call sign FL. broadcasts a weather bulletin in code, at 1008 G.M.T. on a wavelength of 7,300 metres (C.W.).

This bulletin contains the 0700 G.M.T. observations from the undermentioned stations.

Indicator Figures.	Station.	Approximate Position.	
		Latitude.	Longitude.
01	Paris ...	48° 56' N.	2° 26' E.
02	Madrid ...	40° 24' N.	3° 41' W.
03	Vienna ...	48° 13' N.	16° 22' E.
04	Stockholm ...	59° 21' N.	18° 03' E.
05	Lerwick ...	60° 09' N.	1° 08' W.
06	Lyons ...	45° 45' N.	4° 55' E.
07	San Fernando ...	36° 27' N.	6° 13' W.
08	Munich ...	48° 09' N.	11° 33' E.
09	Haparanda ...	65° 52' N.	24° 09' E.
10	Thorshavn ...	62° 03' N.	6° 45' W.
11	Brest ...	48° 23' N.	4° 31' W.
12	Algiers ...	36° 45' N.	3° 03' E.
13	Warsaw ...	52° 14' N.	21° 01' E.
14	Brönnöy ...	65° 29' N.	12° 13' E.
15	Renfrew ...	55° 52' N.	4° 24' W.
16	Bucharest ...	44° 25' N.	26° 05' E.
17	Tunis ...	36° 46' N.	10° 10' E.
18	Prague ...	50° 05' N.	14° 26' E.
19	Ingöy ...	71° 04' N.	24° 09' E.
20	Seydisfjord ...	65° 10' N.	13° 40' W.
21	Kosice ...	48° 43' N.	21° 14' E.
22	Genoa ...	44° 23' N.	8° 55' E.
23	Lemberg ...	49° 50' N.	24° 00' E.
24	Copenhagen ...	55° 42' N.	12° 37' E.
25	Perpignan ...	42° 43' N.	2° 54' E.
26	Lister ...	58° 06' N.	6° 34' E.
27	Corunna ...	43° 23' N.	8° 25' W.
28	Ancona ...	43° 37' N.	13° 31' E.
29	Helsingfors ...	60° 10' N.	24° 57' E.
30	Mahon... ..	39° 54' N.	4° 16' E.
31	Budapest ...	47° 29' N.	19° 03' E.

Indicator Figures.	Station.	Approximate Position.	
		Latitude.	Longitude.
32	Holyhead ...	53° 18' N.	4° 39' W.
33	Zürich ...	47° 22' N.	8° 34' E.
34	Utrecht (de Bilt) ...	52° 05' N.	5° 11' E.
35	Rome ...	41° 54' N.	12° 27' E.
36	London ...	51° 21' N.	0° 07' W.
37	Hamburg ...	53° 33' N.	9° 58' E.
38	Bordeaux ...	44° 50' N.	0° 42' W.
39	Brussels ...	50° 48' N.	4° 21' E.
40	Valencia (Ireland) ...	51° 57' N.	10° 15' W.
41	Rabat ...	34° 02' N.	6° 46' W.
42	Lisbon... ..	38° 41' N.	9° 08' W.
43	Horta ...	38° 32' N.	28° 38' W.
44	Messina ...	38° 12' N.	15° 33' E.
45	Reykjavik ...	64° 09' N.	21° 55' W.
46	Helwan ...	29° 52' N.	31° 20' E.
47	Oran ...	35° 42' N.	0° 41' W.
48	Cassel ...	51° 19' N.	9° 31' E.
49	Malta ...	35° 53' N.	14° 31' E.
50	Constantinople ...	41° 02' N.	28° 58' E.
51	Taranto ...	40° 28' N.	17° 15' E.
52	Sofia ...	42° 42' N.	23° 20' E.
53	Bizerta ...	37° 16' N.	9° 52' E.
54	Tripoli... ..	32° 54' N.	13° 12' E.
55	Agadir... ..	30° 26' N.	9° 32' W.
56	Athens... ..	37° 57' N.	23° 43' E.
57	Funchal ...	32° 37' N.	16° 54' W.
58	Tangier ...	35° 45' N.	5° 47' W.
59	Belgrade ...	44° 47' N.	20° 28' E.
60	Pertusato ...	41° 22' N.	9° 11' E.
61	Florence ...	43° 47' N.	11° 14' E.
62	Corfu ...	39° 35' N.	19° 55' E.
63	Magdeburg ...	52° 09' N.	11° 38' E.
64	Barcelona ...	41° 23' N.	2° 09' E.
65	Moscow ...	55° 46' N.	37° 39' E.
66	Der-er-Zoor ...	35° 20' N.	40° 11' E.
67	Limasol ...	34° 41' N.	33° 04' E.
68	Malin Head ...	55° 23' N.	7° 24' W.
69	Valladolid ...	41° 39' N.	4° 43' W.
70	Leningrad ...	59° 56' N.	30° 16' E.
71	Sebastopol ...	44° 37' N.	33° 31' E.
72	Khania ...	35° 30' N.	24° 02' E.
73	Jan Mayen ...	70° 59' N.	8° 19' W.

Indicator Figures.	Station.	Approximate Position.	
		Latitude.	Longitude.
74	Cordova ... ..	37° 53' N.	4° 49' W.
75	Orenburg ... ..	51° 45' N.	55° 06' E.
76	Venice ... ..	45° 26' N.	12° 20' E.
77	Damascus ... ..	33° 31' N.	36° 14' E.
78	Mygbugten ... ..	73° 30' N.	21° 30' W.
79	Muslimié ... ..	36° 21' N.	37° 08' E.
80	Vaigatch ... ..	70° 24' N.	58° 48' E.
81	Quade Hook (Spitzbergen) ...	78° 57' N.	11° 42' E.
82	Astrakhan ... ..	46° 21' N.	48° 02' E.
83	Omsk ... ..	54° 59' N.	73° 22' E.
84	Kiev ... ..	50° 27' N.	30° 30' E.
85	Port Etienne ... ..	20° 37' N.	17° 04' W.

Code used:—New International. The bulletin is preceded by the words "Météo Europe."

Expressed by symbols:— $I_n I_n$  BBDDF  $w_1$  TTK'R.

$I_n I_n$  = Indicator Figures of observation station. (If a station is substituted for one in the above list, the name of the station is transmitted.)

BB = Barometer (corrected) in whole millimetres (initial 7 omitted). To convert to mbs. and ins., see Table XV, p. 50, Vol. III, No. 27, of this Journal.

DD = Wind direction true. (Table III, p. 17, Vol. III, No. 25, of this Journal.)

F = Wind force by Beaufort Scale. Forces 9 and above sent as 9.

$w_1$  = Cloud amount and general state of the weather (Table XXVII).

TT = Air temperature in whole degrees Centigrade. (To convert to Fahr., see Table XVII, p. 50, Vol. III, No. 27, of this Journal.)

K' = Barometer tendency. (Table XXVI, p. 51, Vol. III, No. 27, of this Journal.)

R = Rainfall for the preceding 24 hours. (Table XXVIII.)

NOTE.—The number of stations whose observations are broadcast in this bulletin is restricted, a suitable selection being made from the above list in a manner to ensure the best distribution. Immediately following the observations information relating to pressure maxima and minima is usually sent in the form Max. (or Min.) name of station BBDDF, etc. (same meanings as in bulletin).

### C.W. Issues.—European and North African Land Stations' and North Atlantic Ships' Observations.

Eiffel Tower W/T station also broadcasts weather bulletins in code at 0400, 1600 and 2100 G.M.T. These bulletins are in two parts, viz:—

**0400 G.M.T. Bulletin.** Wavelength 7,300 metres (C.W.).

Part I preceded by the words "Météo Europe" gives the 0100 G.M.T. observations for the same stations, in the same code as the 1008 G.M.T. bulletin.

Part II preceded by the word "Navires" gives 0100 G.M.T. observations from ships in the N. Atlantic. Code used:—New International. Expressed by symbols:—PQLLL 111GG BBDDF  $w_1$  Kd; with the exception of the barometer which is given in whole millimetres (initial 7 omitted, see conversion Table XV, p. 50, Vol. III, No. 27, of this Journal), these symbols and their meanings are exactly similar to those given on the "Decode Form," p. 16, Vol. III, No. 25, of this Journal, and decoding of the figures sent can be quickly carried out by use of the part of the "Decode Form" named "International Weather."

**1600 G.M.T. Bulletin.** Wavelength 6,000 metres C.W., (broadcast from St. Pierre des Corps W/T Station approximate Latitude 47° 24' N., Longitude 0° 44' E, call sign YG.)

**2100 G.M.T. Bulletin.** Wavelength 7,300 metres, C.W., (broadcast from Eiffel Tower W/T station.)

These bulletins are in the same form as the 0400 G.M.T. bulletin. The observations are those of 1300 and 1800 G.M.T. respectively.

NOTE.—Particular attention should be paid to the day of the week and times of the observations in the "Navires" section of these bulletins.

### C.W. Issue.—American land stations' and N. Atlantic ships' observations.

A weather bulletin is broadcast in code by Eiffel Tower W/T station at 0840 G.M.T. on a wavelength of 7,300 metres (C.W.), containing observations from American land stations, and ships in the North Atlantic, arranged in four parts and preceded by the words "Météo Amérique Atlantique." Code used:—New International.

Part I Commencing with the word "Amérique," contains observations from the undermentioned stations in the form  $I_n I_n$  BBDDF TT $w_1$ , where,

$I_n I_n$  = Day of the month.

GG = Time of observations G.M.T.

$I_n I_n$  = Indicator letters of station.

BB = Barometer reading, corrected, to nearest whole millimetre (See conversion Table XV, p. 50, Vol. III, No. 27, of this Journal.)

D = Wind direction, true (Table VIII, p. 18, Vol. III, No. 25, of this Journal).

F = Wind force by Beaufort scale.

TT = Air temperature in whole degrees Centigrade.

$w_1$  = Weather at time of observation. (Table XXVII).

#### Stations in Part I.

Indicator Letters.	Station.	Approximate Position.	
		Latitude.	Longitude.
BI	Belle Isle* ... ..	51° 55' N.	55° 20' W.
J	St. John's, N.F.* ... ..	47° 34' N.	52° 42' W.
S	Sydney, N.S. ... ..	46° 10' N.	60° 10' W.
FP	Father Point ... ..	48° 31' N.	68° 19' W.
PN	Parry Sound ... ..	45° 20' N.	80° 00' W.
WR	White River ... ..	48° 35' N.	85° 16' W.
WI	Winnipeg ... ..	49° 53' N.	97° 07' W.
LP	Le Pas ... ..	53° 49' N.	101° 15' W.
ED	Edmonton ... ..	53° 33' N.	113° 30' W.
T	Nantucket ... ..	41° 17' N.	70° 05' W.
WA	Washington ... ..	38° 52' N.	77° 03' W.
H	Hatteras ... ..	35° 14' N.	75° 32' W.
C	Charleston ... ..	32° 43' N.	79° 52' W.
B	Bermuda ... ..	32° 17' N.	64° 46' W.
K	Key West ... ..	24° 33' N.	81° 48' W.
LR	Little Rock ... ..	34° 45' N.	92° 20' W.
NV	Nashville ... ..	36° 10' N.	86° 47' W.
V	Cleveland ... ..	41° 30' N.	81° 42' W.
CH	Chicago ... ..	41° 53' N.	87° 37' W.
DU	Duluth ... ..	46° 47' N.	92° 06' W.
HN	Huron ... ..	44° 21' N.	98° 15' W.
SLC	Salt Lake City ... ..	40° 45' N.	111° 54' W.
HL	Helena ... ..	46° 34' N.	112° 04' W.
DV	Denver ... ..	39° 48' N.	105° 00' W.
RO	Roseburg ... ..	43° 11' N.	123° 20' W.
TAT	Tatoosh ... ..	48° 23' N.	124° 44' W.
SF	San Francisco ... ..	37° 48' N.	122° 26' W.
DI	San Diego ... ..	32° 42' N.	117° 10' W.
FW	Fort Worth ... ..	32° 43' N.	97° 15' W.
EP	El Paso ... ..	31° 50' N.	106° 30' W.
JU	Juneau (Alaska) ... ..	58° 21' N.	134° 20' W.
DH	Dutch Harbour (Alaska) ...	53° 55' N.	166° 30' W.
TN	Tanana (Alaska) ... ..	65° 12' N.	152° 00' W.

\* See Note (2).

A five figure group (LL11D) may be added to this Part, preceded by the word "cyclone," giving the latitude, longitude and direction of movement (0 = stationary, 1 = N.E., 2 = East, 3 = S.E., 4 = S., 5 = S.W., 6 = W., 7 = N.W., 8 = N.) of the disturbance.

Part II—Commences with the words "Atlantique Oriental" and gives ships' observations in the same form as Part II of the 0400 G.M.T. issue.

Part III—Commences with the words "Atlantique Occidental" and gives observations from ships in the Western N. Atlantic, in the form  $I_n I_n$  PQLLL 111GG BBDDF TTT $w_1$ , where:—

$I_n I_n$  = Indicator letters or numbers of ship. The three following groups can be decoded in the same manner as for Part II, 0400 G.M.T. issue.

TTT = Air temperature to nearest half degree Centigrade.  
w' = Present weather (Table XXIX).

**Part IV.**—Commences with the words "Britannique" and gives observations from British ships. The name of each ship is sent and the groups following it can be decoded in similar manner to the example given on the "Decode Form," p. 16, Vol. III, No. 25, of this Journal. It should be noted that the distinguishing numbers of these ships are given in the Fleet List each month in the MARINE OBSERVER.

**NOTE.**—(1) Ships' observations given in these bulletins do not necessarily synchronise with the observations in the same message for land stations.

Marine observers are advised to examine the times of observation carefully before use.

- (2) Observations from Belle Isle and St. John's may contain two groups, of which the first refers to 1300 G.M.T. of previous day and the second to 0100 G.M.T. of day of issue. If only one group is sent, it refers to 1300 G.M.T. of previous day.
- (3) Should the "Météo Amérique Atlantique" bulletin be too long for complete transmission at 0840 G.M.T., it will be resumed at 1125 G.M.T. on a wavelength of 2,650 metres C.W.
- (4) When observations for any Part of the bulletins are missing the word "Néant" or "Nil" will be sent.

Nantes-Basse Lande W/T station approximate Latitude 47° 11' N. Longitude 1° 42' W., call sign UA, broadcasts at 1230 G.M.T. the general meteorological situation in the N. Atlantic, together with a forecast, *en clair*. The wavelength used is 2,800 metres (spark).

## NEW INTERNATIONAL CODE, WEATHER TELEGRAPHY TABLES.

Table XXVII.

w<sub>1</sub>—Cloud amount and general state of weather (abridged).

Code Figure.	Code Figure.
0—Cloud amount 0-5.	5—Rain.
1—Cloud amount 6-10.	6—Snow or Hail and Snow.
2—Fog or mist.	7—Sleet or Rain and Snow.
3—Passing showers.	8—Hail or Rain and Hail.
4—Drizzle.	9—Thunderstorm.

Table XXVIII.

R—Rainfall during preceding 24 hours.

Code Figure.	Code Figure.
0 = No rain.	5 = 11-15 mm.
1 = Trace or 0.1 mm.	6 = 16-20 mm.
2 = 0.2-2 mm.	7 = 21-30 mm.
3 = 3-5 mm.	8 = 31-50 mm.
4 = 6-10 mm.	9 = above 50 mm.

## SPECIAL WEATHER TELEGRAPHY TABLE, NOT NEW INTERNATIONAL CODE.

Table XXIX.—w'. Present Weather.

Code Figure.	Explanation.	Code Figure.	Explanation.
0 =	Sky clear	5 =	Rain
1 =	" $\frac{1}{4}$ clouded	6 =	Snow
2 =	" $\frac{1}{2}$ clouded	7 =	Mist
3 =	" $\frac{3}{4}$ clouded	8 =	Fog
4 =	" Overcast	9 =	Thunderstorm

## WIRELESS STORM WARNINGS.

### FRANCE.

Eiffel Tower W/T station broadcasts wireless storm signals when necessary, if the forecasts indicate that the wind force is likely to exceed force 7 on the Beaufort scale, on a wave length of 2,600 metres spark.

The signals refer to the following French coastal areas :—

"Manche"	—The Channel.
"Bretagne"	—Entrance to English Channel, South Coast of Brittany and the Northern part of the Bay of Biscay.
"Ocean"	—From the Loire to the Spanish Frontier, including the central and Southern part of the Bay of Biscay.
"Roussillon"	—Spanish Frontier to Faraman.
"Provence"	—From Faraman to the Italian Frontier, including Corsica.
"Méditerranée"	—French coasts in the Mediterranean, only used when one message suffices for the combined areas "Roussillon" and "Provence."

### Form of Message.

The signal is sent *en clair*. It commences with the name of the day of the week and the duration for which the warning is valid, followed by the word "Tempête" and the probable direction from which the gale may be expected.

### Example of Message.

"Jeudi 15 heures Manche tempête N.W. Bretagne, Ocean tempête S.W. Méditerranée tempête S.W."

### Explanation.

Storms or gales are predicted (or will continue) from now until 1500 to-morrow in the areas and from the directions mentioned.

The following stations transmit storm signals concerning the areas "Manche," "Bretagne" and "Ocean" :—

Cherbourg	approximate Latitude 49° 37' N., Longitude 1° 36' W., call sign FUC
Brest	approximate Latitude 48° 22' N., Longitude 4° 34' W., call sign FUE
Lorient (Pen-Mané)	approximate Latitude 47° 44' N., 3° 21' W., call sign FUN
Rochefort	approximate Latitude 45° 55' N., 0° 57' W., call sign FUR

whilst

Porquerolles	approximate Latitude 42° 59' N., Longitude 6° 12' E., call sign FUQ and
Ajaccio	approximate Latitude 41° 55' N., Longitude 8° 46' E., call sign FUI

transmit storm signals concerning the areas "Roussillon" and "Provence" (or Méditerranée).

The W/T stations transmit the signal on the 600 metre wave length as soon as it is received by land line or from Eiffel Tower. The International Safety Signal — — — (TTT) is first sent out, and is followed a minute later by the storm signal which is repeated three times at intervals of ten minutes.

When the time of sending falls outside a single operator watch on board ship the message is repeated at the commencement of the succeeding watch.

## III.—WIRELESS TIME SIGNALS.

### FRANCE.

In view of changes in the Eiffel Tower Time Signals, which are temporary, the reproduction of information with regard to the Tim

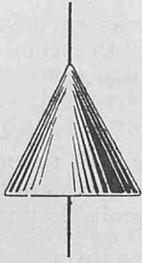
Signals is withheld until such time as more permanent signals may be re-established.

Meanwhile the attention of Marine Observers is directed to Board of Trade and Admiralty Notices to Mariners, for information regarding the temporary arrangements.

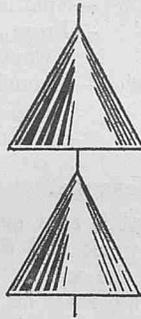
#### IV.—VISUAL STORM WARNINGS.

##### FRANCE.

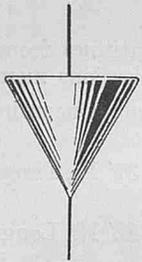
##### Day Signals.



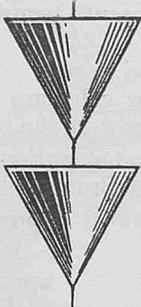
Hoisted when a gale is probable from N.W.



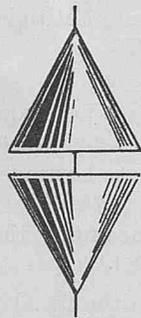
Hoisted when a gale is probable from N.E.



Hoisted when a gale is probable from S.W.



Hoisted when a gale is probable from S.E.



Hoisted when gales of hurricane force are probable.

Any of these signals indicate that there is an atmospheric disturbance in existence, which will probably cause a gale from the quarter indicated by the signal used within a distance of about 50 miles of the place where the signal is hoisted, and the knowledge of which is likely to be of use to seamen. Its meaning is simply "Look out! Bad weather as indicated is probably approaching you."

The signals are hoisted when necessary at the semaphore stations and port offices on the coast of France, and remain hoisted 48 hours from the time of receiving notice from the Ministry of Marine.

#### GREAT BRITAIN AND IRELAND.

Amendment to pages 35-36, "Vol." III., "No. 26.

#### IV.—Visual Storm Warnings.

From March 1st, 1926, the following stations are added to the list:—

##### England, East Coast.

Holy island.	Mablethorpe.
Amble.	Landguard.
Scarborough.	Burnham.
Aldbrough.	

##### England, South Coast.

Herne Bay.	St. Alban's Head.
Margate.	

##### England, West Coast and Wales.

Mousehole.	Fishguard.
Avonmouth.	

##### Scotland, North and East Coasts, with Orkneys and Shetlands.

Collieston.	Fifeness.
Johnshaven.	North Berwick.
Arbroath.	

After February 28th, 1926, the following station is deleted from the list:—

##### England, South Coast.

Anvil point.

#### Special Notices regarding Personnel.

*The Marine Superintendent will be glad to receive information of special distinctions gained and retirements, &c., of Marine Observers.*

##### Commander F.M.C. Sergeant, R.D., R.N.R.

CAPTAIN SERGEANT, Senior Examiner of Masters and Mates and Secretary of the Local Marine Board at Liverpool, has recently retired on attaining the age limit.

He was Marine Agent to the Meteorological Office at Liverpool from 1909 to 1921, when it was found necessary to appoint a Port Meteorological Officer.

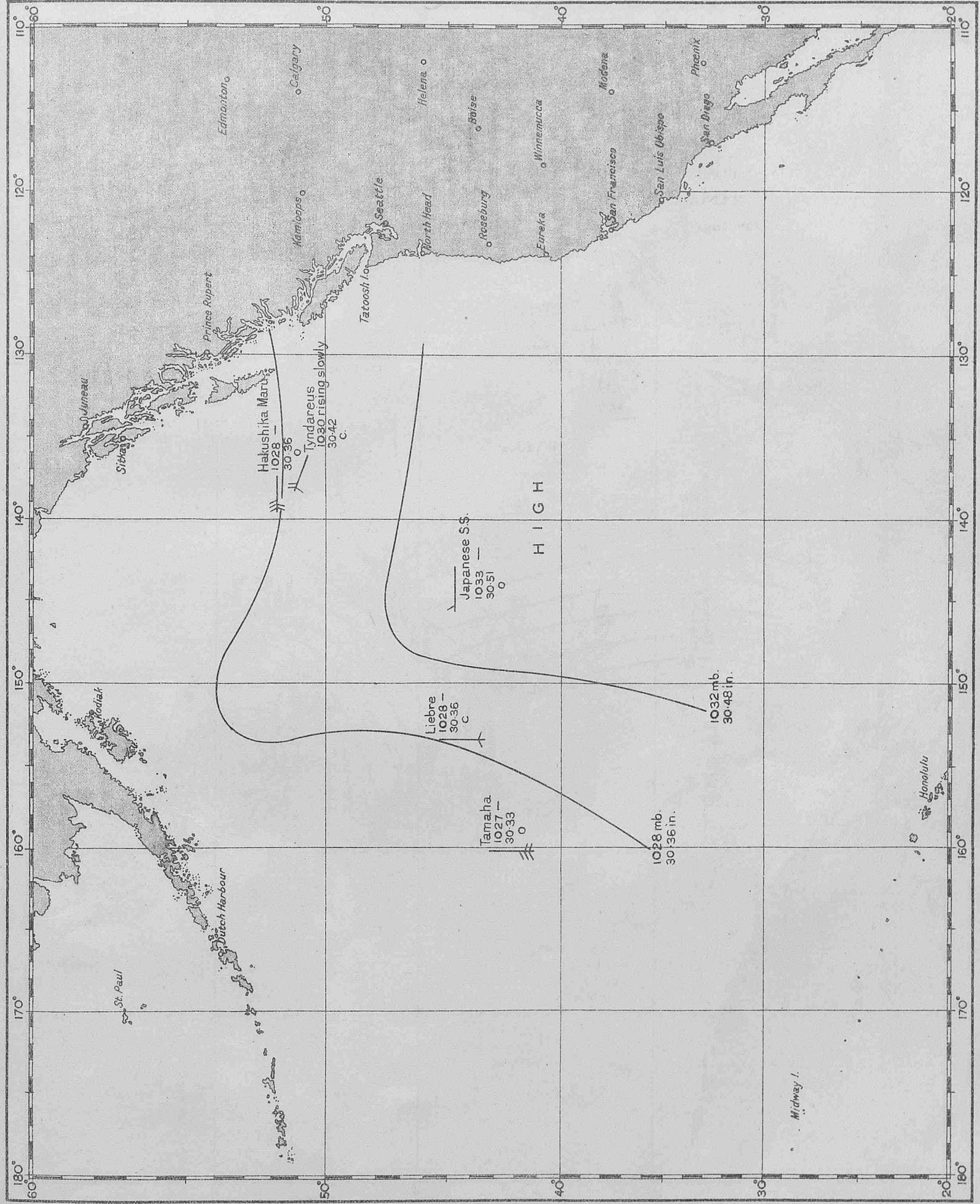
His efforts in interesting the Commanders and Officers of Liverpool ships in marine meteorology were much appreciated and he received the special thanks of the Meteorological Committee, when his Agency was terminated, for his good work.

Captain SERGEANT commenced his sea career as an apprentice in Messrs. GRACIE, BEAZLEY's ship *British Ambassador*.

He commanded the barque *Naiad* for a time and later joined the White Star Line as a junior officer. He commanded the well-known R.M.S. *Teutonic*, before entering the service of the Board of Trade in 1898.

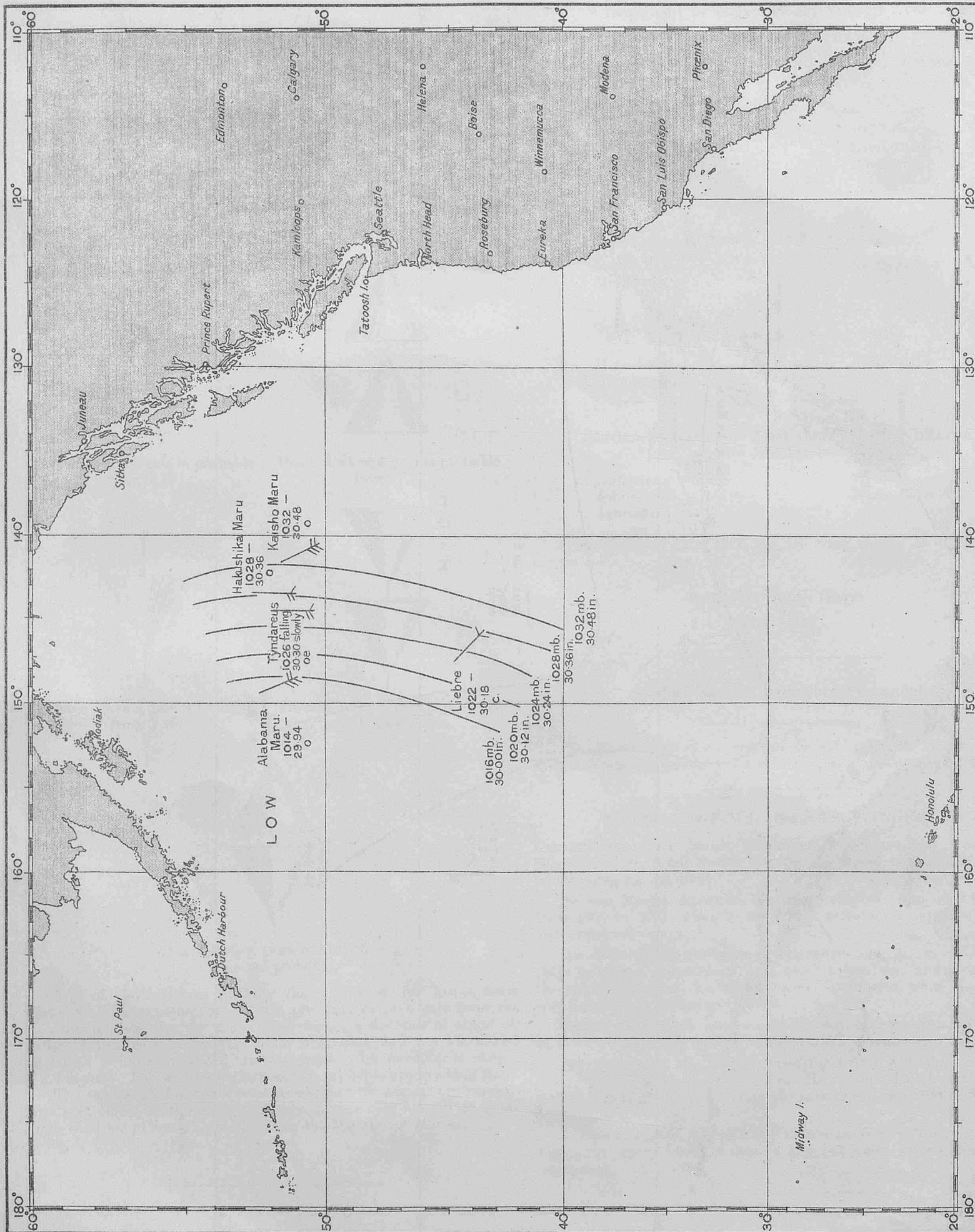
Marine Observers will join the Marine Division in wishing Captain SERGEANT many years of health and happiness in his well-earned retirement.

NOON (A.T.S.) OF APRIL 25TH, 1925.



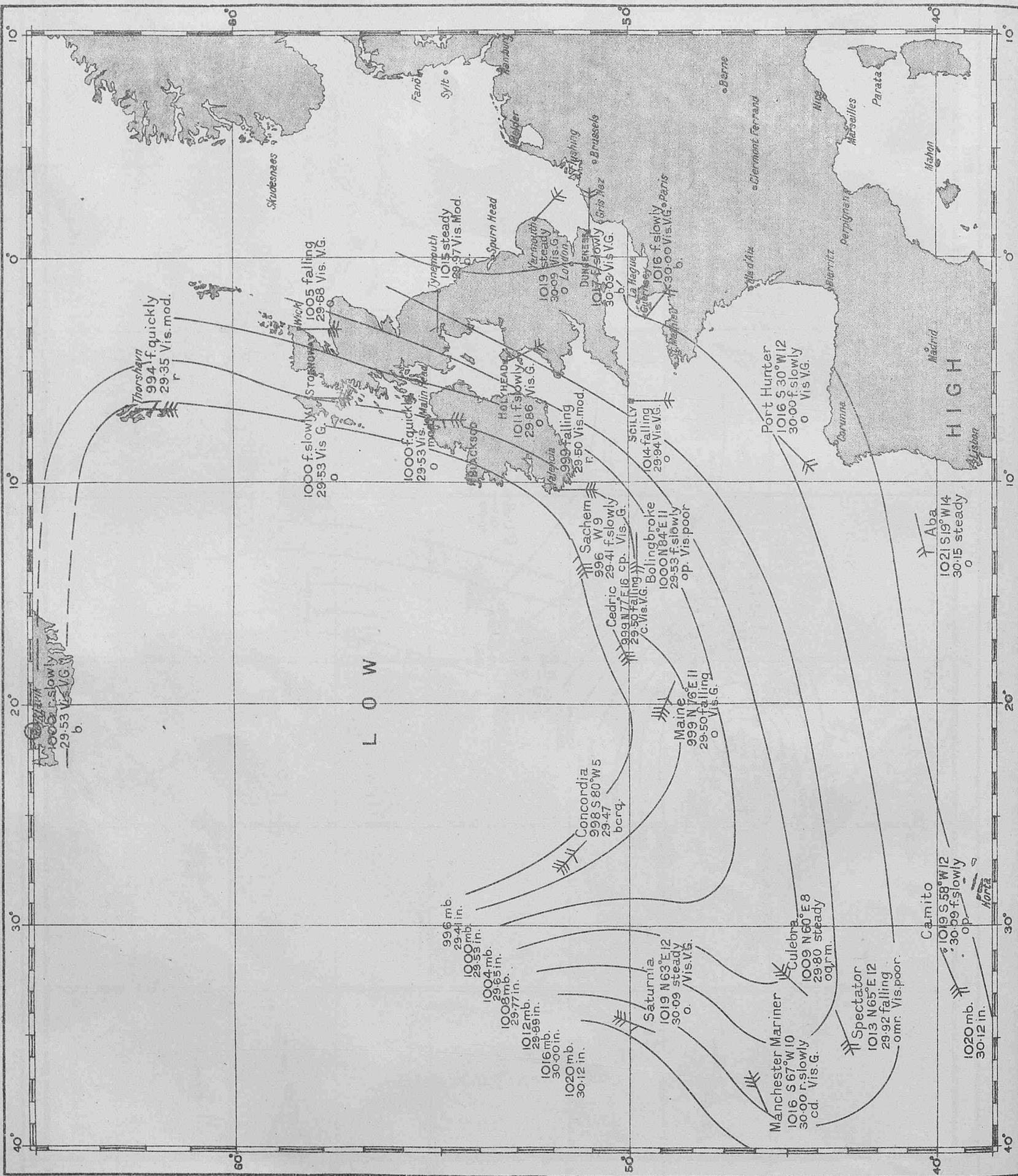
Weather Chart IX.

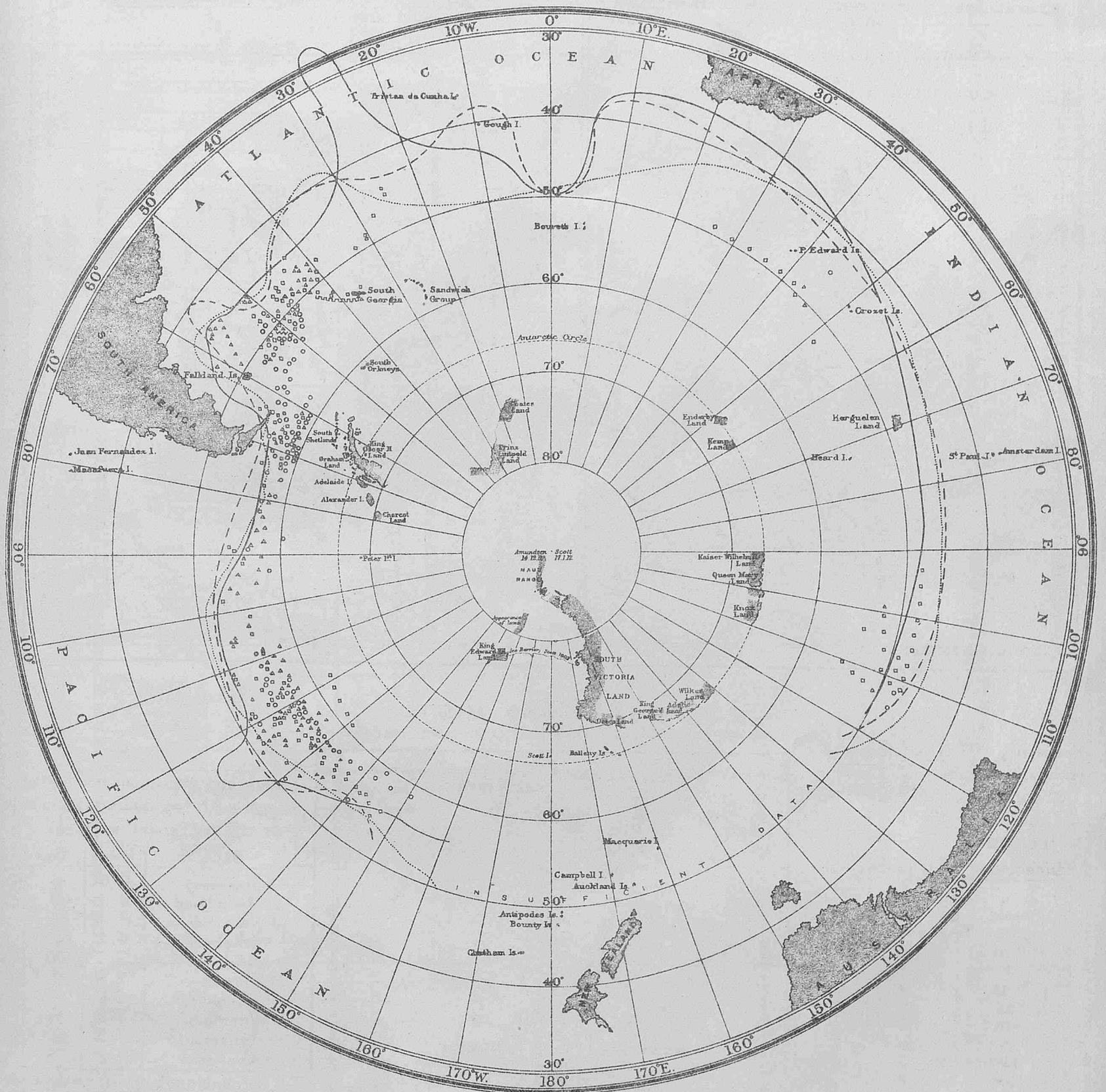
NOON (A.T.S.) OF APRIL 26TH 1925



Weather Chart X.





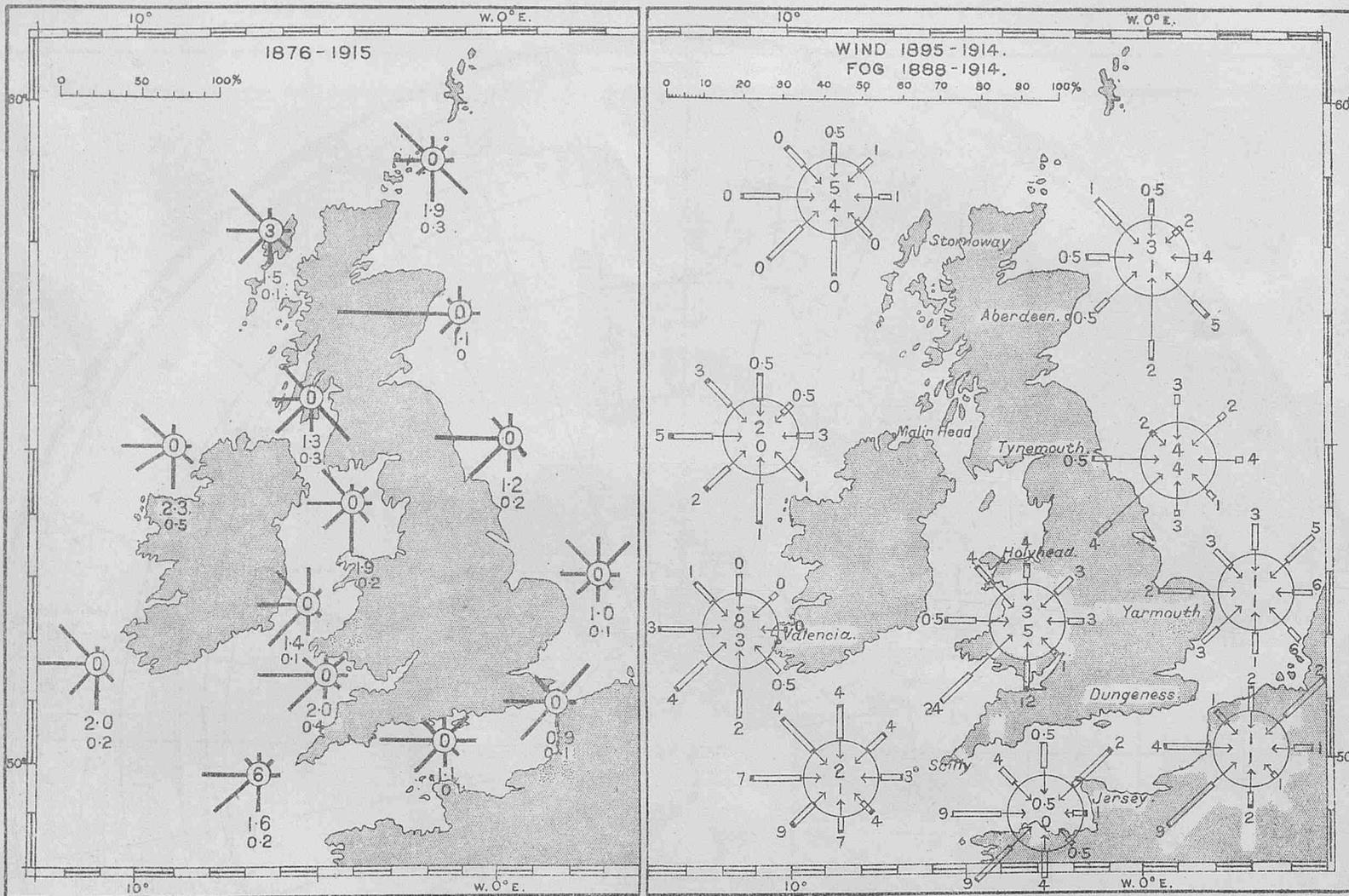


## ICE CHART OF THE SOUTHERN HEMISPHERE, 1902—1925. APRIL, MAY and JUNE.

### EXPLANATION

The symbols used to distinguish the records of each of the three months represented during the period 1902—1924, are as follows:— April bergs  $\Delta$ , pack ice  $\text{~~~~~}$ ; May bergs  $\square$ , pack ice  $\text{~~~~~}$ ; June bergs  $\circ$ , pack ice  $\text{~~~~~}$ . Ice reported during 1925 is shown by the following symbol:— April  $\blacktriangle$ ; Extreme limits are given thus:— April,  $\text{-----}$ ; May,  $\text{-----}$ ; June,  $\text{-----}$ ; these include ice reported since 1772.

WIND AND FOG AT COAST STATIONS. GREAT BRITAIN AND IRELAND



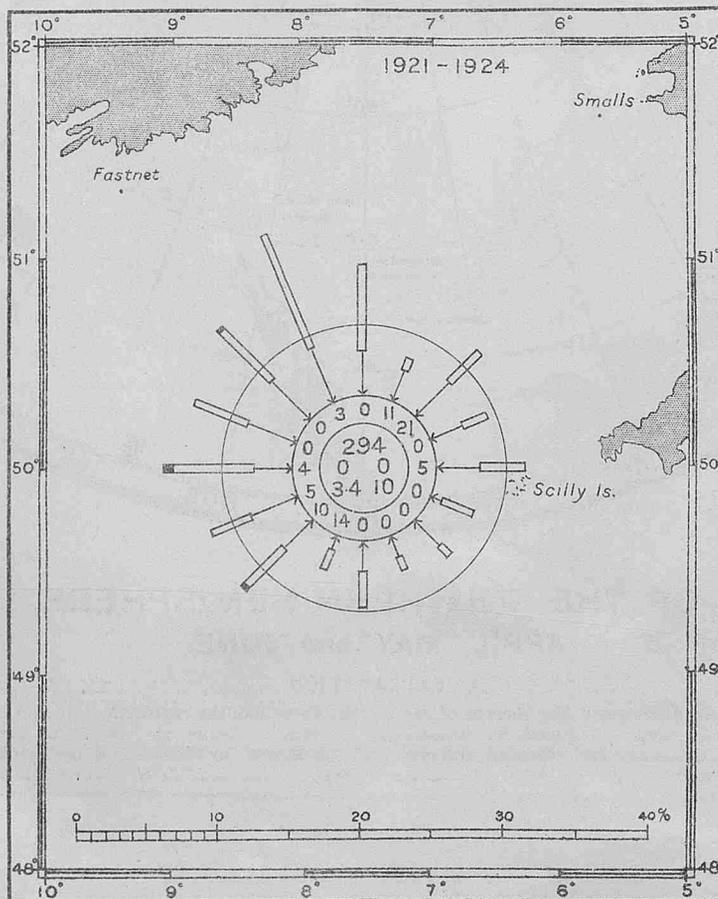
WIND, FOG AND MIST.

S.W. APPROACHES TO GREAT BRITAIN AND IRELAND.

Frequency of fog per thousand observations for each 2 points of compass 1921-1924.  
 Latitude 48°-52°N.  
 Longitude 5°-10°W.

Direction.	Frequency.
N	0
NNE	3
NE	14
ENE	0
E	3
ESE	0
SE	0
SSE	0
S	0
SSW	3
SW	7
WSW	3
W	3
WNW	0
NW	0
NNW	3
Calm	0
Var.	3
<b>Total</b>	<b>42</b>

Percentage frequency of fog and mist for area = 4%.

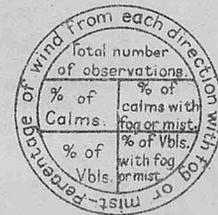


Mean and Maximum number of days with fog during the month at the different stations.

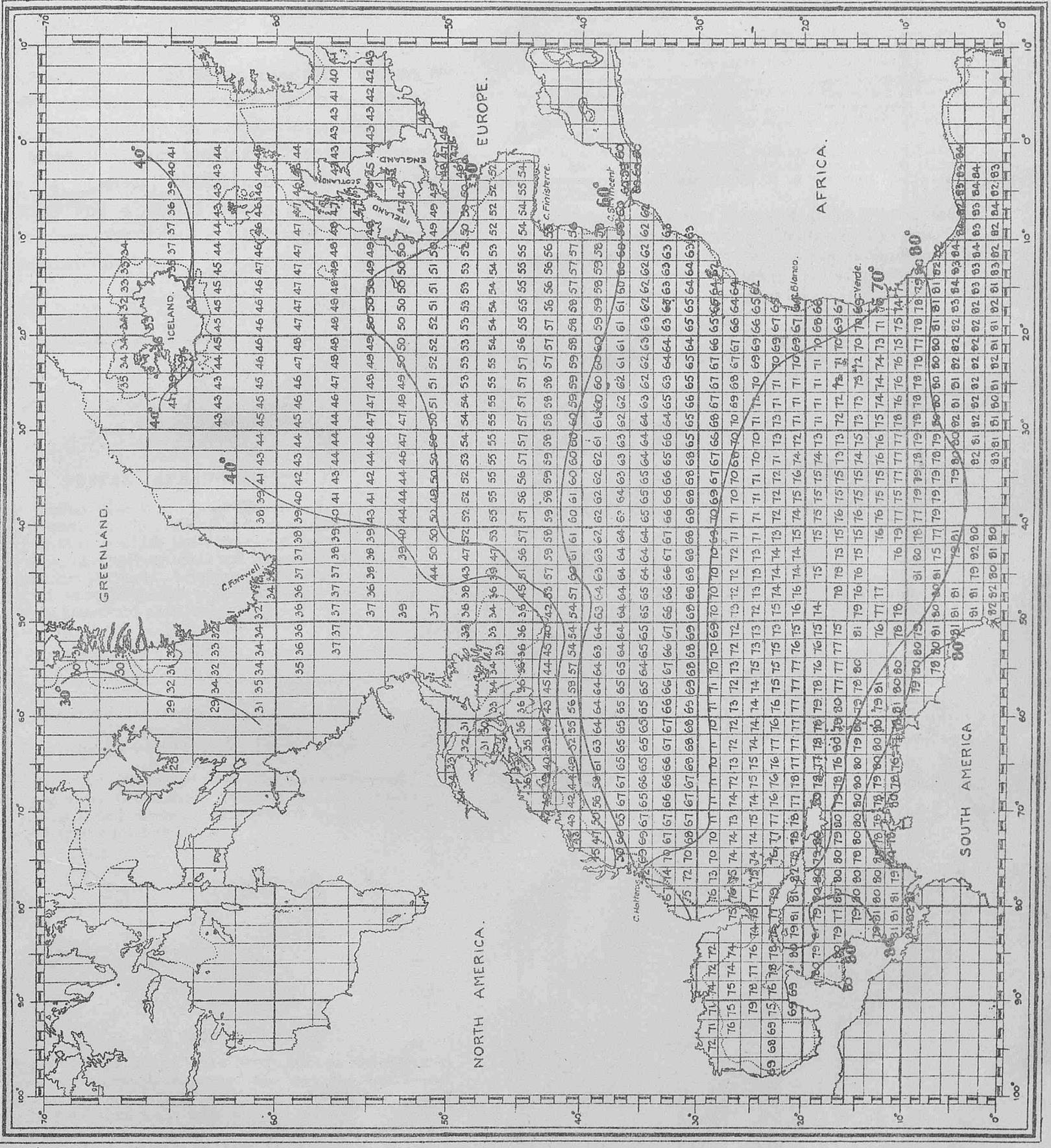
Station.	Mean.	Max.
Stornoway	0.6	6
Malin Head	4.1	5
Valencia	1.1	4
Holyhead	4.2	10
Scilly	3.6	10
Jersey	2.9	6
Dungeness	3.1	7
Yarmouth	1.2	5
Tynemouth	1.9	5
Aberdeen	1.2	5

For explanation of charts see Vol. III. N° 25, of this Journal, page 10.

Key to numbers in rose, S.W. Approaches.



MEAN SEA SURFACE TEMPERATURES FOR MONTH OF APRIL COMPUTED FROM ALL AVAILABLE SOURCES DURING THE PERIOD 1855 TO 1917. NORTH ATLANTIC.





**NOTICES.**

**COVER FOR MARINE OBSERVER.**

Marine observers, regular recipients and subscribers to this Journal are hereby informed that a binding cover for Volume II of "The Marine Observer" may be obtained from H.M. Stationery Office, through any bookseller, price 2s.

The arrangements for assembling the numbers for binding was described in Volume I, No. 12, page 156.

It should be clearly understood that this cover is not the cover used for binding "Excellent" awards, which is far superior; but it will be found to be of good quality and a useful means of preserving the yearly numbers, for which a title page is issued with each December number.

**POSTAL ARRANGEMENTS.**

"The Marine Observer" is published, when circumstances permit, on the first Wednesday of the month previous to that to which the number refers.

If captains of observing ships will forward to the Office the particulars required hereunder, endeavour will be made as far as mails permit to post the latest number for use on their homeward passage.

S.S..... Captain.....  
 Port of Call.....  
 Date of Homeward Departure.....  
 Postal Address.....

When this information is not given "The Marine Observer" is addressed to the Commanding Officer, s.s..... c/o the owners, and captains are requested to make their own arrangements for forwarding.

**ICE REPORTS.**

Commanders of ships in the Trans-North Atlantic and Southern Ocean Trades are earnestly requested to have the Ice Report Form 912 completed and returned at the end of each passage. A nil return is desired if no ice is seen.

These forms are supplied with "The Marine Observer" each month to regular observing ships in these Trades.

**THE BAROMETER.**

Before barometer readings are compared with the normal isobars shown on the Meteorological Ocean Charts, transmitted by W/T or plotted on Weather Charts, mercurial barometers should be corrected for height, gravity, temperature and index error, for which tables are given on pp. 80 to 83 and 84 to 86 of the Marine Observer's Handbook; see also pp. 177-8, Vol. II, No. 23, of this Journal. A table for converting inches to millibars is also given below.

Aneroids require to be corrected for height and index error only. They should be frequently compared, as the mechanism is liable to get out of adjustment without detection.

Readings of the barometer should be entered in the Meteorological Log as read—i.e., uncorrected—and the attached thermometer should also be recorded. A column is now given for the corrected reading, and it will be of great assistance if this is also completed.

While a difference from the pressure values shown on the charts does not necessarily mean unusual weather, when there is a divergence the mariner should be on the alert, particularly within cyclone regions.

It is strongly urged that Marine Observers, whether using Official or Ship's Barometers, for W/T reports, Meteorological Logs or Forms 911, will complete and send in the Blue Post Card, at least once every voyage, so that an effectual check may be kept on the index error.

**BLUE POSTCARD FOR BAROMETER COMPARISON.**

Marine Observers will greatly assist by obtaining comparisons with Standard instruments when at suitable ports; also regularly completing and returning the Blue Postcard whether their instruments are M.O. or Ship's.

Form 913.

Barometer Error.

**TEST CARD FOR BAROMETER ERROR.**

To be forwarded with Logs or Reports to

Meteorological Office,  
 Air Ministry,  
 Kingsway, London.

Name of Ship				Ship
Captain				Capt.
In Port of				Port
Mercurial or Aneroid				Date
Maker's Name and No.				Bar. No.
Height above Mean Sea Level .....ft.				} Too high } Too low
Date 192 .	Time.	Barometer readings.	Attached Therm.	
				At
				Date
				This counterfoil will be returned to Ship.

In British Home Ports please take three readings at 7 a.m., or 6 p.m. G.M.T. If in a colonial or foreign port, read at 8 a.m. Local Standard Time.

**CONVERSION TABLE.**

To Convert Inches into Millibars.

Inch.	mb.	Inch.	mb.	Inch.	mb.
27.50	931.2	28.65	970.2	29.85	1,010.8
27.55	932.9	28.70	971.9	29.90	1,012.5
27.60	934.6	28.75	973.6	29.95	1,014.2
27.65	936.3	28.80	975.3	30.00	1,015.9
27.70	938.0	28.85	976.9	30.05	1,017.6
27.75	939.7	28.90	978.6	30.10	1,019.3
27.80	941.4	28.95	980.3	30.15	1,021.0
27.85	943.1	29.00	982.0	30.20	1,022.7
27.90	944.8	29.05	983.7	30.25	1,024.4
27.95	946.5	29.10	985.4	30.30	1,026.1
28.00	948.2	29.15	987.1	30.35	1,027.7
28.05	949.9	29.20	988.8	30.40	1,029.4
28.10	951.6	29.25	990.5	30.45	1,031.1
28.15	953.2	29.30	992.2	30.50	1,032.8
28.20	954.9	29.35	993.9	30.55	1,034.5
28.25	956.6	29.40	995.6	30.60	1,036.2
28.30	958.3	29.45	997.3	30.65	1,037.9
28.35	960.0	29.50	999.0	30.70	1,039.6
28.40	961.7	29.55	1,000.7	30.75	1,041.3
28.45	963.4	29.60	1,002.4	30.80	1,043.0
28.50	965.1	29.65	1,004.0	30.85	1,044.7
28.55	966.8	29.70	1,005.7	30.90	1,046.4
28.60	968.5	29.75	1,007.4	30.95	1,048.1
		29.80	1,009.1		

# ICE CHART. WESTERN NORTH ATLANTIC.

LETTERS OF TRANSATLANTIC TRACKS INDICATE

- (A) Westbound. From 1st April to 30th June, inclusive.  
Eastbound. From 25th March to 7th July, inclusive.
- (D) From 15th February to 10th April, inclusive.
- (E) From 11th April to 15th May, or until the Cape Race route clear of ice.

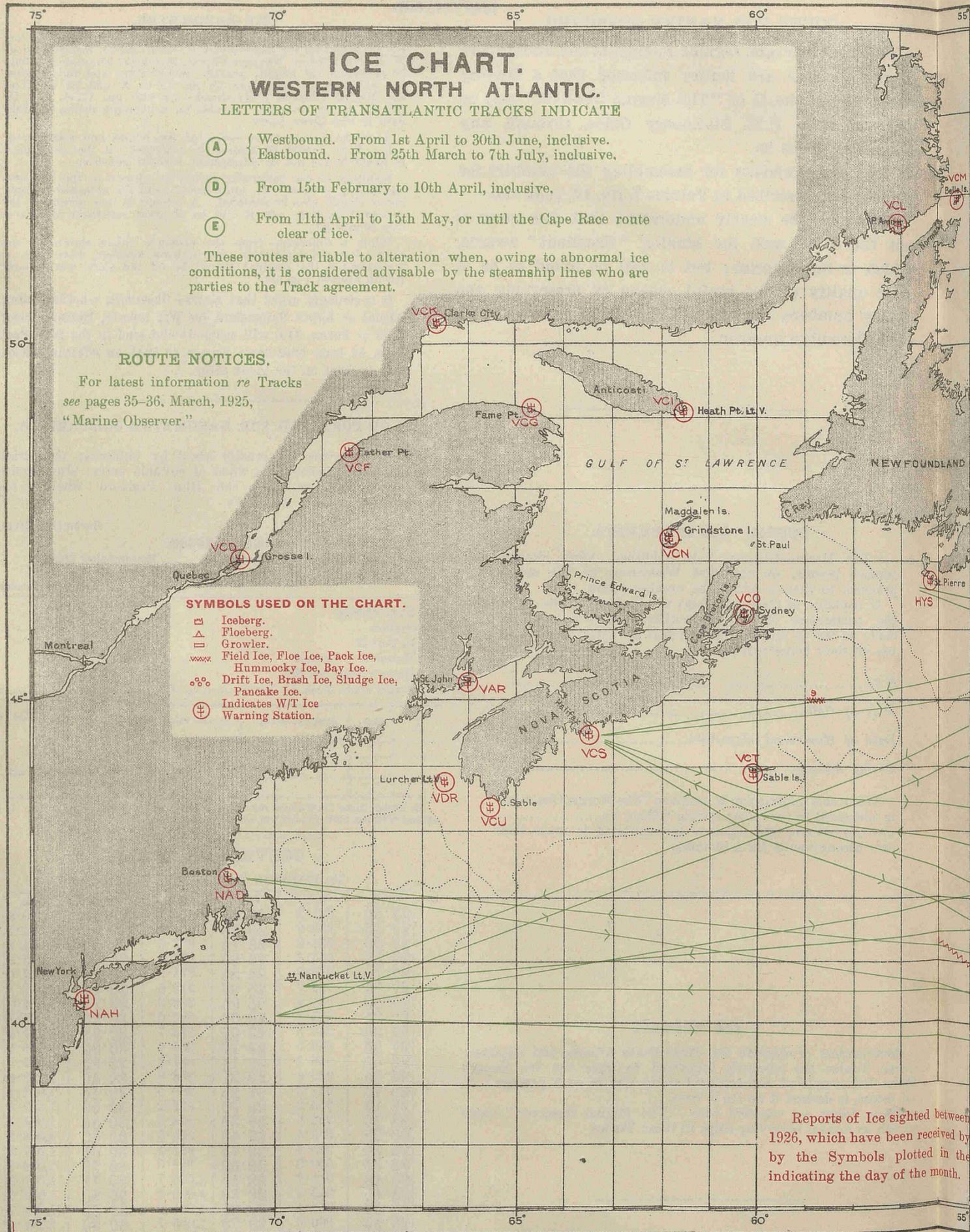
These routes are liable to alteration when, owing to abnormal ice conditions, it is considered advisable by the steamship lines who are parties to the Track agreement.

## ROUTE NOTICES.

For latest information re Tracks see pages 35-36, March, 1925, "Marine Observer."

## SYMBOLS USED ON THE CHART.

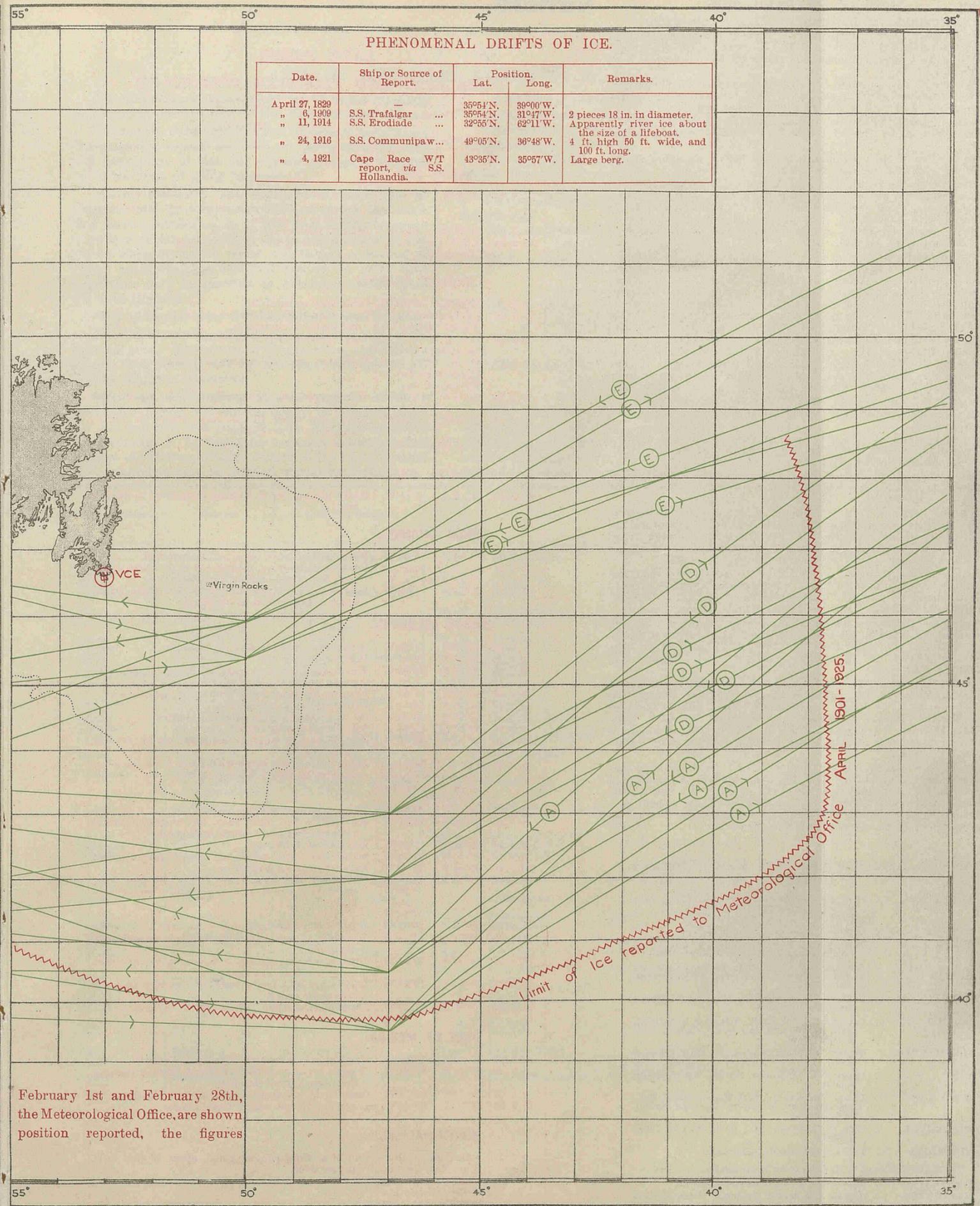
- ▣ Iceberg.
- △ Floeberg.
- ▢ Growler.
- xxxx Field Ice, Floe Ice, Pack Ice, Hummocky Ice, Bay Ice.
- o%o Drift Ice, Brash Ice, Sludge Ice, Pancake Ice.
- ⊕ Indicates W/T Ice Warning Station.



Reports of Ice sighted between February 1st and February 28th, 1926, which have been received by the Meteorological Office, are shown in position reported, the figures indicating the day of the month.

## PHENOMENAL DRIFTS OF ICE.

Date.	Ship or Source of Report.	Position.		Remarks.
		Lat.	Long.	
April 27, 1829	—	35°54'N.	39°00'W.	2 pieces 18 in. in diameter. Apparently river ice about the size of a lifeboat.
" 6, 1909	S.S. Trafalgar ...	35°54'N.	31°47'W.	
" 11, 1914	S.S. Erodiade ...	32°55'N.	62°11'W.	4 ft. high 50 ft. wide, and 100 ft. long. Large berg.
" 24, 1916	S.S. Communipaw...	49°05'N.	98°48'W.	
" 4, 1921	Cape Race W/T report, via S.S. Hollandia.	43°35'N.	35°57'W.	



February 1st and February 28th, the Meteorological Office, are shown in position reported, the figures

## Co-operation of Shipowners, Masters and Mates.

The Director of the Meteorological Office is authorised to lend tested Instruments to Captains of British-owned ships who undertake to make 4 hourly observations and keep Meteorological Logs for the Office.

The instruments supplied for this purpose are one barometer, four thermometers with screen, two hydrometers and in some cases a Barograph and rain gauge is added to the equipment.

Tested instruments are also lent to a number of British Atlantic Liners which make special coded W/T weather reports to the Office.

The number of ships co-operating with the M.O. using official tested instruments on loan is limited.

Vessels observing regularly for the Meteorological Office to which office instruments are not lent, keep Form 911, Ship's Meteorological Report, using the ship's instruments, the barometer being compared with Standards. The number of ships regularly contributing approved forms of all descriptions to the Marine Division is limited to 500.

Captains and Officers who wish to co-operate with the Meteorological Office should apply *by letter* to The Director, Meteorological Office, Air Ministry, Kingsway, London, W.C.2; or *in person* between the hours of 10 a.m. and 4 p.m., to the Marine Superintendent at the same address or to any of the gentlemen whose names and addresses are given below acting as agents at the respective ports. A waiting list is kept of the names of ships whose commanders have offered to regularly co-operate.

Marine Observers (*i.e.*, Captains and Officers who regularly observe for the Meteorological Office) will greatly assist if they will send in Meteorological Logs immediately on completion through the Port Meteorological Officer or Agent, at the same time notifying him of any possible instrumental defects.

Defective instruments will then be replaced and new Log Books, etc., provided.

In London and at base ports where there is not an Agency, notification of defects should be sent to headquarters on arrival, with the Meteorological Log.

Vessels making voyages of less than two months' duration are requested to retain their logs until nearly filled up, but the log should be returned in all cases at least twice yearly.

W/T Registers and Forms 911 should in all cases be sent directly to the Meteorological Office, London. The Port Meteorological Officer at Liverpool and the Visiting Officer in London board vessels co-operating with the Meteorological Office, and the agents visit ships at their ports when circumstances permit.

Postage abroad incurred on behalf of the Meteorological Office in returning logs will be refunded. Postage from British Empire ports need not be prepaid, if the envelope is marked O.H.M.S., and addressed to the Director, Meteorological Office, London.

Captains and Officers whether they observe regularly for the Meteorological Office or not are urged to report exceptional phenomena in air or sea. Reports of weather experienced in or near Tropical Cyclones or hurricanes, also abnormal currents are specially desired.

Masters who wish to assist in developing the rapid interchange of Meteorological information and Weather Forecasting at sea can do so by using the standard form, **not** in code, of W/T Weather Report suggested in "Weather Signals," given in Vol. III, No. 25, pages 14 and 15. For this purpose a mercurial barometer of which the index error has been ascertained is essential.

THE MARINE OBSERVER is sent monthly to all ships regularly contributing Logs, Forms and W/T Registers to the Meteorological Office. It is hoped that each ship will preserve *all* her copies. Personal copies of Numbers are sent to those whose special contributions are published in them. A suitable cover may be obtained from H.M. Stationery Office, price 2s.

## Marine Agencies and Port Meteorological Officers.

LIVERPOOL	..	(Port Meteorological Office), Lieut.-Commander M. Cresswell, R.N.R., Dock Office. Telephone No.: Bank 8959.
CARDIFF	..	Captain T. Johnston, Technical College.
CLYDE	..	Captain M. C. Corrance, Board of Trade Surveyor's Office, 73, Robertson Street, Glasgow.
DUBLIN	..	{ Captain M. H. Clarke, Chief Surveyor, Ministry of Industry and Commerce, Marine Department, 27, Eden Quay.
HULL	..	..
LEITH	..	..
SOUTHAMPTON	..	Captain D. Forbes, Nautical Academy, 1, Albion Place.
TYNE	..	..
HONG KONG	..	Lieut.-Commander C. R. H. Harvey, O.B.E., R.N. Superintendent, Admiralty Chart and Chronometer Depot.
VANCOUVER	..	T. S. H. Shearman, Esq., Room 40, Post Office Building.
AUSTRALIA	..	The Commonwealth Meteorologist.

The Deputy Directors of Navigation act as sub-agents as follows:—

FREMANTLE	..	Captain J. J. Airey, Dalgety's Buildings.
MELBOURNE	..	Captain L. J. Bolger, Electricity Commissioners Building, 22, William Street.
SYDNEY	..	Captain G. D. Williams, D.S.O., Customs House.

## LATE PRESS.

## DERELICTS AND FLOATING WRECKAGE.

Date.	Position.		Description.
	Latitude.	Longitude.	
<b>NORTH SEA.</b>			
10.2.26	54°53'N.	3°35'E.	Spar floating upright about 4 feet above water, apparently attached to sunken wreckage, dangerous to navigation.
11.2.26	59°57'N.	1°44'E.	Drifting lifeboat full of water.
16.2.26	N.N.W. (mag.) 2 m. off Terschelling Lt. V.		Sunken tank lighter <i>Brunsbüttelkoog</i> .
<b>ENGLISH CHANNEL.</b>			
1.2.26	49°23'N.	5°04'W.	Cable buoy marked <i>C1</i> .
2.2.26	S.E. 1 m. from Dover Signal Station.		Large spar, rigid, of sunken schooner <i>John Gibson</i> , dangerous to navigation.
3.2.26	14 m. N.W. by N. of Longships Lt. H.		Large drifting buoy with staff.
5.2.26	5½ m. 206° from Kimmeridge Tower, Weymouth Bay.		Wreckage, probably dangerous to navigation.
5.2.26	49°59'N.	5°33'W.	Waterlogged boat apparently been in water some time.
6.2.26	49°05'N.	6°55'W.	Heavy spar about 40 feet long, yellow in colour, dangerous to navigation.
14.2.26	E. of Lizard Head.		Struck submerged wreckage.
<b>BRISTOL CHANNEL.</b>			
21.2.26	51°16'N.	5°45'W.	Heavy piece of wood floating, dangerous to navigation.
<b>IRISH CHANNEL.</b>			
1.2.26	51°54'N.	6°34'W.	Red spherical buoy, top structure smashed.
7.2.26	4 m. N.W. (mag.) of Coningbeg Lt. V.		Round drifting buoy, painted red with white markings on top and marked <i>Silvertown Coms</i> .
19.2.26	52°10'N.	5°34'W.	Spar floating upright showing 2 feet above water, apparently attached to wreckage.
<b>NORTH ATLANTIC.</b>			
1.2.26	46°40'N.	44°20'W.	<i>Alkaid</i> abandoned in sinking condition.
1.2.26	26°56'N.	79°57'W.	Derelict, bottom up.
2.2.26	33°25'N.	78°28'W.	Wreckage, apparently part of vessel's deck, with pump engine standing.
2.2.26	38°23'N.	74°52'W.	Floating log about 30 ft. long and 2 feet diameter.
3.2.26	31°06'N.	46°—'W.	Cylindrical buoy marked <i>No. 8</i> .
5.2.26	49°54'N.	30°25'W.	SS. <i>Apis</i> abandoned in sinking condition.
5.2.26	33°06'N.	38°19'W.	Sch. <i>Retraction</i> foundered.
5.2.26	36°15'N.	36°36'W.	Sch. <i>Muguet</i> in sinking condition, set on fire and abandoned.
5.2.26	1 m. E. of Barnegat Shoal Gas, Whistle and Submarine Bell Buoy 7B.		Large ocean-going barge with cabin house on poop, showing no lights, floating light.
8.2.26	48°40'N.	20°16'W.	Large cage buoy painted black.
8.2.26	53°42'N.	14°58'W.	Big whistle and light buoy, not burning, painted red and black and covered with green.
9.2.26	50°02'N.	11°00'W.	Red conical light buoy.
9.2.26	17°55'N.	65°12'W.	Struck submerged object, one blade of propeller lost.
10.2.26	32°55'N.	75°22'W.	Derelict schooner bottom up.
11.2.26	49°45'N.	between 7°20'W. and 7°50'W.	Numerous deal logs from 20 to 30 feet long, apparently part of deck cargo, dangerous to navigation.
11.2.26	38°54'N.	36°11'W.	Sch. <i>Novelty</i> abandoned and set on fire.
11.2.26	39°11'N.	74°—'W.	Wreckage of schooner with deck awash and spars alongside.
12.2.26	44°38'N.	19°15'W.	Drifting lifeboat marked 3 belonging to Liverpool, could not make out name.
20.2.26	54°40'N.	13°52'W.	Large buoy with trellis topwork standing about 12 feet above water.
21.2.26	51°52'N.	7°21'W.	Large black gas buoy, dangerous to navigation.
<b>GULF OF MEXICO.</b>			
2.2.26	25°39'N.	86°06'W.	Very large spar covered with marine growth.
6.2.26	27°26'N.	87°24'W.	Derelict motor craft <i>Gulf of Mexico</i> floating upright, deck awash, mast standing.
7.2.26	19°59'N.	94°57'W.	Quantity of wreckage, dangerous to navigation.
10.2.26	22°50'N.	94°05'W.	Log about 15 feet long, 6 feet diameter.
<b>NORTH PACIFIC.</b>			
5.2.26	3 m. N.E. of Duxbury Reef Gas and Whistle buoy, sea coast of California.		Part of a white painted house, about 40 feet long, 20 feet wide.



Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed. Received up to 12.2.26.	Date Received.
Bampton Castle ...	Hutchings, A. H. ...	M. J. Castle ...	No.	Union Castle ...	Met. Log. 2.5.25 to 21.8.25 ...	2.9.25.
Banbury Castle ...	Singeisen, E. A., D.S.C., R.D., Capt., R.N.R.	... ..	"	"	"	"
Banffshire ...	Wynne, R. H. ...	J. M. Bowie ...	No. A.	Turnbull Martin ...	Form 911 13.12.25 to 3.1.26 ...	26.1.26.
Baron Cawdor ...	Cairns, W. ...	A. Campbell ...	" A.	Hogarth & Sons ...	" 26.7.25 to 16.10.25...	20.10.25.
Barpeta ...	Denne, G. A. ...	J. W. Knight ...	" M.	British India ...	" 19.11.25 to 18.12.25	4.1.26.
Baychimo ...	Cornwall, S. A. ...	S. Jackson ...	" A.	Hudson's Bay Co. ...	" 18.11.25 to 9.1.26 ...	13.1.26.
Beaufort ...	Rice, W. V., D.S.O., D.S.C., Commr., R.N.	J. Taylor ...	M.L.	His Majesty's Ship ...	Met. Log. 14.8.25 to 13.11.25...	11.1.26.
59 Belgenland ...	Bradshaw, J. ...	C. J. Murray, J. M. Appleby,	W.T.	Red Star ...	W.T. Reg. 4.10.25 to 21.10.25... Form 911 3.10.25 to 21.10.25	23.10.25. 23.10.25.
Benalder ...	Cole, J. H., D.S.C. ...	T. S. Rawlingson ...	No. A.	Ben Line ...	" 17.12.25 to 24.12.25	3.2.26.
Benigo ...	Nicholl, R. N. C. ...	C. E. Arundel ...	" M.	P. & O. Branch ...	" 18.12.25 to 6.1.26 ...	26.1.26.
Benlloe ...	McCorquodale, A. ...	G. M. Duff ...	" A.	Ben Line ...	" 12.8.25 to 29.8.25 ...	30.9.25.
31 Berengaria ...	Irvine, W. R. D., R.D., Capt., R.N.R.	J. A. Myles, W. C. A. Robson, E. W. Connell.	W.T.	Cunard ...	W.T. Reg. 1.1.26 to 14.1.26 ...	19.1.26.
Berrima ...	Townshend, W. P. ...	T. Ferguson ...	No. M.	P. & O. Branch ...	Form 911 22.11.25 to 7.1.26 ...	12.1.26.
Bintang ...	Morzer Bruyns, M. F. ...	A. A. H. Blankestyn ...	" M.	Nederland ...	" 2.1.26 to 29.1.26 ...	2.2.26.
Bogota ...	Dunn, R. E., O.B.E. ...	T. R. Thomas ...	" A.	R.M.S.P. Co. ...	" 8.10.25 to 28.10.25...	5.11.25.
Bolingbroke ...	Jones, D. C. ...	C. A. Mott ...	M.L.	Canadian Pacific ...	Met. Log. 30.6.25 to 16.1.26 ...	20.1.26.
Borda ...	Holland, R. ...	... ..	No. M.	P. & O. Branch ...	Form 911 12.2.25 to 19.6.25 ...	25.6.25.
Bothwell ...	Jones, D. J. C. ...	G. Mowatt ...	" A.	Canadian Pacific ...	" 31.10.25 to 30.11.25	8.12.25.
Brandon ...	Henderson, W. ...	T. Beck ...	" A.	"	" 9.1.26 to 8.2.26 ...	11.2.26.
Brecon ...	Newman, J. ...	J. Mackenzie, H. C. Waters, T. J. Webster, D. Durin, N. B. Goater, T. Golby.	" A.	"	"	"
Brenda ...	Lightbody, J. E. ...	F. R. Ness ...	" A.	Scottish Fishery Board ...	Form 911 1.1.26 to 31.1.26 ...	5.2.26.
Brighton ...	Hill, A. ...	Mr. Munton ...	C.C.	Southern Railway ...	Telegraphic Report 10.2.26 ...	10.2.26.
British Advocate ...	Taylor, R. J. ...	C. J. Metcalf ...	No. M.	British Tankers ...	Form 911 13.8.25 to 12.10.25...	14.10.25.
British Engineer ...	Joures, T. W. ...	M. J. Grieves ...	" M.	"	" 1.8.25 to 14.11.25 ...	7.1.26.
British Judge ...	Putt, R. O. ...	H. Westlake ...	" M.	"	" 29.12.25 to 14.1.26...	3.2.26.
Bruyere ...	Deuson, W. ...	R. Mowbray ...	" A.	Lampport & Holt ...	" 24.10.25 to 11.11.25	29.12.25.
Cambria C.S. ...	Sherwood, C. A. ...	H. Selby, A. J. English, B. C. Farrow.	M.L.	Eastern Tel. Co. ...	Met. Log. 14.7.25 to 21.11.25...	26.1.26.
Cambria ...	Telfer, J. E. ...	V. S. Phillips ...	C.C.	L.M. & S. Rly. ...	Telegraphic Report 9.1.26 ...	9.1.26.
Camito ...	Scudamore, J. H. H., D. S. C., R. D., Commr., R.N.R.	R. M. Cossantine, P. C. Congdon, A. E. Harvey, F. Dudgeon, W. G. W. Chanter.	M.L.	Elders & Fyffes ...	Met. Log. 14.9.25 to 15.1.26 ...	20.1.26.
Canada ...	Jones, T. ...	A. Thompson ...	No. M.	White Star-Dominion	Form 911 14.11.25 to 6.12.25...	11.12.25.
Canadian Importer ...	Wallace, C. ...	C. W. Gilding ...	" A.	Canadian Govt. Mer- cantile Marine.	" 1.6.25 to 7.7.25 ...	24.7.25.
Canadian Inventor ...	Boulton, F. W. ...	T. Edgar ...	" A.	"	" 21.11.25 to 9.12.25...	1.2.26.
Canadian Miller ...	McConechy, W. T. ...	B. D. Ranns ...	" A.	"	"	"
Canadian Raider ...	Dixon, C. C. ...	C. J. Carp ...	" A.	"	Form 911 16.3.25 to 22.4.25 ...	5.5.25.
Canadian Scottish ...	Wallace, C. ...	P. D. Angus ...	" A.	"	" 7.11.25 to 20.12.25...	2.2.26.
Canadian Skir- misher ...	Millar, W. H. ...	R. J. Watson ...	" A.	"	" 28.10.25 to 9.12.25...	16.12.25.
Canadian Winner ...	Hocking, N. P. ...	R. Girling, J. Cochrane ...	" M.	"	" 29.10.25 to 11.12.25	29.12.25.
Carlow Castle ...	Whitfield, G. J. ...	J. W. Kirby ...	" A.	Union Castle ...	" 8.5.25 to 2.6.25 ...	8.6.25.
35 Carmania ...	McNeil, S. G. S., R.D., Capt., R.N.R.	W. M. Stewart, A. T. Hamer, W. B. Tanner.	W.T.	Cunard ...	W.T. Reg. 4.10.25 to 24.10.25...	27.10.25.
34 Caronia ...	Hossack, W. H., R.D., Capt., R.N.R.	R. F. Bovey, R. Cambell, D. M. MacLean.	"	"	Form 911 6.9.25 to 26.9.25 ...	30.9.25.
52 Cedric ...	Hickson, V. W. ...	S. Weller, W. Nicoll ...	"	White Star ...	W.T. Reg. 26.10.25 to 13.11.25	17.11.25.
53 Celtic ...	Berry, G. ...	J. W. Peters, A. E. Weller, F. E. Patchett.	"	"	Form 911 26.10.25 to 14.11.25	17.11.25.
Centaur ...	Rose, A. F. ...	L. Johnstone, E. D. Potts ...	No. M.	A. Holt & Co. ...	W.T. Reg. 2.11.25 to 23.11.25...	26.11.25.
Ceramic ...	Roberts, J., C.B.E., D.S.O., R.D., Capt., R.N.R.	D. W. Chamberlain ...	" A.	White Star ...	Form 911 1.11.25 to 23.11.25...	25.11.25.
Change ...	Gambrill, F. C. ...	... ..	M.L.	Yuill & Co. ...	W.T. Reg. 4.1.26 to 24.1.26 ...	27.1.26.
China ...	Cossey, W. F. ...	E. R. Chaffin ...	No. M.	P. & O. ...	Form 911 3.1.26 to 24.1.26 ...	27.1.26.
Chindwara ...	Brisley, P. L. ...	W. Welch ...	M.	British India ...	" 10.10.25 to 29.11.25	29.12.25.
Chindwin ...	Esslemont, C. ...	J. Summers, W. Wilson, J. G. Walker.	M.L.	P. Henderson ...	Met. Log. 17.11.25 to 21.12.25	23.12.25.
City of Alexandria ...	Bedford, G. B. ...	T. Telleson ...	No. M.	Ellerman ...	Met. Log. 18.4.25 to 5.7.25 ...	20.7.25.
City of Baroda ...	Houghton, W. ...	A. Beaton, J. Cook, H. N. Jones.	M.L.	"	Form 911 14.3.25 to 7.4.25 ...	5.5.25.
City of Batavia ...	Nancollas, H. E. ...	S. J. Nash ...	No. A.	"	Met. Log. 27.5.25 to 13.8.25...	17.8.25.
City of Benares ...	Wyper, J. ...	C. G. Inglis ...	" A.	"	Form 911 27.12.24 to 25.1.25...	9.3.25.
City of Brisbane ...	Seaborne, F. O., D.S.C.	W. E. Fletcher ...	" A.	"	" 21.11.25 to 25.11.25	16.12.25.
City of Canterbury ...	Bremner, D. M. ...	A. M. Hamilton ...	" A.	"	" 3.10.25 to 4.11.25 ...	8.12.25.
City of Chester ...	Letton, F. W. ...	F. C. Wilson, E. Garner, H. Asher.	M.L.	"	" 3.4.25 to 24.6.25 ...	29.6.25.
City of Edinburgh ...	Spencer, H. ...	J. D. MacDonald ...	No. M.	"	Met. Log. 3.6.25 to 15.10.25 ...	22.10.25.
City of London ...	Martin, D. ...	J. J. McTigue ...	" A.	"	Form 911 4.6.25 to 2.7.25 ...	18.8.25.
City of Marseilles ...	Brown, G. ...	W. A. MacAdams, G. F. L. Coates.	" A.	"	" 16.11.25 to 8.12.25...	11.12.25.
City of Rangoon ...	Dunning, T. W. J. ...	A. Gibb, V. S. Turner, A. H. Cosker, E. J. Sawyer, G. Lawrey.	M.L.	"	" 5.12.25 to 30.12.25...	4.1.26.
City of Valencia ...	Williamson, W. A., R.D., Lieut.- Commr. R.N.R.	C. C. Duncan ...	No. M.	"	Met. Log. 16.6.25 to 17.11.25...	9.12.25.
City of Yokohama ...	McDonald, W. D. ...	R. Moloney ...	" A.	"	Form 911 5.3.25 to 3.4.25 ...	2.6.25.
Clan Cumming ...	McLean, J. G. ...	S. M. Werrey Easterbrook ...	" A.	Clan ...	" 7.11.25 to 11.12.25...	21.12.25.
Clan Lanont ...	McCormish, A. B. ...	C. W. Banbury, A. F. Martin	" A.	"	" 25.12.24 to 29.1.25...	9.3.25.
Clan Lindsay ...	Willits, J., Commr.	J. C. Carter ...	" A.	"	" 16.11.25 to 10.12.25	5.1.26.
Clan Macbeth ...	Young, A. H., R.D., Lieut.-Commr., R.N.R.	J. T. Bell ...	" A.	"	" 26.11.25 to 19.12.25	11.1.26.
Clan Macfadyen ...	Stenson, F. J., R.D., Capt., R.N.R.	K. T. Roper ...	" A.	"	" 1.11.25 to 1.12.25 ...	22.12.25.
Clan Macgillivray ...	West, W. F. ...	P. G. de Gruchy ...	" A.	"	" 7.11.25 to 24.12.25...	30.12.25.
Clan Macindoe ...	Law, A. ...	J. G. Baillie ...	" A.	"	" 18.12.25 to 17.1.26...	11.2.26.
Clan Mackellar ...	Scotland, A. ...	D. McAllister ...	" A.	"	" 22.10.25 to 20.1.26...	8.2.26.
Clan Mackinnon ...	Mackie, R. W. ...	W. F. Isaac, S. Y. Strange, S. H. Danson.	M.L.	"	" 10.12.25 to 4.1.26 ...	2.2.26.
					Met. Log. 20.6.25 to 28.9.25 ...	22.10.25.

LIST OF VOLUNTARY OBSERVING SHIPS

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed. Received up to 12.2.26.	Date Received.
<i>Clan Macphee</i> ...	Gourlay, J. B. ...	D. S. Rae, A. W. Jones, J. J. Millar.	M.L.	Clan ...	Met. Log. 28.12.24 to 24.7.25...	4.8.25.
<i>Clan Macnaughton</i> ...	Thomson, W. ...	A. J. Storkey ...	No. A.	" ...	Form 911 25.10.25 to 21.11.25	22.12.25.
<i>Clan Macgarrart</i> ...	Gray, J. N. ...	W. J. Henderson ...	" A.	" ...	" 29.9.25 to 31.10.25...	3.11.25.
<i>Clan MacTavish</i> ...	Higgins, C. J. ...	" ...	" A.	" ...	" ...	" ...
<i>Clan Macvicar</i> ...	Phillips, G. P. ...	L. S. Murrin ...	" A.	" ...	Form 911 14.7.25 to 2.8.25 ...	24.8.25.
<i>Clan Malcolm</i> ...	Neill, G. A. ...	S. M. Werrey Easterbrook ...	M.L.	" ...	" ...	" ...
<i>Clan Morrison</i> ...	Porterfield, W. M. ...	G. Morren ...	No. A.	" ...	Form 911 21.7.25 to 13.10.25...	15.10.25.
<i>Clan Murdoch</i> ...	Miller, W. ...	P. McMillan ...	" A.	" ...	" 22.10.25 to 8.12.25...	4.1.26.
<i>Clan Ranald</i> ...	Openshaw, L. G. ...	T. E. Woodall ...	" A.	" ...	" 5.10.25 to 30.10.25...	25.11.25.
<i>Clan Ross</i> ...	Jones, R. C. ...	G. Short ...	" A.	" ...	" 8.11.25 to 10.12.25...	29.12.25.
<i>Clan Sinclair</i> ...	Neill, G. A. ...	J. Brittain ...	" A.	" ...	" 10.3.25 to 29.7.25 ...	5.8.25.
<i>Clan Urquhart</i> ...	Gibb, A. F. W. ...	T. G. Mitchell ...	" A.	" ...	" 26.11.25 to 28.12.25	30.12.25.
<i>Colonia, C.S.</i> ...	Garnham, S. A. ...	A. S. Muir, F. Bolingbroke, J. M. Matthews, W. Sangwine.	M.L.	Telegraph Construction & Maintenance.	Met. Log. 29.8.25 to 1.10.25 ...	9.10.25.
<i>Colonian</i> ...	Gittins, R. P. ...	T. A. Schofield-Miller ...	No. A.	Leyland ...	Form 911 7.1.26 to 31.1.26 ...	8.2.26.
<i>Columbia</i> ...	Erskine, R. ...	C. L. Seaman ...	" A.	Anchor ...	" 28.6.25 to 19.7.25 ...	27.7.25.
<i>Concordia</i> ...	Morris, J. ...	T. Philip, J. McIntosh, J. Davies.	M.L.	Anchor Donaldson ...	Met. Log. 7.3.25 to 30.6.25 ...	20.7.25.
<i>Comino</i> ...	Nuttall, E. L. ...	J. Woodward ...	No. A.	Furness Withy ...	Form 911 8.12.25 to 10.1.26 ...	29.1.26.
<i>Copenhagen</i> ...	Kerr, J. J. ...	" ...	" A.	Glen & Co. ...	" ...	" ...
<i>Copinthic</i> ...	Hart, F. ...	F. Kean, M. Bennett, F. G. Rogers.	M.L.	White Star ...	Met. Log. 4.4.25 to 18.7.25 ...	27.7.25.
<i>Cornwall</i> ...	Haines, F. P. ...	Mr. Maitby, Mr. Ray ...	No. A.	Federal ...	Form 911 4.7.25 to 13.8.25 ...	21.9.25.
<i>Crawford Castle</i> ...	Morgan, A. O., R.D., Commr. R.N.R.	J. E. R. Wilford ...	" A.	Union Castle ...	" 6.11.25 to 10.12.25...	11.1.26.
<i>Culebra</i> ...	Mackay, A. S. ...	P. Cooper, J. W. Duncan, C. A. Payne.	M.L.	R.M.S.P. Co. ...	Met. Log. 4.5.25 to 15.12.25 ...	1.1.26.
<i>Cumberland</i> ...	Deith, G. T. ...	" ...	No.	Federal ...	" ...	" ...
<i>Cullbert</i> ...	Barlow, F. P. ...	S. G. Edwards ...	No. A.	Booth ...	Form 911 25.9.25 to 20.12.25...	22.12.25.
<i>Cyclops</i> ...	Cosker, W. ...	H. L. Cole ...	" A.	A. Holt ...	" 27.10.25 to 16.12.25	1.2.26.
<i>Lardanus</i> ...	Williams, D. T. ...	W. K. Kerr ...	" A.	" ...	" 14.12.25 to 22.12.25	1.2.26.
<i>Durian</i> ...	Masters, W. ...	A. S. Holland ...	" A.	Leyland ...	" 6.12.25 to 17.12.25	21.12.25.
<i>Darro</i> ...	Smith, W. E., D.S.O., R.D., Capt., R.N.R.	L. Peterson ...	" M.	R.M.S.P. Co. ...	" 15.11.25 to 9.1.26 ...	14.1.26.
<i>Daytonian</i> ...	Walker, C. J., D.S.C.	" ...	" M.	Leyland ...	" 30.3.25 to 13.5.25 ...	21.5.25.
<i>Demerara</i> ...	Willan, F. C. L. ...	A. Nicholls ...	" M.	R.M.S.P. Co. ...	" 19.10.25 to 13.12.25	17.12.25.
<i>Demosthenes</i> ...	Orriess, F. A. ...	S. J. Buckland ...	" M.	Aberdeen ...	" 2.11.25 to 17.11.25...	29.12.25.
<i>Desado</i> ...	Hannam, F. S. ...	L. D. Jennings, A. H. Phillipson.	" M.	R.M.S.P. Co. ...	" 4.12.25 to 20.1.26 ...	25.1.26.
<i>Desna</i> ...	Huff, G. F. ...	J. W. Smith ...	" M.	" ...	" 12.12.25 to 6.2.26 ...	10.2.26.
<i>Deucalion</i> ...	Findlay, J. ...	L. E. Brown ...	" A.	A. Holt ...	" 7.12.25 to 26.12.25...	19.1.26.
<i>Dieppe</i> ...	Marmery, S. ...	Mr. Parsons ...	C.C.	Southern Railway ...	Telegraphic Report 4.2.26 ...	4.2.26.
<i>Dimbola</i> ...	Roy, C. M. ...	G. A. Molyneux ...	No. A.	Melbourne S.S. Co. ...	Form 911 27.11.25 to 23.12.25	25.1.26.
<i>Discoverer</i> ...	Ling, J. T. ...	H. Hall ...	" M.	Harrison ...	" 17.9.25 to 9.12.25 ...	18.12.25.
<i>Discovery, R.R.S.</i> ...	Stenhouse, J. R., D.S.O., D.S.C., O.B.E., R.D., Commr. R.N.R.	" ...	M.L.	Discovery Expedition	" ...	" ...
<i>Domala, M.V.</i> ...	Buswell, W. ...	C. E. Merchant ...	No. M.	British India ...	Form 911 27.9.25 to 8.10.25 ...	15.10.25.
<i>61 Doric</i> ...	S. Bolton, D.S.C., R.D., Commr. R.N.R.	O. V. Lucas, W. F. Dennison, R. H. Shaw.	W.T.	White Star ...	W.T. Reg. 21.12.25 to 10.1.26	12.1.26.
<i>Doric Star</i> ...	Thomas, R. T. ...	T. Williams ...	No. M.	Blue Star ...	Form 911 20.12.25 to 10.1.26...	12.1.26.
<i>Dorington Court</i> ...	Isaacs, W. A. ...	E. D. A. Gibbs ...	" A.	Haldin & Co. ...	" 1.8.25 to 15.9.25 ...	16.9.25.
<i>Dorset</i> ...	Kettlewell, C. R. ...	E. Smith, H. S. Rogers, S. T. Woodhouse.	M.L.	New Zealand S.S. Co. ...	Met. Log. 12.9.25 to 6.11.25 ...	20.11.25.
<i>Dorsetshire</i> ...	Adamson, B. W. ...	C. H. Griffiths, W. A. Kent, R. Cuming, J. Logan.	"	Bibby ...	" 13.6.25 to 29.12.25...	6.1.26.
<i>Dromore Castle</i> ...	Vincent, E. S., R.D., Commr. R.N.R.	S. S. Smith ...	No. A.	Union Castle ...	" 3.10.25 to 7.1.26 ...	12.1.26.
<i>Dryden</i> ...	Major, T. W. ...	A. Hewitt ...	" M.	Lampert & Holt ...	Form 911 8.12.25 to 26.12.25...	30.12.25.
<i>Duendes</i> ...	Cox, F. D. ...	H. Jones ...	" M.	P.S.N. Co. ...	" 1.9.25 to 17.9.25 ...	7.10.25.
<i>Dundrum Castle</i> ...	Kershaw, H. J. ...	R. May ...	" A.	Union Castle ...	" 7.11.25 to 26.11.25...	4.1.26.
<i>Dunrobin</i> ...	Ramsay, J. D. ...	M. M. Ramsay ...	" A.	Glen & Co. ...	" 3.5.25 to 28.5.25 ...	12.6.25.
<i>Duquesa</i> ...	Ellis, F., D.S.C.	H. D. Chamberlain ...	" M.	Furness Withy ...	" 28.11.25 to 23.12.25	28.1.26.
<i>Durenda</i> ...	Wilson, W. ...	K. G. Pullman ...	" M.	British India ...	" 29.11.25 to 25.1.26...	27.1.26.
<i>Edinburgh Castle</i> ...	Morton Betts, W. ...	" ...	M.L.	Union Castle ...	Met. Log. 1.1.26 to 9.1.26 ...	1.2.26.
<i>El Cordobes</i> ...	Noton, F. G. ...	J. W. Ekins ...	No. A.	British & Argentine S.N. Co.	Form 911 5.9.25 to 27.12.25	30.12.25.
<i>Elmina</i> ...	Allen, E. E. ...	R. A. Roberts, J. A. Jones, C. V. Evans.	M.L.	Elder Dempster ...	Form 911 26.9.25 to 16.12.25...	19.12.25.
<i>El Paraguayo</i> ...	Smith, F. C. ...	J. Allerton ...	No. M.	Houlder Bros. ...	Form 911 21.11.25 to 21.1.26	26.1.26.
<i>Elpenor</i> ...	T. W. Hannay ...	R. L. Phillips, R. Harries, C. Shaw, W. Rankin, G. Houchin.	M.L.	A. Holt ...	Met. Log. 25.5.25 to 24.9.25 ...	28.9.25.
<i>Empress of Asia</i> ...	Douglas, L. D., R.D., Lt. - Commr., R.N.R.	R. H. Foley, R. Dobbin, L. Johnston, L. C. Hogg, T. M. W. Golby.	"	Canadian Pacific ...	" 28.5.25 to 9.9.25 ...	19.10.25.
<i>Empress of Australia</i> ...	Hailey, A. J. ...	" ...	"	" ...	" 21.3.25 to 17.12.25...	12.1.26.
<i>Empress of Canada</i> ...	Robinson, S., C.B.E., R.D., Commr., R.N.R.	W. S. Halliday, L. C. Barry, J. W. Thomas.	"	" ...	" 15.5.25 to 21.9.25 ...	16.12.25.
<i>Empress of France</i> ...	Griffiths, E. ...	O. Pennington, E. Roberts, A. W. Patrick, W. Ewens.	"	" ...	" 21.6.25 to 17.11.25...	24.11.25.
<i>Empress of Russia</i> ...	Holland, A. J., R.D., Lt. Commr., R.N.R.	" ...	"	" ...	" 25.6.25 to 6.10.25 ...	14.11.25.
<i>Empress of Scotland</i> ...	Latta, R. G. ...	B. Grant, D. Loram, W. Bacon, K. Hutchings, F. G. Hutchings.	"	" ...	" 3.5.25 to 7.10.25 ...	3.11.25.
<i>Endeavour</i> ...	Commr. S. A. Geary-Hill, D.S.O., R.N.	M. L. Harrison, E. V. B. Baker, E. H. B. Baker, J. Torlesse.	"	His Majesty's Ship ...	" 26.5.25 to 24.6.25 ...	13.7.25.
<i>Essequibo</i> ...	Duncan, E. E. ...	A. Lyall ...	No. M.	R.M.S.P. Co. ...	Form 911 4.12.25 to 18.1.26 ...	1.2.26.
<i>Eumaeus</i> ...	Read, J. W. ...	W. J. Ryan ...	" A.	A. Holt ...	" 16.12.25 to 30.12.25	1.2.26.
<i>Euripides</i> ...	Collins, P. J., O.B.E.	H. S. Cox, G. R. Fisher, A. J. Terry.	M.L.	Aberdeen ...	Met. Log. 27.2.25 to 18.6.25 ...	29.6.25.
<i>Eurybates</i> ...	Carnon, C. G. ...	C. Napier ...	No. A.	A. Holt ...	Form 911 17.11.25 to 22.12.25	8.2.26.
<i>Explorer</i> ...	Lamont, A. ...	Scientific Staff ...	M.L.	Scottish Fishery Board	Met. Log. 2.3.25 to 17.10.25 ...	29.12.25.
<i>Ferndale</i> ...	Daniel, F. ...	D. Jones ...	No. M.	Commonwealth Govt.	Form 911 25.12.25 to 31.1.26...	4.2.26.
<i>Fitzroy</i> ...	Silk, H. V., Lt.-Commr., R.N.	M. E. Welby ...	M.L.	His Majesty's Ship ...	Met. Log. 25.8.25 to 16.11.25...	21.11.25.
<i>Flandria</i> ...	Veldkamp, G. J. ...	T. Doornbosch ...	No. M.	Holland Lloyd ...	Form 911 30.10.25 to 16.12.25	19.12.25.

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed, Received up to 12.2.26.	Date Received.
<i>Flinders</i> ...	Henderson, D. A., Lt.-Comdr., R.N.	H. E. Turner ...	M.L.	His Majesty's Ship ...	Met. Log. 23.8.25 to 20.11.25...	2.12.25.
<i>Francisco Freya</i> ...	Williams, J. C. ... Angus, W. ...	J. C. Nettleship ... J. H. Hennessey ...	No. A. " A.	Ellerman Wilson ... Scottish Fishery Board	Form 911 5.11.25 to 12.12.25... " 28.12.25 to 22.1.26...	18.12.25. 26.1.26.
<i>Galtymore</i> ...	Ledsome, J. S. ...	N. Goubrough ...	" M.	Furness Withy ...	" 5.3.25 to 15.3.25 ...	18.3.25.
<i>Garoe</i> ...	Visser, C. W. ...	C. J. Vandenberg ...	" M.	Rotterdam Lloyd ...	" 11.7.25 to 17.9.25 ...	8.10.25.
<i>Gascoyne</i> ...	Rutt, W. N. ...	R. Simpson ...	" A.	Dalgety & Co. ...	" 24.10.25 to 4.1.26 ...	8.2.26.
<i>Gelria</i> ...	Bakker, T. J. ...	K. H. Schilp ...	" M.	Holland Lloyd ...	" 13.11.25 to 30.12.25 ...	4.1.26.
<i>Glenamoy, M.V.</i> ...	Angier, J. ...	R. H. Bishop ...	" A.	Glen Line ...	" 10.1.26 to 22.1.26 ...	1.2.26.
<i>Glenapp, M.V.</i> ...	Roberts, W. E. ...	S. W. Bell ...	" A.	" ...	" 14.11.25 to 27.12.25 ...	4.1.26.
<i>Glenluce, M.V.</i> ...	Barkley, E. ...	J. D. Richards ...	" A.	" ...	" 22.2.25 to 24.3.25 ...	30.3.25.
<i>Glenshane</i> ...	Bennett, J. H. ...	R. A. Dale ...	" A.	" ...	" 20.11.25 to 16.1.26 ...	19.1.26.
<i>Gloucestershire</i> ...	Robin, E. ...	M. W. Simmons ...	" A.	Bibby ...	" 25.10.25 to 1.1.26 ...	5.1.26.
<i>Gorgon</i> ...	Hughes, J. W. ...	E. W. Powell ...	" A.	A. Holt & Co. ...	" 21.12.25 to 6.1.26 ...	8.2.26.
<i>Gourko</i> ...	Aspinall, A. E. ...	G. B. Bray, S. N. Stokes, J. D. Birch.	No.	Ellerman Wilson ...	Met. Log. 16.5.25 to 1.11.25 ...	10.12.25.
<i>Haliartus</i> ...	Marsh, L. V. ...	W. H. Upton ...	No. A.	R. P. Houston ...	Form 911 26.11.25 to 18.12.25 ...	19.1.26.
<i>Harmonides</i> ...	Hughes, W. J. ...	D. L. Roberts ...	" A.	" ...	" 1.3.25 to 16.3.25 ...	30.4.25.
<i>Harmony, Auxy.</i> ...	Jackson, J. C. ...	A. W. Bush ...	" A.	Moravian Mission ...	" 1.12.25 to 18.12.25 ...	29.12.25.
<i>Hatarana</i> ...	Woodget, H. T. ...	J. L. Durkee, F. Wells, H. Harrison, H. J. O'Donohoe.	M.L.	British India ...	" 7.10.24 to 22.4.25 ...	4.5.25.
<i>Hauraki, M.V.</i> ...	Frew, J. D. ...	J. A. Pearson ...	No. M.	Union S.S. Co., N.Z. ...	" 10.9.25 to 10.10.25 ...	25.11.25.
<i>Henry Holmes, C.S.</i> ...	Bicker Caarten, A.	R. J. M. Pearce ...	" M.	W. I. & Panama Telegraph Co.	" 7.7.25 to 5.9.25 ...	23.9.25.
<i>Herald</i> ...	Harvey, J. R., O.B.E., Comdr., R.N.	W. C. Jenks ...	M.L.	His Majesty's Ship ...	Met. Log. 1.6.25 to 24.9.25 ...	24.12.25.
<i>Herefordshire</i> ...	Mann, R. P. ...	J. E. Cullen, G. Whitworth, P. S. Cooper.	No.	Bibby ...	" 10.10.25 to 17.12.25 ...	14.1.26.
<i>Herschel</i> ...	Davies, G. W. ...	J. M. Edgar ...	No. A.	Lampport & Holt ...	Form 911 14.10.25 to 15.12.25 ...	29.12.25.
<i>Hibernia</i> ...	Tanner, E. B. ...	R. Woodall ...	C.C.	L.M. & S. Rly. ...	Telegraphic Report, 30.1.26 ...	30.1.26.
<i>Highland Enterprise</i> ...	Pond, R. H. ...	J. H. Tilton ...	No. A.	Nelson ...	Form 911 31.1.25 to 26.4.25 ...	12.5.25.
<i>" Glen</i> ...	Jones, T. J. ...	C. M. Best ...	" A.	" ...	" 20.7.25 to 12.9.25 ...	24.9.25.
<i>" Heather</i> ...	Powell, G. A. ...	J. H. Cables, F. Jeyes ...	No.	" ...	Met. Log. 10.12.24 to 1.6.25 ...	16.6.25.
<i>" Laddie</i> ...	Alford, C. ...	R. Simpson ...	No. A.	" ...	Form 911 5.11.25 to 4.1.26 ...	6.1.26.
<i>" Piper</i> ...	Collings, D. ...	A. S. Jones, J. S. Collins, W. T. Breen, E. F. Smart.	M.L.	" ...	Met. Log. 20.6.25 to 3.11.25 ...	18.11.25.
<i>" Pride</i> ...	Davies, G. A. ...	F. Falconer, R. R. Soanes, G. E. Leech.	No.	" ...	" 5.12.25 to 31.1.26 ...	4.2.26.
<i>" Rover</i> ...	Ashby Graves, F. ...	F. W. Harvey, H. Thomas, F. Abbott.	"	" ...	" 24.9.25 to 23.11.25 ...	2.12.25.
<i>" Warrior</i> ...	Robinson, R. H. ...	G. L. Evans ...	No. M.	" ...	Form 911 1.6.25 to 29.7.25 ...	10.8.25.
<i>Hildebrand</i> ...	Maddrell, J. ...	A. Allan ...	" A.	Booth ...	" 18.11.25 to 31.12.25 ...	14.1.26.
<i>Hobsons Bay</i> ...	Kydd, O. J. ...	J. E. Williams, O. J. Edwards, M. P. Pearce, J. Scott, G. M. Coote.	M.L.	Commonwealth Govt. }	Met. Log. 31.3.25 to 11.7.25 ... " 28.7.25 to 31.10.25 ...	5.11.25. 5.11.25.
<i>Holbein</i> ...	Gough, W. A. ...	H. L. Rudd ...	No. A.	Lampport & Holt ...	Form 911 8.11.25 to 16.1.26 ...	21.1.26.
<i>54 Homeric</i> ...	Holme, A. ...	A. E. Dyer, A. Griffiths, S. A. Jones, S. B. Morice.	W.T.	White Star ...	W.T. Reg. 14.1.26 to 28.1.26 ...	9.2.26.
<i>Horovata</i> ...	Holland, E. ...	H. J. Wilde ...	No. A.	New Zealand S.S. Co. ...	Form 911 16.7.25 to 27.1.26 ...	2.2.26.
<i>Honorius</i> ...	Samuels, C. ...	J. E. Martin, W. G. Iddes ...	" A.	R. P. Houston ...	" 27.7.25 to 27.8.25 ...	31.8.25.
<i>Hubert</i> ...	Buck, R. H. ...	G. H. Jordan ...	" A.	Booth ...	" 6.8.25 to 28.8.25 ...	14.9.25.
<i>Hurunui</i> ...	Burton Davies, J. ...	J. C. Tuckett, C. D. Watt, F. Pover, G. R. Hogg.	M.L.	New Zealand S.S. Co. ...	Met. Log. 20.11.24 to 17.5.25 ...	9.6.25.
<i>Ibez</i> ...	Langdon, C. ...	" ...	C.C.	G.W. Railway ...	Telegraphic Report. 19.3.25 ...	19.3.25.
<i>Ikala</i> ...	Meetham, J. T. ...	E. Lightfoot, C. W. Smithurst ...	No. A.	J. H. Welsford & Co. ...	Form 911 22.5.25 to 5.6.25 ...	16.7.25.
<i>Ingoma</i> ...	Barrow, R. K. ...	O. Stanhope ...	" M.	Harrison ...	" 28.11.25 to 17.1.26 ...	22.1.26.
<i>Intaba</i> ...	Gibbings, W. A. ...	A. M. Hughes ...	" A.	" ...	" 30.10.25 to 16.12.25 ...	23.12.25.
<i>Iris, C.S.</i> ...	Hughes, H. R. ...	" ...	" M.L.	Pacific Cable Board ...	" ...	"
<i>Iroquois</i> ...	Jackson, A. L., Comdr., R.N.	A. K. Baxendell ...	"	His Majesty's Ship ...	Met. Log. 17.8.25 to 30.11.25 ...	27.1.26.
<i>Izion</i> ...	Williams, R. J. ...	A. S. Brotherton ...	No. A.	A. Holt ...	Form 911 10.11.25 to 7.12.25 ...	8.2.26.
<i>Jervis Bay</i> ...	Chaplin, W. R. ...	R. W. Laycock ...	" M.	Commonwealth Govt. ...	" 25.11.25 to 10.12.25 ...	2.2.26.
<i>John Pender, C.S.</i> ...	Gibson, L. ...	A. E. Everall ...	" A.	Eastern Tel. Co. ...	" 31.10.25 to 19.11.25 ...	9.12.25.
<i>Junin</i> ...	Benson, C. W. ...	A. Beharrel ...	" A.	Pacific S.N. Co. ...	" 16.5.25 to 5.6.25 ...	17.6.25.
<i>Kaikoura</i> ...	McNish, R. ...	H. E. Reilly, H. Neagle, D. Glegg, S. Toyne.	M.L.	New Zealand S.S. Co. ...	Met. Log. 26.1.25 to 8.8.25 ...	26.8.25.
<i>Kaisar-i-Hind</i> ...	Manley, G. ...	G. R. Baker ...	No. M.	P. & O. ...	Form 911 26.12.25 to 14.1.26 ...	8.2.26.
<i>Kamo Maru</i> ...	Shiratori, S. ...	" ...	" A.	Nippon Yusen Kaisha ...	" 9.1.26 to 7.2.26 ...	12.2.26.
<i>Kangaroo</i> ...	Norris, H. C. ...	R. J. Sinclair, V. Gilbert, J. Egglestone.	M.L.	State Service Australia	Met. Log. 11.4.25 to 20.9.25 ...	2.11.25.
<i>Kashmir</i> ...	Stringer, R. H., O.B.E., Comdr., R.N.R.	T. C. Fairham ...	No. M.	P. & O. ...	Form 911 21.11.25 to 14.12.25 ...	11.1.26.
<i>Kathlamba</i> ...	Mordue, J. A. ...	" ...	" A.	Ellerman Bucknall ...	" 10.12.25 to 10.1.26 ...	13.1.26.
<i>Kellett</i> ...	Maxwell, P. S. E., Comdr., R.N.	D. G. V. Williams ...	M.L.	His Majesty's Ship ...	Met. Log. 29.7.25 to 16.11.25 ...	18.11.25.
<i>Kenilworth Castle</i> ...	Chave, Sir B., K.B.E. George J. O.B.E.	" ...	"	Union Castle ...	" 8.2.25 to 26.8.25 ...	12.1.26.
<i>Khiva</i> ...	Randall, H. W., R.D., Capt., R.N.R.	M. R. Little, A. H. Cole, L. A. Hill.	"	P. & O. ...	" 29.8.25 to 9.12.25 ...	12.12.25.
<i>Khyber</i> ...	Collyer, R. M. M., R.D., Comdr., R.N.R.	J. B. Child ...	No. M.	" ...	Form 911 4.7.25 to 29.10.25 ...	7.11.25.
<i>Kia Ora</i> ...	McIntosh, A. ...	A. E. Lockhart ...	" A.	Shaw Savill & Albion ...	" 28.4.25 to 10.9.25 ...	25.9.25.
<i>Kildonan Castle</i> ...	Wilford, T. H. ...	G. H. Pickering ...	" A.	Union Castle ...	" 30.10.25 to 20.12.25 ...	22.12.25.
<i>Kitano Maru</i> ...	Gotoh, M. ...	M. Hara ...	" A.	Nippon Yusen Kaisha ...	" 12.9.25 to 6.10.25 ...	13.11.25.
<i>Knight Companion</i> ...	Beale, H. E. ...	J. J. Daniel, A. M. Hunter, ...	" M.	A. Holt ...	" 8.7.25 to 23.7.25 ...	24.8.25.
<i>Kovno</i> ...	Dosser, W. A. ...	J. Marshall, T. Tindell, J. J. Collier, F. T. Shaw.	M.L.	Ellerman Wilson ...	Met. Log. 26.4.25 to 3.10.25 ...	10.11.25.
<i>Kyogle</i> ...	Brown, A. M. ...	C. B. Odman, E. W. Hughes	No. A.	Commonwealth Light-house Service.	Form 911 17.8.25 to 9.11.25 ...	14.12.25.
<i>Lady Denison Pender, C.S.</i> ...	West, G. W. ...	F. Lawrence ...	" A.	Eastern Tel. Co. ...	Met. Log. 28.8.25 to 6.10.25 ...	30.10.25.
<i>Laguna</i> ...	Pape, E. R. ...	W. P. Boon ...	" A.	Pacific S.N. Co. ...	" 22.12.25 to 8.1.26 ...	25.1.26.
<i>Lalande</i> ...	Hamill, H. ...	A. N. Blundell ...	" A.	Lampport & Holt ...	" 15.10.25 to 14.12.25 ...	8.2.26.
<i>Lancashire</i> ...	Beckett, F. W. ...	W. M. S. Higginson ...	" A.	Bibby ...	" 21.11.25 to 28.1.26 ...	5.2.26.
<i>36 Lancastria</i> ...	Brown, F. G. ...	P. J. Robinson, L. Harper ...	W.T.	Cunard ...	W.T. Reg. 12.10.25 to 1.11.25 ... Form 911 11.10.25 to 1.11.25 ...	5.11.25. 4.11.25.
<i>Laomedon</i> ...	Blues, A. ...	H. Howe ...	No. A.	A. Holt ...	" 12.10.25 to 8.11.25 ...	2.12.25.
<i>La Paz, M.V.</i> ...	Ross, J. ...	F. T. Gale ...	" M.	Pacific S.N. Co. ...	" 8.12.25 to 29.12.25 ...	11.1.26.
<i>Laplace</i> ...	Shaw, W. ...	W. Boyde, R. B. Langley ...	" A.	Lampport & Holt ...	" 19.4.25 to 19.7.25 ...	18.8.25.

LIST OF VOLUNTARY OBSERVING SHIPS

v

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed. Received up to 12.2.26.	Date Received.
55 <i>Lapland</i> ...	Howell, T. ...	E. Cornelle, F. Good ...	W.T.	Red Star ...	W.T. Reg. 3.1.26 to 21.1.26 ...	1.2.26.
<i>Lassell, M.V.</i> ...	Hickman, V. T. ...	F. J. Durrant ...	No. A.	Lamport & Holt ...	Form 911 17.10.25 to 7.11.25...	9.11.25.
<i>Leicestershire</i> ...	English, G. L. ...	J. Ineson, P. H. Potter, D. Y. Sharrock, J. Tradewell.	M.L.	Bibby ...	" 1.11.25 to 18.11.25...	14.12.25.
<i>Leighton, M.V.</i> ...	Lindesay J. M. ...	H. A. Bolding, T. O. Jones	No. A.	Lamport & Holt ...	Form 911 15.11.25 to 4.12.25	4.1.26.
<i>Leitrim</i> ...	Robertson, A. ...	E. F. C. Higgins ...	" A.	Dowie, J., & Co. ...	" 10.12.25 to 26.1.26...	5.2.26.
<i>Loch Katrine</i> ...	Shillitoe, B. ...	K. Whitaker ...	" M.	R.M.S.P. Co. ...	" 14.11.25 to 9.2.26 ...	11.2.26.
<i>London Commerce</i> ...	Young, H. J., D.S.C.	H. P. Longland ...	" A.	Furness Withy ...	" 6.12.25 to 4.1.26 ...	11.1.26.
<i>London Importer</i> ..	Williamson, J. M. ...	G. Lusty ...	M.L.	" ...	Met. Log. 11.10.25 to 10.1.26...	22.1.26.
<i>Loriga, M.V.</i> ...	Barkley, E. ...	W. N. Anders ...	No. A.	Pacific S.N.' Co. ...	Form 911 22.5.25 to 6.8.25 ...	25.8.25.
<i>Losada, M.V.</i> ...	Meldrum, G. W. ...	E. Baxter ...	" M.	" ...	" 1.11.25 to 20.11.25	22.12.25.
<i>Macedonia</i> ...	Potter, H. W., R.D., Commr., R.N.R.	E. R. Bodley ...	" M.	P. & O. ...	" 9.1.26 to 27.1.26 ...	8.2.26.
<i>Macharda</i> ...	Richardson, T. ...	D. M. Fulton ...	" M.	Brocklebank ...	" 17.1.26 to 28.1.26 ...	8.2.26.
<i>Mahana</i> ...	Kershaw, W. A. R.	F. M. Smith, J. C. K. Rogers	" A.	Shaw, Savill & Albion	" 27.10.25 to 23.11.25	9.1.26.
<i>Maharaja</i> ...	Elliott, G. ...	D. M. Swaine ...	" M.	Asiatic S.N. Co. ...	" 3.11.25 to 13.12.25	11.1.26.
<i>Maihar</i> ...	Rowe, J. P. ...	C. Shaw, H. T. Scoins, R. G. Widdon, G. Henshaw, A. C. Hocking.	M.L.	Brocklebank ...	Met. Log. 12.6.25 to 21.11.25...	19.1.26.
<i>Maimyo</i> ...	Richardson, T. ...	P. Yates ...	No. A.	" ...	Form 911 23.7.25 to 13.10.25...	3.11.25.
<i>Maine</i> ...	Seymour, H. ...	A. S. Smith ...	" A.	Atlantic Transport ...	" 20.4.25 to 26.5.25 ...	15.6.25.
<i>Maiwara</i> ...	Brown, T. M. ...	" ...	M.L.	Burns Philp ...	" ...	"
58 <i>Majestic</i> ...	Metcalfe, G. R. ...	L. Thompson, W. Pearson C. J. Warltire, J. A. Macnaughton.	W.T.	White Star ...	W.T. Reg. 8.1.26 to 21.1.26 ...	25.1.26.
<i>Makambo</i> ...	Brown, T. M. ...	F. C. Ree, J. B. Norris ...	M.L.	Burns Philp ...	Met. Log. 10.9.24 to 28.2.25 ...	17.11.25.
<i>Makura</i> ...	Worrall, L. C. H. ...	J. D. Lundie, D. Todd, A. R. Noble.	"	Canadian-Australasian	" 11.3.25 to 2.7.25 ...	21.9.25.
<i>Malakuta</i> ...	Maugham, J. W. ...	J. H. Round ...	No. M.	Brocklebank ...	Form 911 21.10.25 to 16.11.25	18.11.25.
<i>Malancha</i> ...	Whitham, F. ...	C. Cadwallader ...	" M.	" ...	" 5.11.25 to 29.1.26 ...	4.2.26.
<i>Malda</i> ...	Gray, T. N. ...	D. B. Lattin ...	" M.	British India ...	" 22.11.25 to 27.12.25	25.1.26.
<i>Manchester Corporation.</i>	Everest, J. E. ...	W. L. Lavers ...	" A.	Manchester Liners ...	" 13.12.25 to 24.12.25...	29.12.25.
<i>Manchester Hero</i>	Riley, J. E. ...	" ...	M.L.	" ...	" ...	"
<i>Manchester Merchant.</i>	Hudson, J. H. ...	R. A. Walker ...	No. A.	" ...	Form 911 25.12.25 to 12.1.26 ...	25.1.26.
<i>Manchester Shipper</i>	Dormer, A. E. ...	" ...	M.L.	" ...	" ...	"
<i>Manipur</i> ...	Seurr, T. W. ...	H. M. Drummond... ..	No. M.	Brocklebank ...	Form 911 28.10.25 to 17.1.26...	19.1.26.
<i>Mantua</i> ...	Butler, G. E. ...	J. Paice ...	" M.	P. & O. ...	" 1.12.25 to 12.12.25 ...	1.2.26.
<i>Manzanares</i> ...	Maxwell Brown, W.E.	G. S. Gracie ...	" A.	Elders & Fyffes	" 10.11.25 to 25.11.25	4.1.26.
29 <i>Marburn</i> ...	Stewart, A. ...	R. Biggs, W. R. Thorburn ...	W.T.	Canadian Pacific	W.T. Reg. 7.11.25 to 27.11.25	1.12.25.
<i>Marella</i> ...	Mortimer S. ...	J. A. Street ...	M.L.	Burns Philp	Form 911 7.11.25 to 27.11.25	1.12.25.
<i>Marengo</i> ...	Wilkins, J. ...	F. Eglin, J. E. Stott, J. Donovan.	"	Ellerman Wilson ...	Met. Log. 2.4.25 to 25.8.25 ...	1.12.25.
<i>Margha</i> ...	Collins, T. ...	" ...	"	" ...	" 14.3.25 to 5.9.25 ...	9.10.25.
<i>Marygha</i> ...	Milne, A. R., R.D., Commr., R.N.R.	J. Strachan, P. Wright, H. E. Evans.	"	British India ...	" 24.10.25 to 3.1.26 ...	18.1.26.
<i>Marylen</i> ...	Griffiths, J. N. ...	E. Eastley ...	No. A.	Canadian Pacific ...	Form 911 19.2.25 to 9.4.25 ...	14.4.25.
<i>Matakana</i> ...	Thurston, H. P. ...	A. Chrystal ...	" A.	Shaw, Savill & Albion	" 26.7.25 to 3.1.26 ...	8.1.26.
<i>Mataran</i> ...	Hillman, E. J. ...	K. L. Thompson ...	" A.	Burns Philp & Co. ...	" 18.6.25 to 18.7.25 ...	31.8.25.
<i>Matheran</i> ...	Columbine, F. F. ...	J. A. Embley, R. E. Gartside, G. T. Hogg, D. Newton.	M.L.	Brocklebank ...	Met. Log. 14.7.25 to 13.10.25...	2.11.25.
<i>Mathura</i> ...	Hanna, R. G. ...	H. H. Armstrong ...	No. M.	" ...	Form 911 14.8.25 to 30.10.25...	3.11.25.
<i>Matiana</i> ...	Langlands, D. H. ...	W. R. Sobey ...	" M.	British India ...	" 23.11.25 to 21.1.26...	27.1.26.
<i>Maungamui</i> ...	Worrall, L. C. H. ...	A. R. Noble ...	" M.	Union S.S. Co. of N.Z.	" 8.8.25 to 3.9.25 ...	28.9.25.
32 <i>Mauretania</i> ...	Rostron, A. H., C.B.E., A.-d.-C., R.N.R., Capt.	E. R. Taylor, A. Mackellar, J. A. Quarrie.	W.T.	Cunard ...	W.T. Reg. 9.12.25 to 20.12.25...	24.12.25.
<i>Media</i> ...	Mallett, R. ...	S. C. Cramb ...	No. A.	T. & J. Brocklebank...	Form 911 20.10.25 to 20.11.25...	14.12.25.
56 <i>Megantic</i> ...	Trant, E. L., Commr. R.N.R.	F. A. Billiard, J. Clarke, A. H. Young.	W.T.	White Star ...	W.T. Reg. 29.11.25 to 18.12.25	24.12.25.
22 <i>Melita</i> ...	Freer, A. ...	J. McLennan, D. Dunn, F. N. Stell.	"	Canadian Pacific	Form 911 30.11.25 to 17.12.25	21.12.25.
<i>Memnon</i> ...	Evans, D. L. ...	L. S. Evans ...	No. A.	A. Holt ...	" 30.11.25 to 17.12.25	21.12.25.
<i>Menominee</i> ...	Pollard, W. F., D.S.O., R.D., Capt. R.N.R.	R. Day ...	" A.	Atlantic Transport ...	" 25.8.25 to 18.10.25...	28.10.25.
<i>Mercian</i> ...	Gardner, J. ...	R. Hughes ...	" A.	Leyland ...	" 12.9.25 to 20.9.25 ...	23.9.25.
21 <i>Metagama</i> ...	Griffiths, E. ...	R. Walker, A. Mansey ...	W.T.	Canadian Pacific ...	W.T. Reg. 25.12.25 to 15.1.26...	19.1.26.
<i>Miami</i> ...	Makepeace, S. ...	A. F. Woodhouse, J. W. Kendall.	No. A.	Elders & Fyffes	Form 911 20.10.25 to 21.11.25	24.11.25.
<i>Minderoo</i> ...	Richardson, E. ...	B. J. Bennie, W. J. McPhedron, J. H. Oxtan.	M.L.	West Australia Nav. Co.	Met. Log. 31.5.25 to 9.11.25 ...	12.1.26.
<i>Minna</i> ...	Mackenzie, G. G. ...	D. Rattray ...	No. A.	Scottish Fishery Board	Form 911 16.12.25 to 16.1.26 ...	20.1.26.
<i>Minnetonka</i> ...	Gates, T. F., C.B.E.	H. E. McCartney ...	" M.	Atlantic Transport ...	" 4.1.26 to 12.1.26 ...	27.1.26.
<i>Minnewaska</i> ...	Claret, F. H., C.B.E., Commr., R.N.R.	J. W. Grier ...	" M.	" ...	" 10.10.25 to 17.10.25	24.10.25.
<i>Mirror, C.S.</i> ...	Snythe, T. W., O.B.E.	A. G. Watts ...	" M.	Eastern Tel. Co. ...	" 15.12.25 to 20.1.26...	4.2.26.
<i>Mississippi, M.V.</i> ...	Wylie, J. T. J. ...	H. K. Cockerill ...	" A.	Atlantic Transport ...	" 17.5.25 to 28.5.25 ...	3.6.25.
<i>Moldavia</i> ...	Ohlson, B. J. ...	H. M. Flint ...	" M.	P. & O. ...	" 10.10.25 to 13.11.25	23.12.25.
<i>Mongolian Prince</i>	Durrant, G. D. ...	M. Gibson ...	" A.	Prince ...	" 13.9.25 to 15.10.25...	26.10.25.
<i>Monkbarns, Ship</i>	Davies, W. ...	R. Baise ...	" A.	J. Stewart & Co. ...	" 23.10.25 to 16.11.25	29.12.25.
24 <i>Montcalm</i> ...	Sibbons, H. ...	H. McFadyen ...	W.T.	Canadian Pacific ...	W.T. Reg. 1.11.25 to 19.11.25	23.11.25.
25 <i>Montclare</i> ...	Webster, G. S., R.D., Commr., R.N.R.	R. Fegan, H. S. Knight, J. Biggs.	"	" ...	Form 911 6.12.25 to 22.12.25	29.12.25.
<i>Montferland</i> ...	Van Noppen, C. D.	Van der Mast ...	No. M.	Holland Lloyd	" 6.12.25 to 23.12.25	29.12.25.
27 <i>Montnairn</i> ...	Turnbull, J., C.B.E., R.D., Capt., R.N.R.	F. E. Williams, A. G. Harrison, T. Jones.	W.T.	Canadian Pacific ...	W.T. Reg. 22.9.25 to 17.10.25...	22.10.25.
<i>Montoro</i> ...	Donaldson, A. ...	K. Morris ...	No. A.	Burns, Philp & Co. ...	" 2.9.25 to 19.10.25 ...	14.12.25.
26 <i>Montrose</i> ...	Landy, E. ...	A. Watt, C. Clarke, F. H. Carter.	W.T.	Canadian Pacific ...	" 19.1.26 to 5.2.26 ...	10.2.26.
20 <i>Montroyal</i> ...	Freer, A., Commr., R.N.R.	J. H. Tudor, R. W. Jones, F. H. Carter.	"	" ...	Form 911 26.6.25 to 17.7.25 ...	20.7.25.
<i>Moresby</i> ...	Latta, R. G., Edgell, J. A., O.B.E., Capt. R.N.	C. F. Mills ...	M.L.	His Majesty's Ship ...	W.T. Reg. 29.8.25 to 17.9.25 ...	14.1.26.
					" 26.9.25 to 15.10.25	14.1.26.
					Met. Log. 4.7.25 to 13.12.25 ...	10.2.26.

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed, Received up to 12.2.26.	Date Received.
<i>Morvada</i> ...	Mills, T. L., O.B.E., R.D., Commr., R.N.R.	A. J. Norris ... ..	No. M.	British India ...	Form 911 9.11.25 to 6.2.26 ...	9.2.26.
<i>Mulbera</i> ...	Steadman, W. R. ...	F. Broomhead ... ..	No. M.	" ...	" 25.12.25 to 13.1.26...	1.2.26.
<i>Nagara</i> ...	Purvis, A. ...	E. N. Giller ... ..	" M.	R.M.S.P. Co. ...	" 26.6.25 to 2.9.25 ...	7.9.25.
<i>Nagoya</i> ...	Davis, H. C. ...	P. Haworth ... ..	" M.	P. & O. ...	" 27.10.25 to 13.11.25	30.11.25.
<i>Nardana</i> ...	Moth, F. L. ...	S. C. T. Smith ... ..	" M.	British India ...	" 15.9.25 to 25.10.25...	31.10.25.
<i>Nariva</i> ...	Buret, T. J. C. ...	E. Delahay, E. I. Fletcher, R. S. Wooley, H. Trenchard, W. Hughes.	M.L.	R.M.S.P. Co. ...	Met. Log. 1.5.25 to 24.6.25 ...	8.7.25.
<i>Nellore</i> ...	Hignett, A. H., R.D., Lt. - Commr., R.N.R.	F. Squire ... ..	No. M.	P. & O. ...	Form 911 10.1.26 to 7.2.26 ..	9.2.26.
<i>Nestor</i> ...	Owen, R. D., O.B.E.	D. Rees, R. Wilks, F. J. Silva	M.L.	A. Holt ...	Met. Log. 30.8.25 to 8.1.26 ...	18.1.26.
<i>Nevasa</i> ...	Swanson C. J. ...	W. G. Bussey ... ..	No. M.	British India ...	Form 911 18.11.25 to 4.1.26 ...	11.1.26.
<i>Newby Hall</i> ...	Edge T. P. ...	R. H. Stewart, G. E. M. Jenkins, R. M. Redhead.	M.L.	Ellerman ...	Met. Log. 2.5.25 to 24.10.25 ...	25.11.25.
<i>Niagara</i> ...	Showman, A. C. ...	T. A. Macpherson, J. Dawson, A. P. Cousin.	"	Canadian-Australian...	" 7.5.25 to 20.8.25 ...	10.9.25.
<i>Ningchow</i> ...	Wilson, C. A. ...	G. H. Oldridge ... ..	No. A.	A. Holt ...	Form 911 7.9.25 to 4.11.25 ...	8.12.25.
<i>Norna</i> ...	Wright, J. ...	T. Mather ... ..	" A.	Scottish Fishery Board	" 22.11.25 to 29.12.25	4.1.26.
<i>Norseman</i> , C.S.	Douglas, W. ...	R. Forrest, E. Pearse, J. A. Prosser.	M.L.	Western Tel. Co. ...	Met. Log. 16.2.25 to 1.9.25 ...	28.9.25.
<i>Nubian</i> ...	Barter, H. O. ...	H. R. Gaskill ... ..	No. A.	Leyland ...	Form 911 23.12.25 to 24.1.26	28.1.26.
<i>Nyanza</i> ...	Watmough, T. M. ...	R. H. Hand, R. G. Freeman, R. E. Mackay.	M.L.	P. & O. ...	Met. Log. 7.10.25 to 24.12.25...	31.12.25.
<i>Oaklands Grange</i> ...	Routledge, R. ...	E. J. Longheed ... ..	No. A.	Houlder Bros. ...	Form 911 30.11.25 to 28.12.25	5.1.26.
<i>42 Ohio</i> ...	Parker, W.H., C.B.E., R.D., Capt. R.N.R.	P. M. Burrell, R. W. Stoney, L. D. Jennings, E. A. E. Littlewood.	W.T.	R.M.S.P. Co. ...	W.T. Reg. 14.9.25 to 1.10.25 ...	5.10.25.
<i>Olympia</i> ...	Caldwell, R. ...	D. R. Urquhart, G. Lynas, W. Proudfoot.	M.L.	Anchor ...	Form 911 7.1.26 to 15.1.26	1.2.26.
<i>57 Olympic</i> ...	Marshall, W., C.B., D.S.O., R.D., Capt., R.N.R.	H. J. C. Day, C. J. Warltire, W. Fitzgerald.	W.T.	White Star ...	W.T. Reg. 1.10.25 to 15.10.25...	19.10.25.
<i>Orama</i> ...	Staunton, H. G., C.B.E., R.D., Commr. R.N.R.	L. J. Vesty, F. Butler, F. L. Hubbard, T. L. Shurrock...	M.L.	Orient ...	Form 911 1.10.25 to 15.10.25...	19.10.25.
<i>Oranian</i> ...	Hoskins, W. ...	R. H. Theaker ... ..	No. A.	Leyland ...	Met. Log. 16.8.25 to 3.9.25 ...	17.9.25.
<i>Orari</i> ...	Robinson, F. W. ...	F. Longheed, C. Wilkinson, W. Tarr.	M.L.	New Zealand S.S. Co.	Met. Log. 7.3.25 to 11.8.25 ...	15.8.25.
<i>40 Orbita</i> ...	Warner, G. E., R.D., Commr. R.N.R.	B. C. Dodds, H. G. Whittle, H. M. Rennie, H. Baylis.	W.T.	R.M.S.P. Co. ...	W.T. Reg. 19.10.25 to 9.11.25	12.11.25.
<i>Oreoma</i> ...	Dominy, R. H., C.B.E., Commr. R.N.R.	G. B. Wardale, R. H. Sissons, W. Billington.	M.L.	Pacific S.N. Co. ...	Form 911 17.10.25 to 10.11.25	12.11.25.
<i>41 Orduna</i> ...	Warner, G. E., R.D., Commr., R.N.R.	J. Vivian, H. G. Whittle, J. Chamberlain, J. Horan.	W.T.	R.M.S.P. Co. ...	Met. Log. 20.8.25 to 4.11.25 ...	13.11.25.
<i>Oriana</i> ...	Mander, T. ...	W. Pearce, R. D. Eckford, T. H. McGill.	W.T.	Pacific S.N. Co. ...	W.T. Reg. 14.12.25 to 7.1.26 ...	14.1.26.
<i>Orila</i> ...	Splatt, W. A. ...	J. G. Harvey, T. R. Scott, D. W. Hutchinson, C. P. D. Dean.	M.L.	" ...	Form 911 13.12.25 to 6.1.26 ...	12.1.26.
<i>Ormonde</i> ...	Knowles, C. H., D.S.O., Commr., R.N.	A. M. Hughes ... ..	"	" ...	Met. Log. 12.11.25 to 19.1.26...	29.1.26.
<i>Ormonde</i> ...	Shelford, W. S., Lt.-Commr., R.N.R.	T. B. Granger Grieve, N. A. Whinfield, J. F. Thompson.	"	Orient ...	" 4.9.25 to 4.12.25 ...	22.12.25.
<i>Ormuz</i> ...	O'Sullivan, F. R. ...	E. Hatch, W. Wickham, W. Elliot.	"	" ...	" 18.10.25 to 19.1.26...	29.1.26.
<i>Oronsay</i> ...	Owens, A. L., R.D., Lt. Commr., R.N.R.	C. Dodgson, P. R. Murphy, R. K. Rogerson.	"	" ...	" 1.11.25 to 4.2.26 ...	10.2.26.
<i>Oroya</i> ...	Pearce, A. ...	S. Lewis ... ..	"	" ...	" 20.9.25 to 26.12.25...	31.12.25.
<i>Orsova</i> ...	Matheson, C. G., D.S.O., R.D., Capt., R.N.R.	G. E. Martin, A. J. Croft, Cohen, H. Petit Dann.	No. M.	Pacific S.N. Co. ...	Form 911 28.10.25 to 3.1.26 ...	9.1.26.
<i>Orviato</i> ...	Simner, G. L., R.D., Commr., R.N.R.	A. O. H. O'Bryen, Hawker, A. H. Dyer.	M.L.	Orient ...	Met. Log. 26.7.25 to 12.1.26 ...	20.1.25.
<i>Osterley</i> ...	Cameron, E. P., R.D., Commr. R.N.R.	H. Tanner, J. E. Goldsworthy, G. L. Carter.	M.L.	" ...	" 4.5.25 to 4.8.25 ...	8.8.25.
<i>Othello</i> ...	Montgomery, H. ...	G. Binks ... ..	No. A.	Ellerman Wilson ...	" 4.10.25 to 7.1.26 ...	18.1.26.
<i>Otira</i> ...	Elford, H. E. ...	E. J. Riccard ... ..	" M.	Shaw, Savill & Albion	Form 911 19.4.25 to 28.7.25 ...	12.8.25.
<i>Otranto</i> ...	Simner, G. L., R.D., Commr., R.N.R.	" ... ..	" No.	Orient ...	" 25.12.25 to 10.1.26...	1.2.26.
<i>Ovid</i> ...	Groom, A. C. B. ...	" ... ..	" A.	" ...	" ... ..	"
<i>Oxfordshire</i> ...	Crumplin, W. E. ...	F. C. Brooks ... ..	" A.	Shakespear Shipping Co. Bibby Bros. ...	Form 911 12.11.25 to 28.11.25	2.12.25.
<i>Pacific Shipper</i> , M.V.	Newman, G. W. A.	H. G. Dupont ... ..	" A.	Furness Withy ...	Met. Log. 17.12.25 to 15.1.26...	21.1.26.
<i>Pakeha</i> ...	W. P. Clifton Mogg	R. K. Vandervard, E.T. Baker, R. James.	M.L.	Shaw, Savill & Albion	" 13.10.25 to 13.11.25	18.11.25.
<i>Paparoa</i> ...	Dowse, F. ...	C. J. Brewer ... ..	No. M.	New Zealand S.S. Co.	Form 911 22.4.25 to 20.8.25 ...	26.8.25.
<i>Pareora</i> ...	Evans, J. O. ...	R. F. Hillings ... ..	" A.	Hain S.S. Co. ...	Form 911 14.11.25 to 6.1.26 ...	9.1.26.
<i>Paris</i> ...	Cook, C. L. ...	Mr. Biles... ..	" C.C.	Southern Rly. ...	" 28.12.25 to 6.2.26 ...	11.2.26.
<i>Patia</i> ...	Bostock, R. J. ...	W. McIlwaine ... ..	No. A.	Elders & Fyffes ...	Telegraphic Report. 30.10.25 ...	30.10.25.
<i>Patrol</i> , C.S.	Welsh, T. K. ...	W. H. S. Clark, H. F. P. Albrecht, W. G. MacBryde, A. T. Morrell.	M.L.	Eastern Extension (A. & C.) Telegraph Co.	Form 911 4.7.25 to 8.8.25 ...	12.8.25.
<i>Persic</i> ...	Bulman, J. B. ...	H. G. Morgan ... ..	No. A.	White Star ...	Met. Log. 1.10.24 to 12.1.25 ...	16.4.25.
<i>Peshawar</i> ...	Hester, C. W., R.D., Commr., R.N.R.	D. G. Baillie, E. J. R. North, R. D. Whyte-Mackay.	M.L.	P. & O. ...	Form 911 8.2.25 to 19.6.25 ...	23.6.25.
<i>Pharos</i> ...	Ewing, T. N. ...	A. McLachlan ... ..	No. A.	Northern Lighthouse Board.	Met. Log. 18.7.25 to 22.11.25...	24.11.25.
<i>Philadelphian</i> ...	Baker, J. A. ...	W. T. Godwin ... ..	" A.	Leyland ...	Form 911 29.6.25 to 14.8.25 ...	18.8.25.
<i>Polycarp</i> ...	Evans, T. G. ...	C. W. Smethurst ... ..	" A.	Booth ...	" 9.10.25 to 1.11.25 ...	16.11.25.
<i>Port Adelaide</i> ...	Hayter S. W. ...	E. Catchpole, G. Lovegrove, C. Hodson.	M.L.	Commonwealth & Dominion.	" 6.1.26 to 16.1.26 ...	1.2.26.
<i>Port Albany</i> ...	Robinson, C. A. ...	E. A. Leavett, A. G. Newbury, W. Eastoe, J. L. Richardson.	"	" ...	Met. Log. 21.8.25 to 28.12.25...	7.1.26.

LIST OF VOLUNTARY OBSERVING SHIPS

vii

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed. Received up to 12.2.26.	Date Received.
Port Auckland	Durham, R. S.	R. B. Stannard	No. A.	Commonwealth & Dominion.	Form 911 25.11.25 to 5.1.26	20.1.26.
Caroline	Renaut, F. A.	T. Copeland, E. Fenton, C. Chamberlin.	M.L.		Met. Log. 24.1.25 to 13.6.25	22.7.25.
Chalmers	Enright, W. J.	W. H. Miles	No. A.		Form 911 14.12.24 to 25.4.25	2.6.25.
Curtis	Van den Bergh, C.	B. T. N. Lawrey, G. F. Pannett.	A.		" 25.11.25 to 10.1.26	13.1.26.
Darwin	Sawbridge, I. R.	W. H. Sadler, J. C. Goddard	M.		" 15.6.25 to 14.8.25	21.9.25.
Denison	Ferris, J.	E. G. Jones	No.		"	"
Dunedin	Hoad, A. C.	C. Newton	No. A.		Form 911 18.11.25 to 2.1.26	5.1.26.
Hacking	Cottell, S. C.	A. Cooper, C. F. Post, J. T. Weldin.	M.L.		Met. Log. 2.4.25 to 13.9.25	29.9.25.
Hunter						
Lincoln			No.			
Melbourne	Kearney, F. J.	D. G. H. Bradley, J. A. Fairbairn, A. G. Starkey.	M.L.		Met. Log. 26.4.25 to 7.9.25	10.9.25.
Nicholson	Jack, J.	H. C. Jeffery, W. G. Jones, J. T. Nicholson, E. G. L. Jones.	"		" 12.2.25 to 29.6.25	11.7.25.
Pirie	Higgs, W. G.		"			
Sydney	Lea, W. H.	A. W. Sams, C. Groves, A. M. Stanton.	"		" 13.12.24 to 19.5.25	25.5.25.
Victor	Swan, L. H.	E. G. Fullick, W. Howe, W. Renouf.	"	" 5.4.25 to 14.8.25	22.8.25.	
President Jackson	Quinns, T. P.	H. G. Holland	No. A.	Pacific Mail S.S. Co.	Form 911 22.10.25 to 22.11.25	6.1.26.
President Jefferson	Griffith, J.					
Protea, H.M.S.A.S.	Nichols, F. R.	C. H. Moen	A.	Admiral Oriental Line	" 30.8.25 to 27.10.25	30.11.25.
	Woodhouse, A. F. B., Lt.-Commr., R.N.	F. J. S. Scott-Stokes	A.	South African Naval Service.	" 1.8.25 to 29.8.25	12.11.25.
Pyrrhus	Elford, W. J.	J. L. Millar	A.	A. Holt	" 12.9.25 to 6.1.26	11.1.26.
60 Regina	Smith, R. G.	G. W. Couch, H. Daman, C. Cochrane.	W.T.	White Star-Dominion	W.T. Reg. 18.1.26 to 7.2.26	11.2.26.
Reindeer	Langdon, C.		C.C.	G.W. Railway	Form 911 18.1.26 to 7.2.26	11.2.26.
Rhodesian Transport.	Fowler, W. H.	W. Heritage	No. A.	Houlder Bros.	Telegraphic Report 9 2.26	9.2.26.
Rimutaka	Hemming, F. A.	H. Horwood, R. S. Cox, O. M. Watts.	M.L.	New Zealand S.S. Co.	Form 911 24.7.25 to 14.10.25	27.10.25.
Risaldar	Park, G.	A. J. Cavallo, H. Hardwick, C. M. Knight.	"	Asiatic S.N. Co.	Met. Log. 12.10.24 to 1.4.25	6.4.25.
Romney	Syms, G.	H. Trodden	No. A.	Lamport & Holt	" 21.4.25 to 10.10.25	17.11.25.
Rotorua	Hunter, J. B.	D. F. Clegg	M.L.	N.Z.S. Co.	Form 911 9.10.25 to 21.10.25	30.11.25.
Royal Fusilier	Dawson, J.	J. Fraser	No. A.	London & Edinburgh S.S. Co.	" 26.9.25 to 12.1.26	20.1.26.
Royal Transport	Dove, J.	R. Martin	A.	Houlder Bros.	" 30.12.25 to 24.1.26	26.1.26.
Ruapehu	McKellar, A. W., R.D., Capt., R.N.R.	E. P. Aslin, J. D. Tooms, A. J. Webb, F. Russel.	M.L.	New Zealand S.S. Co.	Met. Log. 17.11.25 to 17.12.25	21.12.25.
					Met. Log. 2.5.25 to 1.10.25	7.10.25.
Sachem	Westgarth, W. A.	C. Waldron, E. Sainty, G. R. Watson.	"	Furness Withy	" 30.6.25 to 10.12.25	17.12.25.
St. Albans	Pilcher, E.	W. McIntyre	"	Eastern and Australian	"	"
St. Helier	Mulhall, W.	C. Bell	C.C.	G.W. Railway	Telegraphic Report 12.11.25	12.11.25.
St. Julien	Langdon, C. H.	C. Joy	"	"	24.10.25	24.10.25.
St. Patrick	Bearpark, E. W.	J. Hill	No. A.	Rankin Gilmour	Form 911 8.11.25 to 24.11.25	10.12.25.
Salaga	Sola, P., D.S.O.	G. E. Dutton	A.	Elder Dempster	" 15.11.25 to 28.11.25	19.12.25.
Samaria	McNeil, S. G. S.	H. L. Pryse	A.	Cunard	" 28.11.25 to 21.12.25	22.12.25.
Sandown Castle	Jackson, C. R.	P. G. MacIver	A.	Union Castle	" 31.10.25 to 27.11.25	29.12.25.
10 Saturnia	Mitchell, W.	D. Macqueen	W.T.	Anchor Donaldson	W.T. Reg. 17.10.25 to 6.11.25	11.11.25.
					Form 911 16.10.25 to 7.11.25	11.11.25.
Saxoleine	King, A.	B. Johnsen	No. A.	Hunting & Son	" 6.12.25 to 21.12.25	4.1.26.
Saxon	Knight, A.	T. M. Lockwood	A.	Union Castle	" 21.12.25 to 8.2.26	10.2.26.
Scholar	McCullum, J.	J. D. Grieves	M.	Harrison	" 1.4.25 to 20.6.25	2.7.25.
Scindia	Matthews, W.	R. S. Paton	A.	Anchor	" 12.8.25 to 26.10.25	31.10.25.
Scotia	Prichard, S.D.	O. W. L. Jones	C.C.	L.M. & S. Rly.	Telegraphic Report 11.2.26	11.2.26.
Scottish Bard	McDonnell S.	J. W. Lilley	No. M.	Tankers Ltd.	Form 911 11.12.25 to 23.1.26	4.2.26.
33 Scythia	Prothero, W.	T. Parry, J. C. Munro, J. W. Caunce.	W.T.	Cunard	W.T. Reg. 19.10.25 to 9.11.25	13.11.25.
					Form 911 18.10.25 to 9.11.25	13.11.25.
Sheaf Mount	Groves, C. V.	C. A. Goold	No. A.	W. A. Souter	" 13.12.25 to 19.12.25	9.1.26.
Sheaf Spear	Whitfield, G. A., O.B.E.	W. H. Grisewood, N. Thompson.	M.L.	"	Met. Log. 7.12.24 to 16.7.25	19.8.25.
Sicilia	Davis, H. C., D.S.C., R.D., Commr., R.N.R.	G. C. Bateman	No. M.	P. & O.	Form 911 15.9.25 to 14.11.25	7.12.25.
Socrates	Taylor, F. C.	W. E. Jordan	A.	Lampport & Holt	" 22.12.25 to 21.1.26	25.1.26.
Soekaboemi	Z. W. Flach	C. van Reenen	M.	Rotterdam Lloyd	" 28.9.25 to 2.11.25	7.11.25.
Somerset	Barnett, H.	J. J. Youngs	M.	N.Z.S. Co.	" 15.12.25 to 21.1.26	26.1.26.
Somersetshire	De Legh, P.	P. Hawkins, R. C. Leitch, H. G. Walton.	M.L.	Bibby	Met. Log. 24.7.25 to 7.11.25	11.11.25.
Somme	Miles, F. R., Commr., R.N.R.	H. Chamberlain, A. P. Portsmouth.	No.	R.M.S.P. Co.	" 22.11.24 to 29.8.25	10.2.26.
Songster	Jackson, J.	W. Weatherall, W. Wilford, L. Bull.	M.L.	Harrison	" 6.3.25 to 16.5.25	29.5.25.
Spectator	Harding, C. H. J.	D. Fraser, J. G. F. Betson	No. A.	"	Form 911 10.5.25 to 11.9.25	1.10.25.
Spero	Norton, W. J.	T. E. Fea, R. O. Otley	M.L.	Ellerman Wilson	Met. Log. 22.5.25 to 6.12.25	10.12.25.
Stockwell	Kershaw, R. W.	W. Baxter	No. A.	Brocklebank	Form 911 20.9.25 to 9.10.25	21.10.25.
Stuart Prince	Durrant, G. D.	W. C. Freeman	A.	Prince	Met. Log. 9.5.25 to 22.10.25	26.10.25.
Surrey	Field, H. G. B.	C. P. Jackson, C. Welch, H. Harris.	M.L.	Federal	Met. Log. 9.5.25 to 22.10.25	26.10.25.
Suva Maru	Okuno, Y.	H. Yamashita	No. A.	Nippon Yusen Kaisha	Form 911 10.11.25 to 2.1.26	11.1.26.
Tainui	Hartman, W. H.	P. S. Horwood	A.	Shaw, Savill & Albion	" 9.11.25 to 15.12.25	18.12.25.
Tairoa	Summers, W. G.	S. A. Bannister	A.	"	" 2.7.25 to 10.8.25	12.10.25.
Tahiti	Aldwell, B. L.	W. Gould	A.	Union S.S. Co. of N.Z.	" 5.11.25 to 26.12.25	2.2.26.
Taipung			M.L.	Yuill & Co.	"	"
Talhybis	Ireland, T. R.	P. Elder	No. A.	A. Holt	Form 911 19.9.25 to 26.10.25	2.11.25.
Tanda	Pilcher, E.	C. G. Holdaway, J. Kean,	M.L.	E. & A. S.S. Co.	Met. Log. 18.7.25 to 1.12.25	8.1.26.
Tambora	Laing, J. O.	R. Lloyd Harry, B. Dun.	"	"	"	"
	Huisman, N.	H. Van Manen	No. M.	Rotterdam Lloyd	Form 911 22.10.25 to 9.12.25	22.12.25.

Name of Vessel.	Captain.	Observing Officers.	Official Meteorological Equipment.	Line.	Last Log, Register, or Report Contributed. Received up to 12.2.26.	Date Received.
<i>Tairasias</i>	Dodds, R.	W. H. Newby	No. A.	A. Holt & Co.	Form 911 13.12.25 to 14.1.26...	28.1.26.
<i>Tekoa</i>	Howell Price, J., D.S.O., D.S.C.	...	No.	New Zealand S.S. Co.	...	...
<i>Telamon</i>	Beswick, W.	...	No.	A. Holt	...	...
<i>Teucer</i>	Hodgson, R. N.	A. Lightbody	" A.	Aberdeen	Form 911 12.1.26 to 30.1.26...	10.2.26.
<i>Themistocles</i>	Jernyn, W. M.	W. F. Sargent	" M.	A. Holt	" 10.12.25 to 23.1.26...	1.2.26.
<i>Theseus</i>	Jones, E.	J. T. Fettes	" A.	A. Holt	" 18.1.25 to 3.2.26...	10.2.26.
<i>Titan</i>	Wilkinson, T. G.	S. C. Timmouthe, J. Morris, N. L. Thompson.	M.L.	"	Met. Log. 19.4.25 to 11.9.25...	6.10.25.
<i>Tongariro</i>	...	C. B. H. Jones	No. M.	New Zealand S.S. Co.	...	...
<i>Trematon</i>	Evans, B.	S. Smith, C. Mayberry, J. Bell.	M.L.	Hain S.S. Co.	Met. Log. 21.10.24 to 16.7.25...	11.8.25.
<i>Turakina</i>	...	W. Dickinson	No.	New Zealand S.S. Co.	...	...
<i>Tuscana</i>	Gennell, W. J.	G. H. Squires	No. A.	Anchor	Form 911 3.10.25 to 11.10.25...	20.10.25.
<i>Tyndareus</i>	Slater, H. N.	C. Broad, A. C. H. Jones, S. A. Beith.	M.L.	A. Holt	Met. Log. 16.7.25 to 16.12.25...	12.1.26.
<i>Ulysses</i>	McHutcheon, W.	H. A. Standfield	No. A.	Bullard King	Form 911 30.11.25 to 17.12.25...	25.1.26.
<i>Umvolosi</i>	Barnes, E. W.	H. Green	" A.	"	" 17.10.25 to 18.12.25...	11.1.26.
<i>Valacia</i>	Doyle, M.	N. Grayson	" M.	Cunard	" 19.10.25 to 25.11.25...	3.12.25.
<i>Valdura</i>	Anderson, J.	J. Paterson, D. Cameron, L. Rowling.	M.L.	Gow Harrison	Met. Log. 27.10.25 to 12.1.26...	4.2.26.
<i>Vardulia</i>	Hughes, W.	A. Watts	No. A.	Cunard	Form 911 3.11.25 to 14.11.25...	8.2.26.
<i>Vasconia</i>	Inch, F.	G. Watts	" A.	"	" 9.11.25 to 8.12.25...	25.1.26.
<i>Vellavia</i>	Fear, E. T. C.	J. E. Deans	" A.	"	" 1.11.25 to 14.11.25...	16.11.25.
<i>Ventura de Larrinaga</i>	Keay, W. S.	H. J. Kay	" A.	Larrinaga	" 3.12.24 to 28.3.25...	19.5.25.
<i>Verbania</i>	Pooley, T. S. M.	W. Bradley	" A.	Cunard	" 8.11.25 to 18.12.25...	21.12.25.
<i>Verentia</i>	Wray, C. M.	F. H. Wood	" A.	"	" 29.11.25 to 27.12.25...	5.1.26.
<i>Vigilant</i>	Simpson, E. S. S.	J. Hunter	" A.	Scottish Fishery Board	" 30.12.25 to 20.1.26...	30.1.26.
<i>Waimana</i>	Andrews, C. M.	T. A. Smith	" A.	Shaw, Savill & Albion	...	...
<i>Waiotapu</i>	Norton, A.	W. Johnson	" A.	Canadian-Australasian	" 14.11.25 to 18.12.25...	4.1.26.
<i>Walmer Castle</i>	Stanley, W. F., R.D. Commr., R.N.R.	H. A. Deller	" A.	Union Castle	" 27.11.25 to 17.1.26...	8.2.26.
<i>Wangaratta</i>	Scutt, W.	T. W. Wordingham, G. R. Millard, K. M. Morrison, N. A. Pope.	M.L.	British India	Met. Log. 30.8.25 to 19.1.26...	26.1.26.
<i>Wurfelä</i>	Steel, R.	H. Coffey	No. A.	White Star-Dominion	Form 911 6.12.25 to 4.1.26...	25.1.26.
<i>Walshman</i>	Rollerson, W.	W. A. Fletcher	" M.	Federal	" 24.12.25 to 20.1.26...	28.1.26.
<i>Westmoreland</i>	...	...	"	S. L. Glenister	...	...
<i>White Heather, Ketch</i>	Glenister, S. L.	F. R. Smith	"	Union Castle	...	...
<i>Windsor Castle</i>	Strong, H., R.D., Commr., R.N.R.	...	"	...	...	...
<i>Winifredian</i>	Harrocks, W.	G. P. Boyle	" M.	Leyland	Form 911 14.12.25 to 19.1.26...	30.1.26.
<i>Woodarra</i>	Reilly, J. V.	L. D. Graham, G. Hyland, L. C. Comber, J. Wallace.	M.L.	British India	Met. Log. 7.3.25 to 19.8.25...	26.8.25.
<i>Yorkshire Zealand</i>	Millson, G. C. Thomas, A. J.	E. E. Jones N. Lee	No. A. " M.	Bibby Red Star	Form 911 29.8.25 to 5.10.25...	9.11.25.
<i>Conway H.M.S.</i>	Broadbent, H. W., R.D. Capt., R.N.R.	The Senior Cadets	Cadets' M.L.	...	Cadets' Met. Log. 20.9.25 to 12.12.25	21.12.25.
<i>Pangbourne Nautical College.</i>	Tracy, A. F. G., Commr., R.N.	"	"	...	Cadets' Met. Log. 21.9.25 to 12.12.25	17.12.25.
<i>Worcester, H.M.S.</i>	Sayer M. B., O.B.E., R.D., Capt., R.N.R.	"	"	...	Cadets' Met. Log. 25.9.25 to 15.12.25	21.12.25.
<i>Abaco</i>	...	The Keepers	Lighthouse Register	...	Lighthouse Register 15.1.25 to 30.6.25	14.10.25.
<i>Cay Lobos</i>	...	"	"	...	Lighthouse Register 1.1.25 to 30.6.25	9.11.25.
<i>Double Healed Shot</i>	...	"	"	...	Lighthouse Register 1.1.25 to 30.6.25	9.11.25.
<i>Inagua</i>	...	"	"	...	Lighthouse Register 19.1.25 to 30.6.25	14.10.25.
<i>Sombrero</i>	...	"	"	...	Lighthouse Register 1.7.25 to 31.12.25	9.2.26.
<i>Watling Island</i>	...	"	"	...	Lighthouse Register 8.1.25 to 12.7.25	14.10.25.
<i>Cape Pembroke (Falkland Is.)</i>	...	"	"	...	Lighthouse Register 1.1.25 to 30.6.25	9.9.25.

LIST OF SHIPS CO-OPERATING THROUGH THE METEOROLOGICAL OFFICE WITH THE MINISTRY OF AGRICULTURE AND FISHERIES (FISHERIES LABORATORY, LOWESTOFT) IN THE COLLECTION OF WATER SAMPLES, ETC.

Name of Vessel.	Captain.	Observing Officer.	Line.	Last Case of Water Samples, Reports, etc., Received up to 31.1.26.	Date Received.
<i>Herschel</i>	Davies, G. W.	T. Lester Guy	Lampert & Holt	Water Samples	31.12.25.
<i>Hillebrand</i>	Maddrell, J.	A. Allan	Booth	"	8.1.26.
<i>Holbein</i>	Gough, W. A.	G. P. Kitto	Lampert & Holt	"	23.1.26.
<i>Manzanares</i>	Maxwell Brown, W. E.	G. S. Gracie	Elders & Pyffes	"	21.12.25.
<i>Miami</i>	Makepeace, S.	W. E. Grant	"	"	22.1.26.

April M.O., 1926.