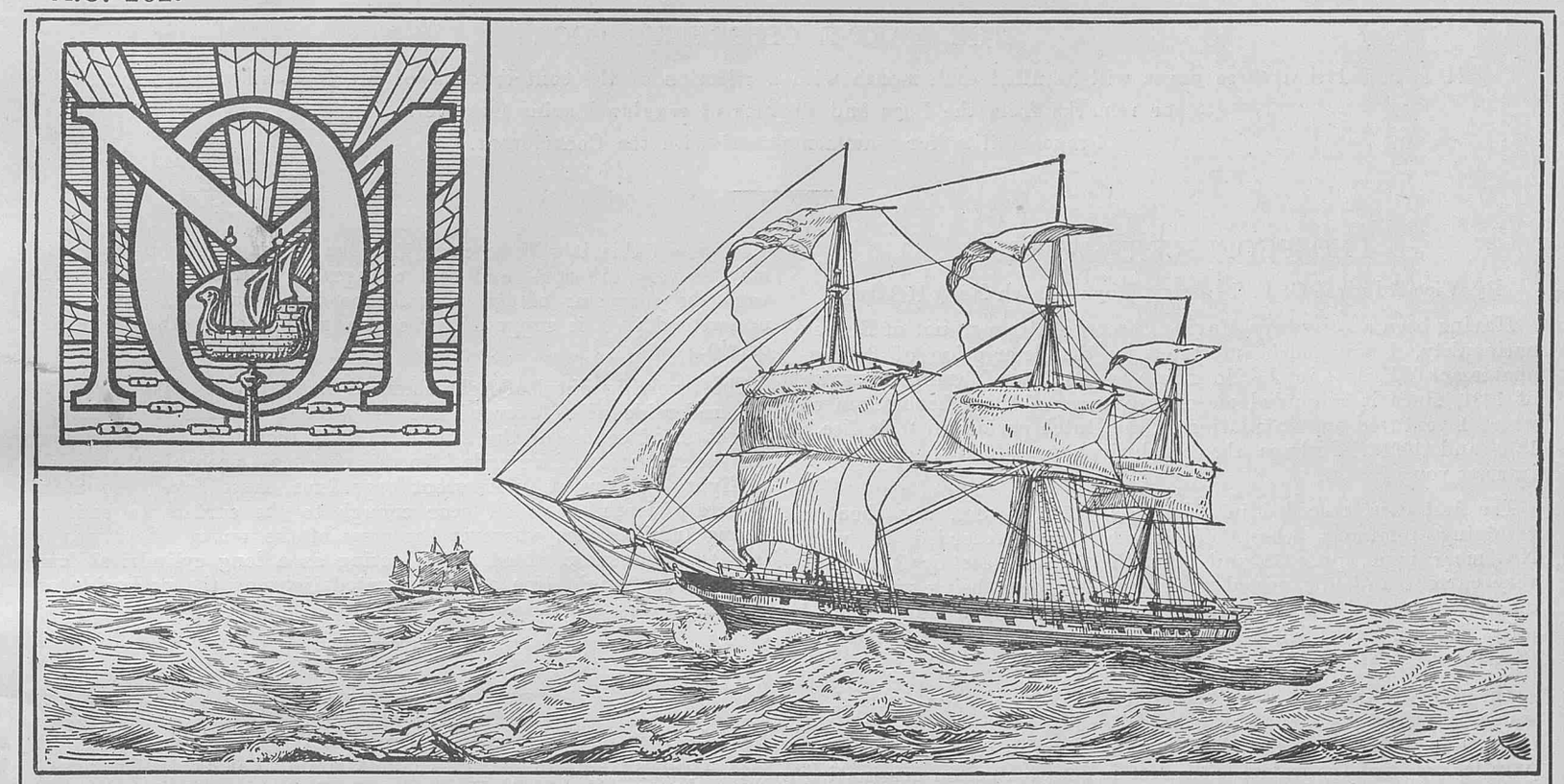


VOL. IX. No. 98. THE MARINE OBSERVER. FEBRUARY, 1932.

TABLE OF PRINCIPAL CONTENTS.

WEATHER IN THE WATERS OF THE BRITISH ISLES.

On Trafalgar Day at the National Seafarers' Service at St. Paul's Cathedral, The Venerable Archdeacon KNIGHT ADKIN referred in his sermon to the tidal races of the Pentland Firth and Portland, the tidal streams encircling the British Isles like great arms, the great swells off our Western Coasts from the Atlantic and the weather, in which elements service afloat had made British seamen what they are, and had done so much to shape our national character.

There is no other region where so many ships, and ships of all nations, stand to lose or gain more by weather intelligence.

The British Wireless Weather Shipping Bulletin has served mariners of all nations navigating these waters for eight years. During those eight years there has been a considerable development in the use of Wireless Telegraphy and Wireless Telephony and particularly by fishing craft and vessels navigating our Northern Waters.

During those eight years there has never been one single complaint as to the general nature and plan of this bulletin, though suggestions have been made from time to time for improvement as its use developed, and criticisms have been made regarding Part I, the General Inference and the number of words used in the forecasts.

During the winter and spring of 1931, with the assistance of the Port Meteorological Officers and Agents, we made an exhaustive enquiry, obtaining the experience and views of a great many Masters and Mates, and Skippers and others in all types of vessels. The results of these enquiries were embodied in a report and recommendations made.

Those recommendations which do not entail additional expenditure have now been adopted.

A general statement will replace the Inference.

A Northern area for forecasts will be added.

Care will be taken to make the wording of the forecasts briefer and clearer than in the past.

A full description of the bulletin as amended from January 1st, 1932, will be found in this number.

MARINE SUPERINTENDENT.

London,

29th October, 1931.

(12797—20) Wt. 77—21 1000 & 300 1/32 P. St G. 4/ 1

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.

PHOSPHORESCENT WHEELS.

By Vice-Admiral G. F. TYDEMAN, Royal Dutch Navy (retired).

Having been a voluntary Marine Observer, although not of British nationality, I was much interested by the description of "Phosphorescent Wheels" in the November issue of THE MARINE OBSERVER of 1931, since it reminded me of two cases of this phenomenon of which I ventured an explanation in the Dutch periodical "De Zee," 1910 and 1921. Perhaps the conclusions to which I came may interest you.

The first case, recorded in "De Zee," 1910, p. 890, was about a revolving luminous wheel, similar to those recorded in your November issue, pp. 233 and 234: the second case dealt with a very curious and unexpected variation, the wheel being visible not on the surface of the sea, but on the underside of a thin layer of mist, floating at a height of about 30 to 35 feet above the water ("De Zee," 1921, p. 134).

The data of the first case, reported by S.S. *Valentyn*, seemed to me to be sufficiently complete to bar all other explanations than the effect, due to the perspective change in direction of the, in reality, parallel crests of the waves, each crest in its progression originating a strong luminescence of the "zoo-corrente," which in this case must have been a rather superficial, continuous layer of great extension.

Considering such a case in a general way and supposing a regular system of waves or swell, it is obvious that there will be a system of more or less strongly illuminated wave-crests, parallel in reality but apparently converging, the motion of which as seen by the onlooker, will be different, according to the course and speed of the ship, with respect to those of the waves. If for instance the ship's course is parallel to the waves and these are coming from the portside, there will be two "wheels" visible, one forward revolving anticlockwise, another astern revolving clockwise. The "hubs" will theoretically be at infinite distance, but it is not to be wondered at, that sailors seeing this rather uncanny looking phenomenon for the first time, and totally unconscious of its origin, will be mistaken on this point, owing to the difficulty of locating an invisible centre and to the fact that in the supposed circumstances the horizon very often cannot be distinguished. Hence the estimate of two hundred yards on board S.S. *Arracan* in one case, of five miles on board S.S. *Talma* in another, this last estimate being by far the best.

Now suppose your course to be perpendicular to the wave-crests, and the ship keeping exactly pace with the waves. What you will see now is a system of converging lines of light on each side, each of them remaining at the same distance and in the same direction. There being no rotation of these systems, they will probably be recognized to be the crests of the waves, more strongly luminescent than the rest of the sea. The idea of a wheel will not originate.

If, however, in this case you slow down, thereby allowing the waves to go ahead, the revolving "wheels" will come into existence, anticlockwise on your port, clockwise on your starboard side, the revolutions being slow. If, on the contrary, you are gaining speed on the waves or meeting them, you will see a wheel on your port side revolving clockwise, another on starboard revolving anticlockwise, and in the last case the rotation will be quickest.

The impression of complete *halves* of a wheel of this kind will only exist if the whole surface in eyesight is covered by a layer of organisms, the luminescence of which is strongly affected by the disturbance experienced in the wave-crests.

If there are only streaks or patches of such organisms, there will not be much of a "wheel" but only streaks and patches of light, which indeed will be the most frequent occurrence, not giving wonder to any sailor.

From all this it will be clear that the circumstances of the case may be very different, and that changes in course and speed will vary the character of the phenomenon in a way that cannot be understood if it is supposed to be of a magnetic or other cosmical origin.

The revolving wheel of light observed on board S.S. *Waerwyck* on the underside of a layer of mist or vapour floating at moderate height is of course of the same origin as those on the water, but may be still more of a puzzle. In this case most probably the source of light, a layer of luminescent organisms, must have been at a moderate depth, but still near enough to the surface to emit a strong luminescence wherever the crest of the waves (there was a swell) was passing. Each crest, acting as a long cylindrical lens focussed a straight line of concentrated light on the underside of the mist.

PITCAIRN ISLAND.

THE following is an extract from the Meteorological Log of S.S. *Tainui*, Captain W. P. CLIFTON-MOGG, Balboa to Auckland, N.Z., observer Mr. G. A. HARVEY, 3rd officer.

In view of the increasing traffic on the New Zealand—Panama trade routes, it may be of interest to masters desirous of making a night stoppage at Pitcairn Island, that on request, a white light will be exhibited from the summit and which in clear weather can be seen at a distance of 18 miles. The island is equipped with an "untuned emergency" wireless set and can be "worked" at a distance of from 50 to 70 miles. A "listening watch" is kept between 4 p.m. and midnight, and a transmission speed of not more than 15 words per minute is advised.

DISCOLOURED WATER.

North Pacific Ocean.

THE following is an extract from the Meteorological Record of SS. *Huntingdon*, Captain H. G. B. FIELD, Wellington, N.Z., to Colon, observer Mr. M. J. BROADHEAD.

"February 18th, 1931, at 1900 G.M.T., passed into large area of discoloured water of a dark brownish-red colour, previously it had been dark blue. Conditions were the same as when the water was normal. Changes were rapid and discoloured water was observed to extend to either horizon.

"Position of ship Latitude 5° 49′ N., Longitude 81° 00′ W.

"At 2109 G.M.T., after steaming N. 40° E. (T) 29 miles to Latitude 6° 10′ N., Longitude 80° 42′ W., the water resumed its normal colour, changing as rapidly as before.

"No more of this phenomenon was seen."

THE following is an extract from the Meteorological Record of S.S. *Rangitiki*, Captain H. BARNETT, Auckland to Panama, observer Mr. H. K. COCKERILL, 3rd officer.

"February 18th, 1931, at 1632 G.M.T., in Latitude 5° 45′ N., Longitude 81° 19′ W. Sighted and passed through a series of 'lanes' of reddish-brown discoloured water. Each of these 'lanes' was about two miles in length and a quarter of a mile in width, and extended in a E.N.E./W.S.W. direction, the lines of demarcation being extremely well-defined. Density 1022.5. Current rips

extending in the same direction had been observed for thirty-six hours previously. Continued to observe this discolouration until 1715 G.M.T., after which no more was seen. Density was then found to be 1024."

EARTHQUAKE.

New Zealand.

THE following is an extract from the Meteorological Log of S.S. *Norfolk*, Captain J. HOWELL-PRICE, D.S.O., D.S.C., at Wellington, New Zealand, observer Mr. G. C. HOCART.

February 3rd, 1931, at 10.50 a.m. Vessel alongside wharf in Wellington, New Zealand, a violent earthquake shock was felt. All high buildings in Wellington commenced swaying, as did the cranes and sheds on the wharf. The motion on the ship was as if the engines had suddenly been reversed. The earthquake which devastated Hawke's Bay, seemed to take a straight line through Wellington and Cook Straight to Christchurch in South Island, where a considerable shock was felt.

The barometer was 29.83 in. and had been steady for the last 24 hours. Air Temperature 67°, Wind E'ly, force 2. The sky was cloudy with heavy cumulus clouds and passing showers of rain.

THE following is an extract from the Meteorological Log of M.V. *Taranaki*, Captain C. WOOD, D.S.C., at anchor in Napier Roadstead, observer Mr. G. COPE.

"2nd February, 1931, at 2347 G.M.T. whilst lying quietly at anchor vessel was shaken by severe earthquake. Water was observed to be receding rapidly from shore and soundings round vessel showed decrease from 6½ fathoms to 4 fathoms. Hove up anchor and proceeded seaward. Soundings showed a decrease of 15 feet for a distance of approximately 3 miles eastward from the leading beacons.

"The weather at time of earthquake was fine and cloudy with light easterly wind, sea was smooth and there was no swell. There was no disturbance noticeable on the water other than that caused by the receding water."

THE following is an extract from the Meteorological Log of S.S. *Ruapehu*, Captain F. W. ROBINSON at Napier, New Zealand, observer Mr. H. I. PHILLIPS.

5th February, 1931, 8.58 p.m. (New Zealand summer time) 0858 G.M.T. At single anchor with 45 fathoms cable in 10 fathoms of water off Ahuriri Bluff, Napier (during the embarkation of Refugees as a result of violent earthquake in Napier on 3rd February), a severe earth tremor was felt shaking the vessel violently, phenomenon lasting about 15 seconds.

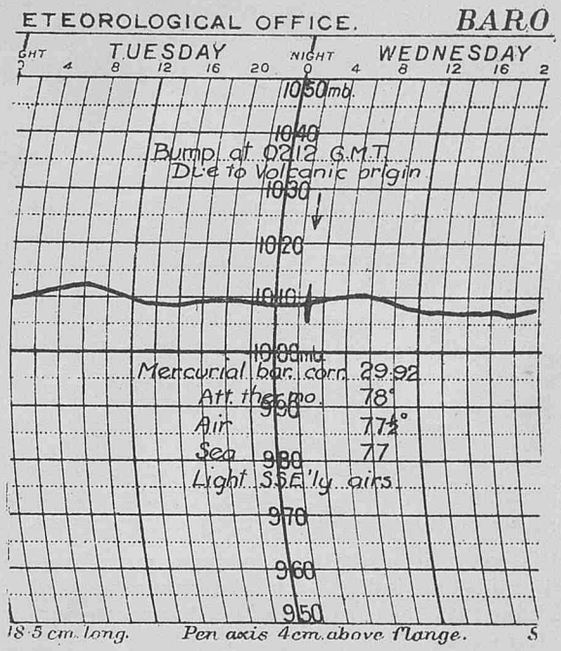
The wireless operator on the S.S. *Northumberland*, which was anchored about 1 mile to the eastward of the S.S. *Ruapehu* was in the act of reporting this tremor to the operator on the *Ruapehu* when the shock was felt on the latter vessel. The former vessel must therefore have experienced this phenomenon at least ¼ minute before the *Ruapehu*, showing that the disturbance originated to seaward of Napier.

The weather at time of observation was mod. S.S.W. breeze, slight sea, barometer 30.05 in., temperature air 56°, sea 60°, sky 3/10 covered, predominating cloud cumulus. A number of dead whales and some marine vegetation were seen floating on the surface during the passage from Auckland to Dunedin (4th to 7th February).

EARTH TREMOR.

Arabian Sea.

THE following is an extract from the Meteorological Record of S.S. *Moldavia*, Captain C. H. C. ALLIN, Colombo to Port Sudan, observer Mr. C. S. PIRIE, 4th Officer.



"18th February, 1931, at 0212 G.M.T. experienced a severe concussion, the ship being badly shaken. The shock was principally felt amidships, the effect being very slight forward and only moderate aft, and no disturbance of the sea was noticed. The effect of the shock, which was presumed to be an earth tremor, is distinctly recorded on the enclosed barogram.

"Weather at time was threatening, sky 2/10ths. covered with Cu. and St. to N.N.E. and S.S.W. Barometer 29.92 in. Temperature: Air 77½°, Sea 77°. Light S.S.E'ly airs.

"Position of ship, Latitude 14° 49′ N., Longitude 42° 16′ E. Course 323°, Speed 15 knots.

"Other persons on board *Moldavia* described it as very similar to the explosion of a mine.

"W/T communication was attempted with the Dutch S.S. *Rietfontien*, which was passing at the time, but with no result, the *Rietfontien* being a 'one operator ship'. At 0530 G.M.T. sent following message to *Rietfontein*, 'At 0212 G.M.T. did you feel any shock in your ship. We experienced severe shock and tremor. No evidence of reason so presume earth tremor'. At 0555 G.M.T. received following reply from *Rietfontein*, 'Commander *Moldavia*. Yes at 0115 G.M.T. experienced a severe shock and tremor and a noise as if the propeller came out of the water."

"At 0858 G.M.T. a request for information to all ships was broadcast, and the following replies received:—

"At 0915 G.M.T. from S.S. *Glenluce*. 'Commander *Moldavia*. Distinct tremor felt at 0438 G.M.T. in about Latitude 14° 51′ N. Longitude 42° 12′ E. No disturbance or discolouring of sea observed.'

"At 0930 G.M.T. from S.S. *City of Melbourne*, 'Commander *Moldavia*. At 0212 G.M.T. Latitude 14° 47′ N., Longitude 42° 11′ E. Centre Peak Lt., bearing 356° distant 14½ miles. Ship badly shaken by concussion felt from forward to midships, but not in engine room'.

"At 1400 G.M.T. from Coy's S.S. *Nankin*. '*Nankin* 14 miles astern of you at time. Felt nothing. Passed you at about 4.30 a.m.'"

ABNORMAL BEHAVIOUR OF HURRICANE IN REGION OF FIJI ISLANDS.

The accompanying report has been received from Captain E. W. G. TWENTYMAN, Harbour Master, Suva, Fiji.

On Sunday, February 15th, 1931, weather conditions appeared to be disturbed to the N.E. of Fiji. News was received from Niuafou

on the 16th to the effect that a storm was experienced there; barometer at 9.10 a.m. 999 mb., wind N.N.E. 40 m.p.h. The wind was reported to have shifted from S.W. to N.N.E., which is very unusual, indicating the storm to be moving to the N.W.

Weather reports received on the morning of the 17th indicated a hurricane approximately 200 miles N.E. of Suva, moving slowly S.W. or W.S.W. Accordingly storm warnings were issued. It was thought that this storm would recurve and pass between Vanua Levu and Viti Levu, or there was a possibility of it moving further to the West. All precautions were therefore taken and a special storm warning was sent to Lautoka and North Coast centres.

This hurricane passed a short distance North of Labasa at about 2 a.m. on 18th, still apparently moving S.W. or W.S.W. Little or no damage was reported at this centre although the wind was estimated at hurricane force, which is doubtful.

Conditions became very confusing on Thursday 19th, as the barometer at Suva was fairly steady, showing slight signs of rising. The wind remained steadily in the East, being very squally with occasional gusts of gale force and heavy passing showers.

What little information that was available from Lautoka and Ba surprisingly did not indicate any hurricane in that direction, although Nadarivatu reported a very low barometer with wind S.E. hurricane force (doubtful).

At 3.30 p.m. Saturday 21st, the barometer at Suva was 996.3 mb. In the morning the wind shifted to E.N.E., and in spite of the barometer falling, this was taken as a good sign indicating the storm moving to the Westward. The wind increased in force during the afternoon showing signs of veering to the East. Squalls continued throughout the night with heavy rain. As no information was now available from the North Coast owing to the telephone lines being down, the worst was feared for that portion of the Group including the Yasawas. Conditions at 6 p.m. were dangerous with so low a barometer and an Easterly gale blowing so there was no other course to adopt but to fire the hurricane signals.

Sunday morning saw the barometer falling slowly, reaching 993.2 mb. at 3.30 p.m. with wind East decreasing slightly.

From Monday 23rd to Friday 27th, although the wind had decreased somewhat, the barometer rose very slowly in that time. It commenced to fall again on the 28th.

At 3.30 p.m. on March 1st another hurricane was centred approximately 130 miles North of Suva moving S.W. The next morning this storm was centred just North of Penang moving S.E., and during the day passed through the Group doing comparatively little damage. On March 4th, 8.30 a.m., this hurricane was centred near Tofua Island in the Tonga Group still moving S.E.

With regard to the February storm, news received from Mr. Giblin of Naviti Island, Yasawa, indicates the hurricane moving to the N.W. after passing Labasa. After passing North of Yasawa it apparently recurved, the centre passing over Naviti Island at 5 p.m. on 21st, when there was a sudden lull and the barometer registered 959.7 mb. to 958.3 mb. Prior to the lull the wind was from the E. to E.N.E., hurricane force. Between 11 p.m. and midnight occasional gusts of hurricane force were experienced from the West, barometer 961.7 mb. At this time Lautoka had a full hurricane from the East.

Now, although only limited information is to hand at present there is little doubt that the storm steadied up when nearing the North Coast of Viti Levu, and later began to move to the N. During Sunday 22nd, Naviti had a rising barometer with wind S. to S.S.E. At midnight it commenced to fall again with a S.E. wind. A lull occurred between 4 a.m. and 6 a.m. on 23rd, barometer 975.3 mb. At 8 a.m. the barometer began to rise with a strong E. gale and at 6 p.m. the barometer was 993.5 mb., wind E. decreasing. This indicates the storm passing away to the North. (Note: At Naviti the barometer is an aneroid.)

It would appear that the hurricane, after leaving Naviti, moved to the N.E. and after passing East of Rotuma commenced to move S.S.W. or S.W. towards Penang, thence recurving and passing through the Group in a South Easterly direction. This, however, has not been proved owing to limited information. If the above is not correct the question is; did the February hurricane break up or where did it go to? There is no indication of it passing to the West or S.W. of the Group, as no shipping reports have been received from that direction, and there has been no report of a hurricane in or near the New Hebrides.

This hurricane has undoubtedly caused the worst floods in the history of the Colony, and the February portion of the blow is thought to be, by some, Fiji's worst hurricane; but I am extremely doubtful of this as we have had considerably lower pressures during other storms. The severe floods are attributed to the fact that the storm centre hovered so close to the North of the Group for such a long time thereby causing continuous heavy rain.

In conclusion I may say that owing to the abnormalities of this storm it has been very difficult to foretell the direction in which the storm was moving and at what rate. This storm is one of the very few experienced here that has been known to move towards the Equator which is contrary to all Laws of Storms.

List of Reported Shipping Casualties.

Yaleka-lekaleka. Blown ashore at Nasova—badly holed.

Variance. Wrecked at Nuku, Natewa Bay.

Tui Kanacea. Parted both cables and kedge line and blown ashore at Wakaya—slight damage—refloated.

Trade Wind. Wrecked at Wakaya.

Tevoro. Blown ashore at Natewa Bay.

Sakura. Sunk off Koro and refloated.

Marama-ni-yanyanu. Blown ashore at Ovalau and refloated.

Joni. Wrecked on Toberua Reef after being blown from her anchorage at Vatu Icake.

NOTE.—Marine Observers can perform a good service to all mariners by instancing this occasion as proof of the need for any ship encountering a dangerous tropical revolving storm to report immediately to "All Ships" and the appropriate station; also to the need for "Selected Ships" to carry out their routine W/T weather reporting in the manner advised by the Meteorological Service of the country in which they are registered. The instructions for reporting tropical revolving storms will be found in Regulation XLVI of the International Convention of Safety of Life at Sea, 1929, which is given on page 28 of the Jan., 1932, number of this journal.

CLOUD PHOTOGRAPHS.

THE accompanying photographs and remarks have been received with the Meteorological Log of R.R.S. *Discovery II*, Commander W. M. CAREY, R.N., observer Mr. R. A. B. ARDLEY, 2nd Officer, and were taken by Dr. E. H. MARSHALL.

December 6th, 1930, 1200 G.M.T. In Grytviken Harbour, South Georgia, looking to Eastward. Breeze variable in Harbour. Clouds of "Whale back" type on the left 5,000 to 7,000 feet high. Light Fr-Cu over hills and passing.

Mr. ARDLEY remarks concerning "Whale-back" clouds:—"These interesting clouds appear to form under a variety of meteorological conditions, and have been, at different times, seen in nearly all parts of this sector of the West Antarctic. In South Georgia they are usually only seen when, after a strong blow from the southern semicircle, the rising barometer reaches its peak. At this time, a few hours of very fine clear weather with moderate winds sets in. At the first fall of the barometer the wind falls light and variable, and the sky becomes streaked with cirriform cloud. At this stage the island peaks are usually clear, and 'whale-backs' are almost certain to form over them."

An ideal set of conditions occurred on December 2nd, 1930, when the ship was surveying off the south coast of the island. On this occasion, the rising glass steadied in the afternoon and commenced to fall immediately, the wind hauling from S.W. to N.W., light. At this stage a thickening film of Ci and Ci-St spread over the sky from S.S.W., and the weather was very fine and clear. The island peaks stood out very clearly, and, directly the wind hauled N.W., whale-backs commenced to form over all the higher mountains. Their weather edges, to the westward, were hard and clear cut, while their lee extremities tailed away in nebulous streaks and wisps. About this time, low, ragged, Fr-Cu were observed streaming to S. Eastward of Annenkov Island although there was no lower cloud to the northward of it, and it is evident that the whale-back phenomenon is analogous to this form of mountain cloud-making by deflection of warm air upwards into colder levels. The clouds from Annenkov formed an admirable comparison.

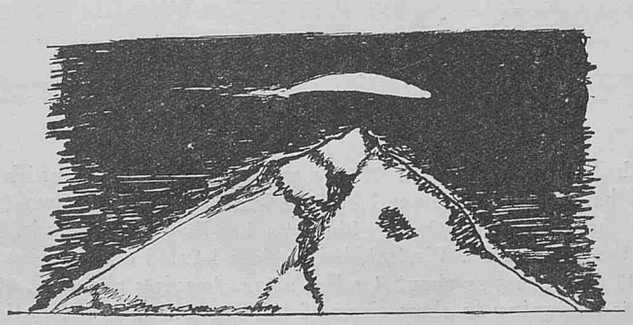
Later in the day, the whole sky became covered with A-St cloud, following the normal sequence, and the mountains were blotted out, though before they were finally obscured, the whale-backs were seen to have lost their distinctive form and were merging into the thickening cloud-pall.

South Georgia is subject to an almost constant series of depressions, and whale-backs may be observed quite frequently.

Off Graham Land and the South Shetlands, the clouds were seen in more or less perfect form, on several occasions, but were difficult to associate with any definite set of weather conditions.

In form, the clouds are lenticular, "whale-backed" and sometimes slightly concave beneath, and their characteristics are their very hard, defined edges and perfect whiteness. Usually they lie, stationary, over the higher points of land, but occasionally detached clouds are seen, quite independent of mountains, as in the photograph; usually their lee edges are much less hard and definite than their weather ends. Sometimes three or four whale-backs, each separate and complete, are seen tiered one over the other above a peak, but this appears to be of rare occurrence and the upper numbers soon disperse.

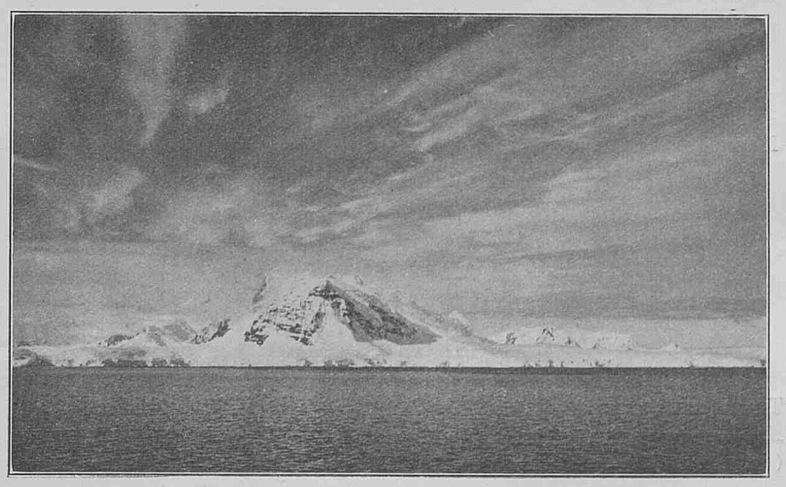
25th January, 1931, 1715 G.M.T., off Lion Island, Anvier Island, Palmer Archipelago, looking to S.S.W., down Neumayer Channel. Calms and light variable airs at sea level. Curtain of wavy cirrus



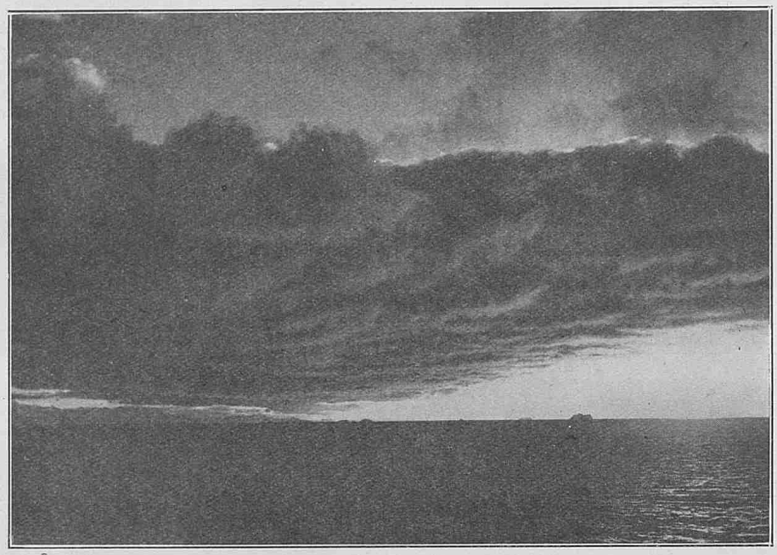
Ideal whaleback over a mountain peak–sky practically cloudless.

extending along horizon for about 30°, centre in S.S.W. which was the point of convergence of all the cirrus and Ci-St in the sky.

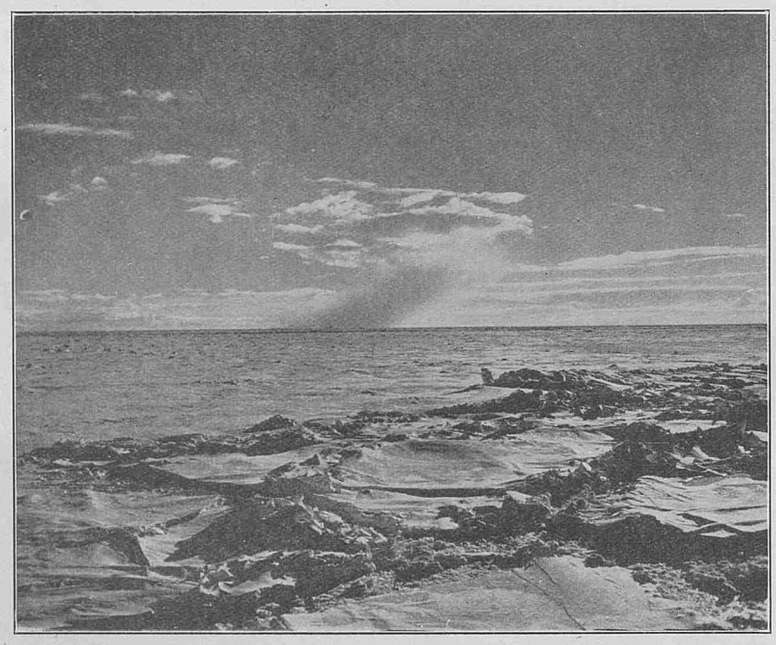
25th January, 1931, 1715 G.M.T. From the same position as the cirrus curtain was taken. Patches of waved cirrus in the zenith associated with faint bands of very high cirro-stratus running transversely to the line of the main cirrus and Ci-St system.



25th January, 1931, 2145 G.M.T., off Waif Island, entrance to Schollaert Channel, Mount Buleke, Brabant Island, bearing N.N.E., wind N.E., force 2. Cirrus and tufted cirrus converging in N.N.E. Belt of light St-Cu to Northward about 5,000 feet high Fr-St among mountains of Brabant Island. At this time the cirrus curtain had lost its form and merged into the general cirrus system to S.S.W.



27th January, 1931, 0015 G.M.T. Off Trinity Island, Graham Island, looking S.S.W. Wind S.W., force 2, Barometer 1001-2 mb. falling slowly. Heavy massed sheet of St-Cu, base height about 2,000 feet, overspreading clear sky from S.S.W. and later passing away to Eastward.

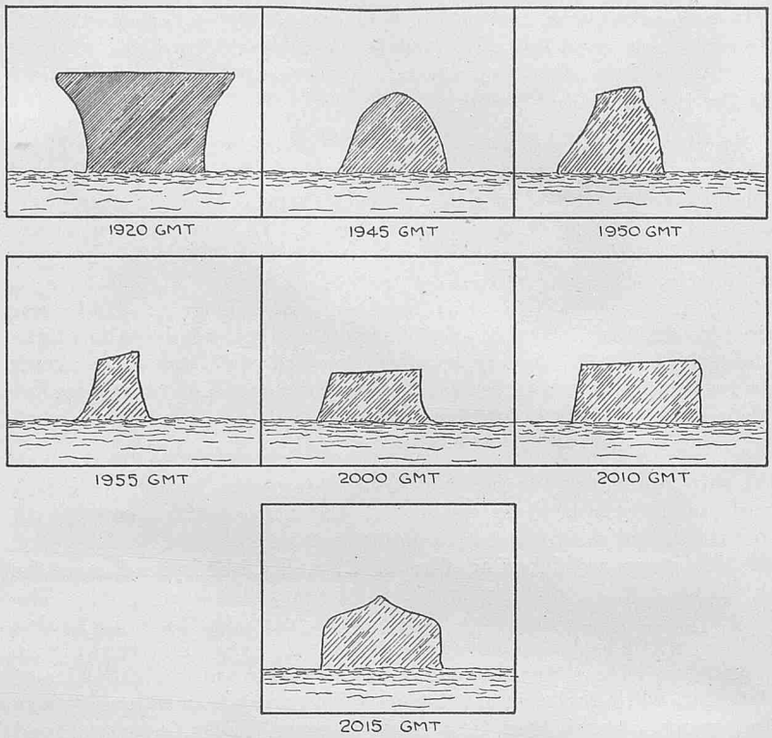


Snow squall over pack-ice in the Ross Sea. Taken by Dr. E. H. Marshall from Norwegian whale ship *C. A. Larven*.

MIRAGE.

South Atlantic.

The following is an extract from the Meteorological Record of S.S. *Avelona Star*, Captain R. J. Thomas, Rio de Janeiro to St. Vincent (Cape Verde Is.).



"February 3rd, 1931, 4.15 p.m. A.T.S. (2000 G.M.T.) mirage occurred at Redonda Island which bore 270° distant 28 miles.

"The Island assumed varying shapes as shown in the diagram. At no time was the Island obscured altogether and no haze was observed over it, although a thin veil of mist was noticed over the mainland.

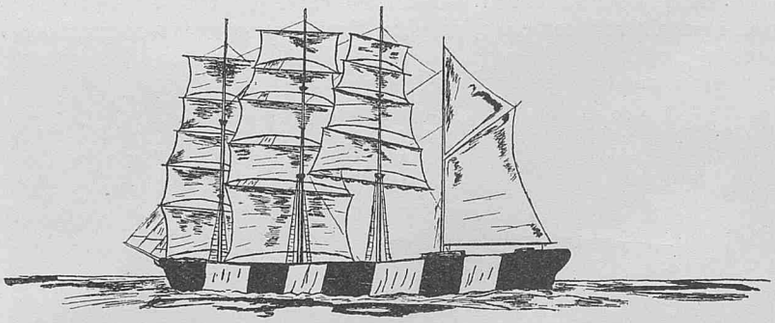
"Wind E.S.E. force 3. Temperature Air 76°. Sea Temp. 71°.

"Position of ship, Latitude 23° 03′ S., Longitude 42° 40′ W. Course 89° speed 14.5 knots."

MIRAGE.

Australian Waters.

The following is an extract from the Meteorological Log of S.S. *Titan*, Captain W. J. Elford, Adelaide to Suez; observer Mr. J. Gould.



"14th February, 1931, at 11.30 a.m. we passed the Finnish four masted barque *Lowhill* bound Port Adelaide to Queenstown (F.O.) with a full cargo of wheat. She was heading N.N.W. viz. right across the Gulf of St. Vincent, being close hauled on the port tack. At 11.45 a.m. she was about 4 miles astern bearing about N. 60° E., and was beginning to show signs of mirage, parts of the hull were seen to disappear. At noon the hull was divided into five well-defined parts, as in sketch. At 12.10 p.m. only the fore section of

the hull (as in sketch) was visible, though the foresail and mainsail seemed to hang down to the water's edge.

"The *Lowhill's* gunwales amidships are seven feet above the water-line.

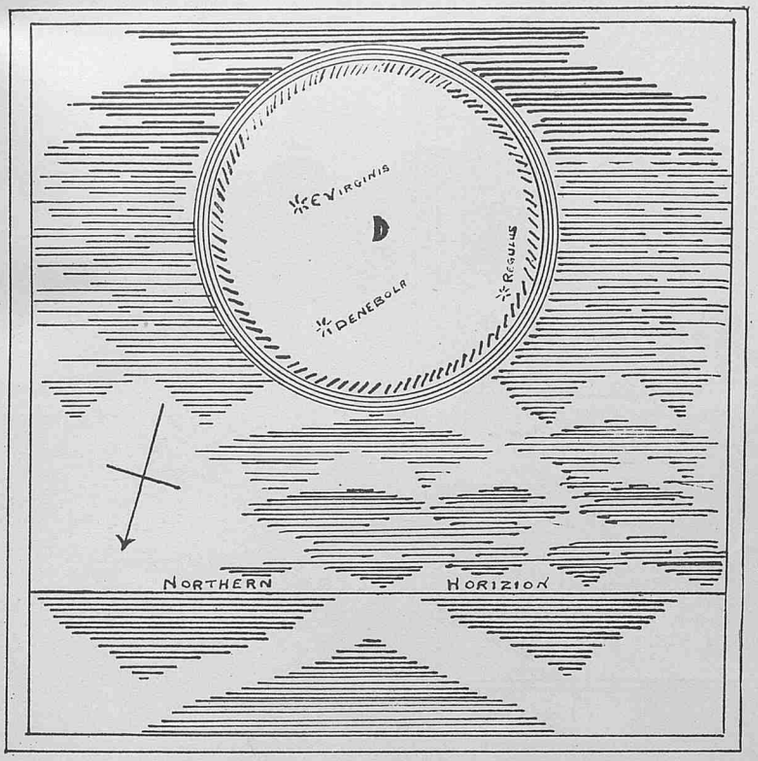
"Wind W. by S. force 4. Barometer 1019 mb. Hygrometer dry 63.7° wet 54.5°, sea 67° Slight sea and moderate SW'ly swell. Fine and clear weather, with cirrus below 45° Alt.

"Position of ship, Latitude 35° 27′ S., Longitude 135° 03′ E. Course 255° speed 11 knots."

LUNAR HALO.

South Pacific.

THE following is an extract from the Meteorological Log of S.S. *Makura*, Captain J. F. SPRING BROWN, Rarotonga to Wellington N.Z., observer Mr. S. H. CRAWFORD.



"5th February, 1931, at 2.00 a.m. a peculiar cloud formation combined with a lunar halo was observed. The sky was overcast with the exception of the circle of 23½° radius round the moon which was clear and gave the impression of an immense gear wheel. The colouring of the halo was indistinct. The circumference of the circle was composed of A-Cu. cloud (making the teeth of the gear wheel) whilst the remainder of the sky was covered with Ci-St. and A-St. Several stars belonging to the constellations Leo and Virgo were visible within the circle. The phenomenon remained visible for about ten minutes. Shortly afterwards the sky became heavily overcast and a heavy shower followed. The wind was variable, veering and backing between N.N.W. and W. but later settled down to fresh and then strong south-westerlies.

"Position of ship, Latitude 31° 10′ S., Longitude 175° 00′ W."

METEOR.

South Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Clan Ranald*, Captain F. J. HAWLEY, London to Cape Town, observers, Messrs. R. J. ELLIOTT 3rd officer, and C. F. COOKE, 4th officer.

"3rd February, 1931, at 2211 G.M.T. observed remarkable falling heavenly body apparently travelling at a high speed towards the horizon in a W.S.W. and E.N.E. direction, finally appearing to break into flames and fizzle out, simultaneously changing its colour rapidly from bright green to various reds and yellows, and breaking up into hundreds of small pieces.

"Position of ship, Latitude 30° 46′ S., Longitude 15° 02′ E. (D.R.)".

North Atlantic.

THE following is an extract from the Meteorological Log of S.S. *Hertford*, Captain J. BURTON DAVIES, Liverpool to New Zealand, via Curacao, observer Mr. T. M. DEVITT, 3rd officer.

"25th February, 1931, at 10.32 p.m. A.T.S. observed very bright meteor appearing near Mizar bearing 050° at an altitude of 28°.

"Time of flight occupied 7 seconds. Angle of descent 030°. Meteor disappeared when in vicinity of Alphecca bearing 080° altitude 19°.

"The tail of the meteor was long and narrow interspaced by five balls of light each about—3 magnitude.

"Magnitude of meteor was many times greater than any planet being white in colour at first, but gradually changing to an appreciable red hue. No explosion was heard.

"Position of ship, Latitude 24° 45′ N., Longitude 56° 42′ W."

WATERSPOUT.

North Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Dunbar Castle*, Commander E. S. VINCENT, R.D., R.N.R., Plymouth to Cape Town, observer Mr. P. G. MACIVER, 3rd officer.

"On February 1st, 1931, at 8.33 ship's time, during typical doldrum weather barometer 1012.6 mb. sea 83°, air 82°. Sea smooth, observed a waterspout forming from the base of heavy nimbus cloud, its bearing and distance from the ship at this time was 143°, 9 miles, and the angular distance of the cloud base above the horizon was 3½°. The spout which never actually met was at its best at 8.45. At this time the sky behind it was clear and the hard well-defined edges of the spout showed up well on the white background. The water underneath appeared very much disturbed, it being piled up underneath the spout so that an impression of fiercely boiling water was obtained.

"The long distance off made observations of the air circulation difficult. There did not appear to be any noticeable commotion in the lower clouds and no marked movement of the meteorological instruments was observed.

"During the period from 8.33-8.45 the spout did not move noticeably in any direction, but from 8.45 onwards it moved slowly to the eastward no longer vertical but in the form of a curve, the lower end ragged and curved to the westward. As it disappeared it became less and less defined and shorter and shorter till it finally went altogether. Three other small spouts commenced to form during this time, two to the left and one to the right of the large one but these never reached any size and soon dispersed. After the disappearance of the spout at 9.15 a short sharp shower of rain occurred lasting about three minutes and after this the heavy clouds passed away to the northward and the sky cleared.

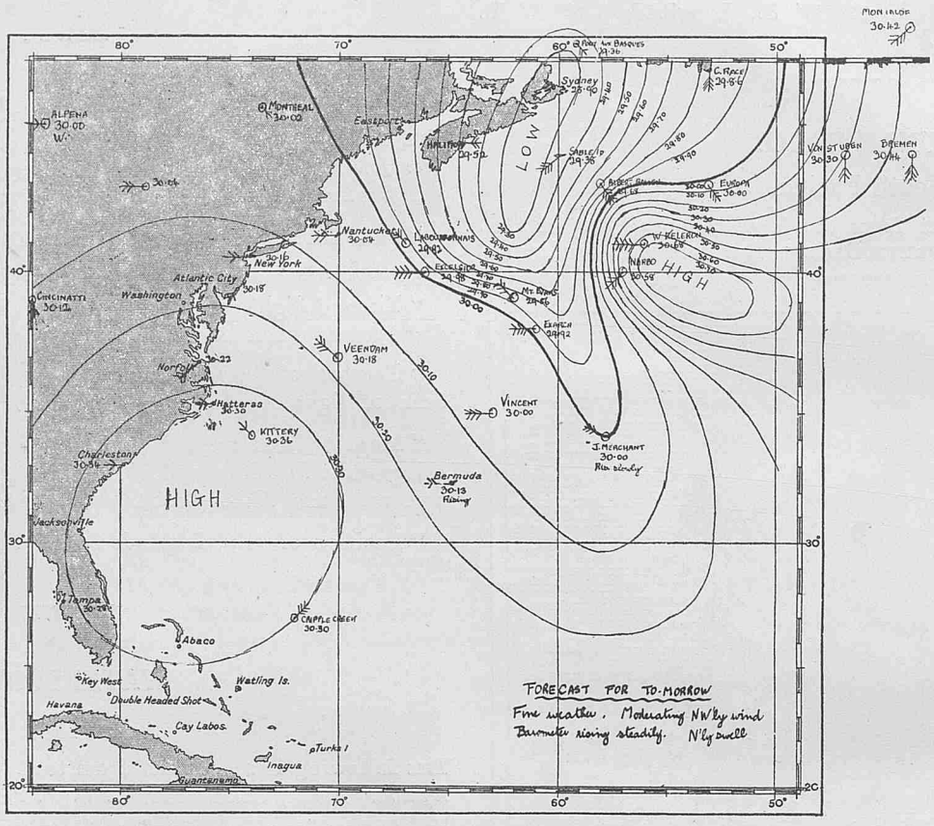
"Position of ship: Latitude 5° 05′ N., Longitude 12° 56′ W. Course 143°. Speed 14.5 knots."

WEATHER CHARTS MADE AT SEA.

Western North Atlantic.

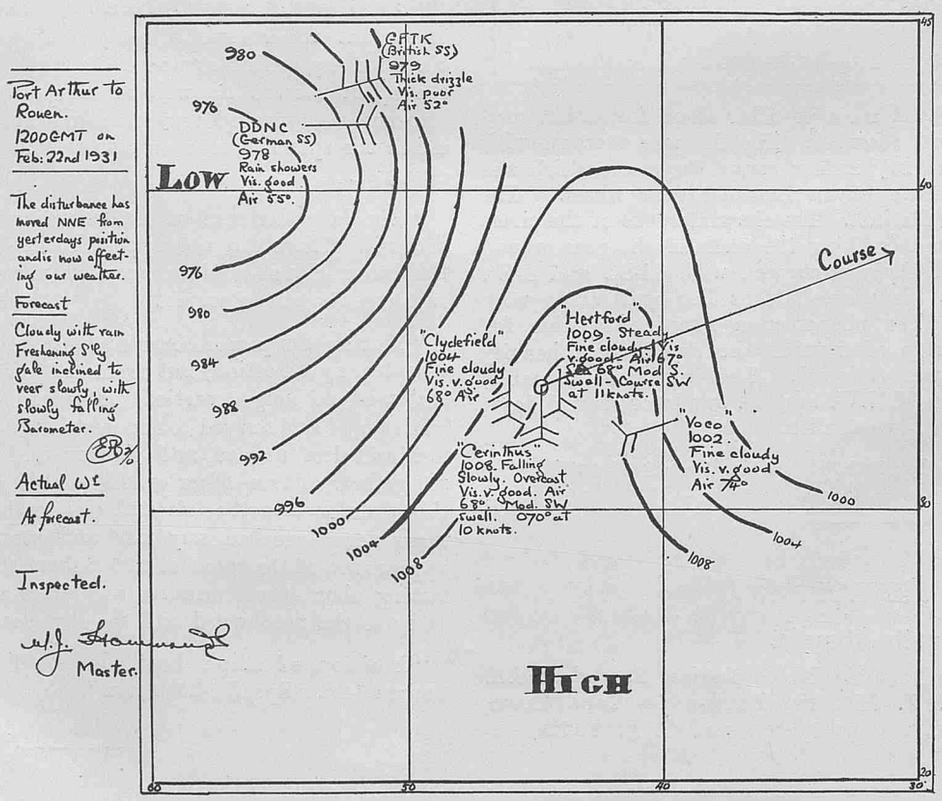
This chart is one of a series made on board s.s. *Jamaica Merchant*, Captain L. A. BACH, during a passage from Kingston, Jamaica to Plymouth, by Mr. R. C. VIGURS, observing officer.

Captain BACH reports that during this passage he was enabled, through the information received by wireless and plotted on charts, to make alterations of course which helped him to make a good passage and deliver his cargo of fruit in accordance with schedule.



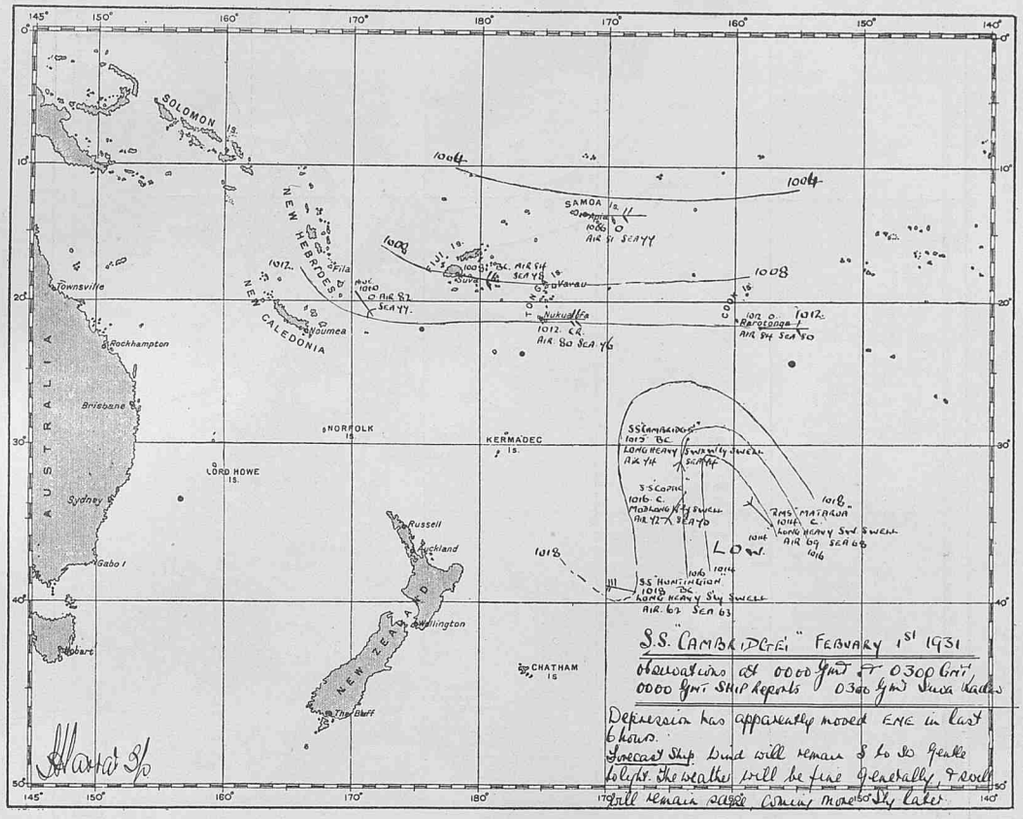
Mid North Atlantic.

This chart is one of a series made on board s.s. *Cerinthus*, Captain M. J. HAMMOND, during a passage from Port Arthur, Texas to Rouen by Mr. E. ALLEN, 2nd officer.



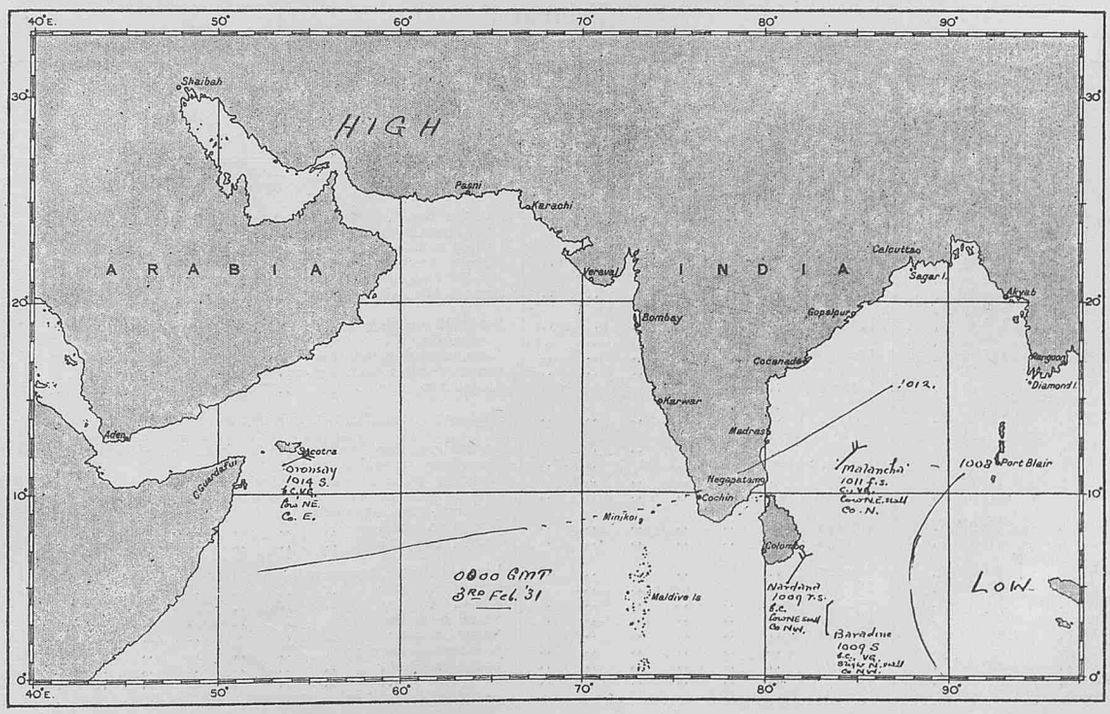
South Pacific.

This chart is one of a series made on board s.s. *Cambridge*, Captain R. WILLIAMS, by Mr. T. S. FARRAR, 3rd officer.



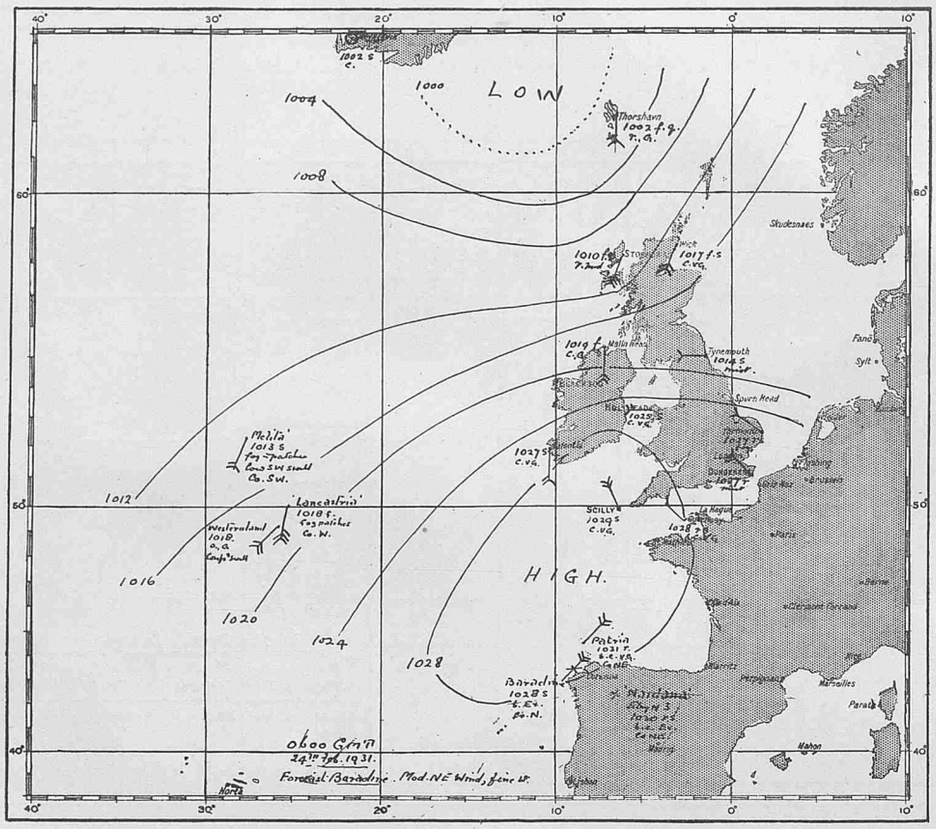
Indian Ocean.

This chart is one of a series made on board s.s. *Baradine*, Captain H. ELLIOTT-SMITH, by Mr. C. B. ROCHE, Chief Officer. It will be noted that the reports extend over a region covering some 30° of Longitude in the Tropics, thus indicating the value of the "A Selected Ship" service and the desirability of "A Selected Ships" using the wavelengths and times of communication allotted to them. Since this chart was made Colombo W/T Station has been detailed to receive reports from "A Selected Ships" which may make interception by shipping easier in this region.



Eastern North Atlantic.

Another chart made by Mr. ROCHE on board s.s. *Baradine*, Captain H. ELLIOTT-SMITH, from the Weather Shipping Bulletin and "Selected Ships" on the Roll Call for the day.



SOUTHERN ICE REPORTS.

During the Year 1931.

February.

Year.	Day.	Position of Ice. Latitude.	Position of Ice. Longitude.	Description.	Remarks.	Name of Ship reporting.
1931	19	Vicinity 66° 58′ S.	61° 12′ E.	25 bergs	Tabular Bergs, moderate size probably aground in a line running about E.N.E. and W.S.W.	Aux. Bq. *Discovery*
	19	Vicinity 66° 29′ S.	61° 41′ E.	6 bergs	1 tilted tabular, 5 moderate, irregular	do.
	19 to 20	From 66° 29′ S. to 61° 47′ S.	61° 41′ E. 62° 34′ E.	20 bergs	Mainly weather-worn tabular, moderate size, about 90 to 100 feet high and 300 to 500 feet long.	do.
	20 to 21	From 64° 47′ S. to 64° 13′ S.	62° 34′ E. 63° 47′ E.	13 bergs	2 small, 11 moderate	do.
	21 to 22	From 64° 13′ S. to 62° 52′ S.	63° 47′ E. 66° 02′ E.	14 bergs, 1 bergy bit	Bergs, 12 weather-worn, tabular; 2 irregular, apparently capsized.	do.
	22	62° 46′ S.	66° 12′ E.	1 berg, 1 growler	Berg, irregular, weather-worn, 60 feet high, 250 feet long	do.
	22	62° 32′ S.	66° 28′ E.	1 berg, 1 growler	Berg, irregular, weather-worn, about 70 feet high	do.
	23	62° 25′ S.	69° 00′ E.	1 berg	Small, irregular	do.
	23	Vicinity 62° 12′ S.	69° 20′ E.	6 bergs	Moderate, irregular, within a radius of about 5 miles	do.
	23	Vicinity 61° 59′ S.	69° 30′ E.	7 bergs	Large, irregular. Largest 115 feet high by 650 feet long	do.
	23	61° 57′ S.	69° 45′ E.	1 berg, 2 bergy bits, brash ice	Berg, large irregular	do
	24	61° 45′ S.	71° 31′ E.	3 bergs	Weather-worn, tabular, moderate	do.
	24	61° 37′ S.	71° 45′ E.	3 bergs, 2 bergy bits	1 large tabular berg; two small irregular, possibly calved from large berg.	do.
	24	61° 28′ S.	72° 01′ E.	2 bergs	Irregular, small	do.
	25	61° 08′ S.	74° 15′ E.	3 bergs	Large, tabular	do.
	25	Vicinity 60° 54′ S.	74° 38′ E.	5 bergs	1 large tabular, 3 moderate, irregular	do.
	25	60° 47′ S.	74° 55′ E.	1 berg	Small, irregular	do.
	25	60° 36′ S.	75° 15′ E.	3 bergs	Small, irregular	do.
	26	60° 01′ S.	75° 55′ E.	1 berg	Small, irregular	do.
	26	59° 30′ S.	76° 30′ E.	2 bergs	Large, tabular	do.
	28	57° 27′ S.	82° 10′ E.	1 berg	Moderate, irregular	do.
	28	57° 10′ S.	82° 39′ E.	1 berg	Large, irregular	do.
	21	52° 43′ S.	161° 38′ E.	1 berg		Bq. *Penang*.
	21	50° 00′ S.	165° 00′ E.	1 berg	Large with two peaks, apparently 100 feet high	Bq. *Favel*.

SOUTHERN ICE REPORTS *(continued)*

Year.	Day.	Position of Ice. Latitude.	Position of Ice. Longitude.	Description.	Remarks.	Name of Ship reporting.
1931	10	62° 42′ S.	56° 32′ W.	Several bergs	..	R.R.S. *Discovery II.*
	12	From 61° 06′ S.	51° 19′ W.	Many bergs	..	do.
		to 60° 58′ S.	50° 30′ W.			
	13	60° 47′ S.	46° 44′ W.	Many bergs	..	do.
	14	60° 39′ S.	45° 47′ W.	Pack ice	To eastward ..	do.
	18	59° 55′ S.	44° 11′ W.	Drift ice	Skirting streams of drift ice	do.
	19	From 59° 43′ S.	43° 58′ W.	Pack ice	Skirting edge of pack ice	do.
		to 59° 30′ S.	43° 29′ W.			
	19	From 59° 41′ S.	42° 46′ W.	Drift ice	..	do.
		to 59° 18′ S.	41° 14′ W.			
	20	58° 52′ S.	39° 26′ W.	Loose ice, drift ice and bergs	..	do.
	20	58° 55′ S.	38° 38′ W.	Many bergs	Drift ice to southward	do.
	20	59° 11′ S.	37° 49′ W.	Few bergs	..	do.
	20	From 59° 11′ S.	37° 49′ W.	Many bergs, drift ice	Skirting drift ice	do.
		to 59° 10′ S.	36° 43′ W.			
	24	S.W. Cooper Is.		20 bergs	Mostly irregular, 5 tabular	R.R.S. *William Scoresby.*
	10	Off Cape Nakep, South Georgia		3 bergs	Irregular	do.
	10	S.E. of Clerke Rocks		4 bergs	Small, irregular	do.
	24	S.S.E. Clerke Rocks		12 bergs. Many growlers	Bergs, 3 tabular, 9 irregular	do.
	21	From 58° 43′ S.	34° 31′ W.	Drift ice	Skirting drift ice	R.R.S. *Discovery II.*
		to 59° 03′ S.	32° 52′ W.			
	24	55° 15′ S.	34° 00′ W.	15 bergs. Many growlers	4 moderate, tabular bergs. Remainder irregular, moderate to small.	R.R.S. *William Scoresby.*
	21	From 59° 03′ S.	32° 52′ W.	Many bergs	..	R.R.S. *Discovery II*
		to 58° 40′ S.	31° 52′ W.			
	24	55° 25′ S.	32° 28′ W.	4 bergs	Irregular	R.R.S. *William Scoresby.*
	10	55° 32′ S.	32° 08′ W.	30 bergs. Many growlers	Bergs, 8 small, moderate, tabular; 22 small, moderate, irregular, much weathered, some capsized.	do.
	25	55° 32′ S.	31° 25′ W.	2 bergs	1 tabular, 1 irregular	do.
	10	55° 40′ S.	31° 39′ W.	Many bergs and growlers	Moderate, irregular and tabular	do.
	10	From 56° 05′ S.	29° 30′ W.	30 bergs	Tabular, irregular, conical, pinnacled, varying in size	do.
		to 55° 40′ S.	31° 39′ W.			
	25	55° 34′ S.	31° 03′ W.	Many bergs	..	R.R.S. *Discovery II.*
	25	55° 27′ S.	31° 02′ W.	10 bergs	2 tabular, moderate, 8 small to moderate; irregular	R.R.S. *William Scoresby.*
	25	From 55° 27′ S.	31° 02′ W.	25 bergs. Many growlers	Bergs, mostly small irregular, 3 large tabular, 3 large pinnacled.	do.
		to 55° 56′ S.	29° 46′ W.			
	25	55° 56′ S.	29° 46′ W.	18 bergs. Many growlers	Bergs, tabular and pinnacled	do.
	10	56° 05′ S.	29° 30′ W.	10 bergs. Many growlers	Bergs, small to moderate, irregular. Much weathered	do.
	10	56° 19′ S.	29° 05′ W.	1 berg	Low tabular	do.
	9	From vicinity of Lyeskov Is.		5 bergs	Mainly small irregular	do.
	10	to 56° 19′ S.	29° 05′ W.			
	25	56° 10′ S.	29° 00′ W.	20 bergs. Many growlers	Bergs, 8 tabular, moderately large, 12 small to moderate, weathered.	do.
	9	Vicinity of Lyeskov Is.		40 bergs. Many growlers	10 moderately large tabular bergs. 30 small to moderate, irregular.	do.
	9	From 57° 10′ S.	25° 20′ W.	Numerous bergs and growlers	Irregular	do.
		to 56° 43′ S.	27° 51′ W.			
	25	N.W. of Zavodoski		5 bergs. Many growlers	Bergs, moderate, tabular	do.
	25	Off Zavodoski		9 bergs, 4 growlers	Bergs, 3 small, 4 moderate, 2 tabular, irregular	do.
	25	N.E. of Visokoi		17 bergs	Small, irregular	do.
	25	N.W of Visokoi		2 bergs. Small growlers	Bergs, small, irregular	do.
	25	E. of Visokoi.		4 bergs	2 moderate, tabular; 2 irregular	do.
	24	55° 55′ S.	26° 27′ W.	Several bergs	..	R.R.S. *Discovery II.*
	9	57° 10′ S.	25° 20′ W.	20 bergs	Small to moderate, irregular	R.R.S. *William Scoresby.*
	8	From 57° 25′ S.	24° 20′ W.	2 bergs, 10 growlers	Bergs tabular	do.
	9	to 57° 10′ S.	25° 20′ W.			
	23	56° 23′ S.	24° 50′ W.	Several bergs	..	R.R.S. *Discovery II.*
	8	57° 25′ S.	24° 20′ W.	25 bergs	Mainly small, irregular, 6 tabular moderately large, 1 large tabular,	R.R.S. *William Scoresby.*
	8	57° 39′ S.	23° 25′ W.	28 bergs	Mainly irregular	do.
	8	57° 45′ S.	23° 02′ W.	8 bergs	Mainly irregular	do.
	8	57° 47′ S.	22° 31′ W.	4 bergs	1 low tabular, 3 irregular	do.
	8	From 57° 55′ S.	21° 44′ W.	6 bergs, 8 growlers	Bergs, 2 tabular, 4 irregular	do.
		to 57° 47′ S.	22° 31′ W.			
	8	57° 56′ S.	21° 44′ W.	4 bergs	Small, irregular	do.
	7	From 58° 15′ S.	21° 40′ W.	3 bergs	1 tabular, 2 irregular	do.
	8	to 57° 55′ S.	21° 44′ W.			
	7	58° 15′ S.	21° 40′ W.	3 bergs	One berg breaking up with 2 small ones, obviously parts of the original berg. Water-worn parts bright blue. Large berg partially capsized, originally tabular, showing about 20 layers very distinctly at the original top, apparently snow deposits. Thickness of layers very difficult to estimate but thought to be from 1 to 3 feet each.	do.
	7	From 59° 51′ S.	20° 12′ W.	24 bergs	5 tabular, 19 irregular	do.
		to 58° 15′ S.	21° 40′ W.			
	7	59° 51′ S.	20° 12′ W.	4 bergs	Small, irregular	do.
	6	61° 30′ S.	19° 40′ W.	2 bergs	Small, irregular	do.
	6	61° 40′ S.	19° 26′ W.	1 berg	Irregular	do.
	6	From 61° 58′ S.	18° 10′ W.	5 bergs	3 irregular, 2 tabular	do.
		to 61° 40′ S.	19° 26′ W.			
	6	61° 58′ S.	18° 10′ W.	1 berg, 1 growler	Berg, small, irregular	do.
	6	62° 26′ S.	18° 04′ W.	1 berg	Irregular	do.
	5	64° 31′ S.	16° 32′ W.	3 bergs	1 tabular, 2 irregular	do.
	5	64° 40′ S.	16° 30′ W.	8 bergs, 3 growlers	Bergs, small, irregular	do.
	4	66° 16′ S.	15° 35′ W.	2 bergs	Irregular	do.
	1	66° 20′ S.	15° 30′ W.	3 bergs, 1 growler	Bergs, small, irregular	do.
	4	67° 30′ S.	14° 40′ W.	3 bergs	Small to moderate, irregular	do.
	2	68° 40′ S.	13° 40′ W.	Loose ice	..	do.
	3	From 68° 40′ S.	13° 40′ W.	Loose ice	..	do.
		to 68° 56′ S.	13° 03′ W.			
	3	68° 50′ S.	13° 03′ W.	Field ice	..	do.
	21	41° 00′ S.	12° 00′ W.	Ice	..	S.S. *Forest Holme.*

Reports of Ice previous to February, 1931, will be found in The Marine Observer, Vol. VIII, No. 86, p. 44.

WEATHER SIGNALS.

I.—SHIPS' WIRELESS WEATHER SIGNALS.

Urgent Meteorological reports should be made at any time. Any ship at any time encountering a tropical revolving storm should report to all ships and the appropriate station, continuing to report at intervals of three hours so long as the ship remains under the influence of the storm.

Ships experiencing gales in which the wind reaches Force 10 or above in the Beaufort Scale should inform all ships within range.

Ships encountering Ice or other navigational dangers should report immediately to all ships and the appropriate station; see instructions for Danger to Navigation Signals for all ships, pages 28 and 29, Vol. IX, No. 97.

For full particulars of "Selected Ships" Routine Meteorological Reports with Schedule for Communication, see pages 13 to 16, Vol. IX, No. 97.

See List of W/T Stations detailed to receive reports from **A Selected Ships** with particulars up to date below, also on Chart III.

In parts of the world where such stations and particulars are not given, British **A Selected Ships** should make their reports to **CQ** on 2100 metres (143 kc/s) as stated on page 15, Vol. IX, No. 97 (January, 1932, Marine Observer).

B Selected Ships broadcast their report to C.Q. on 600 m. spark, and these may be intercepted by the stations ringed in on Chart III. In making these reports to C.Q. "B Selected Ships" should make special endeavour to ensure that the report is received at these shore stations. With a view to assisting Meteorological Services who have provided information and to ensuring that routine reports from all "Selected Ships" within range of certain coast stations may be received by those services a list of stations specially detailed to receive reports from "B Selected Ships" is also given on pages 44 and 45. The procedure given on pages 13 to 16, Vol. IX, No. 97, should be adhered to as far as possible.

According to agreement reached by the International Meteorological Conference, 1929, all arrangements for the co-operation of shipping in Voluntary Marine Meteorological work are to be made through the Meteorological Services of the different countries in which the ships are registered, in accordance with the agreed upon International plan for all parts of the World, following the International Convention for Safety of Life at Sea, 1929.

WIRELESS STATIONS DETAILED TO RECEIVE ROUTINE CODED WEATHER REPORTS FROM "A SELECTED SHIPS."

Request for Information.

The attention of Meteorological Services is invited to the invitation given on page 13 of Vol. IX, No. 97, January Marine Observer.

Ocean.	Station.	Position.	Call Sign.	Frequency and Wave Length. For Station to call up "Selected Ships."	Frequency and Wave Length. For "Selected Ships" to report to Station.	Area and limits covered by Station.	Telegraphic address of Meteorological Centre.	Information required—Limit of Groups.	Notes.
North Atlantic and North Sea.	Portishead.	Lat. 51° 28′ 41″ N. Long. 2° 47′ 30″ W.	GKU.	149 kc/s. (2013 metres).	143 kc/s. (2100 metres).	North Sea and Eastern North Atlantic East of Longitude 40° W. and North of Latitude 38° N., but not within 300 miles of station. (see Chart III.)	Weather London.	Weather only, up to seven groups, preferably No. 3 Supplementary Groups.	Control system. "Selected Ships" chosen to report in given order notified by station daily at 2230, 0330, and 1030 G.M.T. Roll call thus—Weather begins — Call signs of chosen "Selected Ships" —Weather ends.
	Chatham Mass., Sayville N.Y. or West Palm Beach.	Lat. 41° 42′ N. Long. 70° 00′ W. Lat. 40° 42′ N. Long. 73° 06′ W. Lat. 26° 42′ N. Long. 80° 02′ W.	WCC. WSL. WMR.		142·9 kc/s. (2098 metres).	North Atlantic West of Longitude 40° W.	Observer Washington.	Weather only. First four groups of observations taken at 0000 and 1200 G.M.T. only required.	No control. All British "A Selected Ships" within area to address their 0000 and 1200 G.M.T. observations to Observer Washington and their 1800 G.M.T. observations to CQ in accordance with schedule.
	Horta, Azores.	Lat. 38° 32′ N. Long. 28° 38′ W.	CTH.		125 kc/s. (2400 metres).	North Atlantic South of Latitude 38° N and East of Longitude 40° W.	Radio Horta.	Weather only, up to seven groups preferably No. 3 Supplementary Groups.	No control — all British "A Selected Ships" within area should report in accordance with Schedule.

WIRELESS STATIONS DETAILED TO RECEIVE ROUTINE CODED WEATHER REPORTS FROM "A SELECTED SHIPS."

(Continued.)

Ocean.	Station.	Position.	Call Sign.	Frequency and Wave Length. For Station to call up "Selected Ships."	Frequency and Wave Length. For "Selected Ships" to report to Station.	Area and limits covered by Station.	Telegraphic address of Meteorological Centre.	Information required—Limit of Groups.	Notes.
Mediterranean and Red Sea.									
South Atlantic.									
Indian Ocean.	Colombo.	Lat. 6° 55′ 14″ N. Long. 79° 52′ 46″E.	VPB	130 kc/s. (2300 metres).	143 kc/s. (2100 metres).	Indian Ocean including Arabian Sea and Bay of Bengal within a range of about 1500 miles.	Obs.	Weather only. No. 6 Supplementary groups preferred.	No control — all British "A Selected Ships" within area should report in accordance with Schedule.
	Perth.	Lat. 32° 01′ 51″ S. Long. 115°49′31″E.	VIB	—	125 kc/s. (2400 metres).	Indian Ocean and Southern Ocean between Long. 105° and 135° E.; but not within 100 miles of station.	Weather.	Weather only. No. 6 Supplementary groups.	No control — all British "A Selected Ships" within area should report in accordance with Schedule. Reports not required for observation times not starred on Chart I., p. 15, Vol. IX. No. 97 (January).
North Pacific and China Sea.	Cape d'Aguilar, Hong Kong.	Lat. 22° 12′ 39″N. Long. 114°15′19″E.	VPS.		125 kc/s. (2400 metres).	China Sea and North Pacific to about 1,500 miles from station.	Royal Observatory.	Weather only, preferably No. 6 Supplementary Groups.	No control — all British "A Selected Ships" within area should report in accordance with Schedule.
South Pacific.	Sydney.	Lat. 33° 46′ 00″ S. Long. 151°03′09″E.	VIS	—	125 kc/s. (2400 metres).	S. Pacific, Coral and Tasman Seas and Southern Ocean between Long. 135° and 160° E.; but not within 100 miles of station.	Weather.	Weather only. No. 6 Supplementary groups.	No control — all British "A Selected Ships" within area should report in accordance with Schedule. Reports not required for observation times not starred on Chart I., p. 15, Vol. IX. No. 97 (January).

WIRELESS STATIONS DETAILED TO INTERCEPT ROUTINE CODED WEATHER REPORTS FROM "B SELECTED SHIPS."

Ocean.	Station.	Position.	Call Sign.	Telegraphic address of Meteorological Centre desiring information.	Information desired.	Notes.
North Atlantic.	Horta, Azores.	Lat. 38° 32′ N. Long. 28° 38′ W.	CTH.	Radio Horta	Weather only, up to 7 groups, preferably No. 3 Supplementary Groups.	
South Atlantic.	Salinas	Lat. 0° 35′ 00″ S. Long. 47° 18′ 45″ W.	PPL.	Meteoro Rio.	Weather only, including supplementary groups.	
	S. Luiz	Lat. 2° 31′ 48″ S. Long. 44° 16′ 51″ W.	PXM.			
	Fortaleza	Lat. 3° 46′ 21″ S. Long. 38° 32′ 26″ W.	PPC.			
	Natal	Lat. 5° 46′ 41″ S. Long. 35° 18′ 24″ W.	PXN.			
	F. Noronha	Lat. 3° 50′ 24″ S. Long. 32° 24′ 48″ W.	PXF.			
	Olinda	Lat. 8° 00′ 35″ S. Long. 34° 51′ 00″ W.	PPO.			
	Amaralina	Lat. 13° 00′ 12″ S. Long. 38° 30′ 45″ W.	PPA.			
	Abralhos	Lat. 17° 57′ 30″ S. Long. 38° 41′ 05″ W.	PXH.			
	Victoria	Lat. 20° 10′ 00″ S. Long. 40° 17′ 46″ W.	PPT.			
	Rio	Lat. 22° 53′ 42″ S. Long. 43° 13′ 24″ W.	PPR.			
	Santos	Lat. 23° 56′ 27″ S. Long. 46° 19′ 28″ W.	PPS.			
	Floriano-polis.	Lat. 27° 36′ 00″ S. Long. 48° 30′ 18″ W.	PPF.			
	Junçao	Lat. 32° 04′ 00″ S. Long. 52° 07′ 00″ W.	PPS.			
Indian Ocean.	Calcutta.	Lat. 22° 33′ 31″ N. Long. 88° 20′ 16″ E.	VWC.	Weather.	Weather only up to 6 groups, No. 6 Supplementary Groups preferred.	
	Rangoon.	Lat. 16° 45′ 57″ N. Long. 96° 11′ 51″ E.	VTR.			
	Madras.	Lat. 12° 59′ 17″ N. Long. 80° 10′ 56″ E.	VWM.			
	Bombay.	Lat. 19° 04′ 55″ N. Long. 72° 49′ 54″ E.	VWB.			
	Karachi.	Lat. 24° 51′ 05″ N. Long. 67° 02′ 32″ E.	VWK.			
	Matara.	Lat. 6° 01′ 07″ N. Long. 80° 35′ 39″ E.	GZP.			
	Mauritius.	Lat. 20° 23′ S. Long. 57° 35′ E.	VRS.	Observatory Mauritius.	Weather 4 universal groups and first of No. 6 Supplementary Groups.	
	Geraldton.	Lat. 28° 47′ 15″ S. Long. 114° 36′ 24″ E.	VIN	Weather.	Weather only, including No. 6 Supplementary Groups.	
	Perth.	Lat. 32° 01′ 51″ S. Long. 115° 49′ 31″ E.	VIP			
	Esperance.	Lat. 33° 52′ 40″ S. Long. 121° 53′ 34″ E.	VIE			

WIRELESS STATIONS DETAILED TO INTERCEPT ROUTINE CODED WEATHER REPORTS FROM "B SELECTED SHIPS."

(Continued.)

Ocean.	Station.	Position.	Call Sign.	Telegraphic address of Meteorological Centre desiring information.	Information desired.	Notes.
North Pacific and China Sea.	Cape d'Aguilar, Hong Kong.	Lat. 22° 12′ 39″ N. Long. 114°15′19″E.	VPS.	Royal Observatory.	Weather only, preferably No. 6 Supplementary Groups.	
South Pacific.	Auckland.	Lat. 36° 50′ 36″ S. Long. 174°46′08″E.	ZLD.	Weather Wellington.	Weather only, up to 7 groups.	
	Wellington.	Lat. 41° 16′ 26″ S. Long. 174°01′00″E.	ZLW.			
	Awarua.	Lat. 46° 30′ 27″ S. Long. 168°22′21″E.	ZLB.			
	Chatham Island.	Lat. 43° 57′ 02″ S. Long. 176°31′04″W.	ZLC.			
	Rarotonga.	Lat. 21° 11′ 54″ S. Long. 159°48′51″W.	ZKR.			
	Apia.	Lat. 13° 15′ 17″ S. Long.170′49′42″W.	ZMA.			
	Thursday I.	Lat. 10° 35′ 14″ S. Long.142°12′43″E.	VII	Weather	Weather only, including No. 6 Supplementary Groups.	
	Townsville	Lat. 19° 16′ 09″ S. Long.146°49′47″E.	VIT			
	Brisbane	Lat. 27° 25′ 34″ S. Long.153°07′19″E.	VIB			
	Sydney	Lat. 33° 46′ 00″ S. Long.151°03′09″E.	VIS			
	Melbourne	Lat. 37° 46′ 56″ S. Long.144°52′09″E.	VIM			
	Adelaide	Lat. 34° 51′ 14″ S. Long.138°31′55″E.	VIA			

II. WIRELESS WEATHER SIGNALS.

Bulletins.

It is necessary to make careful distinction between wireless weather reports and weather forecasts.

A wireless weather report is a statement, in plain language or code, of the observed conditions prevailing at a place at a given time.

A weather forecast is a statement, usually in plain language, of weather which may be expected at a place or over an area in the near future.

For forecasts issued to shipping by wireless it is usual to publish full descriptions giving abbreviated names of areas with prescribed limits and the length of period; if such published description is not given, the place, or area and the period to which the forecasts apply are included in the message.

WIRELESS WEATHER BULLETINS,

GREAT BRITAIN AND IRELAND.

"WEATHER SHIPPING" BULLETIN.

This Bulletin was amended on January 1st 1932, vide Board of Trade Notice to Mariners of 1st December, 1931.

C.W. Issues.

W/T Station, **Rugby.** Latitude 52° 22′ 10″ N. Longitude 1° 11′ 15″ W. Call Sign **G.B.R.**

Wave length 18,750 metres C.W. (16 kc/s.).

Times of transmission 0910 G.M.T. and 2118 G.M.T.

The message issued at 0910 G.M.T. contains 0700 G.M.T. observations. The message issued at 2118 G.M.T. contains 1800 G.M.T. observations.

During the time of S.O.S. lookout, from 0915 to 0918 G.M.T. there will be a pause in the transmission of the a.m. signals.

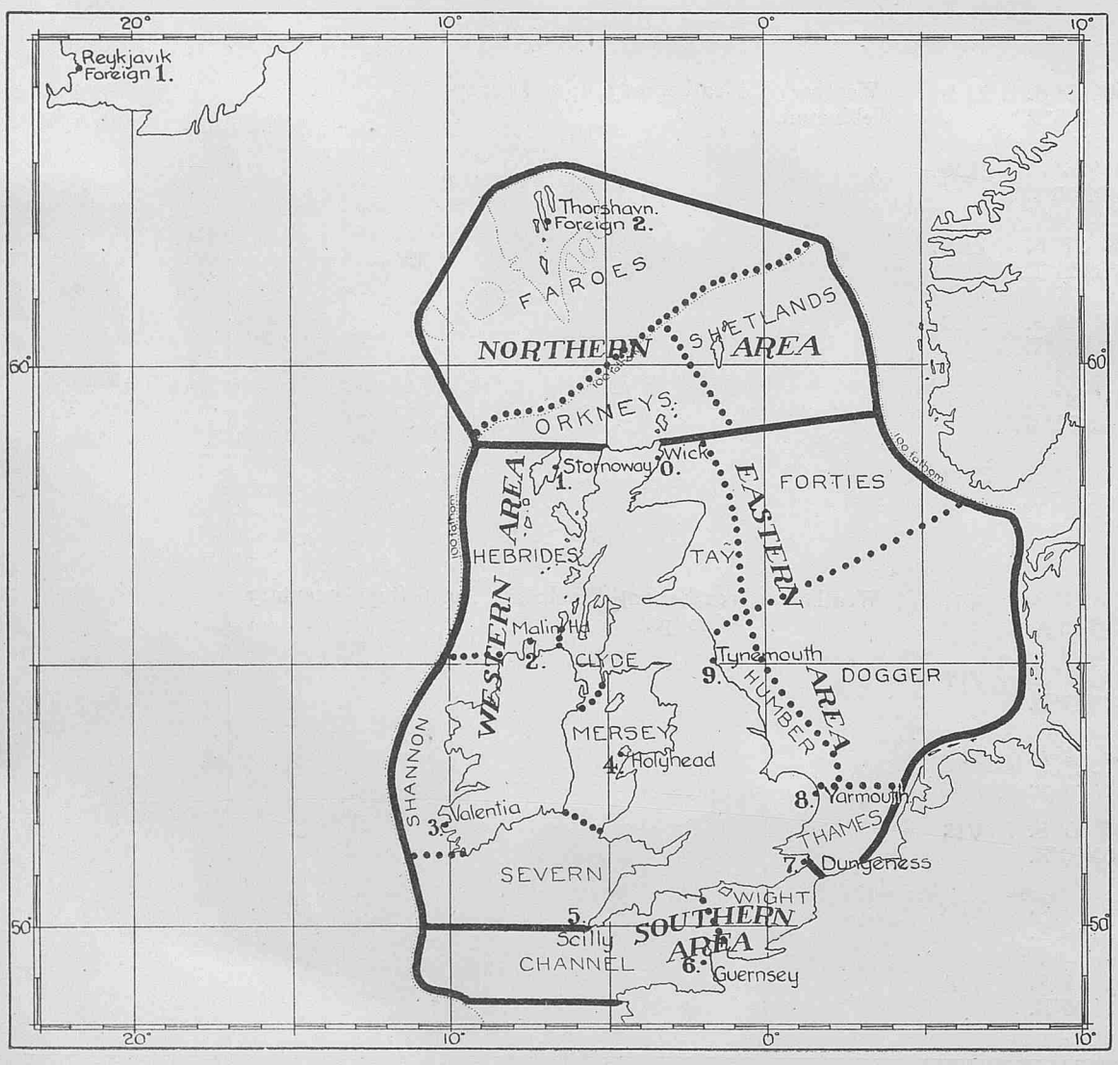
These messages are preceded by the words "Weather Shipping" and consist of seven parts. Part II is in code, the remaining parts in plain language.

Part I is a brief general statement which will generally provide information of the barometric pressure systems which influence the weather in the region dealt with by this Bulletin.

Part II is a weather report in code giving actual observations at ten British coast stations and two foreign stations.

For full information for decoding see next page, pages *24* to *28* of the January MARINE OBSERVER, also the pamphlet, M.O. 329, "DECODE FOR USE WITH THE INTERNATIONAL CODE FOR WIRELESS WEATHER MESSAGES FROM SHIPS", obtainable from H.M. Stationery Office, price 3d.

Chartlet showing Stations, Forecast Areas and Districts.



WESTERN AREA.

The sea and coasts eastward of the 100 fathom line from the latitude of Cape Wrath to Scilly.

DISTRICTS.

HEBRIDES—That part of Western which lies N. and W. of Bloody Foreland, Rathlin I. and Islay.

SHANNON—West coast of Ireland from Bloody Foreland to the Fastnet.

SEVERN—South coast of Ireland. Bristol Channel and approaches.

MERSEY—The Irish Sea and approaches.

CLYDE — The North Channel and approaches to Clyde.

SOUTHERN AREA.

The English Channel from S. Foreland to the 100 fathom line.

DISTRICTS.

CHANNEL—West of St. Albans.

WIGHT—East of St. Albans.

EASTERN AREA.

The North Sea southward of line Ducansby Head to Utsire to the Straits of Dover.

DISTRICTS.

THAMES — Thames estuary and its approaches.

HUMBER—East coast from Haisborough to Longstone.

TAY—East coast of Scotland, including Moray Firth.

FORTIES—Eastward to 100 fathom line and N. of Longstone to Naze.

DOGGER—Eastward to coast of Denmark and S. of line Longstone to Naze.

NORTHERN AREA.

Northward of latitude of Cape Wrath and of line Duncansby Head to Utsire, to the bank of soundings north of the Faroes in the west, and to north east extremity of the 100 fathom line in the east. Westward of the 100 fathom line to Bill Baileys Bank.

DISTRICTS.

ORKNEYS—Orkneys and north-westward to the 100 fathom line.

SHETLANDS — Shetlands and eastward to the 100 fathom line.

FAROES—That part of the Northern Area to the northward of the 100 fathom line.

Parts III, IV, V and VI are forecasts of wind and visibility for the 12 hours following the time of shore observations for the areas shown upon the Chartlet below.

Part VII commencing "Outlook" is a brief general statement of weather expected after the period of the forecasts.

NOTE.—In order to avoid ambiguity between the words Ireland and Iceland the latter word is always repeated whenever it occurs in Part I.

Explanation of Chartlet.

The numbers alongside the names of the stations indicate their code number (in the event of any station being substituted, the name of the substitute will be given in the message in place of this figure until such time as correction has been adequately made in Notices to Mariners and in THE MARINE OBSERVER).

The boundaries of the areas are defined by the plain black lines and the coast line.

These areas are sub-divided into districts, named after islands, rivers or banks within them, so that they may be readily memorised.

For instance the district in the neighbourhood of the Long Forties is termed "Forties".

The boundaries of these districts should only be taken as an approximate indication of their extent.

These districts are for the purpose of giving information of different weather within an area, without unduly lengthening the wording of a message. When similar weather is expected all over an area, these district names will not be used.

DESCRIPTION OF STATION REPORTS GIVEN IN PART II OF THE BULLETIN, AND INSTRUCTIONS FOR DECODING.

These reports only contain an identifying number of the stations from which they originate, and just those elements which are most essential for the purpose of the mariner, viz., the true direction of the wind, and its force, the barometer and how it has recently changed, the visibility to seaward, and the weather.

The observations are made at fixed times, viz., 0700 G.M.T. and 1800 G.M.T.

Instructions for Decoding.

These reports are made by means of the code tables of the International Code for wireless weather messages from ships, in five figure groups which are paired, each pair of groups giving a complete report for a station.

For full description of the key letters, see page 24 January number and pamphlet M.O. 329.

First Group of Pair:—I_N ABBV meaning:—

I_N = Station. British stations from 1 to 9 and 0, and foreign stations 1 and 2, prefixed by the word "foreign" (see Chartlet).

A = Barometric tendency.

BB = Barometric pressure.

V = Visibility.

Second Group of Pair is arranged, in accordance with International agreement, similar to the third group of Selected Ships reports, i.e.

D D F w w

meaning:—

DD = Wind Direction.

F = Wind force.

ww = Weather.

In all cases when a figure cannot be given, a hyphen ▬ • • • • ▬ is given to preserve the order.

Sample Message.

(28th December, 1930).

Call Sign:—*CQ CQ CQ GBR GBR GBR (repeated twice).*

Weather Shipping.

General Statement.—Deep depression north of Faroes moving slowly northeast stop Intense depression north-west of Ireland will probably move east-north-east.

Station Reports.

10877	*20301*	*28856*	*09360*	*30868*	*20402*	*47935*	*17760*	*57996*
18902	*66117*	*16401*	*75127*	*20602*	*85106*	*18502*	*96977*	*16360*
00898	*18601*	*Foreign*	*12847*	*08102*	*22726*	*22660*		

Forecast.

Western Area. Hebrides wind moderate to strong south easterly or variable visibility moderate to good Shannon wind south westerly veering fresh to strong visibility good Clyde Mersey Severn southerly gale visibility moderate to good.

Southern Area. Southerly gale whole gale at times, visibility moderate to good.

Eastern Area. Visibility moderate to good stop Forties wind southwest strong to gale backing and moderating then increasing remainder Eastern Area wind southerly increasing to gale whole gale in places.

Northern Area. Visibility moderate to good stop Faroes Orkneys wind southwest to west strong to gale then moderating and veering northwest Shetlands wind southwest strong to gale probably backing and moderating then increasing.

Outlook strong winds or gales.

I.C.W. and Spark Issues.

Certain portions of the "Weather Shipping" Bulletin described above are broadcast by coast W/T stations on I.C.W. or spark as follows:—

For the Western Area.

Valentia. Lat. 51° 56′ N., Long. 10° 21′ W. (approx.), call sign **G.C.K.**, wavelength 600 metres spark. At 0948 G.M.T. and 2048 G.M.T.

Seaforth. Lat. 53° 28′ N., Long. 3° 01′ W. (approx.), call sign **G.L.V.**, wavelength 600 metres I.C.W. At 0930 G.M.T. and at 2030 G.M.T.

Commencing **Western Area** followed by ten groups of figures which indicate observations made at the five stations numbered 1 to 5 in the "Weather Shipping" Bulletin followed by the word **Forecast** after which the 12-hour forecast for the Western Area will be given.

For the Southern Area.

Niton. Lat. 50° 35′ N., Long. 1° 17′ W. (approx.), call sign **G.N.I.**, wavelength 600 metres I.C.W. At 0930 G.M.T. and at 2030 G.M.T.

Commencing **Southern Area** followed by six groups of figures which indicate observations made at the three stations numbered 5, 6 and 7 in the "Weather Shipping" Bulletin, followed by the word **Forecast**, after which the 12-hour forecast for the Southern Area is given.

For the Eastern Area.

Cullercoats. Lat. 55° 02′ N., Long. 1° 26′ W. (approx.), call sign **G.C.C.**, wavelength 600 metres I.C.W. At 0948 G.M.T. and at 2048 G.M.T.

Commencing **Eastern Area**, followed by eight groups of figures which indicate observations made at the four stations numbered 7, 8, 9 and 0 in the "Weather Shipping" Bulletin, followed by the word **Forecast**, after which the 12-hour forecast for the Eastern Area is given.

Wireless Telephony (R/T) Issues.

Certain portions of the "Weather Shipping" Bulletin are broadcast from the BRITISH BROADCASTING CORPORATION'S Station at Daventry by word of mouth as follows:—

Daventry (Midland National). Latitude 52° 15′ N., Longitude 1° 08′ W. (approx.), wavelength 1554.4 metres (R/T). At 1030 and 2115 G.M.T. on weekdays and 1030 and 2100 G.M.T. on Sundays.

This station broadcasts **Parts I, III, IV, V, VI and VII**, of the "Weather Shipping" Bulletin.

When British Summer time is in operation these issues are made one hour earlier by G.M.T. so that the hours and minutes given by B.S.T. remain the same as in winter when G.M.T. is used.

As changes in the time of these issues through the BRITISH BROADCASTING CORPORATION'S Station at Daventry are occasionally necessary at short notice, mariners are referred to the "Radio Times", the official organ of the BRITISH BROADCASTING CORPORATION which is published weekly, for notice of the exact times of issue of this message; these are also given in the daily press.

It should be noted that the times given in the "Radio Times" are G.M.T. only when summer time is not in operation, while all times for Wireless Weather Telegraphy in THE MARINE OBSERVER are G.M.T.

The masters and officers of merchant shipping, and skippers of fishing craft, who when in port in the British Isles, desire information of the probability of weather expected over the land, and particularly rainfall, for the purpose of making arrangements for working cargo etc., should listen in for the forecasts for land areas, which are made by word of mouth through this station. For times, see "Radio Times" or daily newspapers.

WIRELESS GALE WARNINGS.

I.C.W. and Spark Issues.

These warnings are broadcast in plain language and refer to the area which lies within about 150 miles of the station broadcasting the warning.

The warnings are broadcast on a wavelength of 600 metres preceded by the **International Safety Signal TTT (— — —)** repeated at short intervals 10 times on full power; the warning being broadcast **one minute later, once only.**

Stations broadcasting these warnings.

Station.	Call Sign.	Latitude. (approx.)	Longitude. (approx.)	Wave-length.
Niton (Isle of Wight) ...	**GNI**	50° 35′ N.	1° 17′ W.	600 m. i.c.w.
Land's End	**GLD**	50° 07′ N.	5° 40′ W.	600 m. spk.
Fishguard	**GRL**	52° 01′ N.	4° 59′ W.	600 m. i.c.w.
Seaforth (Liverpool) ...	**GLV**	53° 28′ N.	3° 01′ W.	600 m. i.c.w.
Wick	**GKR**	58° 26′ N.	3° 06′ W.	600 m. spk.
Cullercoats	**GCC**	55° 02′ N.	1° 26′ W.	600 m. i.c.w.
Valentia (Ireland) ...	**GCK**	51° 56′ N.	10° 21′ W.	600 m. spk.
Malin Head (Ireland)...	**GMH**	55° 22′ N.	7° 20′ W.	600 m. spk.

Example.—"*Gale Warning.—Deep depression off N.W. Ireland moving East. Gales from S.E., backing North, probable North of Lat.* 54°. *Southerly gales veering N.W. other coasts.*"

Should the warning be broadcast during the period when one-operator ships do not keep watch it will be repeated in the next watch-keeping period for one-operator ships at either of the following times:—

Wick ...
Land's End
Seaforth ...
Malin Head } 0800, 1200, 1600 or 2000 G.M.T.

Cullercoats ...
Niton ... ...
Fishguard... ...
Valentia (Ireland) } 0818, 1218, 1618 or 2018 G.M.T.

Gale warnings broadcast at 0800, 0818, 2000 or 2018 G.M.T. will follow the navigational warning, if one is broadcast.

NOTE.—For locating depressions the use of the words Ireland or Iceland is frequent and in order that they shall not be confused when Iceland is appropriate it will be repeated thus—Iceland Iceland.

Wireless Telephony (R/T) Issues.

Gale warnings will be broadcast as necessary by Radio Telephony, by the BRITISH BROADCASTING CORPORATION'S station at **Daventry (Midland National)**, on the wavelength of 1554.4 metres as follows:—

Weekdays.

Immediately after the time signals at 1300, 1645 and 1830 G.M.T. Gale warnings issued at 1300 G.M.T. will be repeated both at 1645 and 1830 G.M.T. and a warning issued at 1645 G.M.T. will be repeated at 1830 G.M.T.

Sundays.

Immediately after the time signal at 1500 G.M.T. only.

When British Summer Time is in operation these issues are made one hour earlier by G.M.T. so that the hours and minutes given by B.S.T. remain the same as in winter when G.M.T. is used.

The warnings will be made in the following manner by word of mouth:—

"*The Meteorological Office issued the following gale warning to shipping at* 1430 *G.M.T. to-day:—'Secondary depression off S.W. Ireland moving North-eastward, Southerly gales expected South of line from Exmouth to Spurn Head.'*"

These R/T gale warnings are simply a repetition of the W/T gale warnings at fixed times convenient to the B.B.C.

Changes in the times of issue by R/T of these gale warnings for shipping are necessary at shorter notice than can be given by THE MARINE OBSERVER. Mariners are, therefore, referred to "The Radio Times," the official organ of the BRITISH BROADCASTING CORPORATION, published weekly, for the exact times of issue. The times given in "The Radio Times" are only G.M.T. when summer time is not in operation.

III. WIRELESS TIME SIGNALS.

C.W. Issues.

Rugby W/T station, Lat. 52° 21′ 59″ N., Long. 1° 11′ 12″ W. call sign **GBR**, broadcasts Time Signals on a wavelength of 18,750 metres (C.W.) at 1000 and 1800 G.M.T.:—

System Used.—Modified rhythmic type as recommended by the International Time Commission of 1925, consisting of a series of 306 signals emitted in 300 seconds of Mean Time, the concluding signal being the exact hour.

In each series, Signals Nos. 1, 62, 123, 184, 245 and 306 are single dashes (—) of 0·4 sec. duration and commence at the exact minute. Each dash is followed by 60 dots (·) of 0·1 sec. duration.

The commencement of successive signals, whether dot or dash, are equally spaced at intervals of 60/61 parts of one second of Mean Time, i.e.:—

G.M.T.

h.	m.	s.	Signal.			
9 or 17	55	00	1st signal a dash (—) followed by 60 dots (· · · · etc.).			
,,	56	00	62nd	do.	do.	do.
,,	57	00	123rd	do.	do.	do.
,,	58	00	184th	do.	do.	do.
,,	59	00	245th	do.	do.	do.
10 or 18	00	00	306th signal, a dash (—).			

This type of time signal will enable chronometer comparisons of extreme accuracy to be obtained, the method employed being to count the number of intervals from the first dash (–) until coincidence occurs between one of the rhythmic signals and the beat of the chronometer. It is not necessary actually to count the signals. Take the nearest second of each dash by the chronometer, and write down the chronometer time of coincidence. The difference gives the number of the rhythmic signal. For ordinary navigational purposes a comparison obtained by disregarding the dots and using the commencement of the dashes only (given at the exact minute) will be sufficiently accurate.

NOTE.—An article entitled "Greenwich Time" describing how these signals are made, of great interest to navigators, will be found on pp. 159-167, Vol. V, No. 56.

Wireless Telephony (R/T) Issues.

The Time Signals broadcast by the BRITISH BROADCASTING CORPORATION through their Station at **Daventry (Midland National)**, latitude 52° 15′ N., longitude 1° 08′ W., wavelength 1554.4 metres, may be of utility for rating chronometers at sea in ships which are fitted for R/T reception but have not Wireless Telegraphy on board.

These Time Signals are made at the following times:—

Weekdays.	Sundays.
1030 G.M.T.	1030 G.M.T.
1300 ,,	1500 ,,
1645 ,,	2100 ,,
1830 ,,	
2100 ,,	
2330 ,,	

When British Summer Time is in operation these issues are made one hour earlier by G.M.T., so that the hours and minutes given by B.S.T. remain the same as in Winter when G.M.T. is used.

The time Signals consist of the automatic transmission by the Standard Clock at Greenwich Observatory, of six dots, representing successive seconds. The final dot is the Time Signal. The amount of lag is less than 0.01 seconds.

The Time Signal will, when necessary, be superimposed on programmes, but the Signals will be loud enough to be easily discernible.

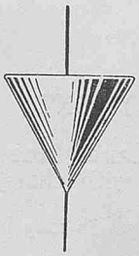
As changes in the times of the BRITISH BROADCASTING CORPORATION issues may be made at shorter notice than can be given by THE MARINE OBSERVER, Mariners are therefore referred to "The Radio Times," the official organ of the BRITISH BROADCASTING CORPORATION, published weekly, for exact times of issue.

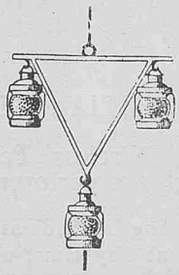
IV. VISUAL GALE WARNINGS.

Great Britain and Ireland.

SOUTH CONE.

By Day. By Night.





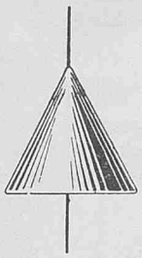
Hoisted for Gales.

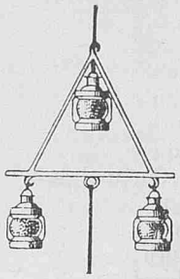
Commencing from a southerly point, such gales often veer, sometimes as far as north-west.

For gales commencing from east or west the S cone will be hoisted if the gale is expected to change to a southerly direction.

NORTH CONE.

By Day. By Night.





Hoisted for Gales.

Commencing from a northerly point.

For gales commencing from east or west the N cone will be hoisted if the gale is expected to change to a northerly direction.

When one of these signals is hoisted it indicates that a telegram has been received from the Meteorological Office by the station exhibiting the signal, that a gale is expected in the vicinity of the station.

The signal will be lowered when the gale has passed and it is anticipated that there will be a period of not less than 12 hours with winds of less than gale force. The cone is kept flying during a lull of the wind if a renewal of the gale is expected.

At present only those stations marked † in the list show the night signal.

The stations are as follows:—

England, East Coast.

Berwick-upon-Tweed	Boston
Holy island	King's Lynn
Amble	Weybourne
Blyth	Cromer
Tynemouth	Yarmouth
North Shields	Gorleston
Souter point	Lowestoft
Sunderland	Southwold
Seaham	Orfordness
Hartlepool	Ipswich
Middlesbrough	Felixstowe
Redcar	Gunfleet
Whitby	Burnham
Robin Hood Bay	Kentish Knock light-vessel
Filey	Greenhithe (H.M.S. *Worcester*)
Scarborough	
Flamborough head	Chatham
Bridlington	Sheerness
Aldbrough	†Southend
Spurn head	Tilbury
Hull	Rotherhithe
Goole	Reculvers
Grimsby	Herne Bay
Mablethorpe	Margate

England, South Coast.

Ramsgate	Beachy head
North Goodwin light-vessel	†Newhaven
Deal	Brighton
Dover	Littlehampton
Sandgate	Hayling island
Dungeness	Portsmouth
Rye	Southampton
Fairlight	Calshot
Eastbourne	Cowes

ENGLAND, SOUTH COAST—(*continued*).

Ryde
St. Catherine point
Needles
Poole
Swanage
St. Alban's head
Weymouth
Portland
Jersey (Channel Is.)
Exmouth
Torquay
Dartmouth
Berry head
Prawle point
Salcombe
Plymouth
Devonport
Rame head
Portwrinkle
Looe
Fowey
Gorran haven
Mevagissey
Coverack
Pendennis Castle point (Falmouth)
Lizard
Mullion
Porthleven
Penzance
Tol Peden Penwith
Scilly (St. Mary's)

England, West Coast, and Wales.

Sennen
Godrevy
St. Ives
Newquay
Trevose head
Padstow
Port Isaac
Lynmouth—Foreland
Bude
Hartland
Bull point
Ilfracombe
Weston-super-Mare
Avonmouth
Newport (Mon.)
Cardiff
Penarth
Nells point
Barry dock
Nash
Briton ferry
Mumbles
Rhos-sili
Burry port
Tenby
Caldy island
St. Ann's head
Fishguard
Newquay (Cardigan)
Aberystwith
Abersoch
Carnarvon
South Stack
Holyhead
Penmon
Point Lynas
Hilbre island
Hoylake
New Brighton
Formby light-vessel
Crosby light-vessel
Runcorn
Liverpool
Preston
Blackpool
Fleetwood
Heysham
Morecambe
Barrow
Walney island
†Workington
Maryport
Douglas (Isle of Man)
Ayre point (Isle of Man)
Ramsey (Isle of Man)

Scotland, West Coast.

Little Ross lighthouse
Mull of Galloway
Port Patrick
Corsewall point
Ballantrae
Ardrossan
Greenock
Kildonan
Campbeltown
Mull of Cantyre
Rhinns of Islay
Rudha Mhail
Glas island
Rudh' Re' lighthouse
Duntulm
Stornoway
Ru Stoer (Stourhead)

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

Cape Wrath
Lerwick
Balta sound
Whalsey
Hamnavoe
Sumburgh head
Fair isle
Noup head
Kirkwall
Stronsay (April to Sept.)
Stromness (Orkney isles)
Cantick head
Broughness
Dunnet head
Wick
Helmsdale

SCOTLAND, NORTH AND EAST COASTS, WITH ORKNEYS AND SHETLANDS—(*continued*).

Tarbetness
Cromarty
Nairn
Burghead
Lossiemouth
Buckie
Port Knockie
Portsoy
Banff
Fraserburgh
Peterhead
Collieston
Aberdeen
Girdleness
Stonehaven
Gourdon
Johnshaven
Montrose
Scurdyness
Arbroath
Fifeness
Anstruther
Methil
Rosyth (H.M.S. *Greenwich*)
Grangemouth
North Berwick
Dunbar
Cockburnspath
St. Abbs head
Eyemouth
Burnmouth
Isle of May

Ireland, North and East Coasts.

Malin head
Portrush
Ballycastle (Torr Head)
Blackhead lighthouse
Belfast
Bangor (Orlock Head)
Ballywalter
Killough
Kilkeel
Kingstown

Ireland, South Coast.

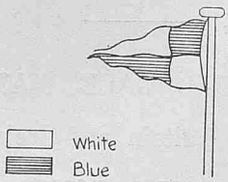
Queenstown
Cork
Galley head

Ireland, West Coast.

Killybegs (St. John's point)
Galway
Loop head

By arrangement with the Admiralty, these signals are hoisted in H.M. Fishery Protection Vessels at sea for the area in which they are stationed, inferior to the

Fishery Flag.



SPECIAL SERVICE BY PAYMENT.

Additional Wireless Telegraphic and Land Line Services which are performed for shipping, with charges.

The following list indicates the information which may be obtained on request, at any time, night or day.

Weather Forecasts.

Special weather forecasts can be made at the Meteorological Office for a period of 24 hours for areas within the region contained between the parallels of 70° N. and 35° N. and between the meridians of 12° W. and the coast of the Continent of Europe.

Procedure for Ships at Sea.—Request weather forecast through the nearest coast W/T. station in Great Britain or Ireland, specifying required date and area, and giving ship's name.

Charge.—7s. 6d.

Procedure for Shipowners and Masters of Ships in port about to sail.—Telephone to Meteorological Office (Telephone No. Holborn 3434, Extension 174) or send **reply paid** telegram to Weather, Phone, London (allowing 10 to 20 words as necessary for reply), requesting weather forecast and specifying date and area for which required, and address to which to be sent.

Charges—None, if the information is required immediately and the reply paid telegram covers the telegraphic charges.

If the information is required for a specified day in advance, or for a number of days, a registration fee of 6d. per week (minimum fee 6d.) in addition to cost of telegrams. In this case application for the forecasts may be made by letter.

Procedure for Salvage Officers and others requiring warning of gales or winds from specified directions, or particular kinds of weather.—Write to the Meteorological Office, London, stating the position or locality and the warnings required, with the period.

Charge.—2s. 6d. for each message, plus telegraphic charges.

NOTE.—For Home waters the Areas and Districts used in the British "Weather Shipping" Bulletin may be used with advantage to indicate the localities for which forecasts are required.

Weather Reports.

Information of the actual local weather conditions prevailing at any of the following stations may be obtained:—

Aberdeen.	Hoylake.	Southend.
*Bangor, Co. Down.	Inchkeith.	Spurn Head.
Barry Island.	Kildonan.	†St. Ann's Head.
Beachy Head.	Lizard.	St. Catherines Point.
*Broughness.	*Mumbles.	*Stornoway.
Cape Wrath.	Needles.	*Torr Head.
†Dover Pier.	*Rame Head.	†Tynemouth.
Dunnet Head.	†Portpatrick.	†Wick.
*Holyhead.	Prawle Point.	

* These stations cannot give information about barometric pressure.
† Reports from these stations include information as to the state of the sea.

Procedure for Ships at Sea.—Request through nearest W/T. coast station in Great Britain or Ireland, specifying the name of the station for which observed weather conditions are required.

Charge.—7s. 6d.

CORRECTION.

IV. VISUAL STORM WARNINGS, AUSTRALIA.

As stated on page 2 of this volume of THE MARINE OBSERVER, visual gale, storm, and hurricane warning signals for parts of the world other than Great Britain will no longer appear in these pages.

As however a mistake was made in the October, 1930, MARINE OBSERVER, and repeated in the October, 1931, MARINE OBSERVER, when giving the visual storm warning signals for New South Wales, it is necessary to publish the following correction:—

Page 217, Volume VII, No. 82.

Page 223, Volume VIII, No. 94.

Delete all following **New South Wales** and *substitute:*—

"The existence of gales which are likely to endanger shipping will be signalled by the International Code from the principal lighthouses and signal stations on the coast of New South Wales".

For full information see Australian Pilot—Vol. II.

Special Notices Regarding Personnel.

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

Captain D. J. Carr Jones.

Captain D. J. CARR JONES commander of the Canadian Pacific Steamship *Montclare* has retired from active service afloat.

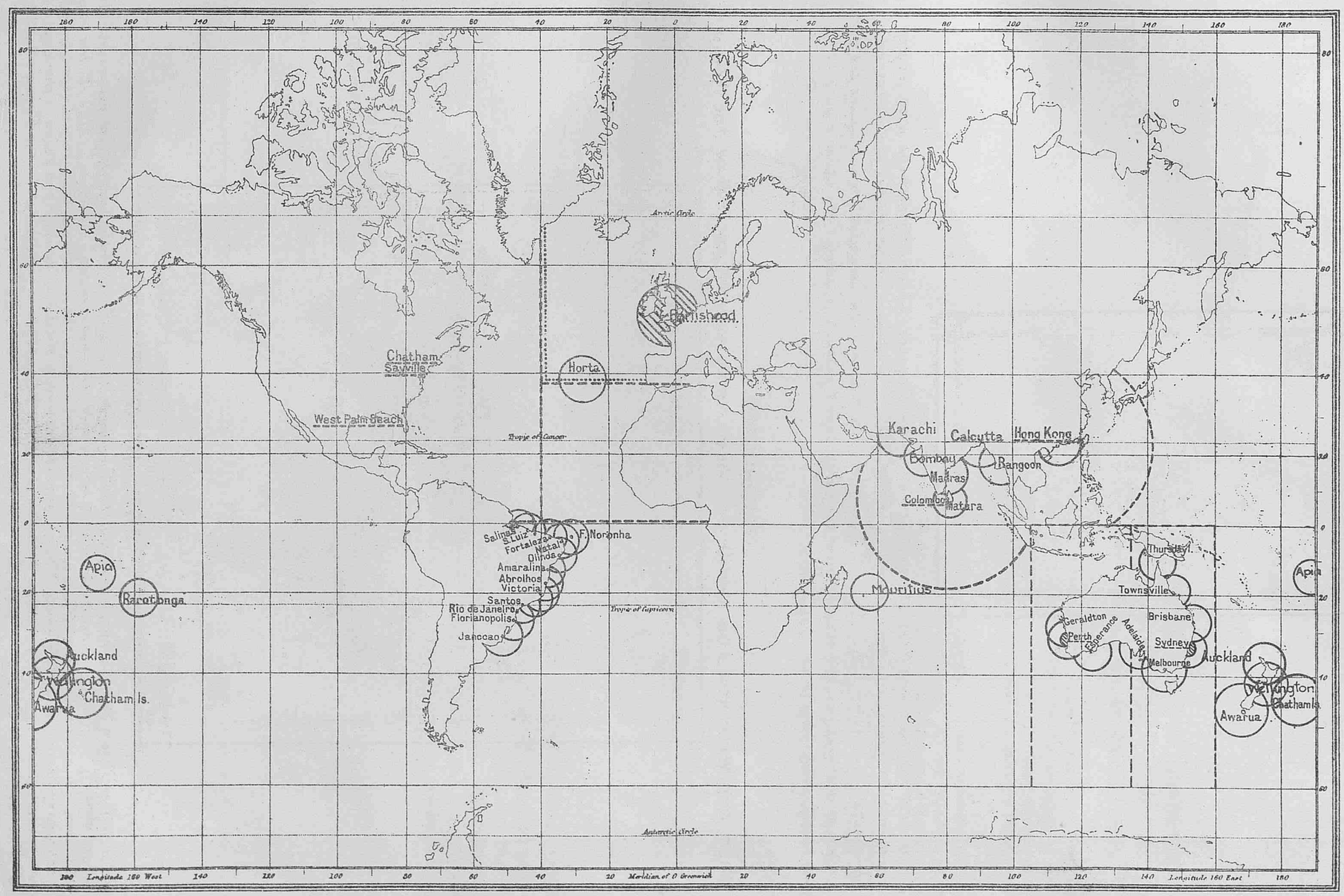
He commenced his sea career at the early age of 13 in the sailing ship *Rokeby Hall* of Liverpool and after some years service in different types of sailing vessels transferred to steam in 1901 when he joined the Allan Line as a junior officer.

Captain CARR JONES transferred to the Canadian Pacific Steamship Company when the Allan Line was taken over by that company and has since commanded many ships of their Fleet including the *Bothwell*, *Bolingbroke*, *Balfour*, *Metagama*, *Duchess of Bedford*, *Duchess of York*, and *Montclare*.

A member of our corps, Marine Observers join with the Marine Division in wishing Captain CARR JONES long life and happiness in his retirement.

Chart III.— SHIPS' WIRELESS WEATHER SIGNALS.

Stations for Reception of Routine Wireless Weather Reports from "Selected Ships."



The dotted line indicates the area in which British "A Selected Ships" report under control to Portishead.

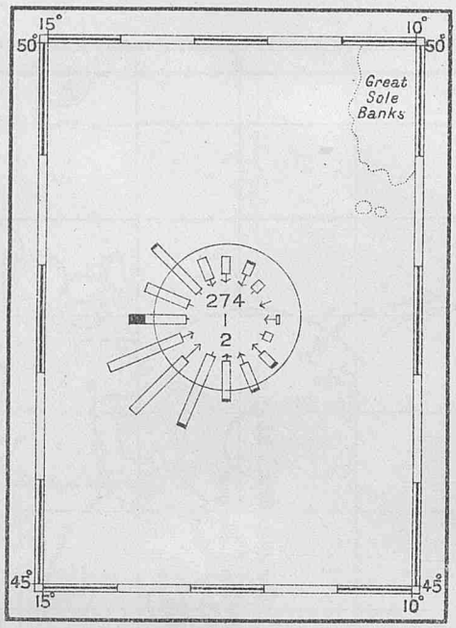
A pecked line indicates the reporting area round stations in other countries to which British "A Selected Ships" should report. The names of such stations being underlined with a pecked line.

The small shaded areas round stations detailed to receive reports from "A Selected Ships" indicate where these ships should not report on account of congestion.

The full circles indicate the areas round islands and coast stations which are detailed to intercept "B Selected Ships" reports made to C.Q. on 600 metres.

FEBRUARY

Wind for the Ocean Region Adjacent to the S.W. Approaches to Great Britain.

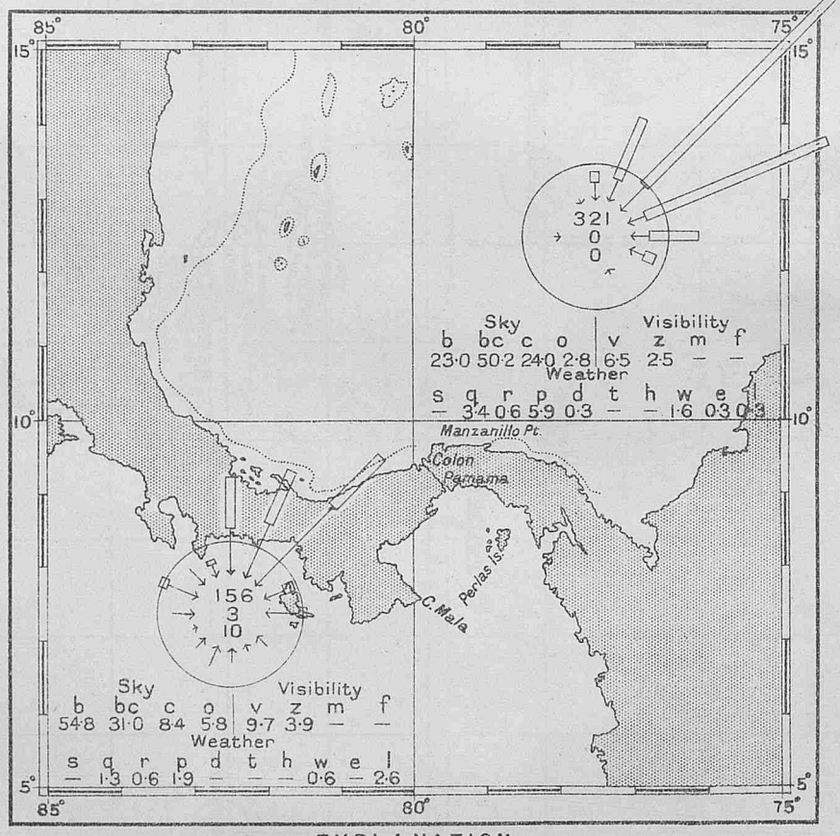


EXPLANATION.

The wind rose is drawn from observations within the 5° square. Arrows fly with the wind, length represents frequency, thickness strength. GALE MODERATE LIGHT 8 — 12 4 — 7 1 — 3 *Distance from head of arrow to circle represents 5%, Scale:-* 10% 20% *The upper figure in the centre of the rose gives total number of observations; the middle figure, the percentage frequency of calms; the lower figure the percentage frequency of variable winds.*

FEBRUARY

Wind, Fog, Mist and Weather for the Ocean Regions to the N.E. and S.W. of the Panama Canal.



EXPLANATION.

The wind roses are drawn from Sea observations within the 5° squares. Arrows fly with the wind, length represents frequency, thickness strength. GALES MODERATE LIGHT 8 — 12 4 — 7 1 — 3 *Distance from head of arrow to circle represents 5%. Scale:-* 10% 20% *The upper figure in the centre of the rose gives total number of observations, the middle figure the percentage frequency of calms, and the lower figure the percentage frequency of variable winds. The percentage frequency of types of weather are shown in the lower half of each 5° square by the figures beneath each of the letters of the Beaufort weather notation. For example in the 5° square Latitude 5° to 10° N, Longitude 80° to 85° W, bc was logged 31 times in every 100 observations while z was logged about 4 times*

Compiled from observations of British Ships received since the adoption of the Hollerith system of extraction covering the years 1921 – 1930.

(M.Stationery Office Press, Kingsway, W.C.2.

Ps. 332/2346. Wt. 774. D. 21. Sp. 909. 1950. (2/31.

NOTICES.

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 Meteorological 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.

DESPATCH OF INFORMATION REQUIRED IMMEDIATELY FOR THE CONDUCT OF THE WORK AT SEA.

Shipowners, Marine Superintendents and all concerned in the despatch of mails to Ships abroad are asked to kindly facilitate the despatch and delivery of postal matter received at their offices from the Meteorological Office and Air Ministry Publication Depot to their Ships abroad.

This matter addressed to the Commanders of Ships contains information which is required for the Conduct of Marine Meteorological Work at Sea and is most effective if received by the Commanders at the earliest possible date.

Much of the information referred to is published in the Marine Observer and is of a seasonal nature. This journal also contains advice to Regular Observing Ships which enables them to perform voluntary service by Wireless Communication for the benefit of all shipping.

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.

"Selected Ships" on the Trade Routes of the Southern Ocean are requested to add to their routine Wireless Weather reports information of floating ice seen or reported within the last 24 hours so that this information may be disseminated to the utmost advantage of all concerned.

RECORDING OF SEA AND SWELL OBSERVATIONS.

Marine Observers when recording sea and swell observations in the Meteorological Log or on the Ships Meteorological Record of Synchronized Observations (Form 911) are especially asked to classify the sea and swell separately entering each in their appropriate column according to scale.

ICE CHART.

WESTERN NORTH ATLANTIC.

LETTERS OF TRANSATLANTIC TRACKS INDICATE

(C) From 1st July to 10th April, inclusive.

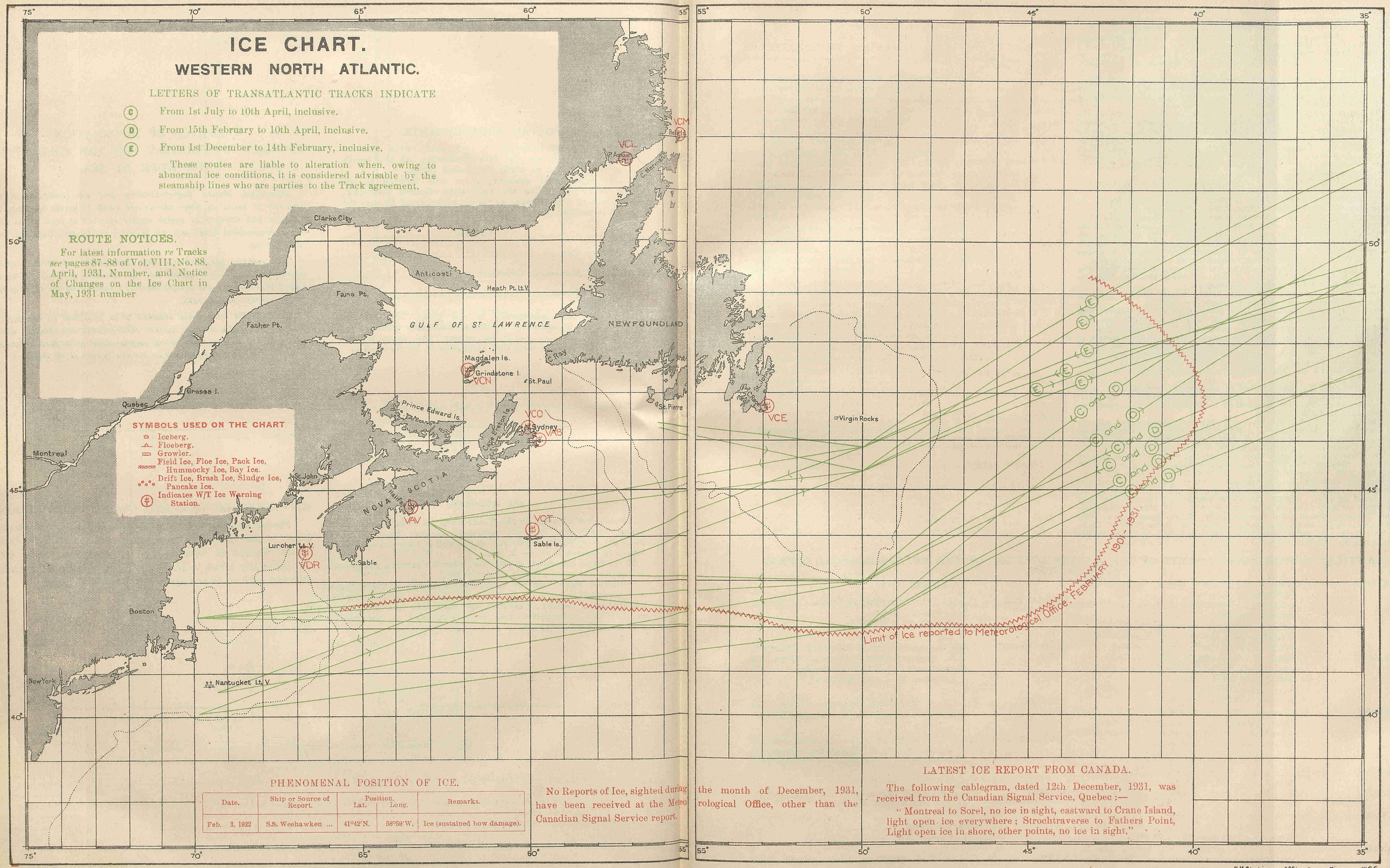
(D) From 15th February to 10th April, inclusive.

(E) From 1st December to 14th February, inclusive.

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 87-88 of Vol. VIII, No. 88, April, 1931, Number, and Notice of Changes on the Ice Chart in May, 1931 number



PHENOMENAL POSITION OF ICE.

Date.	Ship or Source of Report.	Position. Lat.	Position. Long.	Remarks.
Feb. 3, 1922	S.S. Weehawken ...	41°42′N.	58°59′W.	Ice (sustained bow damage).

No Reports of Ice, sighted during the month of December, 1931, have been received at the Meteorological Office, other than the Canadian Signal Service report.

LATEST ICE REPORT FROM CANADA.

The following cablegram, dated 12th December, 1931, was received from the Canadian Signal Service, Quebec :—

"Montreal to Sorel, no ice in sight, eastward to Crane Island, light open ice everywhere ; Strochtraverse to Fathers Point, Light open ice in shore, other points, no ice in sight."

Ps 932/2348 Wt. 77A. D.21 Gp.908. 1050. 12/31.

H.M. Stationery Office Press, Kingsway W.C.2

NOTICES.

MARINE METEOROLOGY.

CO-OPERATION OF SHIPOWNERS, MASTERS AND MATES.

Captains and officers who wish to co-operate regularly with the Meteorological Office should apply to the appropriate Port Meteorological Officers or Agents, a list of these gentlemen with addresses is given below. A general description of Marine Meteorological Work, including the particulars desired from intending Marine Observers, is given in Chapter I of THE MARINE OBSERVER'S HANDBOOK, 5TH EDITION, which may be obtained from H.M. Stationery Office direct, or through any booksellers, price 2s. 6d.

The names of vessels regularly observing for the Meteorological Office, London, together with their Commanders and Observing Officers, are given monthly in THE MARINE OBSERVER, which may be obtained from H.M. Stationery Office, price 2s., 2s. 2d. post free.

The Captains and Officers of regular observing ships constitute the Corps of Voluntary Marine Observers. For certain branches of this work tested instruments are lent to the Captains of British ships registered at ports in Great Britain. A certain number of Regular Observing ships are detailed as "Selected Ships" for the purpose of the World Wide Scheme of Routine Ships' Wireless Weather Telegraphy Reporting. These "Selected Ships" are indicated monthly in the "Fleet List" in THE MARINE OBSERVER by a number.

To decode "Selected Ships'" reports the pamphlet M.O. 329, price 3d. may be obtained from H.M. Stationery Office.

Only ships registered at Ports in Great Britain will, in future, be included in the Meteorological Office, London, "Fleet List."

Marine Observers are asked to send in their Meteorological Log through the appropriate Port Meteorological Officer or Agent (accompanied by Form 138 in the case of "Selected Ships") at intervals of not more than six months. The Meteorological Record Form 911 (accompanied by Form 138 in the case of "Selected Ships") should be posted direct to the Meteorological Office, London, at the end of each voyage.

When sending in the Meteorological Log or Record, Regular Observing ships will render great assistance if they will notify the Port Meteorological Officer or Agent of their requirements.

The Port Meteorological Officers and Agents inspect official instruments at regular intervals, replacing those which are defective.

Where ships' instruments are found by comparison to be reliable they may be used for the work of "Selected Ships." A reliable mercurial barometer is essential as part of the equipment of a "Selected Ship."

A copy of THE MARINE OBSERVER is sent monthly to the Captain of every observing ship for the information and guidance of the officers doing this work. He is also supplied with THE MARINE OBSERVER'S HANDBOOK and such charts and atlases as are considered necessary as Meteorological equipment for **The Work** of a Regular Observing ship in a particular trade.

WIRELESS AND WEATHER AN AID TO NAVIGATION, published by H.M. Stationery Office, which affords information and guidance for the practical application of Marine Meteorology to Navigation, may be purchased through any bookseller, price 5s.

Returns made by Regular Observing ships are acknowledged monthly in THE MARINE OBSERVER, and a list of those Commanders and Officers who have performed specially fine work is published yearly in THE MARINE OBSERVER and Excellent Awards are made to them.

The work done by Regular Observing Ships in making written returns, and by "Selected Ships" in broadcasting routine information by W/T, together with "Weather Shipping" Bulletins broadcast from the shore, conforming with the recommendations of the International Convention of Safety of Life at Sea, 1929, provide the necessary information for the use of all shipping. Thus by shipowners encouraging the specialist work in those of their ships whose names appear in THE MARINE OBSERVER, this Voluntary Work under the supervision of the Meteorological Office provides a service to all shipping at minimum cost to the National funds.

Shipowners are asked to facilitate the forwarding of postal matter from the Air Ministry addressed to the Captains of their ships.

LATE PRESS.

DERELICTS AND FLOATING WRECKAGE.

Date.	Position. Latitude.	Position. Longitude.	Description.
NORTH SEA.			
11.12.31	52°32′N.	2°07′E.	Floating wreckage—wooden decks and coamings.
11.12.31	53°52′N.	6°59′E.	White lifeboat ; dangerous to navigation.
20.12.31	57°58′N.	4°10′E.	Floating wreck.
ENGLISH CHANNEL.			
6.12.31	49°03′N.	4°32′W.	Red conical buoy with two horizontal white bands.
8.12.31	15 miles E. by N. of Owers Light Vessel.		Water-logged boat, painted black.
10.12.31	48°41′N.	4°57′W.	Spar about 6 metres long ; dangerous to navigation.
14.12.31	49°26′N.	2°30′W.	Large mooring buoy ; dangerous to navigation.
IRISH SEA.			
18.12.31	7 miles S.E. of Maughold Head.		Submerged wreckage.
BALTIC SEA.			
3.12.31	Off E. Coast of Oland.		Big timber raft drifting northward ; dangerous to navigation.
BLACK SEA.			
4.12.31	43°12′N.	34°12′E.	Wreck.
MEDITERRANEAN SEA.			
12.12.31	41°40′N.	10°50′E.	s.s. *Teseo* adrift.
NORTH ATLANTIC.			
11.12.31	48°32′N.	5°30′W.	Spar about 20 ft. long, 1½ ft. in diameter.
12.12.31	55°24′N.	6°20′W.	Large rusted can-buoy ; dangerous to navigation.
14.12.31	46°50′N.	6°42′W.	Floating log, length about 30 ft.
15.12.31	30°25′N.	14°55′W.	Steel motor barge adrift, abandoned and dangerous.
12.12.31	38°53′N.	65°19′W.	Obstruction, apparenty dismasted sailing vessel or barge without light.
14.12.31	Off entrance to Ambrose Channel.		Driftwood.
NORTH PACIFIC.			
5.12.31	47°45′N.	125°05′W.	Log, about 25 ft. long and 3 ft. in diameter.
5.12.31	41°13′N.	124°37′W.	Log, about 50 ft. long and 2 ft. in diameter.

NAUTICAL OFFICERS AND AGENTS OF THE MARINE DIVISION OF THE METEOROLOGICAL OFFICE, AIR MINISTRY.

LONDON ... ... Captain L. A. BROOKE SMITH, R.D., R.N.R., Marine Superintendent.
Commander J. HENNESSY, R.D., R.N.R., Senior Nautical Assistant.
Room 319, Adastral House, Kingsway, W.C.2. (*Telephone No.: Holborn 3434 Extension 421*). Nearest station Temple, District Railway.

THAMES ... ... Lieut. C. H. WILLIAMS, R.N.R., Port Meteorological Officer, P.L.A. Building, King George V Dock (south side), London, E.16. (*Telephone No.: Albert Docks 2659. Telegraphic Address: Barometric Aldock, London*).

MERSEY ... ... Commander M. CRESSWELL, R.N.R., Port Meteorological Officer, Dock Office, Liverpool. (*Telephone No.: Bank 8959. Telegraphic Address: Meteorite, Liverpool*).

Agents.

BELFAST ... ... Captain J. MCINTYRE, Harbour Master, Harbour Office. (*Telephone No.: Belfast 4090*).

BRISTOL CHANNEL Captain T. JOHNSTON, Technical College, Cathays Park, Cardiff. (*Telephone No.: Cardiff 6813*).

CLYDE ... ... Mr. ROBERT CLEARY, Master Mariner, The Clutha Stevedoring Co., Ltd., Princes Dock, Glasgow. (*Telephone No.: 513 Ibrox*).

FORTH ... ... Captains C. G. BONNER, V.C., D.S.C., and D. AITCHISON, Leith Salvage and Towage Co., Ltd., 2, Commercial Street, Leith.

Agents (*contd.*).

FREMANTLE W. Australia. ... Captain J. J. AIREY, Deputy Director of Navigation, Customs House. (*Telephone No.: B 1391*).

HONG KONG, China. Lieut. Commander G.B.R. RUDYERD-HELPMAN, R.N., Superintendent, Admiralty Chart and Chronometer Depot, H.M. Dockyard. (*Telephone No.: 108 Dockyard*).

HUMBER ... ... Captain A. M. BROWN, Ellerman Wilson Line Office, Hull. (*Telephone No.: Central 2180*).

SOUTHAMPTON Mr. R. I. T. MCEWAN, Master Mariner, Gilchrist Navigation School, 5, Union Bank Chambers, 1, Bernard Street. (*Telephone No. Southampton 4277*).

SYDNEY, New South Wales. Commander G. D. WILLIAMS, D.S.O., R.D., R.N.R., Deputy Director of Navigation.
Customs House. (*Telephone No.: B 6421*).

TYNE ... Captain J. J. MCEWAN, Marine School, South Shields.

FLEET LIST.

The following is a complete list of ships regularly contributing observations to the Meteorological Office.

The names of the Captains and Officers, as ascertained from logs and records received, are given with the date and description of last log, register or record received up to the time of going to press.

Marine Observers are requested to take this as complete and grateful acknowledgment for the work they have contributed, as it has been found necessary to reduce as far as possible the correspondence of the Marine Superintendent, which was largely composed of letters acknowledging logs and reports, in order that more time may be devoted to obtaining results from the data received.

Only in special cases will individual letters be sent.

Excellent awards will be made at the end of the financial year. The names of Commanders and Officers gaining these awards will be published in a special list in THE MARINE OBSERVER.

Ships not contributing logs or records within a reasonable period will automatically be removed from the list and the free issue of THE MARINE OBSERVER discontinued; it is, therefore, earnestly requested that changes of service, probable periods of lay up or transfer of Commanders may be notified whenever possible.

A waiting list is kept of the names of vessels whose Commanders have offered to regularly co-operate.

The number of voluntary observing ships is limited to a maximum total of 500.

Commanders are requested to point out any errors which may occur in the list.

Explanation of Abbreviations.

Unless otherwise stated, vessels on the following list are s.s.—M.V. indicates Motor Vessel; S.T. = Steam Trawler.

M.L. = Equipped with tested Instruments lent by the Meteorological Office for keeping Meteorological Logs.

W.T. = Equipped wholly or partly with tested Instruments lent by the Meteorological Office for reporting in code by W/T in the International Selected Ship system.

No. = No Meteorological Office instrumental equipment on board.

M = Ship's barometer *mercurial.*

A = Ship's barometer *aneroid.*

C.C. = Equipped with tested Instruments lent by the Meteorological Office for making Cross Channel Telegraphic Reports to Weather, London.

To indicate the nature of the wireless apparatus of Selected Ships—

†† preceding ship's name indicates fitted for long range continuous wave transmission and reception.

*† = Short range transmission and long range continuous wave reception.

** = Short range transmission and reception.

The numbers preceding the names of ships are for identification purposes, when observations are re-transmitted in synoptic messages by wireless or cable, and are not intended for use at sea.

Selected Ships.

Those ships in this list which have a number and symbols indicating W/T apparatus before their names are "Selected Ships" invited to make by W/T, reports of observations taken at arranged G.M. Times to "All Ships."

Name of Vessel	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31.	Date Received.
122 †† *Accra*, M.V. ...	Shooter, J. C.... ...	R. B. Ellis	W.T.-M.	Elder Dempster ...	Forms 911 & 138 21.10.31 to 12.11.31	3.12.31
155 *† *Achilles*	Cosker, W.	C. Broad, J. Simpson, J. S. Stratford.	M.L.	A. Holt	Form 915 28.3.31 to 4.8.31 ...	10.8.31
055 *† *Actor*	Whyte, D. L.	G. Penston, E. Pearce, P. Harrow.	No. M.	Harrison	Forms 911 & 138 26.2.31 to 1.5.31	21.5.31
123 †† *Adda*, M V. ...	Lawson, J. H. ...	J. Boyd, F. C. Langton ...	W.T.-M.	Elder Dempster ...	„ „ 10.9.31 to 11.10.31	19.10.31
050 †† *Adriatic*	Freeman, C. P., R.D., Commr., R.N.R.	O. V. Lucas, G. B. Jones, G. Steele.	W.T.	White Star	„ „ 25.10.31 to 14.11.31	17.11.31
090 *† *Aeneas*	Wallace, W. K. ...	T. Robb, H. D. Rudd, P. Dunsire.	„	A. Holt	Form 911 13.5.31 to 19.6.31 ...	20.6.31
166 *† *Agamemnon* ...	Beswick, W., D.S.C., Commr., R.N.R.	W. K. Hole, O. V. Jones, G. M. B. Whitman.	„	„	Forms 911 & 138 3.11.31 to 13.11.31	18.11.31
127 *† *Albion Star* ...	Hall, J. B.	T. Gilchrist	No M.	Blue Star	Form 911 8.7.31 to 29.10.31 ...	25.11.31
080 †† *Alcantara*, M.V. ...	Wakeman, E. C. ...	W. W. Dovell, T. Davies, R. C. Smith.	W.T.	R.M.S.P.	„ 19.9.31 to 2.11.31 ...	6.11.31
178 *† *Alipore*	Lyndon, E. P., R.D., Lt.-Commr., R.N.R.	J. P. McArthur	No. M.	P. & O....	„ 6.10.31 to 13.11.31 ...	7.12.31
175 †† *Almanzora* ...	Hannam, F. S. ...	G. W. Martin, J. S. Drake, J. G. Scott.	W.T.	R.M.S.P.	„ 29.8.31 to 12.10.31 ...	16.10.31
012 †† *Almeda Star* ...	Turner Russell, W ...	H. Metcalf, E. Russell, C. L. Williams.	No. M.	Blue Star	Forms 911 & 138 14.9.31 to 28.10.31	2.11.31
Alondra	Scott, L. S.	E. W. Thomas, P. Hamilton	„ A.	Yeoward	Form 911 25.10.31 to 14.11.31 ...	17.11.31
Alynbank	Robertson, J.... ...	A. Hunter	„ A.	A. Weir & Co. ...	„ 26.10.31 to 18.11.31 ...	7.12.31
103 †† *Andalucia Star* ...	Vernon, R.	W. Cumming, P. Clarke. A. Holland.	„ M.	Blue Star	Forms 911 & 138 2.9.31 to 14.10.31	2.11.31
Antilochus ...	Dougall, W. T. ...	C. F. Lock	„ A.	A. Holt	Form 911 24.8.31 to 5.9.31 ...	11.9.31
209 †† *Aorangi*, M.V.	Spring-Brown, J. F. Crawford, R.... ...	E. Anderson, D. H. Richards, J. Billingham.	M.L.	Canadian-Australasian	Form 915 14.1.31 to 22.5.31 ...	4.8.31
120 †† *Apapa*, M.V. ...	Beith, A.	V. Feeney, V. H. Thomas ...	W.T.-M.	Elder Dempster ...	Forms 911 & 138 24.9.31 to 25.10.31	27.10.31
029 †† *Appam*	Draper, J. M	W. M. M. Hutchings, C. V. Evans, H. O. Forster.	W.T.	„ „ ...	„ „ 2.9.31 to 9.10.31	10.10.31
017 †† *Aquitania*	Irving, R. B., A.D.C., R.D., Capt., R.N.R.	... ...	„	Cunard...	... ...	...
Araby	Lee, J., D.S.C.... ...	H. Haigh	No. A.	MacIver	Form 911 7.6.31 to 21.8.31 ...	3.9.31
115 †† *Arandora Star* ...	Moulton, E. W. ...	C. O. Worth	„ M.	Blue Star	Forms 911 & 138 9.9.31 to 1.11.31	4.11.31
Architect	Mowat, I.	G. Dewar	„ M.	Harrison	„ „ 2.8.31 to 29.10.31	16.11.31
293 *† *Ariguani*	Scudamore, J. H. H., D.S.C., R.D., Commr., R.N.R.	B. E. Druce, A. Crone, A. F. Moss.	M.L.	Elders & Fyffes ...	Form 915 4.5.31 to 1.9.31	4.9.31
144 †† *Arlanza*	Clarke, E., R.D., Commr., R.N.R.	S. A. Gammon, H. V. Todd, F. T. Brett.	W.T.	R.M.S.P.	Forms 911 & 138 1.8.31 to 14.9.31	16.9.31
091 †† *Armadale Castle* ...	Harvey, H. B. ...	W. Pace, A. H. Parry, C. Lloyd.	„	Union Castle	Form 915 11.9.31 to 1.11.31 ...	14.11.31
296 *† *Arracan*	Thomson, S.	G. Davidson, H. H. Brown, J. P. Anderson.	M.L.	P. Henderson ...	„ 1.5.31 to 19.8.31... ...	8.9.31
Arundel	Shaw, B.	E. Hill	C.C.	Southern Rly. ...	Telegraphic Report 11.12.31 ...	11.12.31
095 †† *Arundel Castle* ...	Stuart, C. E., R.D., Capt., R.N.R.	G. L. Clarke, H. Baty	W.T.	Union Castle ...	Forms 911 & 138 19.9.31 to 4.10.31	16.11.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31.	Date Received.
280 *† *Astronomer* ...	Richards, J.	W. P. Baker, R. Williams. E. B. Stephens.	No. M.	Harrison	Forms 911 & 138 5.7.31 to 7.10.31	13.10.31
065 †† *Asturias* M.V. ...	LeBrecht, H. A. ...	H. G. Whittle, S. J. Hill, T. W. Stevens.	W.T.	R.M.S.P. Co.	" " 10.10.31 to 23.11.31	25.11.31
Atreus	Wilcox, J. H.	E. A. H. Gepp	No. A	A. Holt	Form 911 7.6.31 to 21.9.31... ...	5.10.31
281 *† *Auditor*	Owen, W. T. ...	L. Richardson	" M.	Harrison	Forms 911 & 138 2.8.30 to 29.9.31...	14.10.31
212 *† *Australia*	Scutt, W.	H. Falkiner. E. H. Lidstone. L. Smith.	M.L.	British India	Form 915 28.3.31 to 28.7.31 ...	4.8.31
124 †† *Avila Star*	Fisher, J.	W. J. Stratta, C. Barratt, R. C. Freaker.	No. M.	Blue Star	Forms 911 & 138 27.9.31 to 12.11.31	19.11.31
068 †† *Balmoral Castle* ...	Barron, A.	... ...	W.T.	Union Castle	.. ..	...
179 *† *Balranald*	Short, C. E.	J. A. Stewart, P. Mallett, C. S. Pine.	No. M.	P. & O. Branch ...	Form 911 11.10.31 to 1.11.31 ...	30.11.31
051 †† *Baltic*	Davies, E.	J. Law, N. E. Banks, S. Fieldwood.	W.T.	White Star	Forms 911 & 138 28.9.31 to 18.10.31	19.10.31
248 *† *Banffshire*	Page, W. J.	A. Banks. F. Westacott ...	No. M.	Turnbull Martin ...	" " 1.7.31 to 5.8.31	7.9.31
180 *† *Baradine*	Elliot Smith, H. ...	C. F. Halliday, J. Mann, G. L. Farnfield.	" M.	P. & O. Branch ...	Form 915 1.8.31 to 4.11.31 ...	9.11.31
037 *† *Baronesa*	Compton, R. W. ...	H. N. Sherwell, F. W. Kent, J. G. Freeman.	" M.	Houlder	Forms 911 & 138 10.8.31 to 14.10.31	19.10.31
Baron Forbes ...	Cairns, W.	L. Maclean	" A.	H. Hogarth & Sons...	Form 911 4.2.31 to 26.2.31 ...	9.3.31
213 *† *Barpeta*	Partridge, F. ...	M. F. Harvey, A. J. Baillie ...	" M.	British India	Forms 911 & 138 23.9.31 to 22.10.31	9.11.31
181 *† *Barrabool*	Sheepwash, J. S. ...	F. N. Mosey, G. Hussey, C. B. Holmes.	" M.	P. & O. Branch ...	" " 16.5.31 to 21.8.31	4.9.31
070 †† *Bayano*	Legge, A. W.	H. Leach, A. Sandham, H. Hill.	W.T.	Elders & Fyffes ...	" " 14.10.31 to 14.11.31	21.11.31
Baychimo	Cornwell, S. A. ...	A. V. Kightly	No. A.	Hudson Bay Co. ...	Form 911 7.7.31 to 20.10.31 ...	21.11.31
Beaverburn ...	Landy, E.	... ...	M.L.	Canadian Pacific ...	... ...	...
059 †† *Belgenland* ...	Morehouse, W. A. ...	F. Good, J. Mackie, J. R. Loe.	W.T.	Red Star	Forms 911 & 138 3.11.31 to 21.11.31	24.11.31
183 †† *Bendigo*	Wyatt, F. N.	H. Morgan, R. S. Frost, G. C. Forrest.	No. M.	P. & O. Branch ...	Form 911 12.7.31 to 3.10.31 ...	12.10.31
Bengore Head ...	Milligan J.	C. J. Rea	" A.	Ulster S.S. Co. ...	" 22.11.31 to 27.11.31 ...	1.12.31
237 †† *Berengaria*... ...	Britten, E. T., R.D., Commr., R.N.R.	... ...	W.T.	Cunard	... ...	...
145 *† *Berwickshire* ...	Evens, E. H.	E. Coulthart, J. O. Woodall, R. Frankish.	"	Turnbull Martin ...	Forms 911 & 138 27.9.31 to 19.10.31	9.11.31
Brenda	Wright, J.	T. Mather	No. A.	Scottish Fishery Brd.	Form 911 2.10.31 to 30.10.31 ...	2.11.31
057 †† *Britannic* M.V. ...	Summers, F. F. R.D., Commr., R.N.R.	G. N. Jones, H. P. Grindrood, A. J. Fisher.	W.T.	White Star	Forms 911 & 138 8.11.31 to 28.11.31	30.11.31
269 *† *British Admiral* ...	Putt, R. O.	H. J. Were, W. Barnsfield ...	No. M.	British Tankers ...	" " 2.11.31 to 30.11.31	9.12.31
283 *† *British Dominion*	Taylor, R. J.	J. E. Jones, F. Hall	" M.	" " ...	" " 22.8.31 to 3.11.31	6.11.31
266 ** *British Lantern* ...	Penton. P. M.... ...	T. Snowling, L. Hambling, D. Malcolm.	" M.	" " ...	" " 16.10.31 to 23.11.31	4.12.31
249 *† *Buteshire*	Gibb, A. W. P. ...	P. McMillan, S. W. Brown, F. C. Doyle.	M.L.	Turnbull Martin ...	... ...	...
031 †† *Caledonia*	Collie, A.	J. McMillan, W. Harvey, J. MacWalters.	W.T.	Anchor...	Forms 911 & 138 2.11.31 to 21.11.31	28.11.31
139 †† *California*	Smart, R. W.	D. Morrison, A. C. Johnston, J. F. Adams.	"	"	" " 22.6.31 to 6.12.31	10.12.31
Cambria	Copland, C. P. ...	O. W. Ll. Jones	C.C.	L.M. & S. Rly.... ...	Telegraphic Report 11.12.31 ...	11.12.31
Cambridge	Williams, R.	T. Farrar	M.L.	Federal	Form 911 17.7.31 to 10.11.31 ...	23.11.31
295 †† *Camito*	Forrester, W. T., O.B.E.	C.P. Hopper, H. J. Perrett, W. Ireland	"	Elders & Fyffes ...	Form 915 24.6.31 to 18.10.31 ...	23.10.31
101 *† *Canonesa*	Brodie, W. H. ...	F. E. Flint, A. Hurry ...	No. M.	Furness Houlder ...	Forms 911 & 138 27.4.31 to 17.5.31	19.5.31
Cape of Good Hope	Jacobson, T. A. ...	W. R. Carling	" A.	Lyle S.S. Co.	Form 911 17.9.31 to 16.10.31 ...	2.11.31
282 †† *Carinthia*	Townley, J. C., R.D., Capt., R.N.R.	J. Chapman, A. B. Fasting, G. S. Hutchinson.	W.T.	Cunard	Forms 911 & 138 12.10.31 to 17.10.31	3.11.31
092 †† *Carnarvon Castle* M.V.	Morton Betts, W. ...	G. F. Pettitt, E. Clancy ...	"	Union Castle ...	" " 22.8.31 to 11.10.31	13.10.31
273 *† *Carnarvonshire* ...	Gulston, H. S. ...	S. W. Spencer	No. M.	Glen	" " 4.10.31 to 3.11.31	9.11.31
184 †† *Cathay*	Dazell Riven, J. ...	A. J. McHatlie. J. C. Davies, G. S. Ring.	" M.	P. & O	" " 3.11.31 to 14.11.31	30.11.31
Cavina	Riseley, A. D. ...	B. R. Coe	" A.	Elders & Fyffes ...	Form 911 5.10.31 to 9.11.31 ...	12.11.31
157 *† *Centaur* M.V. ...	Ward Hughes, J. ...	B. L. Brind, D. M. McAdam, D. R. Bannerman.	M.L.	A. Holt & Co. ...	Form 915 25.7.30 to 27.1.31 ...	16.6.31
056 †† *Ceramic*	Lloyd, W.	H. G. Williams, A. Waters ...	W.T.	White Star	Forms 911 & 138 17.9.31 to 3.10.31	9.11.31
Cerinthus M.V. ...	Ramsay, N.	E. Allen, C. L. Seaman. V. H. Kirkland.	M.L.	Hadley Shipping ...	Form 915 2.7.31 to 2.10.31 ...	10.10.31
Changuinola ...	Bostock, R. J. ...	O. H. Pulman	No. A.	Elders & Fyffes ...	Form 911 12.10.31 to 23.10.31 ...	27.10.31
Chindwin	Paterson, G.	J. A. Wilson	" A.	Henderson	" 29.8.31 to 11.11.31 ...	1.12.31
Chirripo	Cossentine, R. M. ...	S. Waddington, C. E. Gardiner.	" A.	Elders & Fyffes ...	" 19.4.31 to 26.6.31 ...	6.7.31
192 †† *Chitral*	Siggers, O.	T. D. Forbes, N. H. Thompson, S. H. Gerrans.	" M.	P. & O.	Forms 911 & 138 7.10.31 to 19.11.31	23.11.31
265 *† *City of Baroda* ...	Bremner, D. M. ...	J. C. Dodsworth, H. G. Williams, E. Bonfield.	W.T.	Ellerman	Form 915 22.8.31 to 17.10.31 ...	21.10.31
City of Cambridge	Wilson, E. G.	H. H. Asher	No. A.	"	Form 911 30.5.31 to 13.7.31 ...	18.7.31
City of Carlisle ...	Mordue, J. A. ...	... ...	" A.	"	" 21.10.31 to 30.10.31 ...	30.11.31
061 †† *City of Exeter* ...	Nichol, L.	H. Burns, J. Fyfe, W. V. Mighton.	W.T.	"	Form 911 & 138 20.10.31 to 28.10.31	5.11.31
274 *† *City of Harvard* ...	MacMillan, J.... ...	F. Deighton. A. J. Tyrrell, E. Brook-Williams.	"	"	Form 915 9.5.31 to 22.7.31 ...	28.7.31
089 *† *City of Hereford* ...	Ricketts, R. J. ...	F. Tibbetts. J. H. T. Vizer ...	No. M.	"	Forms 911 & 138 21.10.31 to 2.11.31	14.11.31
026 †† *City of London* ...	Brown, J. G.	A. J. Barnett, E. Gillies, C. MacPherson.	W.T.	"	" " 16.10.31 to 2.11.31	7.12.31
City of Nagpur ...	McNiel, N.	... ...	"	"	... ...	...
300 †† *City of Paris* ...	McMillan, J.	... ...	"	"	... ...	...
271 *† *City of Roubaix* ...	Radcliffe, A. V., R.D., Lt.-Commr., R.N.R.	J. A. Williams, J. L. Robertson, A. N. G. Jones	No. M.	"	Form 138 13.7.31 to 12.10.31 ...	9.11.31
272 *† *City of Singapore*	Kendall, J. W. ...	F. Wrigley	" M.	"	Forms 911 & 138 15.4.31 to 10.5.31	20.5.31
035 *† *City of Sydney* ...	Mason, E.	C. Humphries, H. Griffith ...	" M.	"	" " 6.8.31 to 6.10.31	12.10.31
Clan Alpine ...	Young, A. H., R.D., Commr., R.N.R.	A. G. M. Watkins	" A.	Clan	Form 911 13.9.31 to 8.10.31 ...	2.11.31
027 *† *Clan Keith*	Waterhouse, J. ...	—Todman	W.T.	"	... ...	...
Clan Kenneth ...	Brown, R. H. ...	T. A. Pearson	No. A.	"	Form 911 4.4.31 to 4.7.31 ...	22.7.31
Clan Macalister ...	Stenson, F. J., A.D.C., R.D., Capt., R.N.R.	J. L. Jones	" A.	"	" 5.9.31 to 11.10.31 ...	9.11.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31.	Date Received.
Clan Macbeth ...	Giles, H. J., R.D. R.N.R.	W. R. Woodriffe, I. Cape Scott.	No. A.	Clan	Form 911 27.9.31 to 28.10.31 ...	16.11.31
Clan Macfarlane ...	Redford, L. F., Lt.-Commr. R.N.R.	W. H. Simpson	,, A.	,, ...	21.7.31 to 17.10.31 ...	19.10.31
Clan Macindoe ...	Scott-Smith, H. E. G. O.B.E., R.D., Lt.-Commr., R.N.R.	J. C. Dunphy	,, A.	,, ...	,, 5.9.31 to 10.10.31 ...	13.10.31
233 *† *Clan Mackellar* ...	Lyall, A. B.	A. V. Howard, G. S. Bullock, L. B. Sparkes.	W.T.	,, ...	Form 915 25.5.31 to 26.10.31 ...	9.11.31
001 *† *Clan Macphee* ...	Gourlay, J. B. ...	E. H. Stone, G. Drake A. Pollock.	,,	,, ...	,, 13.5.31 to 14.9.31 ...	16.10.31
004 *† *Clan MacNair* ...	Holman, W. G. ...	F. H. Petheridge A. Woodrow, J. F. Vooght.	,,	,, ...	Forms 911 & 138 18.7.31 to 20.10.31	21.10.31
002 *† *Clan Macwhirter* ...	O'Bryne, C. E. ...	M. J. Lewis, H. Whitehead, C. Rodger.	,,	,, ...	Form 915 11.6.31 to 30.10.31 ...	7.11.31
003 *† *Clan Malcolm* ...	George, L. S.	A. Lynch, H. Hind, S. Ewing	M.L.	,, ...	,, 17.4.31 to 13.8.31 ...	18.8.31
Clan Morrison ...	Porterfield, W. M., Lt.-Commr., R.N.R.	H. W. Peletier, W. Leck, A. G. Beynon.	No. A.	,, ...	Form 911 28.10.31 to 6.11.31 ...	30.11.31
Clan Murdoch ...	Wynne, R. H.... ...	R. B. Linsley	,, A.	,, ...	,, 21.10.31 to 1.11.31 ...	23.11.31
Clan Ranald ...	Hawley, F. J. ...	H. C. Carter	,, A.	,, ...	,, 25.6.31 to 18.7.31 ...	27.8.31
Clan Sinclair ...	Cater, H.	D. Mc Allister	,, A	,, ...	,, 24.10.31 to 27.10.31 ...	23.11.31
Colonial	Baird, W.	W. Moore, A. P. Brown A. Smart.	,, M.	Harrison	,, 16.10.31 to 16.11.31 ...	20.11.31
298 *† *Comedian*	Cadogan, A.	F. M. Eales	,, M.	,, ...	,, 6.7.31 to 29.7.31 ...	22.8.31
185 †† *Comorin*	Cartright, C.W., D.S.C.	R. E. Tucker	,, M.	P. & O.	Forms 911 & 138 21.8.31 to 27.10.31	30.10.31
198 *† *Contractor*	Harraden, W. E. ...	W.G. Neill, L.Siddon, R. Myles	,, M.	Harrison	,, ,, 29.8.31 to 19.10.31	26.10.31
049 ** *Coptic*, M.V. ...	Williams, G.	J. G. James, P. Saville, W. Burt.	W.T.	Shaw, Savill & Albion	,, ,, 26.9.31 to 27.10.31	3.12.31
100 *† *Cornwall*	Almond, J. G. ...	W. H. G. Timberlake... ...	M.L.	Federal	Form 911 17.4.31 to 21.5.31 ...	28.5.31
006 †† *Coronado*	Thorburn, R. A. ...	A. Orchard, J. Bell, H. Holmes.	W.T.	Elders & Fyffes ...	Forms 911 & 138 28.10.31 to 29.11.31	7.12.31
214 *† *Counsellor*	Jackson, J.	G. C. Heaton, J. Davidson, J. L. Curle.	No. M.	Harrison	,, ,, 26.9.31 to 12.11.31	27.11.31
301 *† *Culebra*	Goble, C. J.	H. D. Hooper, T. Davies, H. A. Wright.	M.L.	R.M.S.P. Co.	Form 915 11.5.31 to 29.9.31 ...	14.10.31
036 *† *Cumberland* ...	Maltby, T. L.	... ...	,,	Federal	... ...	...
285 *† *Custodian*	O'Connor, T.	W. H Corlett, J. L. Williams, J. Glen.	No. M.	Harrison	Forms 911 & 138 30.7.31 to 1.11.31	9.11.31
Dakarian	Brown, W.	A. A. Johnson	No. A.	Leyland	... ...	...
Dardanus	Christie, W.	J. S. Ogilvie	,,	A. Holt	Form 911 11.7.31 to 4.8.31 ...	12.8.31
302 †† *Darro*	Green, J.	W. Roberts, A. J. Barff ...	W.T.-M.	R.M.S.P. Co.	Forms 911 & 138 19.7.31 to 10.9.31	18.9.31
Davisian	Thomas, R.	T. Steventon	No. A.	Leyland	Form 911 10.10.30 to 24.10.31 ...	30.10.31
303 †† *Demerara*	Matthews, G. P. ...	W. Edington, L. T. Peterson	W.T.-M.	R.M.S.P. Co.	Forms 911 & 138 27.9.31 to 19.11.31	24.11.31
Denis	Griffiths, W.	A. W. Hanchett, J. H. Stoker, S. Pollock.	M.L.	Booth	Form 915 10.6.31 to 10.11.31 ...	9.12.31
304 †† *Deseado*	Buret, J. F. C. ...	G. B. Medleycott	W.T.-M.	R.M.S.P. Co.	Forms 911 & 138 21.8.31 to 7.10.31	26.10.31
117 †† *Desna*	Huff, G.	H. Lang, J. E. Matthews ...	,,	,, ...	,, ,, 13.9.31 to 4.11.31	14.11.31
252 *† *Devon*	Kinnell, G.	G. Chaplin, J. D. Marks, M. Willinott.	No. M.	Federal	,, ,, 7.4.31 to 14.7.31	16.7.31
Dieppe	Lidbetter, W.... ...	E. A. Biles	C.C.	Southern Railway ...	Telegraphic Report 10.12.31 ...	10.12.31
284 *† *Director*	Worthington, B. ...	M. G. O'Brien, A. M. Hughes, A. E Rogers.	No. M.	Harrison	Forms 911 & 138 27.4.31 to 1.8.31...	8.8.31
138 *† *Discovery II.*, R.R.S	Carey, W. M., Commr., R.N.	R. A. B. Ardley, A. L. Nelson, L. C. Hill.	M.L.	Falkland Is. Govt. ...	Form 915 31.3.31 to 31.5.31 ...	30.9.31
Dorelian	Hugan, C.	J. A. Kendall	No. A.	Leyland	Form 911 20.3.31 to 25.5.31 ...	1.6.31
136 *† *Doric Star*	Mills, D. H.	— Anderson	No. M.	Blue Star	... ...	...
275 *† *Dramatist*	Meek, A. J.	G. H. Howard, I. W. Page, R. Bryde.	,, M.	Harrison	Forms 911 & 138 13.10.31 to 4.11.31	23.11.31
142 †† *Duchess of Atholl*...	McQueen, D. S. ...	G. Mowatt, C. D. Watt, E. Glennie.	W.T.-M.	Canadian Pacific ...	,, ,, 15.11.31 to 3.12.31	8.12.31
152 †† *Duchess of Bedford*	Sibbons, H.	J. Roche, A. Antrobus, F. Stell.	,,	,, ,, ...	,, ,, 27.9.31 to 15.10.31	21.10.31
151 †† *Duchess of Richmond.*	Freer, A., Capt., R.N.R.	W. A. Stanley	,,	,, ,, ...	,, ,, 8.11.31 to 26.11.31	3.12.31
143 †† *Duchess of York* ...	Stuart, R. N., V.C., D.S.O., Commr., R.N.R.	D. Parsons, J. B. Saunders ...	,,	,, ,, ...	,, ,, 1.11.31 to 19.11.31	26.11.31
098 †† *Dunbar Castle*, M.V	Vincent, E. S., R.D., Commr., R.N.R.	J. Daziel, T. W. McAllen, P. G. MacIver.	W.T.	Union Castle	,, ,, 2[illegible].10.31 to 7.11.31	10.11.31
Dunrobin	Ramsay, J. D. ...	W. R. Holt, J. Y. Butt ...	No. A.	Glen & Co.	Form 911 23.7.31 to 20.9.31 ...	15.10.31
052 *† *Dunster Grange* ..	Wilson, G. F.	J. Allerton	,, M.	Houlder	Forms 911 & 138 21.6.31 to 26.8.31	29.8.31
102 *† *Duquesa*	Frost, C. R.	R. Rushton, C. W. Denman, F. D. Jones.	,, M.	Furness Withy ...	,, ,, 23.8.31 to 4.11.31	9.11.31
215 *† *Durenda*, M.V. ...	Blencowe, J.	C. E. Pugh	,, M.	British India	,, ,, 30.8.31 to 27.10.31	24.11.31
077 †† *Edinburgh Castle* ...	Linklater, H. ...	W. Aldous, H. P. Bidwell ...	W.T.	Union Castle	Forms 911 & 138 29.8.31 to 19.10.31	21.10.31
107 *† *El Argentino*, M.V.	Ellis, F., D.S.C. ...	W. Findlay, J. Burch, C. G. Adlard.	No. M.	Houlder	,, ,, 18.8.31 to 20.10.31	9.11.31
009 *† *Elmworth*, M.V. ...	Dick, J.	J. M. Whyte	,, M.	R. S. Dalgleish ...	Form 911 3.9.31 to 23.9.31 ...	9.10.31
158 *† *Elpenor*	Wilson, R. J.	E. Roberts, J. Macfarlane, G. Rowlands.	M.L.	A. Holt	Form 915 14.3.31 to 7.7.31 ...	16.7.31
108 *† *Elstree Grange* ...	Williams, W. E. ...	P. A. Hawkesworth	No. M.	Houlder	Forms 911 & 138 15.5.31 to 9.8.31	25.8.31
109 *† *El Paraguayo* ...	Owen, R.	G. Fletcher, F. J. G. Rice, R. L. Aldridge.	,, M.	,, ...	,, ,, 21.9.31 to 12.11.31	8.12.31
110 *† *El Uruguayo* ...	McNamara, T. ...	F. E. Hailstone	,, M.	,, ...	,, ,, 12.9.31 to 13.8.31	5.10.31
088 *† *Empire Star* ...	Owen, G., R.D., Lt.-Commr., R.N.R.	... ...	M.L.	Blue Star	... ...	...
006 †† *Empress of Australia*	Griffiths, E., Lt.-Commr., R.N.R.	A. Tippett, A. H. Pigott, R. Newsom.	W.T.	Canadian Pacific ...	Forms 911 & 138 3.10.31 to 23.10.31	27.10.31
034 †† *Empress of Britain*	Latta, R. G.	W. P. Phillips, J. H. Tudor, J. R. Bubb.	,,	,, ,, ...	,, ,, 22.11.31 to 27.11.31	11.12.31
154 †† *Empress of Canada*	Hailey, A. J., Lt.-Commr., R.N.R.	G. O. Baugh, R. H. Foley, H. Kennedy.	M.L.	,, ,, ...	Form 915 28.3.31 to 8.7.31 ...	31.8.31
153 †† *Empress of Japan*	Robinson, S., C.B.E., R.N.R.	R. Goss, R. Wolfenden, A. Le Maistre.	,,	,, ,, ...	,, 7.8.30 to 13.1.31 ...	16.2.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31	Date Received.
011 †† *Euripides*	Vaughan, P. R., D.S.C., R.D., Commr. R.N.R.	... ...	W.T.—M.	White Star	... ...	...
Explorer	Allan, J.	A. Stout	No. A.	Scottish Fishery Brd.	Form 911 2.11.31 to 24.11.31 ...	2.12.31
067 *† *Ferndale*	Beighton, J. N. ...	L. J. Hopkins, H. C. Howie, D. W. Campbell.	„ M.	Aberdeen Commonwealth.	Forms 911 & 138 3.9.31 to 8.10.31	26.11.31
074 *† *Fordsdale*	Avern, J., Commr. R.N.R	F. H. E. Vaughan	„ M.	Aberdeen Commonwealth.	„ „ 18.7.31 to 25.8.31	8.9.31
030 †† *Franconia*	Gibbons, G., R.D., Capt., R.N.R.	W. M. Stewart, W. B. Tanner, R. Pollitt.	W.T.	Cunard	Form 911 17.9.31 to 1.11.31 ...	3.11.31
Freya	Lamont. A.	W. Pirrie	No. A.	Scottish Fishery Brd.	„ 2.11.31 to 30.11.31 ...	2.12.31
159 ** *Gascoyne*	Johnson, L.	J. S. Macbryde. C. O. Melson, W. Uttley,	M.L.	A. Holt & Co.... ...	Form 915 12.2.31 to 3.7.31 ...	31.8.31
125 *† *Glenamoy*, M.V. ...	Ings, W. J.	F. Laycock, L. Eccles, A. C. Radley.	W.T.	Glen Line	„ 22.6.31 to 27.10.31 ...	2.11.31
126 *† *Glengarry*, M V. ...	Angier, J.	G. Morgan, I. G. Neill, S. W. Bell.	No. M.	„	Forms 911 & 138 19.6.31 to 4.10.31	9.10.31
085 *† *Governor*	Windsor, G. R. ...	A. Watson, J. Stanhope ...	„ M	Harrison	„ „ 25.6.31 to 23.8.31	27.8.31
111 *† *Hardwicke Grange*	Fowler, W. H. ...	W. L. Baker, A. W. Seybold, W. E. Ellis.	„ M.	Houlder	Forms 911 & 138 2.8.31 to 7.10.31	13.10.31
Harmonides ...	Elwell, F. R. ...	L. Pogson	„ A.	R. P. Houston ...	Form 911 27.9.31 to 20.10.31 ...	25.11.31
262 ** *Hauraki*, M.V.	Norton, A. T.... ... Hender, W.	D. W. Blacklaws, D. McLeish, H. A. Brockett.	M.L.	Union S.S. Co., N.Z. ...	Form 915 8.12.30 to 16.7.31 ...	28.9.31
206 *† *Herminius*	Thurston, H. P. ...	F. W. Gilroy	,	Shaw, Savill & Albion	Form 911 9.7.31 to 1.11.31 ...	9.11.31
253 *† *Hertford*	Burton Davies, J. ...	P. Shakespeare, P. Block, P. M. Devitt.	„	Federal	Form 915 14.2.31 to 24.6.31 ...	6.7.31
Hiberna	Williams, E. R. ...	C. A. Marsh	C.C.	L.M. & S. Railway ...	Telegraphic Report 24.10.31 ...	24.10.31
182 †† *Highland Brigade*	Lloyd, H.	W. Stephen, N. Hersee, C. Morgan.	No. M.	Nelson	Forms 911 & 138 9.8.31 to 27.9.31	7.10.31
116 †† *Highland Chieftain*, M.V.	Robinson. R. H. ...	W. J. Presland, J. H. Cables, L. Irving.	W.T.—M.	„	„ „ 20.9.31 to 8.10.31	16.11.31
099 †† *Highland Monarch*. M.V.	Ashby Graves, F. ...	R. Polden	No. M.	„	„ „ 7.9.31 to 28.10.31	2.11.31
250 †† *Highland Princess* M.V.	Collings, D.	C. Leech, J. Fitton, D. Seabrook.	„ M.	„	„ „ 8.10.31 to 22.11.31	26.11.31
Hilary	Jones, W. C. H., R.D., Commr., R.N.R.	... ...	M.L.	Booth	... ...	...
079 *† *Hildebrand* ...	Buck, R. H., R.D., Capt., R N.R.	F. H. Good	W.T.	„	Forms 911 & 138 19.7.31 to 24.8.31	1.9.31
075 *† *Hobson's Bay* ...	Roberts, T. V., R.D., Lt.-Commr., R.N.R.	F. L. Gross, C. Smith, C. Carroll.	No. M.	Aberdeen Commonwealth.	Form 915 9.7.31 to 11.10.31 ...	19.10.31
Hubert	Briscoe, W.	R. Parry, G. G. Westhorp, L. A. Sterling.	M.L.	Booth	„ 17.5.31 to 25.7.31 ...	28.7.31
261 *† *Huntingdon* ...	Field, H. G. B. ...	P. S. Calcutt, H. F. Wilkinson, M. T. D. Walter.	W.T.	Federal...	Forms 911 & 138 26.4.31 to 15.8.31	27.8.31
200 *† *Huntsman*	Russell, H.	J. Richardson. D. H. Goddard	No. M.	Harrison	Form 911 15.8.31 to 2.11.31 ...	13.11.31
289 *† *Inanda*	Gibbings, W. H. ...	D. C. Brown, R. L. Williams, T. W. Kent.	„ M.	„	Forms 911 & 138 11.10.31 to 18.11.31	3.12.31
Ingoma	Richardson, R. ...	D. O. Pucy	„ M.	„	„ „ 12.9.31 to 21.10.31	28.10.31
160 *† *Ixion*	Stewart, J. A. ...	C. S. Pope, G. Collier, F. G. Brown.	M.L.	A. Holt	Form 915 11.4.30 to 9.9.31 ...	16.11.31
Jamaica Merchant	Bach, L. G., R.D., Lt.-Commr., R.N.R.	C. P. Winard, B. W. Smith, A. E. Rich.	„	Jamaica Direct Fruit	Form 915 10.6.31 to 21.8.31 ...	3 9.31
072 ** *Jamaica Planter* ...	P. D. Allen	G. R. Wortley	W.T.	„ „	Forms 911 & 138 22.9.31 to 25.10.31	9.11.31
Javanese Prince, M.V.	Smith, J.	C. E. Edney	No. A.	Prince	Form 911 24.10.31 to 7.11.31 ...	20.11.31
187 *† *Jeypore*	Harris, W. L.... ...	A. G. Edwards	„ M.	P. & O....	Forms 911 & 138 17.10.31 to 14.11.31	26.11.31
188 †† *Kaisar-i-Hind* ...	Headlam, P. C., R.D., Commr. R.N.R.	T. T. Ferguson, H. Flint, L. Irons.	„ M.	„	Forms 911 & 138 30.8.31 to 7.9.31	21.10.31
041 *† *Karamea*, M.V. ...	Kenworthy, V. ...	N. S. Milne, C. Sendall, P. Campbell.	M.L.	Shaw, Savill & Albion	Form 915 17.7.31 to 1.11.31 ...	4.11.31
217 *† *Karapara*	White, R. W.	J. B. Walker, C. W. Furze ...	No. M.	British India... ...	Forms 911 & 138 22.8.31 to 12.10.31	16.11.31
286 *† *Karmala*	McBryde, A.	A. Storr, L. Porter, F. W. J. Pearce.	„ M.	P. & O.	„ „ 28.6.31 to 2.10.31	8.10.31
190 *† *Kashgar*	Sudell, F., R.D., Commr., R.N.R.	R. P. Eddy	„ M.	„	„ „ 4.5.31 to 7.8.31 ...	11.8.31
191 *† *Kashmir*	Axford, R. G.... ...	L. A. Hill, G. Randall, D. S. Charter.	„ M.	„	„ „ 22.8.31 to 28.11.31	3.12.31
114 †† *Kenya*	Miller, A.C.	R. Lord, H. Evans, G. Spedding.	„ M.	British India ...	„ „ 10.9.31 to 24.10.31	16.11.31
218 *† *Khandalla*	Eadie, J. D.	D. W. Dix, A. J. Woodcock	„ M.	„ „	„ „ 23.9.31 to 6.10.31	2.11.31
186 *† *Kidderpore* ...	Wright, C. S., R.D., Commr., R.N.R.	J. Collard, G. B. Roche ...	„ M.	P. & O.	„ „ 1.9 31 to 12.9.31	7.12.31
169 ** *Kwangchow* ...	Stringer. C. B. L. ...	B. C. Finch, E. J. Cox ...	M.L.	China Nav. Co. ...	Form 915 26.11.30 to 1.5.31 ...	29.6.31
147 †† *Laconia*	Hawkes, W. R. D., Capt. R.N.R.	J. D. Archer, R. V. Youd, M. Boston.	W.T.	Cunard...	Forms 911 & 138 2.11.31 to 21.11.31	25.11.31
Lagarto, M.V. ...	Kirkwood, J. H. ...	J. D. Richards	No. A.	Pacific S.N. Co. ...	Form 911 23.9.31 to 16 11.31 ...	7 12.31
Laguna, M.V. ...	Dunn, R.E., O.B.E. ...	W. Billington	„ A.	„ „	„ 16.5.31 to 2.6.31 ...	5.6.31
193 *† *Lahore*	Hollow, J. H.... ...	J. G. K. Gregory, F. Hull, S. R. Eva.	„ M.	P & O.	Forms 911 & 138 19.7.31 to 12.10.31	14.10.31
082 *† *La Paz*, M.V. ...	Morgan, D. R. ...	G. Pattison	„ M.	Pacific S.N. Co. ...	„ „ 2.7.31 to 13.10.31	2.11.31
134 †† *Lapland*	Harvey, H.	L. Williams, H. Patterson, R. M. Farmer.	W.T.	Red Star	„ „ 19.10.31 to 24.10.31	10.11 31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log. Register, or Record Contributed. Received up to 11.12.31.	Date Received.
076 *† *Largs Bay*	Jermyn, W. M. ...	F. B. Marsden, B. S. Mackenzie.	No. M.	Aberdeen Commonwealth.	Forms 911 & 138 17.5.31 to 28.6.31	28.9.31
112 *† *La Rosarina* ...	Webb, C.	W. S. Hamblin...	„ M.	Houlder	„ „ 12.7.31 to 17.9.31	22.9.31
Lassell	Lindsay, J.	P. Casey	„ A.	Lamport & Holt ...	Form 911 11.2.31 to 6.5.31... ...	14.5.31
064 †† *Laurentic*	Jackson, W. H. P. ...	F. M. Murphy, T. Holmes, A. Thompson.	W.T.	White Star	Forms 911 & 138 14.11.31 to 5.12.31	7.12.31
083 *† *Lautaro*, M.V. ...	Kite, E.	J. Lloyd Jones, J. Williams...	No. M.	Pacific S.N. Co. ...	„ „ 24.10.31 to 12.11.31	3.12.31
254 *† *Limerick*	Molyneux, P. L. ...	J. Trotter, N. A. Thomas ...	„ M.	Federal...	„ „ 1.9.31 to 15.10.31	21.10.31
093 *† *Llandaff Castle* ...	Le Brocq, C.	J. M. Goode	W.T.	Union Castle	„ „ 11.9.31 to 15.11.31	19.11.31
097 †† *Llangibby Castle*, M.V	Nicholl, D.	H. S. Warren	„	„ „	„ „ 18.7.31 to 19.9.31	5.10.31
094 *† *Llandovery Castle*	Morgan, A. O., R.D., Commr., R.N.R.	R. C. J. Hatt	„	„ „	Form 911 9.11.31 to 20.11.31 ...	7.12.31
216 *† *Llanstephan Castle*	Bickford, C. N. ...	J. B. Duncan, G. H. Pickering, S. Smith.	„	„ „	Forms 911 & 138 28.6.31 to 28.8.31	3.9.31
084 *† *Lobos*, M.V. ...	Leyne, R. W.	R. H. Sissons	No. M.	Pacific S.N. Co. ...	„ „ 21.4.31 to 10.8.31	14.8.31
Lochgoil, M.V. ...	Schlanbusch, O. V. ...	P. Burrell	„ A.	R.M.S.P. Co.	Form 911 27.6.31 to 10.9.31 ...	29.9.31
137 *† *Logician*	Herschel, R. J. ...	T. Winstanley, E. L. Stockley	„ M.	Harrison	Forms 911 & 138 22.6.31 to 13.10.31	23.10.31
008 *† *Losada*	Clapham, E. C. ...	D. W. Hutchinson	„ M.	Pacific S.N. Co. ...	„ „ 28.8.31 to 16.9.31	18.9.31
013 *† *Macharda*	Hanna, R. G.	C. Lindsay Miller, C. Parry, G. A. Jackson.	No. M.	Brocklebank	Forms 911 & 138 1.7.31 to 17.7.31	10.8.31
232 *† *Madura*	Wright, J. A.	A. Usher, E. Roberts, T. R. Jackson.	„ M.	British India... ...	„ „ 26.8.31 to 21.10.31	23.10.31
078 *† *Magician*	Bury, E. R.	W. E. Shotton, J. Johnson ...	„ M.	Harrison	„ „ 18.5.31 to 14.9.31	17.9.31
141 *† *Mahia*	Andrews, C. M. ...	G. Sangwin, M. P. Congdon, J. Jackson.	W.T.	Shaw, Savill & Albion	„ „ 22.7.31 to 19.11.31	23.11.31
140 *† *Mahratta*	Williams, E. R. ..	T. C. Eddy, H. F. Scoins, A. McPhee.	No. M.	Brocklebank	„ „ 4.8.31 to 7.9.31	19.9.31
014 *† *Mahronda*	Sharpe, F. W. ...	W. Le Brocq, M. Melville, H. Wellington.	„ M.	„	„ „ 25.9.31 to 22.10.31	27.10.31
015 *† *Mahsud*	Kershaw, R. W. ...	S. Richardson, J. R. Paisley	„ M.	„	„ „ 20.5.31 to 6.8.31	14.9.31
016 *† *Maidan*	Ison, W. A	F. Moore, F. L. Attwood, L. E. Jeans.	„ M.	„	„ „ 26.2.31 to 8.5.31	12.5.31
042 *† *Maimoa*	Johnson, J. W ...	A. Winton, D. O. V. Pickersgill, W. A. Rogers.	M.L.	Shaw, Savill & Albion	Form 915 19.6.31 to 26.10.31 ...	3.11.31
Maimyo	Anderson, C.	O. Jones	No. A.	Brocklebank	Form 911 7.5.31 to 12.8.31 ...	9.9.31
054 †† *Majestic*	Trant, E. L., R.D., Commr., R.N.R.	... ...	W.T.	White Star	... ...	...
018 *† *Makalla*	Maughan, J. W. ...	E. Williams	No. M.	Brocklebank	Form 911 25.5.31 to 25.9.31 ...	1.10.31
225 ** *Makura*	MacDonald, D. ...	A. P. Cousin, S. H. Crawford, H. McRae.	M.L.	Canadian-Australasian	Form 915 16.4.31 to 1.8.31 ...	1.10.31
019 *† *Malakuta*	Adamson, F. L. ...	H. Simpson	No. M.	Brocklebank	Forms 911 & 138 26.11.30 to 4.3.31	1.4.31
020 *† *Malancha*	Whitham, F.	R. Humble, J. H. Chadwick, M. Mackenzie.	„ M.	„	„ „ 6.6.31 to 6.7.31	4.8.31
219 *† *Malda*	Denne, G. H. A. ...	D. Lattin, K. Male, W. Hirst	„ M.	British India ...	Form 911 16.6.31 to 5.9.31 ...	14.10.31
195 †† *Maloja*	Browning, J. B., R.D., Commr. R.N.R.	R. E. Baldwin - Wiseman, C. H. Hand, G. R. Peters.	„ M.	P. & O.	Forms 911 & 138 28.6.31 to 30.9.31	6.10.31
196 †† *Malwa*	Britten, P. O.	P. G. Lawrence...	„ M.	„	„ „ 19.7.31 to 11.9.31	24.9.31
053 *† *Manaar*	Thowless, E.	A. L. Harrop, J. Robinson, R. G. Widdon.	„ M	Brocklebank	„ „ 20.7.31 to 9.10.31	21.10.31
Manchester Brigade	Stott, C. H.	E. E. Bonnaud, J. Eccles, W. E. Hardman.	M.L.	Manchester Liners ...	Form 915 14.3.31 to 1.8.31 ...	10.8.31
Manchester Hero ...	Mitchell, G. M. ...	R. O. Jones, J. N. Emmitt, M. Barnes.	„	„ „ ...	„ 27.6.31 to 4.10.31 ...	21.10.31
028 †† *Mandala* ...	Kinnear, A. D. ... / Longhurst, J. H. ...	W. E. F. Powell	No. M.	British India... ...	Forms 911 & 138 24.3.31 to 12.6.31	16.6.31
146 *† *Mandasor*	Richardson, T. ...	H. Fosbrooke, F. C. Madden, J. B. Leigh.	„ M.	Brocklebank	„ „ 1.11.31 to 24.11.31	30.11.31
220 *† *Manela*	Maples, S. H. ...	W. F. Solly, T. M. Robertson, P. Vaughan.	„ M.	British India	„ „ 26.9.31 to 31.10.31	4.11.31
022 *† *Manipur*	Cochran, G. N. ...	L. F. Dodson. R. Penston, A. Hill.	„ M.	Brocklebank	„ „ 4.7.31 to 16.7.31	10.8.31
221 *† *Manora*	Hudson, H. T., R.D., Commr., R.N.R.	A. F. Baber. W. Brawn, J. W. Elcoat.	„ M.	British India... ...	„ „ 25.10.31 to 29.11.31	4.12.31
177 *† *Mantola*	James, D. F.	M. Sharp, S. Henderson, R. H. Ayres.	„ M.	„ „	„ „ 6.6.31 to 21.8.31	9.9.31
197 †† *Mantua*	Hignett, R.D., Commr R.N.R.	J. D. Homidge, J. A. Wild, E. J. Sparling.	W.T.-M.	P. & O.	„ „ 22.8.31 to 9.11.31	2.12.31
299 ** *Marella*	Donaldson, A. ...	A. W. Blane. D. Pemberton, A. G. W. Thomas.	M.L.	Burns Philp	Form 915 31.12.30 to 28.5.31 ...	3.9.31
Marengo	Sibree, J. S.	F. Brown, C. Newton, J. E. Dobson.	„	Ellerman Wilson ...	„ 26.3.31 to 29.10.31 ...	6.11.31
222 †† *Margha*	Kitson, G. A.	P. Wright, H. Watkins, L. T. Carter.	W.T.	British India... ...	Forms 911 & 138 6.11.31 to 11.11.31	17.11.31
104 *† *Marquesa*	Smiles, R. S.	J. Wetherall	No. M.	Furness Houlder ...	„ „ 8.9.31 to 19.11.31	24.11.31
021 *† *Masula*	Fitt, W. H.	G. P. Price	„ M.	British India	„ „ 27.8.31 to 16.9.31	29.9.31
251 *† *Matakana*	Gordon, H. R.	H. Thompson	M.L.	Shaw, Savill & Albion	Form 911 20.6.31 to 29.9.31 ...	2.10.31
044 †† *Mataroa*	Gaskell, J. H., R.D., Lt.-Commr., R.N.R.	F. Eadon, F. C. Charnley, T. H. Davies.	„	„ „ „	Form 915 22.5.31 to 30.8.31 ...	1.10.31
023 *† *Matheran*	Mulcahy, J. J. ...	S. S. Slade, J. F. Butterworth, W. Cowrie.	No. M.	Brocklebank	Forms 911 & 138 2.11.31 to 13.11.31	23.11.31
223 *† *Matiana*	Green, F. V.	L. A. Bunn, H. A. Dean ...	„ M.	British India... ...	„ „ 11.11.31 to 18.11.31	21.11.31
024 *† *Matra*	Cornish, N. P. ...	... ...	„ M.	Brocklebank	„ „ 18.8.31 to 3.12.31	9.12.31
032 †† *Mauretania*... ...	Peel, R. V., R.D., Capt., R.N.R	R. H. C. Crawford, H. V. Clarke, G. Duguid.	W.T.	Cunard	„ „ 13.9.31 to 28.9.31	30.9.31
278 *† *Middlesex*	Almond, J. G. ...	... ...	No. M.	Federal	Form 911 2.10.31 to 14.10.31 ...	30.10.31
270 *† *Minderoo*	Macphedran W. J. ...	A. J. Perry	„ M.	Western Australian S.N. Co.	Forms 911 & 138 23.8.31 to 4.10.31	16.11.31
Minna	Mackenzie, G. G. ...	A. M. Campbell	„ A.	Scottish Fishery Brd.	Form 911 28.10.31 to 1.12.31 ...	7.12.31
224 *† *Modasa*	Gilchrist, J. W ...	E. Hale, K. Kirkup, H. C. Pearson.	„ M.	British India	Forms 911 & 138 6.7.31 to 20.9.31...	24.9.31
194 †† *Moldavia*	Allen, C. H.	T. E. Heath	W.T.-M.	P. & O.	Form 911 27.9.31 to 24.11.31 ...	8.12.31
199 †† *Mongolia*	Rhodes, H. R. ...	H. Tee, H. C. Slinn, W. S. Joliffe.	No. M.	„ „	Forms 911 & 138 8.9.31 to 5.11.31	9.11.31
260 †† *Monowai*	Toten, A. T.	L. B. Elhert, T. W. Gibson, L. J Drew.	M.L.	Union S.S. of N.Z. ...	Form 915 22.1.31 to 9.5.31 ...	4.8.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed Received up to 11.12.31.	Date Received.
148 †† *Montcalm*	Rothwell, A.	T. L. Gillette, A Mackie	W.T.-M.	Canadian Pacific ..	Forms 911 & 138 15.11.31 to 3.12.31	7.12.31
149 †† *Montclare*	Carr-Jones, D. J. ...	J. Shearer, J. Sharples, J. Soames.	W.T.	" " ...	" " 25.10.31 to 13.11.31	24.11.31
150 †† *Montrose*	Dott, J. F.	K. Hutchings, E. A. Shergold, L. L. Thornton.	"	" " ...	" " 1.11.31 to 19.11.31	23.11.31
164 †† *Mooltan*	Morton, A. J.	R. M. Richardson, J. L. Dunkley, A. D. Dennis.	No. M.	P. & O.	" " 31.5.31 to 3.9.31	17.9.31
226 †† *Mulbera*	Caffyn, F.	A. H. Hogge	" M.	British India	" " 5.10.31 to 2.11.31	30.11.31
290 *† *Musician*	Bostock, O.	K. H. Davies, H. Philpott, S. H. Diamond.	" M.	Harrison	" " 30.8.31 to 17.11.31	20.11.31
073 *† *Nagara*	Womersley, H. ...	E. N. Giller, T. Fraser, G. Bonner.	" M.	R.M.S.P. Co.	Forms 911 & 138 30.8.31 to 21.10.31	26.10.31
201 †† *Naldera*	Harrison, R., D.S.O., R.D., Capt. R.N.R.	H. J. Mann, G. D. Copeland, L. J. Brown.	W.T.	P. & O.	Form 915 4.4.31 to 8.7.31 ...	14.7.31
121 *† *Nankin*	Gordon, A. S.... ...	... ...	M.L.	" "	... ...	...
Natia	Purvis, A, ...	F. Thacker	No. M.	R.M.S.P.	Form 911 10.10.31 to 4.12.31 ...	8.12.31
227 *† *Nardana*	Reilly, J. V.	L. D. Macfadyen, H. Goater, H. Grace.	M.L.	British India	Form 915 25.4.31 to 21.8.31 ...	24.8.31
118 ** *Narenta*	Clayton, R.G., D.S.C.	J. Smith, C. E. Brown, M. A. Murch.	No. M.	R.M.S.P. Co.	Forms 911 & 138 15.5.31 to 12.8.31	19.8.31
202 †† *Narkunda*	Cadiz, F. G., D.S.C....	J. C. Davies, J. Travis, G. W. Copeland.	W.T.-M.	P. & O.	Form 911 19.11.31 to 27.11.31 ...	30.11.31
305 *† *Nebraska*	Falconer, A. C. ...	H. D. Bowker, H. Collinson, P. R. Cocks.	No. M.	" "	Forms 911 & 138 10.8.31 to 4.9.31	8.9.31
203 †† *Nellore* ...	Diamond, L. S. ... Skinner, M.B. ...	J. F. M. Heddle, H. E. Nuzum, J. W. Kavanagh.	M.L.	E. & A. S.S. Co. ...	Form 915 1.5.31 to 27.7.31 ...	17.9.31
162 *† *Nestor*	Adcock, F.	G. Edge, P. Elder, W. Pearse.	W.T.	A. Holt	" 26.7.31 to 30.11.31 ...	10.12.31
Newfoundland ...	Foxworthy, A. W.	R. F. Handley, E. Sainty, J. L. Macklin.	M.L.	Furness Withy ...	" 13.2.31 to 5.8.31 ...	12.8.31
210 ** *Niagara*	Hill, T. V.	G. H. Kime, D. A. Menlove L. P. Bourke.	"	Canadian-Australasian	" 1.5.31 to 14.8.31 ...	29.10.31
256 *† *Norfolk*	Howell - Price, J., D.S.O., D.S.C.	G. C. Hocart, H. Cockerell, H. Dash.	"	Federal	" 4.4.31 to 11.7.31 ...	21.7.31
Norna	Angus, W.	T. R. Ness, ...	No. A.	Scottish Fishery Brd.	Form 911 4.11.31 to 30.11.31 ...	7.12.31
297 *† *Northumberland* ...	Upton, H. L., D.S.C., R.D., Commr., R.N.R	H. Rogers, G. B. Cathie, H. I. Phillips.	" M.	Federal...	Forms 911 & 138 24.4.31 to 9.8.31...	13.8.31
267 *† *Novara*	Dene, R. C.	N. W. Leach	" M.	P. & O.	" " 31.10.31 to 30.11.31 ...	7.12.31
Nova Scotia ...	Furneaux, S. J. ...	J. E. Wilson, A. Hender, N. Forsythe.	M.L.	Furness Withy ...	Form 915 17.4.31 to 28.9.31 ...	2.10.31
230 *† *Nowshera*	Longhurst, J. H. ...	R. Burch, B. H. Bentall	No. M.	British India	Forms 911 & 138 18.1.31 to 29.1.31	11.5.31
231 *† *Nuddea*	Beeching, P. H. ...	D. A. Jones, W. Monk, T. Hodgkinson.	" M.	" "	" " 18.8.31 to 20.10.31	23.11.31
294 †† *Olympic*	Binks, J. W., R.D., Lt.-Commr., R.N.R.	... ...	W.T.	White Star	... ...	...
243 *† *Opawa*, M.V. ...	Robinson, F. W. ...	J. W. Pring, H. P. Williamson, R. H. Chapman.	M.L.	New Zealand S.S. Co.	Forms 911 & 138 24.5.31 to 21.9.31	25.9.31
170 †† *Orama*	Matheson, C. G., D.S.O., R.D., Capt. R.N.R.	E. V. Bilger, W. Eliot, R. W. Roberts.	W.T.	Orient	" " 25.5.31 to 25.8.31	3.9.31
086 †† *Orcoma*	Benson, E. W. ...	T. R. Scott, H. J. Jones, H. D. Dillon.	W.T.-M.	Pacific S.N. Co. ...	" " 2.8.31 to 30.9.31	7.10.31
087 †† *Orduna*	Ridyard, A., O.B.E....	T. J. Naylor, R. F. A. Cox, E. B. James.	"	" " ...	" " 10.1.31 to 23.3.31	2.4.31
258 *† *Oregon Star* ...	Lewis, G.	E. T. Blaxland	No. M.	Blue Star	... ...	...
171 †† *Orford*	Owens, A. L., Commr. R.D., R.N.R.	B. W. Gorman, B. H. Jones, C. H. Denton.	" M.	Orient	Forms 911 & 138 17.2.30 to 16.5.31	9.6.31
174 †† *Ormonde*	James, L. V., D.S.C.	T. L. Shurrock, N. Smith, C. Blake.	W.T.	"	" " 19.7.31 to 20.10.31	30.10.31
172 †† *Oronsay*	Cameron, E. P., R.D., Commr., R.N.R.	E. M. Mackay, D. Madeley	"	"	" " 21.6.31 to 22.9.31	5.10.31
173 †† *Orontes*	O'Sullevan, F. R. ...	J. M. Swanson	No. M.	"	" " 19.5.31 to 7.6.31	13.6.31
105 †† *Orsova*	Thorne, G. G., R.D. Commr., R.N.R.	R. B. Stannard	W.T.	"	" " 16.8.31 to 17.11.31	26.11.31
156 †† *Otranto*	Staunton, H. G., C.B.E. R. D. Commr., R.N.R.	A. E. Coles	W.T.-M.	Orient	... ...	...
287 *† *Pacific Enterprise*, M.V.	Newman, G. W. A....	C. G. White	M.L.	Furness Withy ...	Form 911 9.4.31 to 1.7.31	16.7.31
279 *† *Pacific Exporter* ...	Holland, C. E., R.D., Commr., R.N.R.	W. Edmonds	W.T.	" " ...	Forms 911 & 138 2.7.31 to 23.9.31	5.10.31
Pacific Shipper, M.V	Nuttall, E. L.... ...	S. Porter	No. A.	" "	Form 911 16.6.31 to 16.9.31 ...	21.9.31
Pancras ...	Barlow, F. P. ... Reynolds, W.... ...	L. A. Sayers, S. Adams ...	M.L.	Booth	Form 915 9.2.31 to 16.7.31 ...	29.7.31
Paris	Hill, A....	T. Mahoney	C.C.	Southern Rly. ...	Telegraphic Report. 1.12.31 ...	1.12.31
Patia	Sapsworth, S. A. ...	R. O. Laycock, R. S. Howlett.	No. A.	Elders & Fyffes ...	Form 911 6.10.31 to 7.11.31 ...	14.11.31
Patrician	Low, J.	W. E. Williams, E. Bennett, A. E. Jackson.	" M.	Harrison	... ...	...
Peisander	Findlay, J.	C. T. Morgan	" A.	A. Holt...	Form 911 3.2.31 to 23.4.31 ...	12.5.31
058 †† *Pennland*	Making, V. L. ...	G. Parkinson, G. T. Bayle, J. Cross.	W.T.	Red Star	Forms 911 & 138 26.10.31 to 14.11.31	16.11.31
204 *† *Peshawur*	Roche, C. B.	P. Haworth, J. A. Hunter, A. Nicklen.	No. M.	P. & O.	Form 915 2.8.31 to 2.12.31 ...	7.12.31
238 *† *Piako*	Aslin, E. P. C. ...	A. D. Wilson, A. W. Marshall, R. H. Carter.	"	New Zealand S.S. Co.	Forms 911 & 138 11.6.31 to 30.7.31	13.8.31
039 *† *Planter*	Ling, J. T.	W. S. Eustance, J. J. Devereux, W. H. Slaughter.	"	Harrison	" " 30.8.31 to 4.12.31	7.12.31
040 *† *Port Adelaide* ...	Williams, R.	F. W. Elger	W.T.	Commonwealth & Dominion.	... ...	...
255 *† *Port Alma*	Hayter, S. W.... ...	G. Dean, E. Wheeler, J. Moate.	M.L.	" " "	Form 915 11.7.31 to 4.12.31 ...	9.12.31
128 *† *Port Auckland* ...	Robinson, C. A. ...	A. Brown	"	" " "	" 15.7.31 to 29.10.31 ...	11.11.31
268 *† *Port Bowen* ...	Brown, A. H.	F. R. Gorman, T. L. Kidwell, T. Soans.	W.T.	" " "	" 1.7.31 to 13.10.31... ...	28.10.31
129 *† *Port Campbell* ...	Gregory, S. E. A. ...	J. C. Goddard, N. M. Muzzell, C. Midwinter.	"	" " "	" 8.3.31 to 18.7.31 ...	23.7.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31.	Date Received.
136 *† *Port Caroline* ...	Hearn, G. W.... ...	V. G. Battle, E. W. R. Young, R. E. Garner.	M.L.	Commonwealth and Dominion.	Form 915 17.6.31 to 8.10.31 ...	19.10.31
131 *† *Port Darwin* ...	Hudson, J. J.... ...	K. D. Morgan, W. R. Johnson, L. C. Asser.	,,	,, ,, ,,	,, 5.5.31 to 27.8.31 ...	11.9.31
132 ** *Port Denison* ...	Hall, G. S.	A. G. Newbury, R. A. Holloway, H. Duckling.	,,	,, ,, ,,	,, 23.4.31 to 26.8.31 ...	3.9.31
133 *† *Port Dunedin*, M.V.	Mason, W. S., D.S.C.	H. M. Post. C. A. Hodson. R. W. Chamberlain.	,,	,, ,, ,,	,, 15.5.31 to 1.9.31 ...	7.9.31
010 *† *Port Fremantle*, M.V.	Gilling, W.	A. Naismith	,,	,, ,, ,,	Form 911 12.8.31 to 17.9.31 ...	21.9.31
176 *† *Port Gisborne*, M.V.	Higgs, W. G.	R. B. Linklater, L. J. Skailes, L. E. Ring.	,,	,, ,, ,,	Form 915 19.7.31 to 24.10.31 ...	30.10.31
135 *† *Port Hunter* ...	... ...	G. T. C. Harris, C. R. Townshend, P. A. Munday.	,,	,, ,, ,,	,, 13.3.31 to 27.6.31 ...	8.7.31
Port Wellington ...	Jones, C. N.	W. B. Hopkins	No. A.	,, ,, ,,	Form 911 6.4.31 to 13.7.31 ...	26.8.31
106 *† *Princesa*	Friend, A. B.	F. Poulson, E. Lougheed, O. Sheard.	,, M.	Houlder	Forms 911 & 138 18.10.31 to 1.11.31	30.11.31
163 *† *Protesilaus*	Rundle, G. G.... ...	W. C. McGuigan	M.L	A. Holt	Form 915 28.5.31 to 14.9.31 ...	23.10.31
Pyrrhus	Davis, A. L.	E. M. Robb	No. A.	,, ...	Form 911 26.7.31 to 26.10.31 ...	7.12.31
205 †† *Rajputana*	Jask, H. M.	G. Aspinall, D. Buckley, C. F. Wright.	,, M.	P. & O.	Form 911 & 138 15.6.31 to 17.9.31	2.10.31
063 *† *Rancher*	Mc.Cullum, J.... ...	G. Harvey, C F. Minshull, A. L. Lewis,	,, M.	Harrison	,, ,, 12.7.31 to 29.9.31	2.10.31
228 †† *Ranchi*	Brooks, C.	T. A. Sergeant, H. E. Holt ...	,, M.	P. & O	,, ,, 20.9.31 to 11.11.31	17.11.31
236 †† *Rangitane* M.V. ...	McKellar, A. W. ...	A. Brown, R. C. Aldridge, C. J. P. Guille.	W.T.-M.	New Zealand S.S. Co.	Form 915 3.7.31 to 15.10.31 ...	22.10.31
257 †† *Rangitata* M.V. ...	Hunter, J. L. B. ...	J. Oxnard, D. Chadwick, S. Leggett.	,,	,, ,, ,,	Forms 911 & 138 6.6.31 to 16.9.31	28.9.31
240 †† *Rangitiki* M.V. ...	Barnett, H.	H. Hill, L. F Malcouronne, C. Cruttenden.	,,	,, ,, ,,	,, ,, 13.4.31 to 21.7.31	28.7.31
207 †† *Ranpura*	Furlong, G. H. S., R.D., Capt. R.N.R.	F. Ferguson, R. A. Perry, H. Toon.	No. M.	P. & O.	,, ,, 10.10.31 to 1.12.31	9.12.31
071 †† *Rawalpindi* ...	Stringer, O.B.E., R.D., Commr., R.N.R.	G. W. du Fosse, E. Cowen ...	W.T. M.	,, ...	,, ,, 29.8.31 to 22.10.31	26.10.31
247 *† *Recorder*	Egerton, J. J. ...	A. S. Milne, H. C. Blyth, W. Weatherall.	No. M.	Harrison	,, ,, 20.10.31 to 8.12.31	11.12.31
306 *† *Reina del Pacifico*, M.V.	Ross, J.	W. A. Hearle, R. Bridson, J. K. Campbell.	,, M.	Pacific S.N. Co. ...	,, ,, 1.9.31 to 21.10.31	28.10.31
239 *† *Remuera*	Grunt, S. C. ... ... Wilde, H. J.	A. J. Angell, J. R. Vincent, H. Vernon.	M.L.	New Zealand S.S. Co.	Form 915 31.7.31 to 5.11.31 ...	11.11.31
Rhexenor	Stout, G. L.	J. S. Parry	No. A.	A. Holt...	Form 911 1.6.31 to 26.6.31... ...	11.8.31
Rhodesian Transport.	Bowen, A. C.	H. S. Butler	,, A.	Houlder Bros. ...	,, 5.4.31 to 5.7.31 ...	30.7.31
Ross, S.T.	Johnson, H.	... ...	,, A.	W. Grant & Sons ...	... ...	...
189 *† *Rother*	Woodhead, T. H. ...	H. Robinson, H. L. Marshall	W.T.	Goole Steam Shipping	Forms 911 & 138 31.10.31 to 21.11.31	24.11.31
241 *† *Rotorua*	Lamb, C. B.	L. W. Fulcher, K. L. Jones, J. G. Gould.	M.L.	New Zealand S.S. Co.	Form 915 3.4.31 to 22.7.31 ...	29.7.31
062 *† *Royal Star*... ...	Walsh, W	A. F. Day, J. Higgin, J. W. McHugh.	,,	Blue Star	,, 6.9.31 to 30.11.31 ...	7.12.31
246 *† *Ruahine*	Maltby, T. L.	A. Hocken, R. Warren, L. Mercer.	W.T.	New Zealand S.S. Co.	Forms 911 & 138 7.5.31 to 22.8.31	29.8.31
St. Helier	Pitman, R.	A. C. Ricketts	C.C.	G.W. Railway ...	Telegraphic Report 5.12.31 ...	5.12.31
St. Julien	Richardson, L. ...	A. E. Ricketts, H. D. Freeman.	,,	,, ,, ...	,, ,, 10.12.31 ...	10.12.31
St. Minver, S.T. ...	Hatton, A.	C. Shaw, W. Robertson, G. Henshaw.	No. A.	Bunch Steam Fishing Co.	Form 911 6.11.31 to 5.12.31 ...	9.12.31
St. Patrick	... ...	F. E. Martin	C.C.	G. W. Railway ...	Telegraphic Report 15.9.31 ...	15.9.31
038 †† *Samaria*	Malin, R. G., Lt.-Commr., R.N.R.	A. MacKellar, F. G. Watts, J. A. Myles.	W.T.	Cunard	Forms 911 & 138 26.10.31 to 14.11.31	17.11.31
291 *† *Scholar*	Peterkin, A. G. ...	A. Robertson	No. M.	Harrison	,, ,, 20.7.31 to 25.9.31	2.10.31
Scotia	O'Neill, J.	W. H. Hughes	C.C.	L.M. & S. Railway ...	Telegraphic Report 5.12.31 ...	5.12.31
033 †† *Scythia*	Oram, B. B., R.D., Commr., R.N.R.	F. P. Collins, A. Bridgewater, H. L. Pryse.	W.T.	Cunard	Forms 911 & 138 21.9.31 to 1.11.31	3.11.31
211 *† *Shropshire*, M.V. ...	English, G. L. ...	A. D. Quayle, R. Cumming, D. Hetherington	,,	Bibby	Form 915 24.7.31 to 3.10.31 ...	6.10.31
Silksworth ...	Blacklock, G.... ...	J. J. Muttitt	No. A	R. S Dalgleish ...	Form 911 28.8.31 to 21.10.31 ...	30.10.31
Somerset	Pilcher, C. R.... ...	C. Edgecombe	M.L.	Federal	,, 16.8.31 to 14.11.31 ...	19.11.31
277 *† *Spero*	Montgomery, H. ...	H. W. Vickers, A. Kirk ...	,,	Ellerman Wilson ...	Form 915 28.3.31 to 3.10.31 ...	7.10.31
Stephen	Barlow, E. P. ...	C. G. Powell, G. H. Daniels	,,	Booth	,, 26.6.31 to 30.10.31 ...	27.11.31
259 *† *Surrey*	Lettington, A. E. ...	R. Rees, D. J. Murray, H. H. Mackillican.	,,	Federal...	,, 17.5.31 to 16.9.31 ...	26.9.31
Sylvafield, M.V.	MacDonald, W. ...	J. Johnson	No. A.	Hunting & Son ...	Form 911 23.8.31 to 26.9.31 ...	29.9.31
Tacoma City ...	Paul, H.	H. Small	,, A.	Reardon Smith ...	Form 911 7.8.31 to 25.11.31 ...	1.12.31
229 *† *Tactician*	Trinick, F., O.B.E. ...	E. P. Simmons	,, M.	Harrison	,, 19.7.31 to 7.10.31 ...	10.10.31
045 †† *Tainui*	McIntosh, A. ...	G. A. Harvey, A. G. Collins, J. Worrall.	M.L.	Shaw, Savill & Albion	Form 915 27.6.31 to 9.10.31 ...	11.11.31
081 *† *Tairoa*	Christie, D.	G. L. Almond, C. A. Meyer, L. B. Miller.	,,	,, ,, ,,	,, 27.5.31 to 1.10.31 ...	5.10.31
234 *† *Talma*	Harley, G. J.	M. H. Vincent, R. Potter, R. H. Weatherseed.	W.T.-M.	British India	Forms 911 & 138 17.5.31 to 21.9.31	12.10.31
046 †† *Tamaroa*	Hartman, W. H. ...	L. R. Bull, R. R. Roseman, F. Lutyen,		Shaw, Savill & Albion	,, ,, 18.5.31 to 7.6.31	13.6.31
264 ** *Tanda*	Pilcher, E. T., Lt.-Commr., R.N.R	R. Lloyd, G. C. Smith, B. M. Dun.	M.L.	E. & A. S.S. Co. ...	Form 915 30.5.31 to 30.8.31 ...	2.11.31
165 *† *Tantalus*, M.V. ...	Melling, C. F.... ...	A. C. H. Jones, J. J. Daniell, W. C. Angus.	W.T.	A. Holt	,, 1.7.31 to 25.10.31 ...	29.10.31
047 *† *Taranaki*, M.V ...	Wood, C., D.S.C. ...	R. K. Bolton, R. Bitmead, S. P. Wallis.	M.L.	Shaw, Savill & Albion	Form 915 11.4.31 to 7.7.31 ...	14.7.31
Tarantia	Caithness, J. B. ...	J. M. Cherry	No. A.	Anchor	Form 911 10.10.31 to 29.10.31 ...	26.11.31
069 *† *Tekoa*	McNish, R. H. L., D.S.O., Lt.-Commr., R.N.R.	J. J. Youngs, W. Rodwood, C. W. Roberts.	,, M.	New Zealand S.S. Co.	,, 28.10.31 to 7.11.31 ...	7.12.31
Tetela	Brice, E. H.	J. D. Paterson	,, A.	Elders & Fyffes ...	,, 7.9.31 to 9.10.31 ...	15.10.31
Teucer	Davies, J.	C. C. L'Estrange	,, A.	A. Holt	,, 26.4.31 to 15.8.31 ...	24.8.31
048 †† *Themistocles* ...	Young, A. D.	... ...	W.T. M.	Aberdeen Commonwealth.	... ...	...
007 *† *Thistleglen*	Whitfield, G.A., O.B.E.	S. B. Davis, H. B. Meek, G. L. Hetherington.	M.L.	Allan Black & Co. ...	Form 915 12.2.31 to 14.5.31 ...	18.5.31

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 11.12.31.	Date Received
235 *† *Tilawa*	Coleborn, E.	E. Cullerne, A. Bain, F. Haigh	No. M.	British India... ...	Form 911 3.10.31 to 28.10.31 ...	23.11.31
168 *† *Tinhow*	Scobie, A.	G. W. Seth, P. Aydon, C. H. Smith.	,,	A. Weir & Co. ...	Forms 911 & 138 21.7.31 to 12.10.31	23.11.31
161 *† *Titan*	Elford, W. J.	F. B. Smith, A. K. Sanderson, W. H. Deans.	W.T.	A. Holt	Form 915 23.5.31 to 29.9.31 ...	7.10.31
244 *† *Tongariro*	Hamilton, F. S. ...	E. A. Quick, D. Baldwin, H. Dawson.	M.L.	New Zealand S.S. Co.	,, 27.7.31 to 1.12.31	7.12.31
025 †† *Transylvania* ...	Gemmell, W.	A. Middleton, J. O. Dunn, J. A. Lefevre.	W.T.	Anchor	Forms 911 & 138 25.10.31 to 14.11.31	17.11.31
288 *† *Traveller*	Barrow, W. T. C. ...	R. Ledger	No. M.	Harrison	,, ,, 4.6.30 to 14.8.31	24.8.31
Trecarrell	Old, E. G.	W. E. McEwan, G. A. Solly	,, A.	Hain S.S. Co.	Form 911 26.3.31 to 29.4.31 ...	19.5.31
242 *† *Trematon*	Cundy, F.	J. Jenkyn, C. M. Quick, T. M. Meakin.	M.L.	,, ,, ...	... ...	...
119 *† *Trojan Star* ...	Griffin, G. A.	A. Emerson, L. S. Hassell ...	No. M.	Blue Star	Forms 911 & 138 14.6.31 to 30.8.31	4.9.31
245 *† *Turakina*	Laird J.	A. Weatherall, E. G. Williams, J. Reeve.	,, M.	New Zealand S.S. Co.	,, ,, 4.3.31 to 12.6.31	17.6.31
276 †† *Tuscania*	Rome, W. B.	D. Blair, G. Noble, E. Richardson.	W.T.	Anchor...	,, ,, 11.10.31 to 1.11.31	3.11.31
167 *† *Tyndareus*... ...	McClure, W.	J. R. C. Evans. W. F. Lochead, E. B. Sandon.	M.L.	A. Holt	Form 915 23.12.30 to 25.5.31 ...	4.7.31
Uffington Court ...	Clarke, E. J	T. Glover	No. A.	Haldin & Co.	Form 911 25.3.31 to 8.6.31 ...	23.6.31
113 *† *Upwey Grange*, M.V.	Goodrick, H. P. ...	A. Bradbury, G. T. Hurst, P. J. Walker.	,, M.	Houlder	Forms 911 & 138 14.9.31 to 30.11.31	8.12.31
292 †† *Viceroy of India* ...	Thornton, E. J., R.D., Capt., R.N.R.	W. R. B. Noall, F. Shute, L. Kingston.	,, M.	P. & O.	Forms 911 & 138 27.9.31 to 3.11.31	6.11.31
Vigilant	Simpson, E. S. S. ...	J. Wilson	,, A.	Scottish Fishery Brd.	Form 911 1.11.31 to 28.11.31 ...	1.12.31
263 ** *Wairuna*	Stewart, A. R. ...	J. E. Warwick, G. M. Coote, C. T. Robb,	M.L.	Union S.S. Co. of N.Z.	Form 915 14.10.31 to 23.6.31 ...	23.9.31
005 †† *Warwick Castle* ...	Owens, G.	P. Clissold	W.T.	Union Castle ...	Form 911 10.10.31 to 29.11.31 ...	1.12.31
060 †† *Westernland* ...	Doughty, J. H. ...	J. L. McLaren, C. Clark, W. L. Wood.	,,	Red Star	Forms 911 & 138 9.11.31 to 28.11.31	30.11.31
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208 †† *Winchester Castle* M.V.	Gardner, G. F., O.B.E., Lt.-Commr. R.N.R.	G. F. Moon, A. G. Parey ...	W.T.	Union Castle	Forms 911 & 138 5.9.31 to 25.10.31	27.10.31
096 †† *Windsor Castle* ...	Kerbey, J. H.... ...	F. Hunter, E. H. Dixey, J. Trayner	,,	,, ,, ...	Form 915 28.3.31 to 20.9.31 ...	23.9.31
Worthing	Marmery, S.	C. Munton, E. Balcombe ...	C.C.	Southern Railway ...	Telegraphic Report 14.11.31 ...	14.11.31
043 ** *Zealandic*, M.V. ...	Elford, H. C.	P. Horwood, J. Thompson, B. Morris.	W.T.	Shaw, Savill & Albion	Forms 911 & 138 3.11.31 to 8.12.31	11.12.31
Zent	Moore, J. A.	W. Pearce	No. A.	Elders & Fyffes ...	Form 911 24.9.31 to 26.10.31 ...	12.11.31
Conway, H.M.S. ...	Richardson, F. A., D.S.C., Commr., R.N.	The Senior Cadets	Cadets' M.L.	... ...	Cadets' Met. Log. 3.5.31 to 24.7.31	1.8.31
Pangbourne Nautical College	Tracy, A. F. G., Commr., R.N.	,, ,, ...	,,	... ...	Cadets' Met. Log. 26.4.31 to 23.7.31	28.7.31
Worcester, H.M.S.	Steele, G. C., V.C., Lieut.-Commr., R.N.	,, ,, ...	,,	... ...	Cadets' Met. Log. 8.5.31 to 29.7.31	4.8.31
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Cay Lobos	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.31 to 30.6.31	10.8.31
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Inagua	... ...	,, ...	,,	... ...	Lighthouse Register 26.2.31 to 5.9.31	5.10.31
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Watling Island ...	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.31 to 30.6.31	10.8.31
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Name of Vessel.	Captain.	Observing Officer.	Line.	Last Case of Water Samples, Reports, etc., received up to 30.11.31.	Date Received.
Dakarian	Brown, W.	A. A. Johnson	Leyland	Water Samples	...
Darian	Hannaford, W.	W. R. Vaughan	,, ...	,, ,, ...	18.9.31
Darro	Green, J.	A. J. G. Barff	R.M.S.P. Co.	,, ,, ...	18.9.31
Davisian	Thomas, R.	F. Steventon	Leyland	,, ,, ...	5.11.31
Dorelian	Hughan, C.	F. C. Sheerbart	,, ...	,, ,, ...	14.10.31
Hildebrand...	Buck, R. H., R.D., Capt. R.N.R.	F. H. Good	Booth	,, ,, ...	3.9.31

February, M.O., 1932.

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MARINE METEOROLOGY, ATLASES, BOOKS AND MEMOIRS.

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Monthly Current Charts for the Atlantic Ocean, from information collated and prepared in the Meteorological Office. (No. 132, 1897) (22½ × 18 in.) (Published by the Admiralty.)

Charts of Meteorological Data for the Nine 10° Squares of the Atlantic which lie between 20° N. and 10° S., and extend from 10° to 40° W., with accompanying Remarks, ending with the Best Routes across the Equator. (No. 27, 1876) 24*s*. (17 × 20 in.)

ATLANTIC (NORTH) :—

Atlas of Currents on the Main Trade Routes of the North Atlantic. (No. 323, 1930. 6*s*. 6*d*.) (29¼ × 19½ in.)

Meteorological Charts of the North Atlantic for each month of the year, giving normals of Pressure, Air and Sea Surface Temperature and Ocean Currents, with Frequencies of Winds, also Ice Limits. (No. 149A, 1923.) 1*s*. each (35 × 22½ in.). Sold by J. D. Potter, 145, Minories, E.1.

Synchronous Weather Charts of the North Atlantic and the adjacent Continents, 1st August, 1882, to 3rd September, 1883. Parts I to IV (33 sheets each). (No. 71, 1886) 17*s*. each Part. (26 × 22 in.)

Charts of Meteorological Data for Square 3, Lat. 0°-10° N., Long. 20°-30° W. (20 × 13½ in.) and Remarks to accompany the Monthly Charts, which show the Best Routes across the Equator for each Month, &c. (17 × 16½ in.) (No. 20, 1874). 20*s*.

Discussion of the Meteorology of that Part of the Atlantic lying North of 30° N., for the eleven days ending 8th February, 1870. With Charts (No. 13, 1872). 5*s*. (4to.)

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Wind Charts for the Coastal Regions of South America, from information collated and prepared in the Meteorological Office. (No. 159, 1902.) (27 × 20½ in.) (Published by the Admiralty.)

The relation between Pressure, Temperature, and Air Circulation over the South Atlantic Ocean. By M. W. Campbell Hepworth, C.B., R.D., Captain R.N.R., Marine Superintendent. (No. 177, Second Edition, 1917.) 1*s*. (8vo.)

BAFFIN BAY AND DAVIS STRAIT :—

Monthly Meteorological Charts of Baffin Bay and Davis Strait. (No. 221, 1917.) 8*s*. (30 × 25½ in.)

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INDIAN OCEAN :—

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