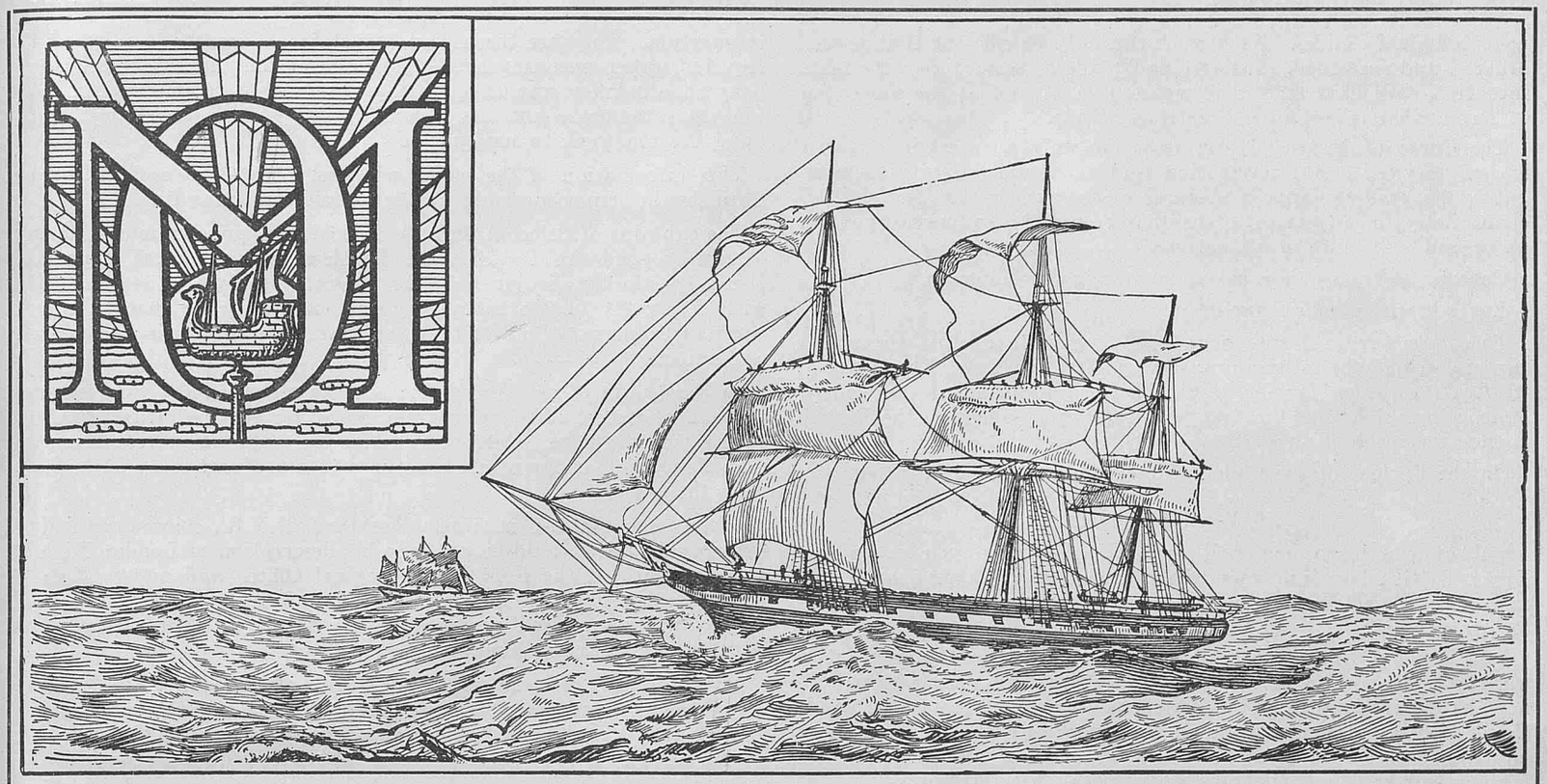

VOL. IX. No. 107. THE MARINE OBSERVER. NOVEMBER, 1932.

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PERSONNEL.

In 1924, the publication of the fleet list of voluntary observing ships, in which are given the names of the Captains and Observing Officers of these ships—who constitute the British Corps of Voluntary Marine Observers for the time being—provided the Merchant Service with information which it had not had before.

Some Lines had published for many years—usually for circulation within the company—fleet lists with the names of Commanders and officers, but we know of no published list which gave up-to-date information of Captains and Officers of a large number of ships of many companies of the British Merchant Service. Officers who were old friends and past messmates, and who had lost touch with each other, in some cases for many years, were made aware of the companies and ships in which they served, and every one concerned could see who were doing The Work. This gave the Corps of Voluntary Marine Observers encouragement and strength to work together.

The British Corps of Voluntary Marine Observers as a body is in fact about 77 years old, but the name is comparatively new. Many of us did this voluntary work in the Merchant Service for years before the Great War, but the first time that we ever heard of officers who did observation work at sea organized by the Meteorological Office, spoken of as Marine Observers was upon joining the office; and to SIR NAPIER SHAW, the then Director is due the credit of this use of the word "Corps" for in November, 1919, he so named it to me. The Corps of Voluntary Marine Observers is not a term which was likely to be originated by a seaman, for we speak of Ship's Company, officers, or crew, but it is a most distinctive term for the purpose, and in these days conveys the idea of the spirit which permeates those sea officers who do this work voluntarily in Merchant ships, in the country's service.

SIR NAPIER may well be proud of the title which he initiated. True we have stressed the word "Voluntary" since the Great War, for Marine Observers have been called upon to do much more than before, and it was necessary to give them due credit and to make certain that those ashore who desired observations knew that they were beholden to Volunteers.

The function of the Corps of Marine Observers is to observe meteorological elements regularly, and record and return information to the Meteorological Office, and in particular those who command and officer Selected Ships to report by W.T. to all ships and

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meteorological centres. Such work can only be efficient if it is well ordered and sustained. Interest and pride of service give the main incentive. We have striven to promote both, and at the same time to foster what is best in the Merchant Navy.

The Corps of Marine Observers is not only an asset in meteorological service to aid navigation and to further natural science, but by its good example is a source of strength to the British Merchant Navy in its service to the Empire and its influence upon the peace and well-being of all nations.

Care for personnel is a key to success in any enterprise.

Early training counts for much.

Therefore our first step here in 1919 was to consult the senior captain in the officers' training service, CAPTAIN H. W. BROADBENT of *H.M.S. "Conway,"* which resulted in the adoption of the Cadets' Meteorological Log as the first post-war improvement in the British marine meteorological service.

On the fly leaf of the Cadets' Meteorological Log is printed:—

A Word of Advice.

"What you learn now will be invaluable when you go to sea. Every British boy who goes to sea wishes to be a Seaman. You cannot be a good seaman unless you are observant, therefore learn to observe now.

"Meteorological observations will only be one of your many duties when you become an officer, but it is a very important duty. If now, as Cadet Captain of the Watch, you learn to observe the wind, clouds and other elements, and to read your instruments accurately and record them, you will soon learn, as officer of the watch, how to foretell bad weather and know when to call the Captain."

The next step to be taken in the interests of the personnel and of the efficiency of the work, will be made in the January, 1933, "MARINE OBSERVER," when a column will be provided in the fleet list, after that for the observing officers, in which the name of the senior wireless operator in Selected Ships will be indicated. It is time that the work of the wireless operator received due published recognition. They are the newest branch in the merchant navy, and require proper encouragement. It is desirable that the merchant navy should know who is operating the wireless communication as well that the merchant navy should know who is observing, and applying the work to navigation.

This information of the senior wireless operator in each Selected Ship should help to promote confidence and understanding.

The captains of Selected Ships are asked to require their observing officers to send the Register for Wireless Meteorological Reports, Form 138, to the Senior Wireless Operator, before it is returned with Form 911 or the Meteorological log, in order that he may enter in Columns 38 and 39 the exact particulars of communication, and initial.

In these days of machinery, the pursuit of arts and crafts is apt to be neglected, but there is great scope for such arts and crafts at the present time, when no man knows when his circumstances may change. A hobby at all times is a blessing, and to no one more than the seaman.

Last month LIEUT.-COMMANDER WILLIAMS, R.N.R., showed with his drawing, how life could be put into his description of London River and the work of the Port Meteorological Office; and many officers have greatly enhanced the value of the information they have returned by drawing and photography, as may be seen throughout the pages of the Marine Observer's Log.

In this number we publish a photograph of a model of the "Conway" made by the ship's carpenter and cadets. Model making is an art and a craft, which is not only a fascinating hobby but by which the seaman can derive much instruction in all branches of his profession.

We commend these ideas to the Corps of Voluntary Marine Observers.

MARINE SUPERINTENDENT.

London,
July 13th, 1932.

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.

CURRENTS.

Caribbean Sea.

THE following is an extract from the Meteorological Record of S.S. *Logician*, Captain R. F. HERSCHEL, Liverpool to West Indies. Observer, Mr. E. L. STOCKLEY, 3rd Officer

November, 1931. The following currents experienced on a passage from Curaçao to Porto Colombia are so erratic as to warrant special mention.

Leaving Santa Ana Harbour, Curaçao at 4.45 p.m. on November 25th the set experienced was N. 40° W. 1.0 kt. This held good until North Pt. was abeam at 6.34 p.m. From there until when the next fix was obtained off Aruba Island at 9.32 p.m. the ship had been set S. 62° E., 0.3 kt., on a contrary set to what might normally have been expected. Proceeding along the coast of Aruba Island a very strong easterly set was experienced and for the next hour the set was S. 60° E., 3.0 kt. From 10.32 p.m. to 11.30 p.m. when Noordpunt Lt. was abeam the set was still to the eastward, but had eased up considerably, careful bearings giving it as S. 57° E., 0.5 kt. From then onwards the normal westerly set held good, it being N. 18° W., 0.3 kt. for the next twelve hours, and S. 70° W., 0.9 kt. for the following ten hours.

Whilst the currents experienced certainly seem unusual, they are as we found them, for the positions were all reliable, being chiefly cross bearings of Pt. Colorado and Noordpunt Lights, and the speed of the ship which was carefully checked by both log and revolutions remained the same throughout. The weather was quite normal, and had been for days, and the temperature of the sea surface did not vary to any great extent.

I may say that the Pilot at Curaçao informed us that for three days previously the set off the entrance to Santa Ana Harbour had been strong to the eastward at approximately 3.0 kt. but that day (November 25th) the ordinary westerly set had resumed, though not with its usual strength. In view of that, and of the set we experienced off Aruba Island, it is obvious that the currents in this locality were even more unreliable than is usually the case.

An extract of the log is given below :—

From		To		From		To		Set.	Drift.	Rate.	Remarks.
Date.	Time.	Date.	Time.	Latitude.	Longitude.	Latitude.	Longitude.	(True).	Nautical Miles.	per hour.	
Nov. 25th ...	4.45 p.m.	Nov. 25th	6.34 p.m.	12° 06′ N.	68° 56′ W.	12° 15′ N.	69° 15′ W.	N40W	2	1.0 kt.	Left Santa Ana Harb. 4.45 p.m.
,, ,, ...	6.34 p.m.	,, ,,	9.32 p.m.	12° 15′ N.	69° 15′ W.	12° 34′ N.	69° 43′ W.	S62E	1	0.3 kt.	6.34 p.m. North Pt. Lt. at 10 miles.
,, ,, ...	9.32 p.m.	,, ,,	10.32 p.m.	12° 34′ N.	69° 43′ W.	12° 38′ N.	69° 50′ W.	S60E	3	3.0 kt.	10.2 p.m. Pt. Colorado Lt. at 12½ miles.
,, ,, ...	10.32 p.m.	,, ,,	11.30 p.m.	12° 38′ N.	69° 50′ W.	12° 43′ N.	69° 59′ W.	S57E	½	0.5 kt.	11.30 p.m. Noordpunt Lt. at 8 miles.
,, ,, ...	11.30 p.m.	,, 26th	11.46 a.m.	12° 43′ N.	69° 59′ W.	12° 21′ N.	72° 14′ W.	N18W	4	0.3 kt.	11.46 a.m. C. la Vela at 9 miles.
,, 26th	11.46 a.m.	,, ,,	10.0 p.m.	12° 21′ N.	72° 14′ W.	11° 31′ N.	74° 14′ W.	S70W	9	0.9 kt.	10.0 p.m. Santa Marta Lt. brg. S. 4 W. (True).

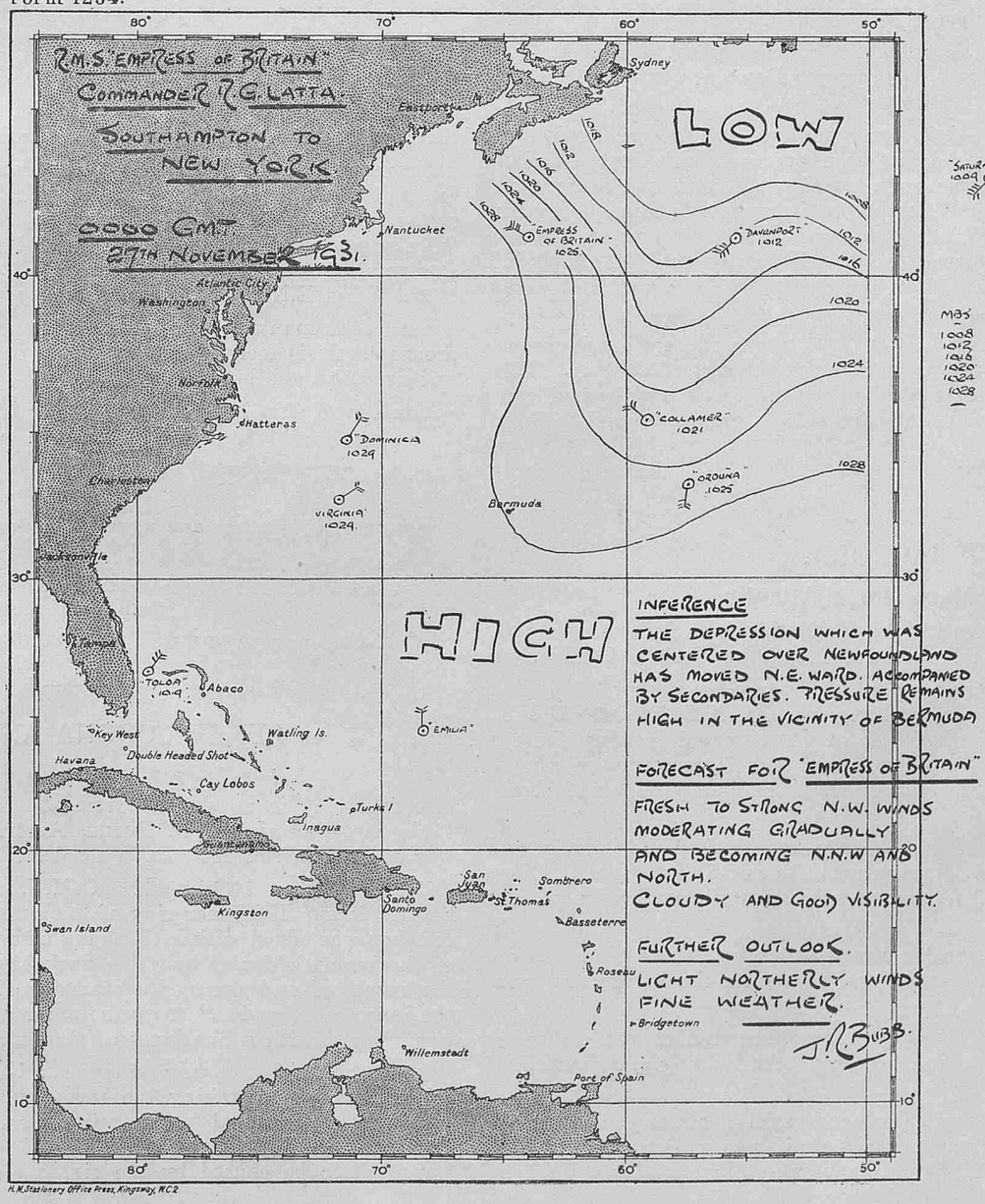
Note.—The North Atlantic Atlas of Currents does not extend east of Longitude 70° W., for the southern part of the Caribbean Sea. West of Longitude 70° W. there is considerable proportion of easterly current, mainly between N. and E., in all seasons. Off Colon there is a definite easterly counter-current in all seasons, except during winter, November to January.

WEATHER CHART MADE AT SEA.

Western North Atlantic.

Weather chart made at sea on board R.M.S. *Empress of Britain*, Captain R. G. Latta, Southampton to New York, by Mr. J. R. Bubb, 6th Officer.

Form 1254.



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

PHOSPHORESCENCE.

Arabian Sea.

THE following is an extract from the Meteorological Log of S.S. *City of Harvard*, Captain J. McMILLAN, Calcutta to Suez. Observer, Mr. E. BROOK WILLIAMS, 2nd Officer.

November 11th, 1931, 2.15 a.m. A.T.S. (G.M.T. 1845) observed peculiar phosphorescence. Points of bright light became visible in the water, and a few seconds after appearance, each point appeared to spread into a milky patch about six feet in diameter, remained visible for about 10 seconds, and then disappeared completely. These patches formed in groups in areas of between 30 and 40 yards in diameter, and were present over the whole of the surface visible from the bridge. Occasionally the bright points of light failed to spread and were clearly visible for some distance around the ship. No phosphorescence was visible in the water which was disturbed by the passage of the ship. The phenomenon lasted for about 40 minutes.

Wind variable and squally, barometer 1010.8 mb. Temperature; Air, dry 78° F., wet 75.5° F. Water 82° F., incessant heavy rain, heavily overcast (stratus) slight sea and S.W. swell.

Position of ship Latitude 7° 00′ N. Longitude 79° 30′ E. Course 280°, speed 11.5 knots.

SQUALL.

River Mississippi.

THE following is an extract from the Meteorological Record of S.S. *Patrician*, Captain J. LOWE, Georgetown Demerara to New Orleans. Observer, Mr. W. E. WILLIAMS, 3rd Officer.

November 20th, 1931, when proceeding up the River Mississippi near 12 mile Point, sky having been overcast with heavy nimbus clouds of threatening appearance, vessel was struck by a heavy rain squall, wind force 8 N.W. by W. and torrential rain. Previous to the squall wind was light and variable. Barometer at 1553 G.M.T. 29.84 in. Temperature 73°. Barometer at 1625 29.92 in. Temperature 59°.

Wind appeared as if blowing off ice and temperature fell 14° in 32 minutes. Squall passed over at 1705 but wind kept fresh accompanied by a steady downpour of rain for the rest of the day. This squall lifted the roof off a shed at Gutna Dock and caused considerable damage, also causing ships at Quarantine ground to drag their anchors.

AURORA.

Western North Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Minnetonka*, Captain T. F. GATES, C.B.E., New York to London, via Halifax. Observer, Mr. H. E. D. McCARTNEY, 5th Officer.

November 8th, 1931, approaching Halifax N.S. at 0430 G.M.T. (0030 A.T.S.) an arc of white aurora was observed forming above a bank of low cumulus. The phenomenon speedily obtained maximum luminosity which rendered the sky below completely dark and above, the brightness of full moonlight.

The arc was well defined both arms reaching to the horizon and extended over an arc of 45° from north to north east (True). There was no distortion in circularity, and the approximate maximum altitude was 15°.

No colouring was noticeable at any time, but waves of light were continually radiating in quick succession from the aurora and passing over the heavens.

These light waves presented an appearance similar to the effect of wisps of fog or mist passing over a bright light (e.g. a mast head lamp).

After an hour's display the phenomenon gradually disappeared although an occasional ray of light similar to a distant searchlight beam flickered across the sky till daybreak. Sky cumulus, 4 tenths.

MIRAGE.

Straits of Magellan.

THE following is an extract from the Meteorological Log of R.R.S. *Discovery II*, Commander W. M. CAREY, R.N., Port Stanley to Magallanes. Observer, Mr. R. A. B. ARDLEY, 2nd Officer.

November 15th, 1931, 1445 G.M.T., 1045 at ship.

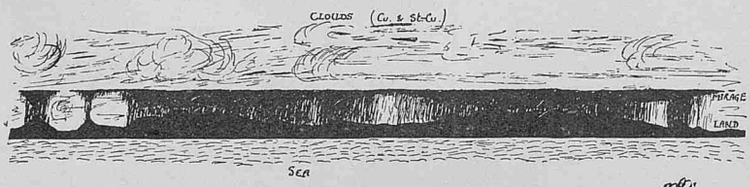
When just clear of First Narrows, proceeding westward through Magellan Strait, a remarkable mirage was observed over the hills on the Tierra del Fuegian side, particularly those backing St. Isidro Pt., then distant 22 to 25 miles. The weather was very fine and clear, land 35 miles away being plainly visible. The mirage took the form of inverted images of all the land higher than about 250 feet above sea level. The images were ill-defined and ragged-edged on their lower edges, and resembled dark brown clouds overhanging the land. Their upper edges lay in a perfectly straight horizontal line, and appeared to be bordered by a narrow band of faint white haze. The main inverted images of the land were fairly dense, but down from them tailed shreds and streamers of a cloud-like appearance joining the line of the actual land beneath, so that, in the case of the higher hills, true land and mirage were merged into one, and the ridges appeared much higher than they should have done and perfectly flat-topped, while isolated hills were seen as square-topped towers to the naked eye. Lower hummocks were merely accompanied by a small lenticular cloud above them, on a level with the line bounding the top of the other mirage. This line must have been approximately 550 feet above sea-level, hence land below 250 feet in height produced no mirage.

This phenomenon continued until 1150, when the hills were distant 14 miles, and the land quickly resumed its normal appearance. At the same time, the hills at the back of Barranca Point, on the Patagonian shore, now distant 15 miles, and other distant hills to the northward, produced an exactly similar effect, which continued till they were lost sight of in a rain squall about 1230, ship's time.

Throughout this period, the weather was bc, (cloud amt 6-7, mainly Cu. and St-Cu.), fine and warm, with the sun shining brightly most of the time; and the only occasion when the mirage faded was when the sky was clouded over and the land partly obscured in a rain shower at 1115. Barometer 1001.2 mb, slowly falling, Dry 53.7°, Wet 49.2°. Wind E.N.E. 4, remaining steady throughout.

The accompanying sketch is not necessarily topographically accurate. It is merely an attempt to depict the phenomenon as it appeared through binoculars.

Position of ship Latitude 52° 35′ S. Longitude 69° 40′ W.



Land in the vicinity of C. St Isidro, Tierra del Fuego, distant 17-19 miles, from the Eastward.

LUNAR CORONA AND HALO.

Mediterranean Sea.

THE following is an extract from the Meteorological Log of S.S. *Peshawur*, Captain C. B. ROCHE, Australia to London, via Suez. Observer, Mr. J. A. HUNTER, 3rd Officer.

27th November, 1931, at 2200 G.M.T. observed lunar corona and halo to form. The inner ring of the aureole was the usual brownish red, but was edged with a thin ring of dark brown, the bluish-white of the inner field also had this dark brown edging. The halo was the usual red and attained a diameter of 21° 48′ (Sextant angle) to the inner edge, and 27° 11′ to the outer edge, the whole phenomenon was covered with a fine layer of cirro-stratus clouds.

At 1008 G.M.T. the halo disappeared and the corona changed in colour and shape, taking the form of the moon and the colours, violet, green, and red, commencing from the inside, the green predominating. The outer edge of the corona was indented, and appeared to be caused by the cirrus clouds. At 2212 G.M.T. the

variegated colours changed to the reddish brown of the ordinary Corona.

Position of ship off Torrox Point (Latitude 36° 43′ N. Longitude 3° 57′ W.).

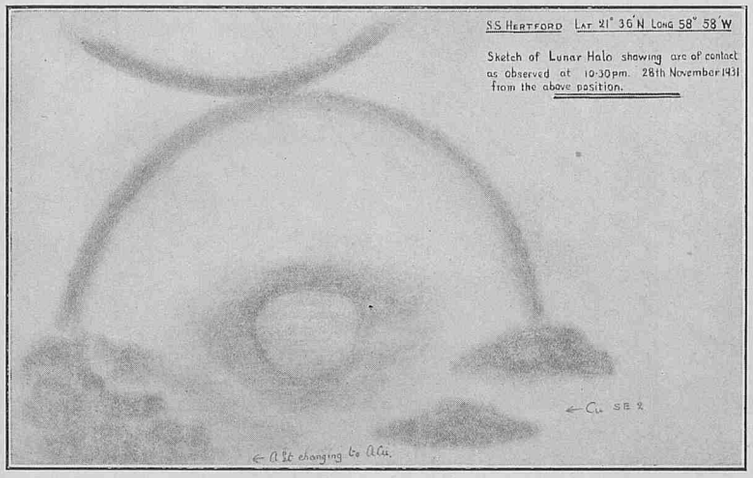
LUNAR HALO.

North Atlantic.

THE following is an extract from the Meteorological Log of S.S. *Hertford*, Captain J. BURTON DAVIES, Falmouth to Curaçao. Observer, Mr. W. H. TIMBERLAKE, 3rd Officer.

28th November, 1931, at 10.30 p.m. observed a clearly defined partial lunar halo of 22° radius. Wind at time of observation E.S.E. force 4. Barometer 1016.8 mb. falling, Temperature Dry bulb 79.1° Wet 72.4°. Altitude of Moon 23° 30′ bearing N. 69° E. A thin veil of Ci-St. completely covered the sky with A.-St. changing to A.-Cu. in vicinity of Moon, also two-tenths Cumulus moving S.E. at a moderate speed. The halo remained visible until 11.00 p.m. when the Cirrus veil dispersed.

Position of ship Latitude 21° 36′ N. Longitude 58° 58′ W.



SUN DOGS.

North Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Minnewaska*, Commander F. H. CLARET, O.B.E., R.D., R.N.R., London to New York. Observer, Mr. E PENGELLY.

Monday, November 9th, 1931, at 1630 G.M.T. two sun dogs were seen close one above the other in the A-St. clouds, bearing W.S.W. from the ship, and N.N.E. of the sun. Both were distinctly yellow in colour except their extremities which were faint and confused.

Close to the left of these, exceptionally brilliant and powerful sun rays or streamers shone out from behind a heavy Cu-Nb cloud across the A-St. and Ci-St. clouds presenting a windy and wintry appearance. The sun and the horizon were obscured by heavy rain squalls. Weather conditions were as follows, Wind W.S.W. force 10, mountainous seas. Bar. 28.71 in. and falling quickly. Cloud Cu-Nb. 7 A-St. Ci-St. amount 2. Temperature Air 55°, Wet Bulb 52°, Sea 55°.

Position of ship (D.R.):—Latitude 49° 58′ N., Longitude 15° 00′ W.

Tuesday, November 10th, 1931, at 1600 G.M.T. a very clear sun dog was seen bearing S.S.W. true from the ship, and S.E. of the sun. That part nearest the sun was of a bright red colour, followed by a pretty and distinct yellow, and then by a yellowish green.

The sun and the horizon were again obscured by heavy squalls and Cu-Nb. clouds. Weather conditions were wind W. by N. force 8 and greater than that in the squalls, high sea, Bar 29.00 in. rising. Temperature Air 55°, Sea 58°, cloud Cu-Nb. Fr-Cu. amount 6. A-St., Ci-St., amount 2.

Position of ship (D.R.):—Latitude 49° 43′ N. Longitude 18° 36′ W.

METEORS.

South Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Clan Keith*, Captain J. WATERHOUSE, New York to Buenos Aires. Observers, Messrs. W. N. TUDMAN, 2nd Officer, and D. W. GIBBON, 4th Officer.

November 17th, 1931, at 2.26 a.m. A.T.S. (0438 G.M.T.), observed a particularly brilliant meteor in N.W. Quadrant which illuminated the whole sky for an instant with a dazzling white light. At the time the sky was mainly clear, no moon, with a little Cumulo-Nimbus. It appeared in the vicinity of Castor and Pollux and disappeared in a flash between Aldebaran and the Pleiades, leaving a well-defined white trail, which continued to glow for three or four minutes. Approximate altitude 49°.

A full minute later a smaller, and less bright meteor appeared at the point of disappearance, and continued on towards the horizon at a much slower rate. An extraordinary number of meteors were observed throughout the Watch, several almost equalling in brilliance the one described above, but no definite radiant point was apparent.

Position of ship, Latitude 15° 30′ S., Longitude 36° 46′ W.

North Atlantic.

THE following is an extract from the Meteorological Log of S.S. *Nova Scotia*, Captain S. J. FURNEAUX, Liverpool to St. John's N.F. Observer, Mr. J. E. WILSON, 2nd Officer.

November 16th, 1931, at 0446 G.M.T., observed a very brilliant meteor fall vertically from midway between, but below, the Hyades and the Pleiades. Altitude approximately 43° bearing 235°. It burst almost immediately and sea and sky were brilliantly lit up for about 2 seconds. The tail was particularly brilliant and was visible to the naked eye for 11 *minutes* and for a further 3 *minutes* through glasses. Apparently it was composed of twin streams of vapour—parallel and very close together. At 3½ minutes the lower ends joined together and became a thick wavy line. At 6 minutes much of its brilliance was lost and the lower end began to curve to the left. At 7½ minutes it had the appearance of a cloud of silvery smoke and was shaped like the letter "d." It remained in this formation until 0457 G.M.T., when it was not visible to the eye, and had not changed when it was lost to sight through glasses.

Several smaller meteors were observed before and after this occurrence to fall from the vicinity of Orion. The majority fell vertically or nearly so, but one or two travelled E. to W. almost parallel to the horizon.

About 45 minutes after the above meteor was lost sight of a patch of diffused white light was noticed bearing N.N.W. (310°) behind a bank of Cumulus cloud on the horizon. The effect was the same as if the moon was rising behind the clouds. This lasted for about 5 minutes. Clear sky with occasional small Cumulus clouds passing over. The bearing and altitude of above remained the same all the time.

Position of ship, Latitude 52° 46′ N., Longitude 36° 38′ W.

SHOWER OF LEONID METEORS.

North Atlantic.

THE following is an extract from the Meteorological Record of S.S. *Duchess of York*, Commander R. N. STUART, V.C., D.S.O., R.D., R.N.R., Montreal to Liverpool. Observer, Mr. D. PARSONS, 4th Officer.

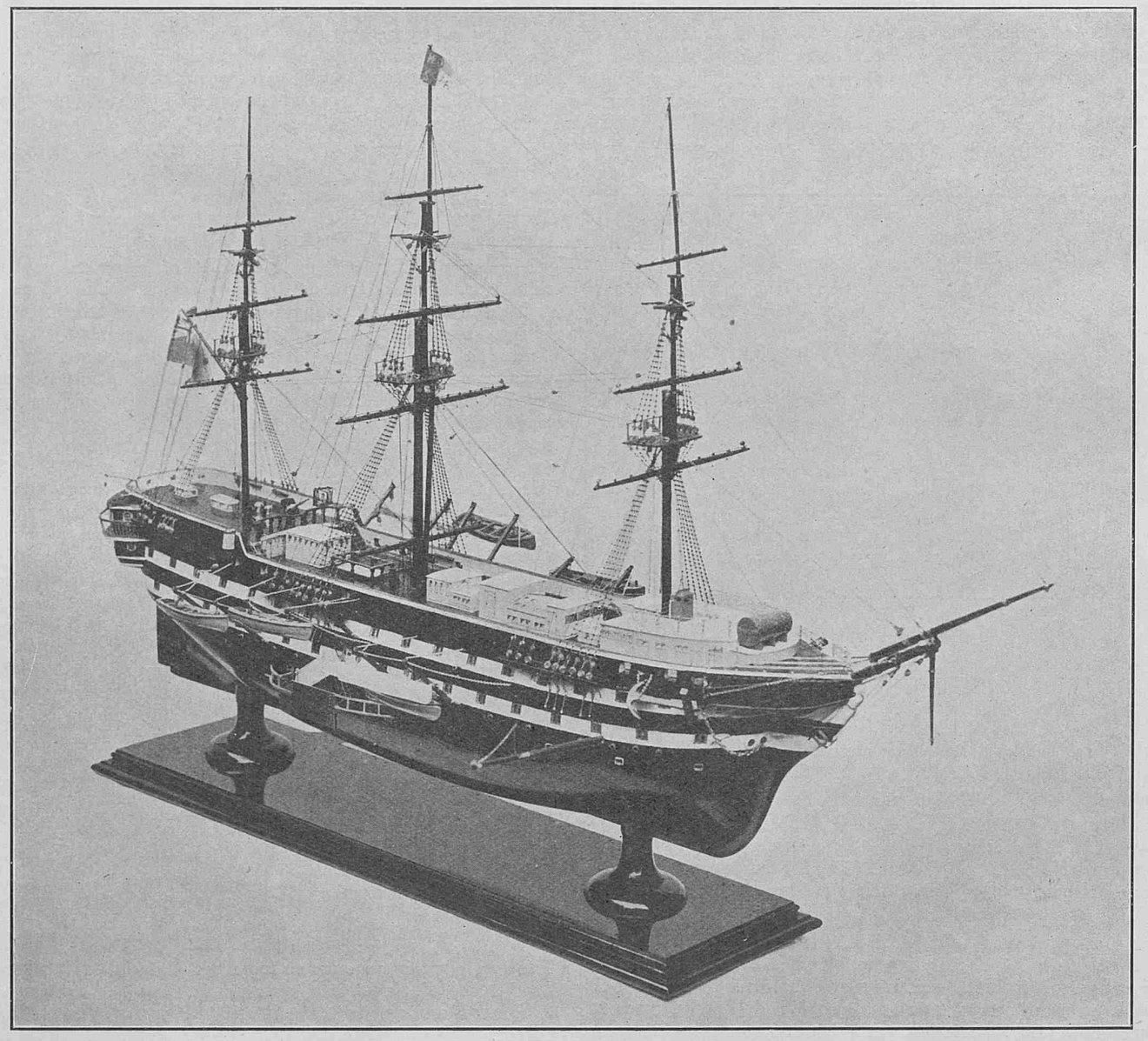
November 17th, 1931, at 0601 G.M.T., an exceptionally bright meteor was observed commencing from the S.E. quadrant of the sky at an altitude of about 65° and travelling towards the N.W. with extraordinary brilliance, disappearing about 10° past the zenith. It burned with a greenish yellow light, bursting with a bright green flash about the zenith and still continued to the point of disappearance. A whitish glowing trail with a large reddish glowing mass at the bursting point was left in the sky; this quickly took up a V-shaped formation with the bursting point at the apex and with the arms extending towards the S.W. quadrant. This remained visible for a period of 6 minutes then disappeared. The whole sky was brilliantly illuminated by this phenomenon.

Position of ship, Latitude 55° 25′ N., Longitude 39° 19′ W. Course 077°. Speed 18 knots.

H.M. SCHOOL SHIP CONWAY.

MODEL AND SOME HISTORICAL NOTES.

We are indebted to Commander F. A. RICHARDSON, D.S.C., Royal Navy (retired), Captain of the *Conway*, and Honorary Secretary of the Conway Club (old boys), for the following notes; and to Mr. W. CULL for permission to reproduce the photograph of the model of the *Conway* formerly *Nile* made on board by the ship's carpenter and cadets, at the suggestion of JOHN MASEFIELD, LL.D., Poet Laureate, President of the Conway Club.



At the annual meeting of the Conway Club, held at Liverpool in June, 1932, it was decided to submit the model for the acceptance of HIS MAJESTY THE KING. HIS MAJESTY was graciously pleased to accept the model from the hands of the president of the Conway Club, JOHN MASEFIELD, at Buckingham Palace in July.

This model of the *Conway* has been made from a piece of the ship's original African oak cut from a fairhead on the Lower Deck, starboard side.

The work has been carried out entirely by Mr. JOHN BULLIS WILLIAMS, carpenter of the *Conway*, assisted by the Cadets.

It is built to the scale of one-eighth inch to the foot.

It took two years to complete in spare time.

The wood must be at least one hundred and fifty years old.

There are one hundred and fifty-six dead eyes and ninety-one blocks, all made from old school rulers. The metal, where possible, is ship's copper, silver-plated.

There are one hundred and twenty yards of rigging (wire and silk trout-line), six hundred and twenty-two bolts (the domestic pin).

Six feet nine inches of chain on boat davits.

There are one thousand, seven hundred and ninety-eight clove hitches in fore, main and mizzen rigging.

The hull received sixteen coats of paint and enamel. Below water is the plain wood, polished.

The *Nile* is the third ship to be named *Conway*. In 1859 the Admiralty loaned the Frigate *Conway* of 28 guns to the Mercantile Marine Service Association to use as a training ship for Cadets wishing to go to sea as officers in the Merchant Service. The scheme

was so popular that in 1861 a larger vessel was asked for and the *Winchester* replaced the *Conway*. The *Winchester* was a 51 gun frigate. On replacing *Conway* she took over the name.

In 1875 a still larger ship was deemed to be necessary and the Admiralty placed the *Nile* at the disposal of the Conway Committee, and she too was renamed *Conway*.

There have been 7,158 Cadets through the three *Conways* (June, 1932).

The motto of the *Conway* is, "*Quit ye like men be strong.*"

The present *Conway* (H.M.S. *Nile*) of which this model is made, was laid down at Devonport Dockyard in October, 1827. She was completed and launched as a sailing ship in 1839, to be subsequently converted to a single-screw steamer in 1852-4. She was undocked after conversion on 30th January, 1854. She was then re-rated for tonnage as 4,375 tons. She was recommissioned by Captain (Commodore) Henry B. Martin in April, 1854.

Served in Baltic Fleet under Vice-Admiral Sir Charles Napier in 1854 and under Rear-Admiral Dundas in 1855.

Present at Naval Review, Spithead, 23rd April, 1856.

Reinforced North American Squadron under Rear-Admiral Arthur Fanshaw, June, 1856.

Flagship of Rear-Admiral Chads at Cork, 1858, and of Rear-Admiral Charles Talbot (December 7th, 1858).

Joined Channel Fleet August, 1859, as a private ship. Detached to West Indies but returned to Queenstown owing to severe damage in a hurricane 4th November, 1859. Left England as Flagship West Indies, Rear-Admiral Sir Alexander Milne, April, 1860, and returned to England, April, 1864.

Paid off and laid up 23rd April, 1864.

Lent to Mercantile Marine Service Association 22nd June, 1875, and renamed *Conway*.

DRIFTS IN THE INDIAN AND PACIFIC OCEANS.

Prepared in the Marine Division by A. J. Tabor, Clerical Assistant.

In continuation of an article published in The Marine Observer, Volume IV, No. 47, entitled "Drifts of Derelict ships in the N. Atlantic," it is here proposed to publish reports of drifts in the Pacific and Indian Oceans.

When compared with the Atlantic there are relatively few, long and interesting accounts of drifts in these oceans, this being probably due to the much smaller volume of traffic together with the large and unfrequented areas lying between the widely spaced routes. Consequently a large number of vessels reported abandoned have never been sighted again.

It is necessary to go back for a number of years to find interesting records, since towards the end of the nineteenth century iron ships had largely replaced wooden ships, with a noticeable decrease in the number of abandonments, while at the present day the increased size and equipment of the modern steamer, together with the steps taken to destroy derelicts, have almost removed this menace to safe navigation. The following figures from the Board of Trade records during the three years ended June, 1893, given in a report to a Derelict Committee, is interesting in connection with the distribution of dangerous floating objects.

There were all over the world 103 casualties to British vessels striking floating objects; of these only one casualty was reported in the Arabian Sea, one in the Indian Ocean, and one in the Pacific Ocean. The large majority were in the North Atlantic and Home Waters.

The following recorded accounts of long drifts in the Indian and Pacific Oceans are interesting, but it should be borne in mind that in the case of derelicts, only the resultant set and drift can be given, for owing to the different currents and winds which may be experienced the actual set and drift will in most cases greatly exceed the resultant drift.

The British iron barque *Ada Iredale* on October 15th, 1876, was abandoned in the South Pacific about 2,000 miles east of the Marquesas Islands. Her coal cargo had ignited and was burning steadily. After drifting slowly westward, in the south equatorial current, the burning derelict was picked up by a French cruiser and towed to Tahiti. She had travelled nearly 2,500 miles in eight months. After the fire had died out the hull was repaired and ship recommissioned under the American Flag, her name being changed to *Annie Johnson* of San Francisco.

Another British iron ship, the *Oriflamme*, due to the spontaneous combustion of her coal cargo, was abandoned in June, 1881, about 850 miles west of Lima on the coast of Peru. In February, 1882, this vessel drifted ashore on the island of Raroia, having covered about 2,850 miles in eight months.

In 1892 the four-masted iron ship *Nonresfeld* from Liverpool to San Francisco was abandoned on December 20th in 8° N. 118° W., with her cargo on fire. A week later she was sighted a few miles from that position.

In January, 1893, she was sighted in Lat. 20° 20′ N. Long. 110° 10′ W., on April 24th, 1893, in Lat. 3° 50′ N. Long. 144° W., and on June 11th, 1893, in Lat. 6° 30′ N. Long. 148° W. The whaling barque *Alice Knowles* reported having seen her on December 28th, 1895, in Lat. 9° N., Long. 175° E., 3,967 miles from her position of abandonment. The distance through the positions given where she was sighted was 5,619 miles.

The *Waikato* was abandoned on June 5th, 1899, in 37° S., 21° E., she was sighted by the *Taacora* on July 28th in 40° 02′ S., 38° E., was again sighted on August 2nd in 39° S., 39° E., and again on September 2nd in 43° S., 52° E., finally being found in 39° 30′ S., 64° 30′ E., 2,056 miles from her position of abandonment by the *Banca* on September 15th, and towed by her into Fremantle. This vessel afforded a further interesting drift in the South Atlantic when she broke down on July 1st, 1902, in Latitude 33° S., Longitude 6° E. She drifted until July 27th, when she was picked up in Latitude 28° S., Longitude 13° E., and towed into St. Helena. Full particulars of this drift with a chart were published in the January, 1903, North Atlantic Pilot Chart.

An interesting drift, though more in the S. Atlantic, is that of the S.V. *Dumbartonshire*, abandoned on July 28th, 1894, in 39° S., 38° W., was passed in 40° S. 5° W., by the *Port Douglas* in January, 1895, by the *Osaka* on January 14th in 40° S., 1° W., by the *Sidney* three days later in 41° S., 1° E., by the *East Lothian* on 27th in 40° S., 3° E., and by the *Brenhilda* on March 7th in 41° S., 14° E. Apparently she disappeared shortly after that date, having drifted 2,390 miles in an Easterly direction in over seven months.

The British iron single screw steamer *Linlithgow*, homeward bound from California in 1896, met with an accident to her shaft on August 11th in 5° 51′ N., 108° 32′ W. She drifted till October 12th and was then left derelict in about 12° 50′ N., 93° 20′ W. An extract of the log of S.S. *Linlithgow* from the time she was disabled, supplied by Captain D. Petrie to the U.S. Hydrographic Office, giving her daily positions, daily drift, and weather is here given, the track being shown on the chart Figure 1.

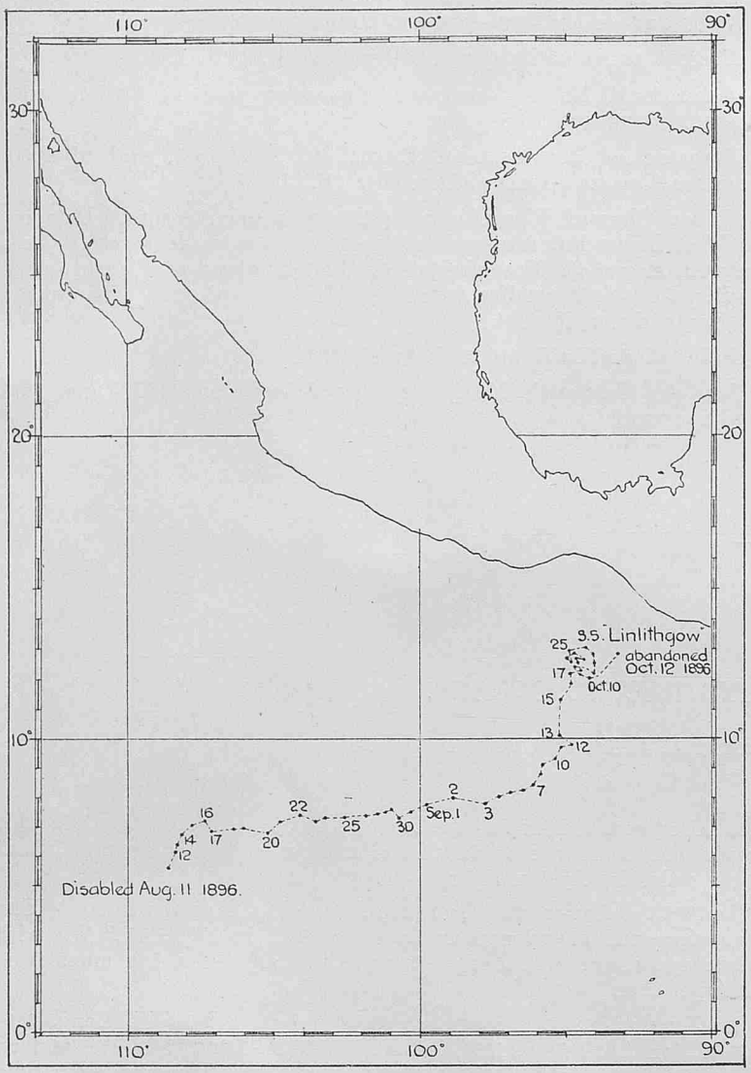


Figure 1.—Chart showing Drift of Disabled S.S. "Linlithgow".

DAILY POSITION OF S.S. "LINLITHGOW" DURING TIME SHE WAS BROKEN DOWN AND DRIFTING ABOUT IN THE PACIFIC OCEAN.

Date.	Observation at Noon.		Drifted in 24 Hours.	Wind.
	Latitude.	Longitude.		
1896.				
Aug. 11	5° 51′ N.	108° 32′ W.	—	—
,, 12	6° 12′ N.	108° 27′ W.	—	—
,, 13	6° 23′ N.	108° 23′ W.	—	—
,, 14	6° 47′ N.	108° 08′ W.	Drift N. 33° E. 20½ miles in the last 24 hours.	Fresh southerly.
,, 15	7° 06′ N.	107° 47′ W.	Course of drift N. 47° E. dist. 28 miles.	About south.
,, 16	7° 12′ N.	107° 22′ W.	Drift N. 77° E. dist. 26 miles.	Light breeze from between S.S.W. and N.W.
,, 17	6° 49′ N.	107° 08′ W.	Drift N. 58° E. dist. 27 miles.	S.W. fresh breeze.
,, 18	7° 00′ N.	106° 32′ W.	Drift N. 73° E. dist. 37½ miles.	—
,, 19	7° 00′ N.	106° 00′ W.	Drift N. 90° E. dist. 32 miles.	Light unsteady breeze S.W. and W.
,, 20	6° 54½′ N.	105° 19′ W.	Drift S. 83° E. dist. 41 miles.	Unsteady breeze, shifting between S. and N.W.
,, 21	7° 14½′ N.	104° 49′ W.	Drift N. 56° E. dist. 36 miles.	Steady fresh southerly breeze.
Aug. 22	7° 29′ N.	104° 03′ W.	Drift N. 72° E. dist. 48 miles.	3 p.m. had N.W. squall.
,, 23	7° 20′ N.	103° 37′ W.	Drift S. 71° E. dist. 27½ miles.	Light variable airs and calms.
,, 24	7° 23′ N.	103° 18′ W.	Drift N. 81° E. dist. 19 miles.	Moderate to fresh S.W. breeze.
,, 25	7° 38′ N.	102° 39′ W.	Drift N. 69° E. dist. 42 miles.	Light to moderate S.W. winds.
,, 26	7° 33½′ N.	101° 50′ W.	Drift S. 85° E. dist. 49 miles.	Light westerly and N.W. airs.
,, 27	7° 30′ N.	101° 33′ W.	Drift S. 78° E. dist. 17 miles.	Light variable breeze between W.S.W. and W.N.W.
,, 28	7° 30′ N.	101° 21′ W.	Drift E. dist. 12 miles.	Light variable airs and calms.
,, 29	7° 35′ N.	101° 05′ W.	Drift N. 73° E. dist. 17 miles.	Dead calm till 10 a.m. then light N. air.
,, 30	7° 25′ N.	100° 53′ W.	Drift S. 49° E., 16 miles.	Light airs and calms.
,, 31	7° 38′ N.	100° 30′ W.	Drift N. 61° E., 26 miles.	Light S.W. breeze and squally.
Sept. 1	7° 54′ N.	99° 45′ W.	Drift N. 70° E., 48 miles.	Fresh S.W. breeze.
,, 2	8° 02′ N.	98° 50′ W.	Drift N. 82° E., dist. 54 miles.	Fresh breeze from between S.W. and W.S.W.
,, 3	7° 59′ N.	97° 47′ W.	Drift S. 87° E., dist. 63 miles.	Steady moderate breeze.
,, 4	8° 10′ N.	97° 22′ W.	Drift N. 66° E., dist. 27 miles.	—
,, 5	8° 18′ N.	96° 55′ W.	Drift N. 73° E., dist. 28 miles.	Light S.W. airs.
,, 6	8° 20′ N.	96° 27′ W.	Drift N. 86° E., dist. 28 miles.	Light westerly and N.W. airs.
,, 7	8° 32′ N.	96° 13′ W.	Drift N. 49° E., dist. 18 miles.	Light airs and calms.
,, 8	8° 51′ N.	95° 57′ W.	Drift N. 40° E., dist. 25 miles.	Light southerly airs and calms.
,, 9	9° 06′ N.	95° 43′ W.	Drift N. 47° E., dist. 20½ miles.	Light airs and calms.
,, 10	9° 24′ N.	95° 24′ W.	Drift N. 47° E., dist. 26 miles.	Light S.W. breeze.
,, 11	9° 41′ N.	95° 06′ W.	Drift N. 47° E., dist. 25 miles.	Light S.W. and westerly breeze.
,, 12	9° 45′ N.	94° 58′ W.	Drift N. 64° E., dist. 9 miles.	Light S.E. breeze.
,, 13	10° 00′ N.	95° 15′ W.	Drift N. 49° W., dist. 23 miles.	—
,, 14	(Omitted).		—	—
,, 15	11° 28′ N.	95° 00′ W.	Drift N. 10° E., dist. 89 miles for 2 days.	Strong breeze and squally.
,, 16	11° 56′ N.	94° 55′ W. (at 11 p.m. by Pole Star)	Drift N. 11° E., dist. 28 miles in 35 hours.	Light airs and squally.
,, 17	12° 08′ N.	94° 57′ W.	Drift N. 9° W., dist. 12 miles in 13 hours.	About N.E. and E.N.E.
,, 18	12° 20′ N.	94° 39′ W.	Drift N. 57° E., dist. 22 miles.	Light airs from E.S.E.
,, 19	12° 36′ N.	94° 47′ W.	Drift N. 26° E., dist. 14 miles.	Calms and light airs.
,, 20	12° 33′ N.	94° 37′ W.	Drift N. 72° E., dist. 10 miles.	Light N.N.W. and northerly breeze.
,, 21	12° 38′ N. (Within 4 miles of position of Sept. 19th.)	94° 49′ W.	Drift N. 69° E., dist. 13 miles.	Light northerly breeze.
,, 22	12° 36′ N.	94° 53′ W.	Drift S. 66° W., dist. 4½ miles.	Light airs and calms.
,, 23	12° 41′ N.	94° 55′ W.	Drift N. 22° W., dist. 5½ miles.	Light easterly breeze.
Sept. 24	12° 59′ N.	94° 59′ W.	Drift N. 10° W., dist. 18½ miles.	Light S.E. breeze.
,, 25	12° 52′ N.	94° 40′ W.	Drift S. 70° E., dist. 20 miles.	Fresh W.S.W. to W.N.W.
,, 26	12° 54′ N.	94° 33′ W.	Drift N. 70° E., dist. 7 miles.	Light westerly breeze.
,, 27	12° 48′ N.	94° 25′ W.	Drift S. 54° E., dist. 10 miles.	Light W.N.W. and N.W. breeze.
,, 28	12° 45′ N.	94° 16′ W.	Drift S. 70° E., dist. 9 miles.	Light airs and calms.
,, 29	12° 32′ N.	94° 11′ W.	Drift S. 22° E., dist. 14 miles.	—
,, 30	12° 26′ N.	94° 13′ W.	Drift S. 19° W., dist. 6 miles.	N.W. wind, heavy squall from S.E.

Date.	Observation at Noon.		Drifted in 24 Hours.	Wind.
	Latitude.	Longitude.		
1896. Oct. 1	12° 39′ N.	94° 41′ W.	Drift N. 65° W., dist. 30½ miles.	Strong S.E. fresh gale and squalls.
,, 2	12° 46′ N.	94° 47′ W.	Drift N. 40° W., dist. 9 miles.	Light S.E., S.W. and westerly airs.
,, 3	12° 32′ N.	94° 42′ W.	Drift S. 19° E., dist. 15 miles.	Light breeze.
,, 4	12° 21′ N.	94° 42′ W.	Drift, due South, dist. 11 miles.	Light N.W. and westerly airs.
,, 5	12° 21′ N.	94° 30′ W.	Drift, East, dist. 13 miles.	Light easterly breeze.
,, 6	12° 32′ N.	94° 58′ W.	Drift N. 69° W., dist. 30 miles.	Light easterly breeze and squalls.
,, 7	12° 22′ N.	94° 59′ W.	Drift S. 5° W., dist. 10 miles.	Light airs.
,, 8	12° 01′ N.	94° 58′ W.	Drift S. 3° E., dist. 21 miles.	Light northerly breeze.
,, 9	12° 05′ N.	94° 41′ W.	Drift N. 77° E., dist. 17½ miles.	Light airs and calms from N.N.W., W. and S.
,, 10	12° 15′ N.	94° 21′ W.	No meridian altitude.	—

The above record of daily drifts, also giving the wind, is interesting, because some idea may be formed as to the amount of drift due to leeway and the amount due to current.

The result of an investigation was published in Volume II, No. 18, of the MARINE OBSERVER, of the state of wind and current when S.S. *Archimedes* was broken down and drifting in the eastern N. Atlantic in June, 1924. In her case it was estimated that not more than 30 miles of a total drift of 78 miles was due to current, while the remaining 48 miles was probably due to wind.

The S.S. *Pukaki* when in Latitude 5° 15′ N., Longitude 162° 45′ W., on January 28th, 1916, became disabled with a broken propeller shaft and drifted for 43 days while repairs were being effected. Figure 2 shows the irregular course covered by *Pukaki* during this time, giving a resultant set and drift during the 43 days to the W.S.W. 677 miles.

The following is an account of the drifts of two life-buoys in 1923 received from MESSRS. BURNS PHILP & Co., of Sydney, N.S.W.

"Two life-buoys were brought in to Port Moresby by the *Elevara* from Daru, and we have a letter from the Resident Magistrate, Daru, advising that the life-buoys were washed up at Turi Village on May 15th and June 4th. Turi Turi Village is about 10 miles West of Daru, and Mr. LEONARD MURRAY, the Official Secretary, in speaking of the matter mentions that an interesting feature of the life-buoys being found at Turi Turi is that up to the time of their being discovered, no South-East weather had been experienced, calms and North-West winds prevailing. Mr. MURRAY also informs us that another life-buoy was picked up in the vicinity of Cape York Peninsula."

These life-buoys belonged to the S.S. *Mindini*, which was wrecked on Mellish Reef on March 8th, 1923.

The position of Mellish Reef is Latitude 17° 25′ S., Longitude 155° 52′ E., and of Turi Turi, is Latitude 9° 07′ S., Longitude 143° 02′ E.

The drift of the life-buoys was, therefore, N. 56° W., for a distance of 899 miles, the first life-buoy travelling at the rate of not less than 13.2 miles per day and the second at the rate of not less than 10.2 miles per day.

The following account of two long distance drifts accompanied by a photograph, was supplied by Captain J. J. AIREY, who was at that time Merchant Navy Agent at Fremantle.

"A spherical floating gas buoy constructed of steel with a superimposed steel framework structure supporting a dioptric lantern illuminated by acetylene gas was reported to have broken adrift

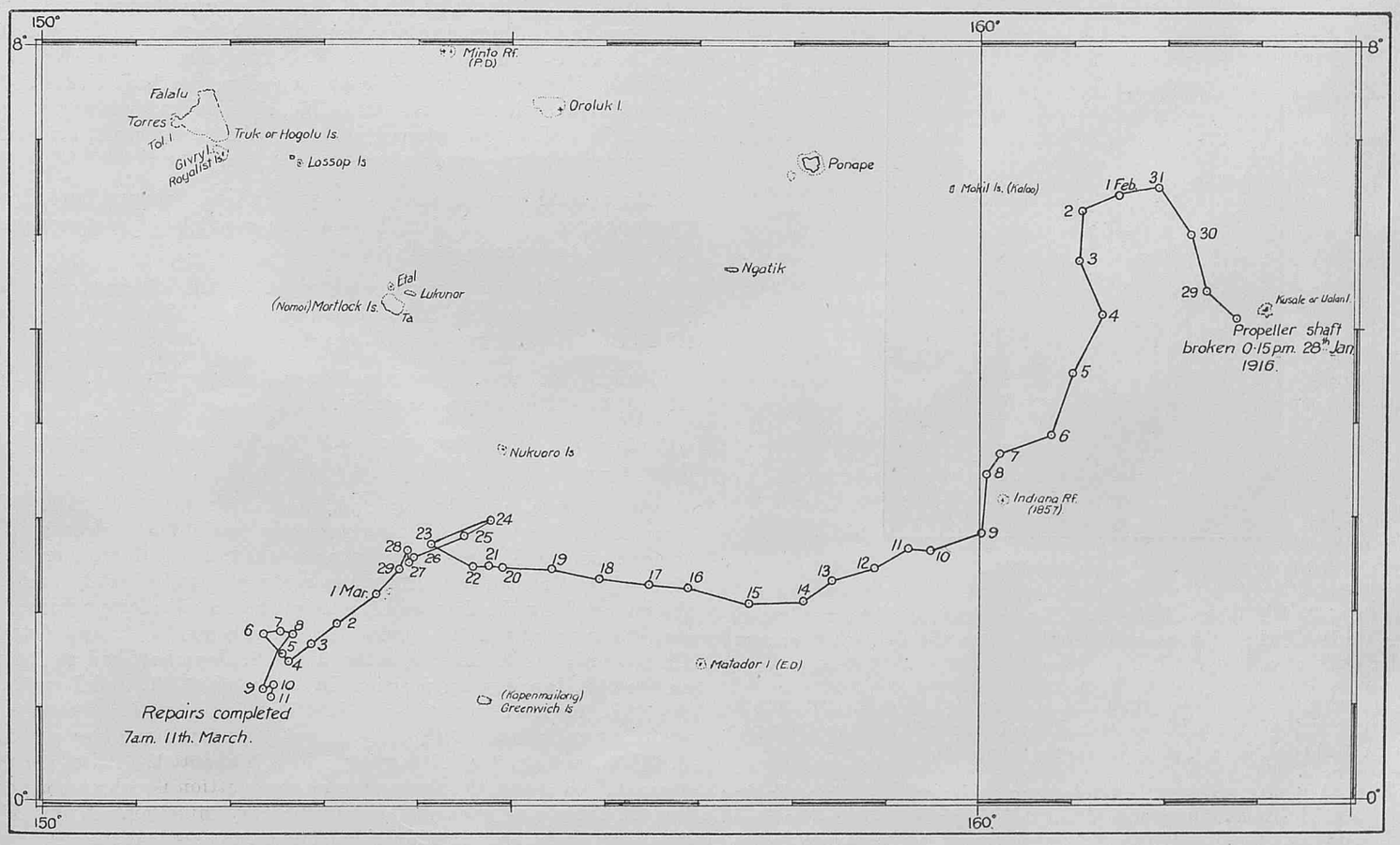


Figure 2.—Chart Showing 43 days' drift of S.S. "Pukaki" during Repair of Propeller Shaft.

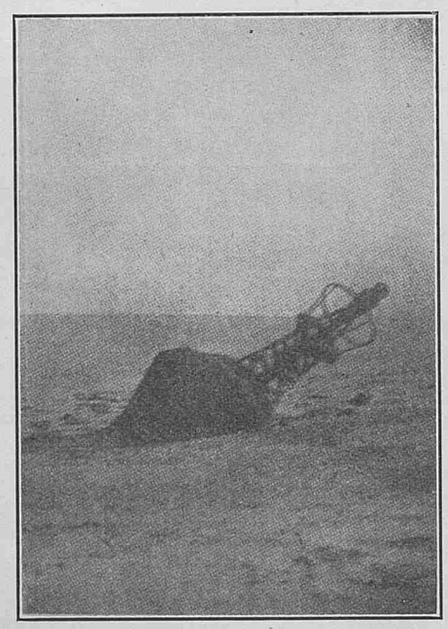
on July 3rd, 1918, from its moorings off Cape Indio, River Plate (South America). This buoy is identical with a gas buoy, having ironwork superstructure, that was found stranded on the coast of Western Australia, near Cervantes Island, about 100 miles north of Fremantle.

"The Master of the steamship *Poona* recently reported to the Commonwealth Navigation Service having passed, on March 9th, 1923, in the Indian Ocean, when in Latitude 36° 38′ S., Longitude 106° 06′ E., a derelict light buoy whose description agrees with the buoy eventually found cast ashore north of Fremantle. The position of the buoy when sighted by the *Poona* was 570 miles S.E. of the position where found, showing that its average daily drift was $4\frac{3}{4}$ miles per day for a period of 122 days since it was sighted by the *Poona*.

"The Trinity House Authorities in England were advised of the discovery of a buoy on the beach at Cervantes, W.A., and provided with a description of the buoy. This was circulated to foreign Governments and the identity of the buoy was determined.

"The voyage of this derelict light buoy is a remarkable ocean drift of 8,500 miles. Assuming that it followed the shortest and most direct route, it has drifted at the rate of 4.6 miles per day for the five years (exactly) it was adrift.

"Another remarkable feature is that the buoy after its severe buffeting is intact and in very good condition. The lantern and lighting mechanism were removed intact and placed in the Customs House at Fremantle for safe keeping. The buoy was left on the beach where it was stranded and the opinion has been expressed that the cost of recovery and transit of the buoy back to the Argentine Republic would be greater than it was worth. The cost in Australia of a light buoy of this description would be approximately £600. The type is almost similar to those in use in Port Phillip Bay for indicating to Pilots and shipmasters the various deep-water channels."



Captain G. W. West of the C.S. *Lady Denison Pender* while on cable work off the east coast of Africa gave the following account of the drift of a buoy.

"In June, 1924, whilst repairing cable in Latitude 28° 00′ S., Longitude 44° 00′ E., a large cable buoy broke adrift from its moorings in 1,230 fathoms, owing to strong currents.

"The buoy was recovered and is now on board this ship, having been sighted by a Portuguese Pilot off Cape Bazaruto (Latitude 21° 32′ S., Longitude 35° 30′ E.), and towed to Bazaruto Island in November last.

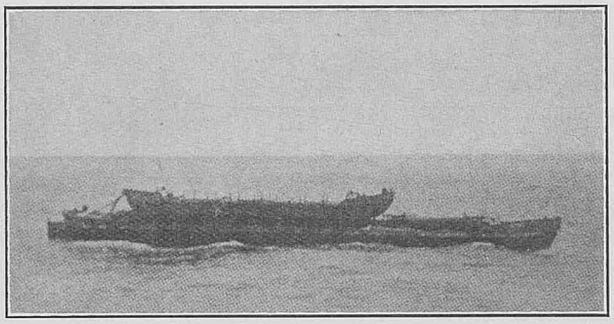
"This is approximately 630 miles distant from the position in which the buoy was lost, and in view of the strong southerly current prevailing in the Mozambique Channel, its courses and distances during the five months' passage will remain a matter of interesting conjecture."

The following account has been received from the Eastern Telegraph Co., Ltd., through the Hydrographer of the Navy:—

"In August, 1921, our C.S. *Cambria*, while on repair to the Aden-Zanzibar cable about 1,000 miles north of Zanzibar, lost a large buoy through the excessive currents experienced. It may interest you to note that we have just been advised (June, 1925) that the Walvis Bay Police Patrol report this buoy has been washed ashore near Sandfish Harbour south of Walvis Bay.

"This buoy has thus drifted considerably more than 4,000 miles since it was lost in 1921."

The accompanying photograph taken on board S.S. *Barrabool* and the following remarks of a derelict barge adrift in the South Indian Ocean are of interest.



"Captain R. Bidwell of the S.S. *Barrabool* reports passing a derelict barge in the South Indian Ocean on 24th January, 1925, in Latitude 39° 10′ S. Longitude 82° 00′ E. This derelict consisted of a Dredging Hopper barge of large capacity, marked *H.A.M.* 79, painted black, with a broad white line. A smaller, but new barge, marked *H.A.M.* 37, was stowed on top of the larger craft, evidently cradled for towing purposes.

"There were broken towing wires trailing forward and from general appearances the derelict had been adrift but a comparatively short time, and was in good condition.

"The derelict was again sighted, the S.S. *Themistocles*, on February 2nd, passing it in Latitude 40° 12′ S. and Longitude 85° 18′ E.

"During the nine days since it was first sighted it had drifted 113° (S. 67° E.) distance 160 miles".

Captain W. M. Jermyn of S.S. "*Themistocles*" reported as follows:—

"At 7.29 p.m. on February 2nd, in position 40° 12′ S. 85° 18′ E., observed derelict barge floating perfectly upright and drawing the average amount of water considering it was laden with another barge of smaller dimensions. Unfortunately night had already cast its shadows making the derelict little more than a silhouette against the sea. Consequently I am unable to furnish you with any details. However a point of interest is that the S.S. *Barrabool* had at 11 a.m. on the 24th January, in position Latitude 39° 10′ S., and Longitude 82° 00′ E., observed the same derelict. By calculation I find that from position on January 24th to position February 2nd gives a set of S. 68° E., and drift of 165.5 miles, which is about 17.76 miles per day average. Of course the above current observation is without considering the prevailing weather for the nine days nine hours drift, which would no doubt have considerable effect on the set had the wind been at all strong".

Lieutenant P. M. VAN RIEL, R.H.M., of the Dutch Meteorological Office ascertained that the dredging hopper *H.A.M.* 79, owned by HOLLANDSCHE, AANNEMING-MAATSCHAPPIJ, The Hague, was lost from a tow near East London on June 19th, 1924, in Latitude 33° S., Longitude 28° E.

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

The following note by Commander H. STRONG, R.N.R., late of the Union Castle Line, was compiled from the description attached to a Dug-out Canoe exhibited in the Port Elizabeth Museum.

" This canoe was cast ashore on New Brighton Beach at Algoa Bay on February 15th, 1927. It has been hacked out of a large tree trunk. There are five pairs of blocks with a hole in each one along the inside of the gunwales, and a square socket has been formed in the bottom between the second pair of blocks from forward, for receiving the step of a mast pole. The three inner pairs of perforated blocks are for seats on which the occupants of the boat sat. The other two were used for lashing down the bamboo poles which were placed across the canoe, and formed part of the outriggers.

" It has been definitely ascertained that these canoes are still made and used in the Malay States, notably at Malacca and Sumatra. A sample of the wood of which the canoe has been made was submitted to Mr. B. J. RANDLE, the wood technologist of the Forest Products Research Laboratory, University of Oxford, who succeeded in identifying it with a Malayan wood known as Rengas.

" Botanically, the wood is probably one of two closely related species of Anarcardiacae, Gluta tavoyana or Melanorhaea glaba.

" These trees do not occur outside the region of Indo-Malaya.

" The canoe was no doubt carried across the Indian Ocean by the Malabar Current and down the East African coast to the beach at Algoa Bay by the Mozambique Current at an average rate of 10 miles in the 24 hours over a distance of 5,000 miles.

" Dimensions of canoe:—Length 22 feet, Width 21 inches, Depth 24 inches ".

The following is an extract from a letter received from Captain R. SARGENT, Port Captain at Mombasa.

" The Nahotha (Skipper) of a native Dhow reported recently that on the 6th February, 1928, he picked up a life-buoy in ' Owyombo Creek '. He brought the buoy to the Mombasa Port Office, when reporting his arrival, and upon examination it was found to bear the words ' *Orama Barrow* '. It is white painted, with part of its covering worn away, but the name of the ship and port, although faded, are quite discernible ".

" ' Owyombo Creek ' is shown on Admiralty Chart No. 1389 (Formosa Bay to Chale Point) as ' Owyombo River,' and is situated between the small ports of Malindi and Kilifi. Several similar Creeks are shown as rivers, but are in reality salt water creeks. As far as I can ascertain, the buoy was picked up amongst the mangroves in Latitude 3° 23′ S., Longitude 39° 58′ E."

This buoy was lost overboard from R.M.S. *Orama* on December 11th, 1926, in Latitude 20° 03′ S., Longitude 104° 00′ E. The course and distance between these positions is N.75° W., 3,917 miles, so that the buoy could not have drifted less than 9.28 miles a day.

The *King Cadwallon* abandoned on fire on July 13th, 1929, in 32° 01′ S., 40° 41′ E., was picked up 40 miles off Durban on August 14th and towed in, having thus drifted N.77° W. 475 miles in 32 days or 15 miles per day.

A report of the master of the Salvage Vessel *Preserver* in connection with the recent disaster to M.V. *Georges Philippar* giving the position of foundering of the vessel, affords an interesting instance of a drift off Cape Guardafui.

The *Georges Philippar* was abandoned on fire on the morning of May 16th, 1932, when about 5 miles off Cape Guardafui. She was picked up by the *Preserver* on May 19th at 2.56 p.m. in 14° 10′ N., 50° 22′ E., and at 6.10 p.m. the wreck capsized, disappearing about 2 minutes later in 1,200 fathoms in Latitude 14° 20′ N., Longitude 50° 25′ E. The drift from the morning of 16th to 2.56 p.m. of 19th was N.23° W., 145 miles, or 41 miles per day. Between 2.56 p.m. and 6.10 p.m. of 19th she drifted N.16° E., 10 miles or 74 miles per day.

From the meteorological record of S.S. *Mahsud*, one of the vessels which rendered assistance, we find that the weather during the 16th and 17th May was fine with smooth sea, the wind being calm on 16th and S. force 1 on 17th. The current reported on 16th whilst the vessel was stopped off Cape Guardafui was N.43° W. 2 knots which agrees well with *Georges Philippar's* drift. By comparison with the current roses published in Volume VII, No. 75 and No. 78 of the MARINE OBSERVER, it will be seen that May is a transitional month for currents in the Gulf of Aden, but an inspection of the rose on the May, June, July, chart shows that strong currents to the Northward have occurred.

Drifts of Bottle Papers.

The drifts of bottles cannot be traced so well as those of derelicts for the simple reason that they cannot be identified and fixed by reports during their drift. The only indications they afford, is that they have travelled not less than the total direct distance between place of release and recovery, at a daily rate of not less than this distance divided by the number of days between date of release and date of finding.

This is illustrated by the following report by Mr. O. R. WOODS, Harbour Master at Townsville, Queensland:—

" A bottle dropped overboard in Latitude 32° 45′ S., Longitude 164° 30′ E. from the American barquentine *Aurora*, A. HANSEN, master, on 9th February, 1917, was picked up on the beach at Cape Bowling Green, N. Queensland, Latitude 19° 20′ S. on 10th January, 1918.

" On 4th May, 1916, a bottle was dropped containing four letters from troops en route overseas from Australia on board H.M.T. *Hymettas* near Green Cape, N.S.W., Latitude 37° 17′ S., and was picked up in South Bay, Palm Island, N. Queensland, Latitude 18° 44′ S. on 13th August, 1919.

" These drifts are interesting from the fact that from Sandy Cape (Latitude 24° 41′ S.) to Green Cape (Latitude 37° 17′ S.) the current along the coast is to southward and it would appear as if the bottles in each case had drifted eastwards before making their northing."

The set of the current along the east coast of Australia resembles that of the Agulhas current in flowing southward but unlike the latter stream on reaching the latitude where the coastline turns westward it follows the land no longer, but is turned eastward by the current setting in that direction from Bass Strait. An inspection of the current charts published in the MARINE OBSERVER Volume V, March, June, September, and December, will show that there is a general circulation, anticlockwise, between the Australian and New Zealand coasts, proceeding generally S.E. and E., south of the latitude of Sydney changing to N.E. and N. towards the New Zealand coast, and north of the 30° parallel trends to the Westward. It is quite possible that these bottles made a large circular drift covering a much greater distance than would be indicated by a straight course between their launching and stranding positions.

Mr. WOODS' expressed opinion is thus confirmed.

The bottle set adrift by the Ship *Patriarch* shown with an asterisk * in the list overleaf is probably a marked example of a bottle paper lying ashore undiscovered for many years, in this case no less than 35, and a further case which illustrates this point is contained in a letter sent by the finder of the bottle paper released from *Dorset* marked † in the list overleaf. This gentleman who had a good knowledge of local conditions suggested that the bottle had drifted from the southward of the islands and had come through the outer line of reefs into Zeewick Channel where it had been set by the tide or current to the south and east past Gun and Middle islands to the spot where found. He states that the islands are seldom visited so that the bottle may have been lying on the beach for some time before being found.

The following table gives a summary of bottle drifts in the Indian and Pacific Oceans since 1896 with bearing and distance of the place of recovery from the position of release where land does not intervene, and the minimum average daily drift which the bottle must have made.

TABLE OF BOTTLE PAPERS RELEASED IN THE INDIAN AND PACIFIC OCEANS, RETURNED TO THE MARINE DIVISION, 1896–1932.

Released from S.S.	Date.	Position Released.		Date Recovered.	Position Recovered.		Bearing and distance of Place of Recovery from position of Release.	Average drift in miles per day by shortest sea route.
		Latitude.	Longitude.		Latitude.	Longitude.		
Ship Patriarch	23.11.96	39° 15′ S.	143° 17′ E.	20.12.96	Between Rocky Pt. and Pt. Addis. 38° 25′ S.	144° 10′ E.	—	—
,, ,, ...	9.10.96	40° 07′ S.	118° 16′ E.	21. 8.97	N. of Kingston, Laceped Bay, S. Australia. 36° 18′ S.	139° 40′ E.	N. 77° E. 1,020 m.	3·2
,, ,, ...	11.10.96	38° 01′ S.	126° 01′ E.	1. 1.98	Manan Bay, S. Australia. 35° 15′ S.	137° 02′ E.	N. 73° E. 559 m.	1·2
,, ,, ...	28.12.97	25° 11′ S.	159° 00′ E.	23. 2.98	Seven mile Beach, Richmond River, N.S.W. 28° 50′ S.	153° 45′ E.	S. 52° W. 356 m.	5·3
Clan Macintyre	6. 5.05	16° 35′ N.	82° 17′ E.	7. 9.05	20° 19′ N.	86° 44′ E.	N. 48° E. 338 m.	2·7
Goldmouth	10. 5.06	9° 39′ S.	72° 57′ E.	1.10.06	1° 27′ N.	44° 23′ E.	N. 69° W.1,835 m.	12·7
Empress of Japan ...	24. 3.06	50° 47′ N.	148° 40′ W.	26.11.06	57° 20′ N.	152° 30′ W.	N. 19° W. 416 m.	1·7
,, ,, ,, ...	29.12.05	50° 58′ N.	162° 22′ W.	16. 1.07	60° 01′ N.	144° 15′ W.	N. 49° E. 821 m.	2·1
,, ,, ,, ...	17. 8.06	53° 14′ N.	154° 14′ W.	9. 3.07	53° 05′ N.	168° 15′ W.	S. 89° W. 472 m.	2·4
,, ,, ,, ...	22. 3.06	50° 40′ N.	168° 18′ W.	20.12.07	57° 11′ N.	153° 13′ W.	N. 54° E. 660 m.	1·0
,, ,, ,, ...	3.11.06	52° 41′ N.	161° 42′ W.	31. 1.08	57° 40′ N.	136° 10′ W.	N. 71° E. 928 m.	2·0
Wakanui	22.12.09	35° 32′ S.	20° 03′ E.	15. 1.10	34° 23′ S.	21° 26′ E.	N. 43° E. 96 m.	4·0
,, ...	12. 1.10	45° 07′ S.	149° 30′ E.	11. 7.11	W. coast of N. Island, N.Z. 40° 47′ S.	175° 07′ E.	N. 77° E. 1,160 m.	2·1
Clan Macintosh	18.12.12	12° 05′ N.	48° 31′ E.	3. 1.13	12° 45′ S.	45° 03′ E.	N. 79° E. 207 m.	12·9
War Finch	14. 1.19	11° 04′ S.	83° 16′ E.	9. 6.19	Poivre I., Seychelles. 5° 48′ S.	53° 18′ E.	N. 80° W.1,810 m.	13·1
Makura	28. 2.22	21° 55′ S.	177° 27′ E.	20. 4.22	N.E. Tanna, New Hebrides.		N. 72° W. 470 m.	9·2
,, ...	18. 1.22	33° 24′ S.	175° 28′ E.	17. 5.22	16 m. S. of North C., N.Z. 34° 42′ S.	173° 04′ E.	S. 57° W. 143 m.	1·2
,, ...	24. 1.22	1° 09′ N.	169° 15′ W.	18. 6.22	Mabel Arno, Marshall Is.		N. 23° E. 379 m.	2·6
,, ...	26.10.21	27° 24′ S.	176° 24′ E.	30. 3.23	Coolum Beech, Tandina, Queensland.		N. 88° W.1,232 m.	2·4
,, ...	20. 4.24	4° 13′ S.	172° 04′ W.	20. 5.24	Aroral, Gilbert Is.		—	—
,, ...	13. 2.24	32° 32′ S.	175° 39′ E.	5. 6.24	Kaipara Heads. 36° 25′ S.	174° 08′ E.	S. 18° W. 245 m.	2·1
,, ...	23. 7.24	34° 13′ S.	171° 34′ W.	25.9.24	Deep Water Cove, Russel, N.Z. 35° 11′ S.	174° 22′ E.	—	—
,, ...	9. 8.23	26° 41′ S.	176° 15′ E.	1.11.24	21° 47′ S.	165° 41′ E.	N. 63° W. 650 m.	1·4
Euripides	27. 6.24	36° 13′ S.	124° 25′ E.	9.11.24	Between Carpenter's Rock and Rivoli Bay, S. Australia. 37° 34′ S.	140° 24′ E.	S. 84° W. 780 m.	5·7
Makura	12.11.24	34° 21′ S.	172° 27′ E.	1. 1.25	20 m. S. of North C. Lt. H. N.Z. 34° 43′ S.	173° 07′ E.	S. 56° E. 40 m.	0·8
,, ...	30. 5.24	33° 52′ S.	158° 40′ E.	11. 1.25	E. side Lord Howe I. 31° 32′ S.	159° 04′ E.	N. 8° E. 142 m.	0·6
,, ...	7. 8.24	24° 09′ S.	177° 06′ E.	16. 4.25	Surprise Island (Novnea, New Caledonia). 18° 28′ S.	163° 08′ E.	—	—
,, ...	22. 4.24	6° 50′ N.	166° 12′ W.	30. 4.25	13° N.	124° E.	—	—
,, ...	6. 1.24	45° 46′ N.	130° 03′ W.	12. 6.25	5 m. S. of C. Mears Lt. H. 45° 29′ N.	123° 59′ W.	S. 86° E. 258 m.	1·6
,, ...	3. 1.25	23° 51′ S.	177° 02′ E.	1. 8.25	Anewa, New Hebrides. 19° 17′ S.	169° 36′ E.	—	—
,, ...	4. 1.25	30° 05′ S.	176° 03′ E.	18.11.25	C. Palmerston. 21° 32′ S.	149° 30′ E.	N. 70° E. 1,530 m.	4·7
Nyanza	28. 6.25	19° 39′ N.	64° 18′ E.	29.12.25	1° 06′ N.	44° 03′ E.	—	—
Euripides	18. 8.25	37° 37′ S.	107° 07′ E.	24. 1.26	Mouth of Hill River. 30° 23′ S.	115° 04′ E.	N. 42° E. 585 m.	3·4
Dorset	10. 3.24	31° — N.	125° — E.	–. 2.26	Ouani-Arjouan (Comoro Is. N.W. coast of Madagascar)		—	—
St. George	19.12.24	7° 10′ S.	128° 00′ W.	–. 5.26	Walkers Bay, Cooktown. 43° 21′ S.	147° 20′ E.	—	—
Aorangi	17 .4.26	9° 57′ S.	175° 34′ W.	4. 6.26	13° 20′ S.	176° 10′ W.	S. 10° W. 207 m.	4·3
Dorset	18. 3.26	38° 06′ S.	96° 27′ E.	9. 9.26	28° 58′ S.	113° 58′ E.	N. 58° E. 1,040 m.	4·7
Tahiti	4. 2.26	8° 03′ S.	145° 10′ W.	9. 5.27	15° 15′ S.	145° 22′ E.	—	—
Dimboola	27. 2.27	38° 02′ S.	149° 09′ E.	15. 5.27	5 m. S. Jervis Bay, N.S.W. 35° 13′ S.	151° 50′ E.	N. 38° E. 212 m.	2·7
Aorangi	18. 4.27	6° 29′ S.	173° 48′ W.	11. 6.27	1° 46′ S.	175° 29′ E.	—	—
Piako	7.11.27	1° 49′ N.	83° 49′ E.	6. 3.28	9 m. off Coast of Nennappuwa (Negombo, Ceylon). 7° 17′ N.	79° 47′ E.	N. 36° W. 496 m.	3·4
Aorangi	21. 3.28	15° 09′ S.	173° 21′ W.	17. 4.28	Le Kebg Nateuva Bay, Fiji Islands. 27° 30′ S.	153° 30′ E.	—	—
Makura	23. 4.27	35° 46′ S.	156° 34′ E.	7. 8.28	Stradbroke Is. (Queensland). 8° 02′ N.	93° 27′ E.	—	—
Piako	26. 7.27	9° 21′ N.	68° 01′ E.	18. 8.28	7° 45′ S.	131° 24′ E.	S. 87° E. 1,520 m.	3·9
Changte	26. 8.28	10° 00′ S.	139° 00′ E.	27. 9.28	15° 20′ S.	146° 10′ W.	N. 73° W. 472 m.	14·7
Piako	26 .1.27	11° 49′ S.	105° 08′ W.	28.10.28	30 m. N. of Cairns, N. Queensland Coast. 16° 52′ S.	145° 30′ E.	S. 85° W.2,410 m.	3·8
Welsh City	7.10.27	3° 53′ S.	173° 22′ W.	16.12.28	Ono. I. Law Group, Fiji Islands 18° 55′ S.	178° 29′ E.	—	—
Tahiti	18. 9.27	19° 37′ S.	154° 31′ W.	30. 7.28	14° 31′ N.	49° 07′ E.	N. 88° W.1,540 m.	4·9
Tongariro	27. 3.29	10° 28′ N.	53° 35′ E.	20. 4.29	23° 40′ N.	119° 40′ E.	—	—
Alynbank	15. 3.29	8° 12′ N.	116° 16′ E.	11. 8.29	Rotumah Is., Fiji. 12° 30′ S.	177° 05′ E.	N. 12° E. 950 m.	6·0
Aorangi	2. 8.29	13° 13′ S.	177° 18′ W.	2. 9.29	San Antonio Zambalese, Philippine Islands. 15° 10′ N.	120° 00′ E.	N. 83° W. 331 m.	10·7
Alynbank	14. 3.29	11° 53′ N.	118° 16′ E.	23. 9.29	Small I. of Leili off I. of Kwai, E. Coast of Malaita, British Solomon Is. 8° 45′ S.	160° 55′ E.	N. 27° E. 221 m.	1·1
Aorangi	14. 4.29	1° 48′ S.	171° 11′ W.	21.10.29	Kalin-taki, Zuamstee (E. Pacific). 18° 40′ S.	138° 48′ W.	S. 76° W.1,730 m.	9·0
Hertford	21. 7.29	16° 11′ S.	117° 09′ W.	7.12.29	36° 12′ S.	175° 30′ E.	S. 83° W.1,250 m.	8·9
Aorangi	12. 9.29	34° 16′ S.	164° 09′ E.	9. 3.30	34° 26′ S.	173° 03′ E.	S. 78° E. 570 m.	3·2
Aorangi	16.11.29	34° 12′ S.	164° 55′ E.	20. 3.30	Kapaa Kanan T.H. Hawaii. 22° 05′ N.	159° 19′ W.	S. 88° E. 406 m.	3·3
Aorangi	24.10.29	24° 29′ N.	154° 53′ W.	31. 3.30	32° 40′ S.	132° 20′ E.	—	—
Discovery S.Y.	13.10.29	33° 58′ S.	155° 45′ E.	18. 4.30	Between Pt. Huyts and Hornalup Inlet 2 m. W. of Hornalup. 35° 24′ S.	118° 04′ E.	—	—
Discovery S.Y.	21. 3.30	35° 24′ S.	118° 04′ E.	19. 4.30	37° 40′ S.	140° 12′ E.	N. 56° W. 43 m.	1·5
Discovery S.Y.	5. 4.30	37° 16′ S.	139° 29′ E.	10. 6.30	N.E. Coast of Papua 24 m. N.W. of E. Cape. 10° 11′ S.	150° 26′ E.	—	—
Aorangi	29.10.29	13° 25′ S.	177° 28′ W.	11. 6.30	25° 15′ S.	153° 15′ E.	—	—
Aorangi	1. 1.29	34° 15′ S.	164° 42′ E.	18. 8.30	9° 23′ S.	171° 16′ W.	N. 45° W. 770 m.	1·1
Wairura	12. 7.30	8° 59′ S.	165° 21′ W.	1.10.30	Ocean-beach, Strahen, Tasmania. 42° 10′ S.	145° 20′ E.	S. 86° W. 356 m.	4·3
Port Hobart	17. 8.27	43° 35′ S.	71° 44′ E.	13.10.30	Ongea (Ongea Lav. Is. Fiji). 19° 13′ S.	178° 25′ W.	N. 89° E. 3,290 m.	2·8
Hertford	9. 3.30	31° 39′ S.	164° 45′ W.	9.11.30	At Sea 5 m. S.E. of Robe, S. Australia. 36° 30′ S.	139° 50′ E.	N. 44° W.1,040 m.	4·3
Alynbank	13.2.29	22° 00′ S.	154° 01′ E.	15.11.30	Kauai, Hawaii, Honolulu. 21° 18′ N.	157° 52′ W.	S. 86° E. 700 m.	1·1
Discovery S.Y.	21. 3.30	35° 02′ S.	119° 39′ E.	2. 1.31	40° 04′ S.	147° 45′ E.	S. 82° E. 940 m.	3·2
Aorangi	24.11.25	24° 52′ N.	154° 24′ W.	16. 1.31			S. 42° W. 288 m.	0·15
Discovery S.Y.	3.11.30	40° 10′ S.	147° 18′ E.	18. 1.31			N. 72° E. 22 m.	0·3

TABLE OF BOTTLE PAPERS RELEASED IN THE INDIAN AND PACIFIC OCEANS, RETURNED TO THE MARINE DIVISION, 1896–1932.

Released from S.S.	Date.	Position Released.		Date Recovered.	Position Recovered.		Bearing and distance of Place of Recovery from position of Release.	Average drift in miles per day by shortest sea route.
		Latitude.	Longitude.		Latitude.	Longitude.		
Niagara	19. 2.31	15° 48′ S.	178° 42′ W.	6. 3.31	Ucui Dromuma Kaba Point (Bau, Taikon) Tai Levu.		S. 54° W. 190 m.	12·6
Discovery S.Y.	9. 3.30	44° 34′ S.	90° 05′ E.	28. 4.31	17° 39′ S.	178° 36′ E.	N. 83° E. 2,430 m.	5·8
Discovery S.Y.	15. 3.30	39° 40′ S.	106° 19′ E.	26. 6.31	39° 35′ S.	143° 57′ E.	N. 85° E. 1,590 m.	3·4
Hertford	27. 7.29	26° 11′ S.	145° 52′ W.	29. 6.31	Creina, Nora Bay (S.E., S. Australia).		N. 74° W.1,640 m.	4·8
Discovery S.Y.	29. 4.31	40° 02′ S.	171° 16′ E.	15. 7.31	37° 20′ S.	139° 51′ E.	N. 68° E. 137 m.	1·8
Discovery S.Y.	24.11.30	45° 06′ S.	147° 00′ E.	19. 7.31	18° 36′ S.	173° 56′ W.	N. 87° E. 1,580 m.	6·6
*Patriarch	20. 9.1895	39° 18′ S.	130° 04′ E.	early Aug. 1931.	About 10 m. S. of New Plymouth.		—	—
Aorangi	23.12.30	8° 46′ N.	164° 59′ W.	4. 8.31	39° 11′ S.	174° 00′ E.	—	—
Discovery S.Y.	26.11.30	48° 16′ S.	146° 31′ E.	26.10.31	43° 50′ S.	176° 28′ W.	N. 71° E. 1,290 m.	3·5
Aorangi	7. 6.29	11° 50′ N.	163° 23′ W.	10. 1.32	On the Coorong S. Australia, 20 m. N. of Kingston.		W.4,182 m.	4·2
Wairura	14. 5.31	13° 49′ S.	161° 08′ W.	14. 1.32	8° 19′ N.	167° 24′ E.	S. 76° W.1,090 m.	4·4
Discovery S.Y.	23.11.30	43° 58′ N.	147° 35′ E.	22. 1.32	41° 13′ S.	174° 42′ E.	—	—
Aorangi	11. 5.31	8° 07′ S.	174° 40′ W.	21. 3.32	11° 16′ N.	125° 30′ E.	—	—
					18° 13′ S.	179° 07′ W.	S. 88° W.1,470 m.	4·6
					39° 30′ S.	173° 56′ E.		
					8° 54′ S.	160° 40′ E.		

† See Remarks on Page 207.
* See Remarks on Page 207.

SOUTHERN ICE REPORTS.

During the Year 1931—November.

Year.	Day.	Position of Ice.		Description.	Remarks.	Name of Ship reporting.
		Latitude.	Longitude.			
1931	24	62° 02′ S.	72° 38′ E.	Bergs and pack ice	Pack formed of small growlers and was navigable as far as visible.	S.S. *Southern King.*
	25	62° 10′ S.	72° 56′ E.	Bergs and pack ice	Many large bergs and pack ice	do.
	26	62° 04′ S.	73° 00′ E.	Bergs and pack ice	The same bergs, growlers and pack in sight as yesterday...	do.
	27	61° 57′ S.	73° 26′ E.	Bergs and pack ice	Bergs setting very slowly about E. (true); pack setting about N.E.	do.
	28	61° 39′ S.	73° 38′ E.	Large bergs	A few large bergs; no pack in sight	do.
	29	61° 25′ S.	73° 45′ E.	Large bergs	A few large bergs; no pack in sight	do.
	30	61° 14′ S.	73° 53′ E.	Large bergs	A few large bergs; no pack in sight	do.
	23	59° 25′ S.	73° 57′ E.	Bergs and growlers	One berg abeam at noon 2½ miles long, 120 feet high; and at 4 p.m. one berg 5 miles long, 120 feet high, by sextant angle; bergs of flat top and perpendicular sides.	do.
	22	58° 48′ S.	77° 31′ E.	Bergs and growlers	Few growlers and many large barrier bergs	do.
	21	59° 14′ S.	83° 01′ E.	Bergs and growlers	Many large bergs, barrier and glacier-like	do.
	20	58° 37′ S.	83° 43′ E.	Bergs and growlers	Many bergs, barrier and glacier-like; numerous growlers impeding navigation.	do.
	10	56° 00′ S.	85° 00′ E.	3 growlers	First ice sighted	do.
	10	56° 28′ S.	85° 30′ E.	1 berg	Rugged; estimated 100 feet high, 300 feet long	do.
	11	58° 15′ S.	90° 00′ E.	Numerous growlers and bergs	Bergs rugged and glacier-like	do.
	19	58° 16′ S.	90° 14′ E.	Bergs and growlers	Vessel steaming to westward continually passing large and small bergs.	do.
	12	58° 20′ S.	91° 09′ E.	Pack ice, growlers and bergs	Pack consisted of heavy growlers impossible to navigate...	do.
	13	58° 30′ S.	91° 20′ E.	Pack ice, growlers and bergs	Heavy pack to the southward, lying East and West ...	do.
	14	58° 16′ S.	92° 00′ E.	Pack ice, growlers and bergs	Heavy pack to the southward, lying East and West ...	do.
	15	58° 13′ S.	93° 06′ E.	Pack ice, growlers and bergs	Vessel at East end of pack at noon; East side of pack lying about S. by W.	do.
	16	58° 38′ S.	93° 23′ E.	Pack ice, growlers and bergs	Heavy pack to Westward; many large bergs to the Southward.	do.
	18	58° 23′ S.	93° 50′ E.	Bergs and growlers	A large barrier-like berg, half mile long, 140 feet high, observed to drift N. (true) 6 miles in 24 hours.	do.
	17	58° 34′ S.	93° 56′ E.	Pack ice, growlers and bergs	Pack drifting about E. (true). Bergs drifting N. (true) through the pack.	do.
	22	63° 40′ S.	75° 01′ W.	Berg	60 feet high and 200 feet long. First berg seen bound south. Pinnacled and much broken-down.	R.R.S. *Discovery II.*
	22 22	From 64° 16′ S. to 64° 00′ S.	74° 59′ W. 75° 50′ W.	Brash and pack	Came up to streams of small brash; one mile to the southward entered loose light pack, composed of hard young ice about three feet thick, in small floes, honeycombed at the edges but very hard. Visibility poor, and limits of ice not discernible, but it appeared to extend pretty solidly to the southward. Course was altered to the north-eastward, and the brashy edge of the ice skirted, on various courses, between these positions. No bergs seen till last position, when three very small rugged bergs, only about 20 feet high, were in sight.	do.
	22 23	From 63° 57′ S. to 63° 07′ S.	73° 38′ W. 72° 30′ W.	3 small bergs ... ... Pack and brash	Between these positions, skirted the edge, at distances off of from 1 to 5 miles, of light pack ice, mainly broken into small brash at its borders. During the night the sea surface froze, the swell breaking the newly formed ice into tiny pans a few inches in diameter, and about half an inch thick. Flat calm, and sea temperature 29.5°, air 28.0°. No bergs.	do.
	23 23	From 63° 01′ S. to 62° 47′ S.	72° 30′ W. 69° 25′ W.	Pack and brash	Continued skirting the edge of light loose pack, occasionally out of sight. The general trend of the ice-edge was E.N.E. and tongues of light brash ran out in a north-easterly direction.	do.
	24 24	From 62° 14′ S. to 61° 26′ S.	68° 15′ W. 64° 32′ W.	Pack and brash	Between these positions, the edge of light pack was skirted. The fringe of the ice was more ragged than yesterday, and the sea off its edge was littered with small fragments of floes and brash.	do.
	24	61° 48′ S.	67° 10′ W.	Berg	About 40 feet high, 250 feet long, and much water-worn...	do.
	25	60° 32′ S.	64° 10′ W.	Pack ice	In this position, the last of pack-ice was seen. Ship bound N.E.	do.
	25	59° 58′ S.	62° 15′ W.	Berg	30 feet high and 200 feet long. Weathered and pinnacled.	do.
	26 26	From 59° 59′ S. to 59° 40′ S.	60° 28′ W. 59° 42′ W.	Drift ice and 1 berg	Encountered streams of drift-ice, light, sparsely distributed and much broken down, and worked through it till 0430, when an ice-free sea was met and more ice seen to the eastward. Berg small and much weathered.	
	27	4–10 m. N.W. of Seal Rks. Elephant I.		2 bergs	Small, only about 20 feet high and 150 feet long, and weathered.	do.

Reports of Ice previous to November, 1931, will be found in the "Marine Observer," Vol. VIII, No. 95, p. 237.

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 XII.

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 reports to C.Q. on 600 m. spark, and these may be intercepted by the stations ringed in on Chart XII. 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 212 and 213. The precedure 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 XII.)	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 London—call sign of chosen "Selected Ships" to report through GKU at schedule times on 2100 m. Radio Horta—call sign of ships to report through CTH at schedule times on 2400 m.
	Chatham Mass., Sayville N.Y. Rockland. West Palm Beach.	Lat. 41° 42′ N. Long. 70° 00′ W. Lat. 40° 45′ N. Long. 73° 06′ W. Lat. 44° 09′ N. Long. 69° 13′ W. Lat. 26° 42′ N. Long. 80° 02′ W.	WCC. WSL. WAG. 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).	125 kc/s. (2400 metres).	"A Selected Ships" indicated by roll call made through Portishead to report to Horta—E'n. N. Atlantic. east of long. 40° W. and N. of lat. 38° N. "A Selected Ships" S. of lat. 38° N.—N. Atlantic from lat. 10° to 38° N. eastward of long. 40° W.	Radio Horta.	Weather only, up to seven groups, preferably No. 3 Supplementary Groups.	"A Selected Ships" in the E'n. N. Atlantic, N. of lat. 38° N., chosen to report to Horta will be indicated by a special roll call made through Portishead daily at 2230, 0330 and 1030 G.M.T. immediately following the roll call of selected ships chosen to report to Weather London. These ships should report to CTH in the order indicated in accordance with schedule and on 2400 m. S. of 38° N., 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.	Slangkop (Cape Town)	Lat. 34° 08′ 46″ S. Long. 18° 19′ 18″ E.	ZSC	—	143 kc/s. (2100 metres).	South Atlantic Westward of 25° E. and within a range of about 2 000 miles of station.	Met.	Weather only. Four universal groups and first group of No. 6 Supplementary groups.	No control. Only 0600 G.M.T. observation required. All British "A Selected Ships" within area should report, commencing at 0618 G.M.T.
Indian Ocean.	Jacobs (Durban).	Lat. 29° 55′ 51″ S. Long. 30° 58′ 38″ E.	ZSD	—	143 kc/s. (2100 metres).	Indian Ocean S. of 20° S. and Eastward of 25° E. and within a range of about 2,000 miles of station.	Met.	Weather only. Four universal groups and first group of No. 6 Supplementary groups.	No control. Only 0600 G.M.T. observations required. All British "A Selected Ships" within area should report, commencing at 0618 G.M.T.
	Bombay.	Lat. 19° 04′ 55″ N. Long. 72° 49′ 54″ E.	VWB	—	143 kc/s. (2100 metres).	Arabian Sea N. of line C. Comorin to Ras Fartak.	Weather.	Weather only. No. 6 Supplementary groups.	All British "A Selected Ships" are requested, when convenient, to report 0000 G.M.T. observations commencing at 0018 G.M.T. in addition to schedule times.
	Madras.	Lat. 12° 59′ 17″ N. Long. 80° 10′ 56″ E.	VWM	—	143 kc/s. (2100 metres).	Bay of Bengal N. of line C. Comorin to Achin Head.	Weather.	Weather only. No. 6 Supplementary groups.	All British "A Selected Ships" are requested when convenient, to report 1200 G.M.T. observations commencing at 1218 G.M.T. in addition to schedule times.
	Colombo.	Lat. 6° 55′ 14″ N. Long. 79° 52′ 46″ E.	VPB	130 kc/s. (2300 metres).	143 kc/s. (2100 metres).	Indian Ocean South of a line Ras Fartak, C. Comorin and Achin Head, and 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.
	Mombasa.	Lat. 4° 03′ 11″ S. Long. 39° 39′ 51″ E.	VPQ	—	125 kc/s. (2400 metres).	From Ras Hafun to Lat. 26° S. when westward of the Colombo area.	Weather Nairobi.	Weather only. No. 6 Supplementary groups.	No control — all British "A Selected Ships" within area should report 0600 G.M.T. observations.
	Perth.	Lat. 32° 01′ 51″ S. Long. 115° 49′ 31″ E.	VIP	125 kc/s. (2400 metres).	143 kc/s. (2100 metres).	Indian Ocean and Southern Ocean between Long. 105° and 135° E.; but not within 100 miles of the coast.	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′ 11″ 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).	143 kc/s. (2100 metres).	S. Pacific, Coral and Tasman Seas and Southern Ocean between Long. 135° and 160° E.; but not within 100 miles of the coast.	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.			
	Abrolhos	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.			
	Juncçao	Lat. 32° 04′ 00″ S. Long. 52° 07′ 00″ W.	PPJ.			
Indian Ocean.	Jacobs (Durban).	Lat. 29° 55′ 51″ S. Long. 30° 58′ 38″ E.	ZSD	Met.	Weather only, 4 universal groups and first group of No. 6 Supplementary groups.	
	Algoa Bay (Port Eliza-beth).	Lat. 33° 57′ 16″ S. Long. 25° 35′ 30″ E.	ZSQ	Met.	Weather only, 4 universal groups and first group of No. 6 Supplementary groups.	
	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.			
	Mombasa.	Lat. 4° 03′ 11″ S. Long. 39° 39′ 51″ E.	VPQ	Weather Nairobi.		
	Dar-es-Salaam.	Lat. 6° 50′ 38″ S. Long. 39° 17′ 24″ E.	ZBZ	Weather Nairobi.		
	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.	
	Esperance.	Lat. 32° 01′ 51″ 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′11″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°45′55″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			
	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. WIRELESS WEATHER BULLETINS.

SOUTH-WEST AFRICA, UNION OF SOUTH AFRICA, AND PORTUGUESE EAST AFRICA.

(Spark and C.W. Issues.)

REPORTS of weather conditions at 0630 G.M.T. at South African ports are broadcast daily by Coast W/T Stations, mostly in Code.*

Details of Reports.

1. Transmitting station ... **Walvis Bay** (Latitude 22° 58′ S.; Longitude 14° 30′E., approx.).
   Call signal ... ... **ZSV.**
   Messages directed to ... CQ.
   Wave length ... ... 630 m. I.C.W.
   Times of transmission:
   0850 G.M.T. (observations at following stations at 0630 G.M.T.).*
   1250 G.M.T. (forecast for coast in plain language).**
   1955 G.M.T. (forecast for coast in plain language).**

2. Observation stations, 0850 report:

Indicator Letters.	Station.	Position (approx.) Lat. S.	Long. E.
ZSC	Capetown...	33° 56′	18° 29′
ZST	Port Nolloth	29° 14′	16° 51′
ZSV	Walvis Bay	22° 58′	14° 30′
CRU	Mossamedes	15° 12′	12° 09′
CRR	Loanda	8° 49′	13° 13′

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1. Transmitting station ... **Capetown** (Latitude 34° 09′ S.; Longitude 18° 19′ E., approx.).
   Call signal ... ... **ZSC.**
   Messages directed to ... CQ.
   Wave length ... ... 625 m. I.C.W.
   Times of transmission:—
   0830 G.M.T. (observations at following stations at 0630 G.M.T.).*
   1220 G.M.T. (forecast for coasts in plain language).**

2. Observation stations, 0830 report:—

Indicator Letters.	Station.	Position (approx.). Lat. S.	Long. E.
ZSA	East London	33° 02′	27° 55′
ZSQ	Port Elizabeth	33° 59′	25° 37′
ZSM	Mossel Bay	34° 11′	22° 09′
ZSC	Capetown	33° 56′	18° 29′
ZST	Port Nolloth	29° 14′	16° 51′
ZSV	Walvis Bay	22° 58′	14° 30′

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1. Transmitting station ... **Port Elizabeth** (Latitude 33° 57′ S.; Longitude 25° 35′ E. approx.).
   Call signal ... ... **ZSQ.**
   Messages directed to ... CQ.
   Wave length ... ... 600 m. spk.
   Times of transmission:—
   0820 G.M.T. (observations at following stations at 0630 G.M.T.).*
   1230 G.M.T. (forecast for coasts in plain language).**

2. Observation stations, 0820 report:—

Indicator Letters.	Station.	Position (approx.). Lat. S.	Long. E.
ZSD	Durban	29° 52′	31° 03′
ZSA	East London	33° 02′	27° 55′
ZSQ	Port Elizabeth	33° 59′	25° 37′
ZSM	Mossel Bay	34° 11′	22° 09′
ZSC	Capetown	33° 56′	18° 29′

1. Transmitting station ... **Durban** (Latitude 29° 56′ S.; Longitude 30° 59′ E. approx.).
   Call signal ... ... **ZSD.**
   Messages directed to ... CQ.
   Wave length ... ... 625 m. I.C.W.
   Times of transmission:—
   0810 G.M.T. (observations at following stations at 0630 G.M.T.).*
   1205 G.M.T. (forecast for coasts in plain language).**

2. Observation stations, 0810 report:—

Indicator Letters.	Station.	Position (approx). Lat. S.	Long. E.
CQA	Beira	19° 50′	34° 51′
CQE	Lourenço Marques ...	25° 58′	32° 36′
ZSD	Durban	29° 52′	31° 03′
ZSA	East London	33° 02′	27° 55′
ZSQ	Port Elizabeth	33° 59′	25° 37′

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1. Transmitting station ... **Lourenço Marques,** (Latitude 25° 58′ S.; Longitude 32° 36′ E. approx.).
   Call signal ... ... **CQE.**
   Messages directed to ... CQ.
   Wave length ... ... 600 m. spk.
   Time of transmission:—
   0800 G.M.T. (observations at following stations at 0630 G.M.T.)*

2. Observation stations, 0800 report:—

Indicator Letters.	Station.	Position (approx.). Lat. S.	Long. E.
ZSA	East London	33° 02′	27° 55′
ZSD	Durban	29° 52′	31° 03
CQE	Lourenço Marques ...	25° 58′	32° 36
CQA	Beira	19° 50′	34° 51′
CQF	Mozambique	15° 02′	40° 45′

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1. Transmitting station ... **Mozambique** (Latitude 15° 02′ S.; Longitude 40° 45′ E. approx.).
   Call signal ... ... **CQF.**
   Messages directed to ... CQ.
   Wave length ... ... 600 m. spk.
   Time of transmission:—
   0900 G.M.T. (observations at following stations at 0630 G.M.T.)*

2. Observation stations 0900 report:—

Indicator Letters.	Station.	Position (approx.) Lat. S.	Long. E.
CQF	Mozambique	15° 02′	40° 45′
CQA	Beira	19° 50′	34° 51′
CQE	Lourenço Marques ...	25° 58′	32° 36′

Madagascar.

Spark Issues.

The following W/T Stations transmit weather reports in code* taken at 0400 G.M.T. at the undermentioned stations:—

W/T Station.	Call Sign.	Time of Transmission.	Observation Stations.	Positions (approx.) Lat. S. °	′	Long. E. °	′
Majunga ...	**FIO**	0500 G.M.T.	Helleville (Nossi Bé)	13	24	48	17
			Zaudzi	12	47	45	16
			Diégo Suarez ...	12	15	49	23
			Majunga	15	43	46	20
Diégo Suarez ...	**FIL**	0430 ,,	Helleville (Nossi Bé)	13	24	48	17
			Diégo Suarez ...	12	15	49	23
Tamatave ...	**FIS**	0415 ,,	St. Mary	17	00	49	54
			Tamatave	18	09	49	26
Tulear	**FIT**	0445 ,,	Tulear	23	21	43	40

Ships can obtain on request any weather information in the possession of the above stations.

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* The code used is not the International Ships' Wireless Weather Code referred to on page 20, Vol. IX, No. 97, January Marine Observer.
** Sundays and holidays excepted.

WIRELESS STORM WARNINGS.

Madagascar.

(Spark Issues.)

CYCLONE warnings are broadcast when necessary by the following stations on a wave length of 600 metres (spark), in each case:—

Zaudzi (Mayotta I.): Latitude 12° 47′ S., Longitude 45° 16′ E., Call Sign **FIM.**

Majunga: Latitude 15° 43′ S., Longitude 46° 20′ E., Call Sign **FIO.**, Times of transmission, 0500, 1630 G.M.T.

Diégo Suarez: Latitude 12° 15′ S., Longitude 49° 26′ E., Call Sign **FIL.**, Times of transmission, 0430, 1600 G.M.T.

Tamatave: Latitude 18° 09′ S., Longitude 49° 26′ E., Call Sign **FIS.**, Times of transmission, 0415, 1615 G.M.T.

Tulear: Approx. Latitude 23° 21′ S., Longitude 43° 40′ E., Call Sign **FIT.**, Times of transmission 0445, 1645 G.M.T.

The warning, originating from the observatory at Antananarivo, will be broadcast at every even hour during the probable passage of the cyclone when within the range of the W/T stations, by Majunga W/T station and Tulear W/T station, alternately, in the case of a cyclone affecting the Mozambique Channel, and alternately by Diégo Suarez and Tamatave W/T stations in the case of a cyclone affecting the area north-east and east of Madagascar.

The warning will be preceded by the Safety Signal **TTT (— — —)** repeated ten times at short intervals on full power. The warning will be broadcast one minute after the Safety Signal, and will be repeated three times at intervals of ten minutes.

If the Safety Signal *only* is broadcast it will indicate, in the absence of precise information, that there is reason to expect the passage of a cyclone.

During the whole period of this service Diégo Suarez, Tamatave and Tulear W/T stations will remain permanently on watch.

Mauritius.

Spark Issues.

Mauritius W/T station, call sign **VRS**, broadcasts, during the cyclone season (1st November to 15th May), on a wavelength of 600 metres spark, at irregular intervals, or on request, to all ships when it is known that a cyclone is in existence, the latest weather information *immediately* this information is received at the W/T station from Mauritius Observatory. The message is transmitted *en clair* in English giving as far as is known the position of the cyclone, with the direction and rate of its movement, also the weather conditions at Mauritius.

Requests from ships for further information will be forwarded at once to the Observatory.

Continuous watch will be kept at the W/T station.

III. WIRELESS TIME SIGNALS.

Union of South Africa.

I.C.W. Issue.

TIME signals actuated automatically from the Royal Observatory at the Cape by direct land line are broadcast by **Cape Town W/T station**, call sign **ZSC**, Latitude 34° 09′ S., Longitude 18° 19′ E. (approx.), on a wavelength of 625 metres (**I.C.W.**).

The time signals are broadcast according to the New International System of W/T time signals and the procedure is as follows:—

G.M.T. h. m. s.		G.M.T. h. m. s.	
20 56 05	to	20 56 50	— — — repeated 5 times at 10 second intervals.
57 00	,,	57 50	— • • — repeated 10 times at 5 second intervals.
57 55	,,	58 00	55 56 57 58 59 60 / • • • • • • Time Signal.
58 08	,,	58 10	— •
58 18	,,	58 20	— •
58 28	,,	58 30	— •
58 38	,,	58 40	— •
58 48	,,	58 50	— •
58 55	,,	59 00	55 56 57 58 59 60 / • • • • • • Time Signal.
59 06	,,	59 10	— — •
59 16	,,	59 20	— — •
59 26	,,	59 30	— — •
59 36	,,	59 40	— — •
59 46	,,	59 50	— — •
20 59 55	,,	21 00 00	55 56 57 58 59 60 / • • • • • • Time Signal.

Portuguese East Africa.

Spark and C.W. Issues.

DELAGOA BAY.—LOURENÇO MARQUES. W/T time signals are transmitted automatically by means of the pendulum clock at Campos Rodrigues Observatory.

The transmission of the signals is made simultaneously by **Ponta Vermelha W/T station**, Lat., 25° 58′ 05″ S., Long., 32° 35′ 39″ E., call sign **CQE**, wave length 600 metres (spk.) and **Polana W/T station**, Lat., 25° 57′ 40″ S., Long., 32° 35′ 59″ E., call sign **CRAP** wave length 2,400 metres, C.W., and the new International system of W/T time signals is used.

The transmitting times are:—

	G.M.T. h.	m.	s.		h.	m.	s.
From	7	57	00	to	8	00	00
,,	18	57	00	,,	19	00	00

The procedure as regards each series of signals is as follows:—

G.M.T. h. m. s.		G.M.T. h. m. s.	Signal.
7/18 57 00	to	7/18 57 50	— • • — — • • — — • • — Prevenção. Sinais feitos à mão (Prepare. Time signal coming).
57 55	,,	58 00	55 56 57 58 59 60 / • • • • • • *Time signal.*
58 08	,,	58 10	— •
58 18	,,	58 20	— •
58 28	,,	58 30	— •
58 38	,,	58 40	— •
58 48	,,	58 50	— •
58 55	,,	59 00	55 56 57 58 59 60 / • • • • • • *Time signal.*
59 06	,,	59 10	— — •
59 16	,,	59 20	— — •
59 26	,,	59 30	— — •
59 36	,,	59 40	— — •
59 46	,,	59 50	— — •
7/18 59 55	,,	8/19 00 00	55 56 57 58 59 60 / • • • • • • *Time signal.*

Note.—The error of the Observatory clock is stated never to exceed a few hundredths of a second.

Occasionally Campos Rodrigues observatory will transmit other time signals, which must not be confused with those given above. These signals belong to the category of rhythmic time signals, and will consist of several long series of dots.

GREAT BRITAIN.

AMENDMENTS.

THE FOLLOWING CHANGES CAME INTO FORCE ON OCTOBER 3RD, 1932, AND THE FEBRUARY, 1932 NUMBER SHOULD BE AMENDED AS FOLLOWS:—

"WEATHER SHIPPING" BULLETIN.

Wireless Telephony (R/T) Issues.

Vol. IX, No. 98.

Page 48, Column 1, line 6, *for* 2115 G.M.T. *substitute* 2300 G.M.T.

WIRELESS GALE WARNINGS.

Wireless Telephony (R/T) Issues.

Vol. IX, No. 98.

Page 48. *Delete* paragraphs headed "**Weekdays**" and "**Sundays.**"
Substitute the following:—

Weekdays.		**Sundays.**
1030 G.M.T.	at the end of the "Weather Shipping" Bulletin	1030 G.M.T.
1300 G.M.T. 1645 G.M.T.	immediately after the Time Signal...	1615 G.M.T.
1800 G.M.T. 2100*G.M.T.	preceding the general Weather Forecast.	
2300 G.M.T.	at the end of the "Weather Shipping" Bulletin	2100 G.M.T.

Whenever the Meteorological Office telegraphs gale warning signals to be hoisted on any coast, a notification is broadcast at the next of the above-mentioned times. A comprehensive statement is appended to the morning and evening "Weather Shipping" Bulletin stating what gale warnings are then in operation.

Delete paragraph commencing "Changes in the times of issue.

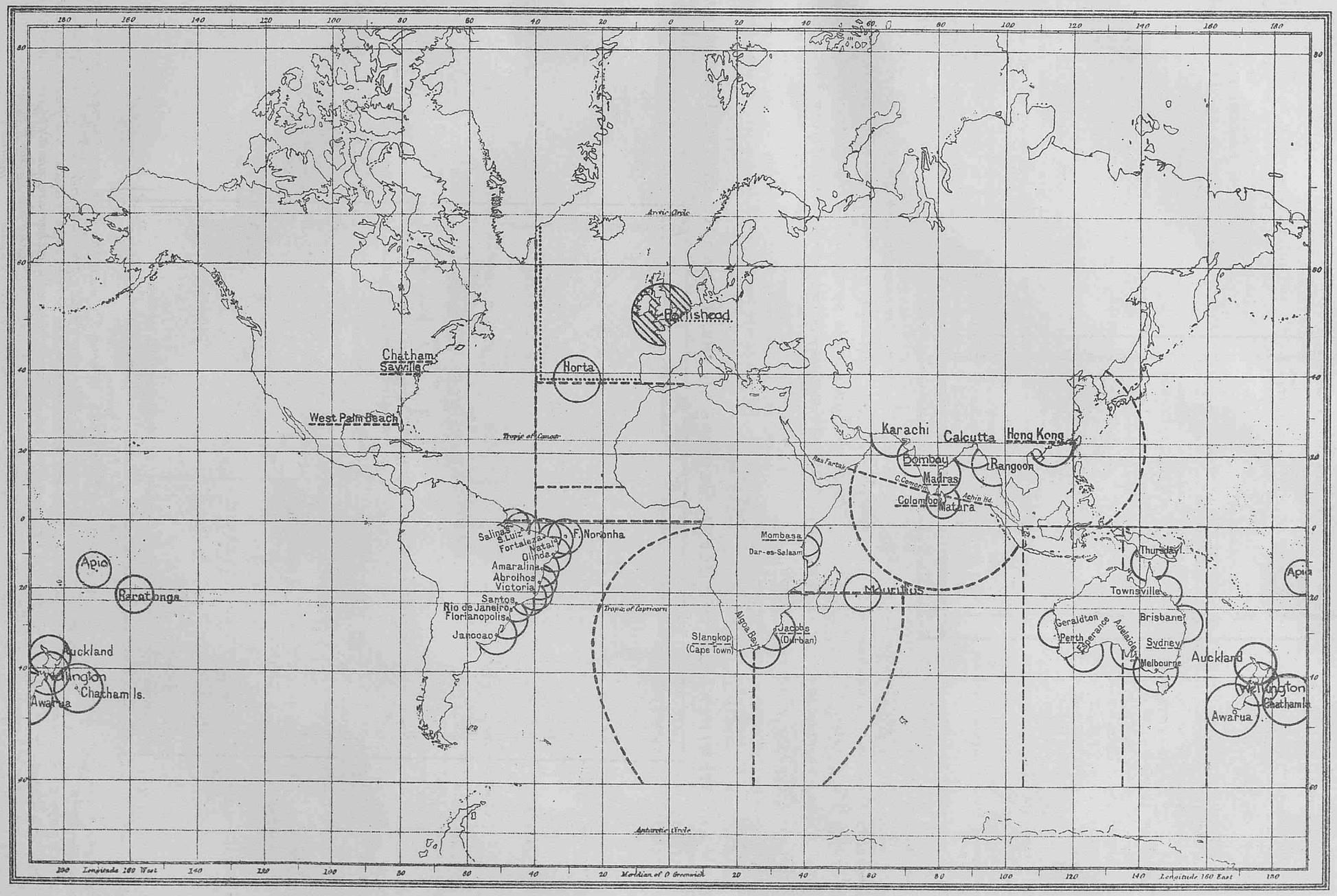
Substitute *This time is subject to slight alteration from time to time. Notice of any changes will be broadcast with both the "Weather Shipping" Bulletins of the previous day and with the morning "Weather Shipping" Bulletin of the day on which any alteration is necessary.

Special Notices Regarding Personnel.

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

Chart XII – 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.

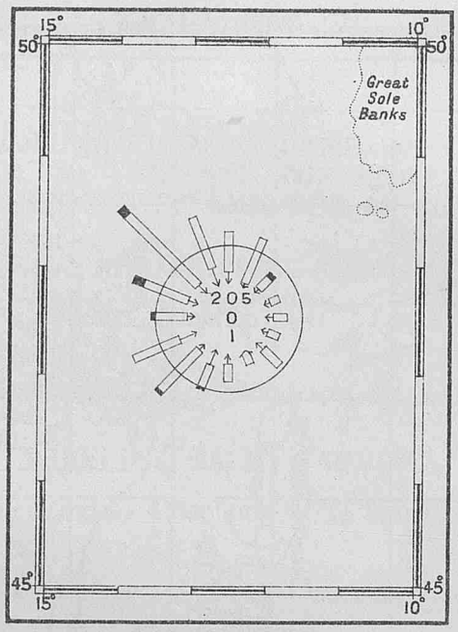
A pecked line indicates the reporting area round stations in other countries to which British "A Selected Ships" should report. The names of such stations being underlined with a pecked line.

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.

NOVEMBER

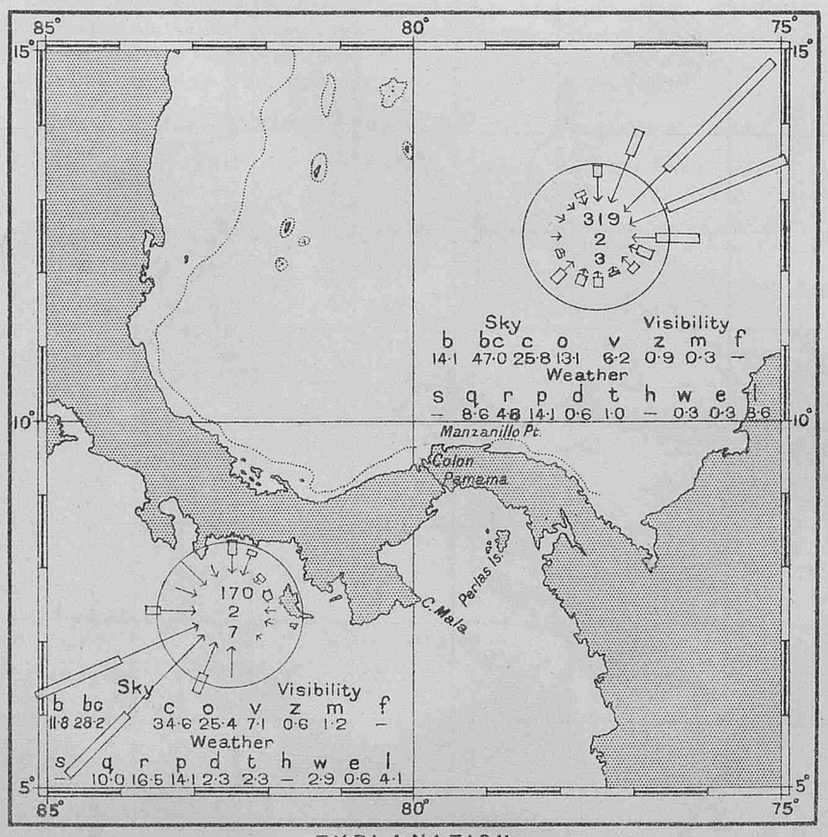
Wind for the Ocean Region Adjacent to the S.W. Approaches to Great Britain.



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.*

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 10° to 15° N., Longitude 75° to 80° W., b was logged 47 times in every 100 observations while p was logged 14 times.*

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

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

Pd 606/2482. Wt. 76A. D. 28. Gp. 908. 950. 9/32.

MARINE METEOROLOGY.

Co-operation of Shipowners, Masters and Mates.

Captains and Officers of ships registered in Great Britain and Northern Ireland, who wish to co-operate regularly with the Meteorological Office should apply to the appropriate Port Meteorological Officer or Agent, a list of whom, with addresses, is given below.

In accordance with the International Convention for Safety of Life at Sea, the Meteorological Office arranges for certain "Selected Ships" to take meteorological observations at specified hours, and to transmit such observations by wireless telegraphy, for the benefit of other ships and the various meteorological services.

Arrangements are also made for a limited number of ships to keep meteorological logs in certain trades for the purpose of completing the meteorological survey of the oceans.

Ships performing these voluntary duties are known as Observing Ships; the whole as the Voluntary Observing Fleet; and the commanders and officers of these ships as the Corps of Voluntary Marine Observers.

At present the observing fleet is limited to a number not exceeding 366 observing ships. The number of British "Selected Ships" is determined upon the British proportion of world tonnage, on the assumption that there should be a total of 1,000 "Selected Ships" of all nations.

The observing fleet list indicating which are "Selected Ships," with the names of commanders, officers, and other particulars, is published in THE MARINE OBSERVER and kept up to date monthly.

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 is supplied to all observing ships, and may also be obtained from H.M. Stationery Office, direct, or through any bookseller, price 2s. 6d.

THE MARINE OBSERVER is sent monthly to the captain of every observing ship, for the information and guidance of his observing officers, and in the case of "Selected Ships," the wireless operators also. The Captains of observing ships are also supplied on request with charts, and atlases, according to trade, if available, as meteorological equipment.

Ships keeping the Meteorological Log, Form 915, are lent a complete set of official tested instruments.

"Selected Ships," other than meteorological log keeping ships, keep the Ships' Meteorological Record, Form 911. All "Selected Ships" also keep the Ships' Wireless Weather Register, Form 138.

No observing ship is detailed as a "Selected Ship" unless she has on board a reliable mercurial barometer.

Official tested instruments are lent to "Selected Ships" when necessary.

The commanders of observing ships keeping the meteorological log are requested to return it (accompanied by Form 138 in the case of "Selected Ships") through the appropriate Port Meteorological Officer or Agent at intervals of not more than five months.

Commanders of observing ships keeping Forms 911 are requested to return them (accompanied by Form 138 in the case of "Selected Ships") by post direct to the Meteorological Office, London, at the end of each voyage, or at intervals of not more than two months.

These forms have the address and "On His Majesty's Service" printed upon them, and should be folded for posting accordingly.

The Port Meteorological Officers and Merchant Navy Agents inspect official instruments in Meteorological log ships half-yearly, and in "Selected Ships" quarterly, when possible; and they will replace defective gear. These officers will also check the accuracy of barometers in observing ships, but marine observers should themselves frequently check by comparison.

The work of the British observing fleet, that of the observing fleets of other nations party to the Convention for Safety of Life at Sea, together with Weather Shipping Bulletins and Gale and Hurricane Warnings conforming to the International Convention for Safety of Life at Sea, provide the necessary information for shipping. Thus a world wide service for all shipping, at the minimum cost to national funds, is provided. Shipowners are asked to facilitate this voluntary work which is done by the commanders and officers of their ships.

Shipowners will greatly assist by facilitating the forwarding of postal matter from the Air Ministry addressed to the Captains of ships.

Ships which are not regular observing ships are advised to procure the DECODE for use with the International Code for Wireless Weather Messages from Ships, M.O. Pubn. 329, which can be obtained from H.M. Stationery Office, price 3d. This gives a description of the system of communication of "Selected Ships," as well as the DECODE.

For guidance in the practical use of wireless weather intelligence, WIRELESS AND WEATHER AN AID TO NAVIGATION may be obtained from H.M. Stationery Office, through any bookseller, price 5s.

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 324, Adastral House, Kingsway, W.C.2.
(*Telephone No.: Holborn 3434 Extension 421*).
Nearest station Temple, District Railway.

THAMES ... ... Lieut. Commander 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 Dock 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*).

Agents (*contd.*).

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

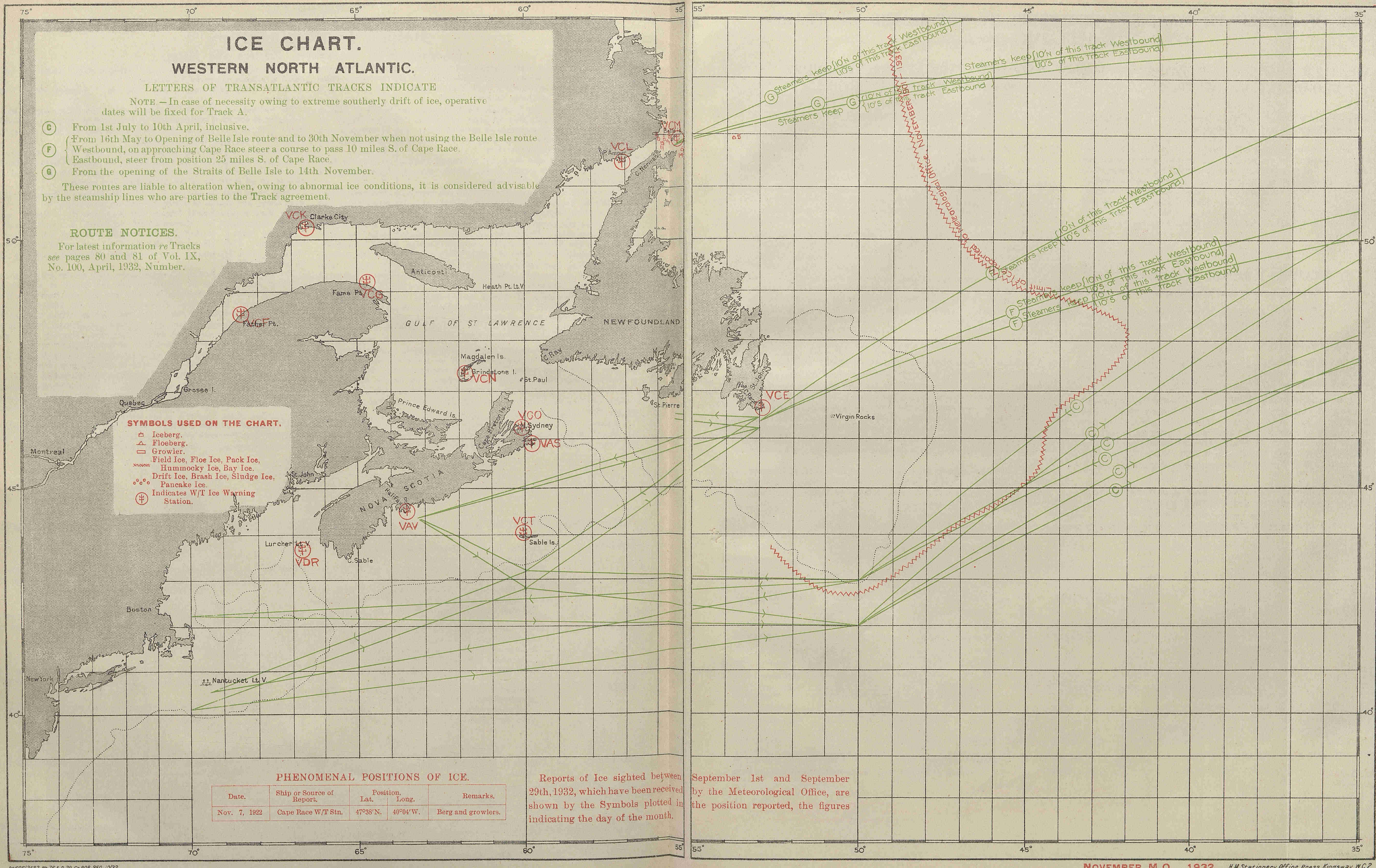
HONG KONG, China. Lieut. Commander G. B. R. RUDYERD-HELPMAN, R.N., Superintendent, Admiralty Chart and Chronometer Depot, H.M. Dockyard. (*Telephone No.: 108 Dockyard*).

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

SOUTHAMPTON Captain Sir BENJAMIN CHAVE, K.B.E., Room 35, Royal Mail Lines, Ltd.

SYDNEY, New South Wales. Commander G. D. WILLIAMS, D.S.O., R.D., R.N.R., Deputy Director of Navigation.
Captain R. G. BLAYNEY.
Customs House.
(*Telephone No.: B6421*).

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



PHENOMENAL POSITIONS OF ICE.

Date.	Ship or Source of Report.	Position. Lat.	Long.	Remarks.
Nov. 7, 1922	Cape Race W/T Stn.	47°38'N.	40°04'W.	Berg and growlers.

Reports of Ice sighted between September 1st and September 29th, 1932, which have been received by the Meteorological Office, are shown by the Symbols plotted in the position reported, the figures indicating the day of the month.

Ps.606/2482. Wt. 76 A. D. 29. Gp. 908. 950. 10/32.

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

NOTICES.

COPY OF NOTICE TO MARINERS PUBLISHED BY THE BOARD OF TRADE ON SEPTEMBER 22ND 1932.

WEATHER SHIPPING BULLETINS, GALE WARNINGS AND NAVIGATIONAL WARNINGS BROADCAST BY R/T FROM DAVENTRY ON WAVE-LENGTH 1554·4 METRES.

(All times given in this notice are clock-times, i.e. G.M.T. or B.S.T., according to which is in operation in the British Isles.)

In order to ensure that the "Weather Shipping" Bulletins which are broadcast from Daventry in the evening shall be available at the same time every day, it has been necessary to change the time of issue of these messages. It has also been arranged that Navigational Warnings issued by the Admiralty shall be broadcast at the end of the evening "Weather Shipping" Bulletin. These changes, and certain changes in the times of broadcasting of Gale Warnings, will take effect on 3rd of October 1932, from which date the messages broadcast for shipping by Daventry will be the following:—

(1) WEATHER SHIPPING BULLETINS.

Weekdays.	Sundays.
10.30 a.m.	10.30 a.m.
11.00 p.m.	9.0 p.m.

These messages consist of:—

(a) a brief general statement of the barometric pressure systems which influence the weather of the seas around the British Isles and their approaches;

(b) forecasts of wind and visibility, for the next twelve hours, for each of four areas, viz.; Western, Southern, Eastern and Northern areas. When necessary these areas are divided into districts. These areas and districts are shown on chartlet K referred to on page 44 of Board of Trade Notices to Mariners Half-yearly Book dated 1st December 1931, and in Vol. II of the Admiralty List of Wireless Signals, page 137 (Supplement No. 2, 1932);

(c) an "outlook" containing a brief general statement of weather expected after the period of the forecasts.

(2) GALE WARNINGS.

Weekdays.	Sundays.
10.30 a.m. at the end of the "Weather Shipping" Bulletin.	10.30 a.m.
1. 0 p.m. } 4.45 p.m. } immediately after the Time Signal.	4.15 p.m.
6. 0 p.m. } 9. 0 p.m. (*See* Note) } preceding the general Weather Forecast.	
11. 0 p.m. at the end of the Weather Shipping Bulletin.	9.0 p.m.

Note—This time is subject to slight alteration from time to time. Notice of any changes will be broadcast with both the "Weather Shipping" Bulletins of the previous day and with the morning "Weather Shipping" Bulletin of the day on which any alteration is necessary.

Whenever the Meteorogical Office orders gale warning signals to be hoisted on any coast, a notification is broadcast at the next of the above-mentioned times. A comprehensive statement is appended to the morning and evening "Weather Shipping" Bulletin stating what gale warnings are then in operation.

(3) NAVIGATIONAL WARNINGS.

Weekdays—11 p.m. after the "Weather Shipping" Bulletin.
Sundays—9 p.m. after the "Weather Shipping" Bulletin.

The above Warnings will be broadcast for the benefit of the Home Trade and Fishing Vessels, (especially those vessels which do not carry a W/T operator) and will consist of notifications concerning casualties to lights, extension of shoals, etc., etc., which are considered to be of an urgent nature. Broadcasts will normally be made once only in respect of any particular seamark or danger, and the cessation of broadcasting must not be taken as implying that the seamark has been re-established or the danger removed.

The above arrangement will come into force on the evening of Monday, 3rd October, 1932, but it will not in any way affect the existing procedure of broadcasting navigational and gale warnings to shipping from the G.P.O. Coastal Wireless Stations.

The necessary amendments to Weather Signals for the British Isles given in the February 1932 MARINE OBSERVER will be found on page 216 of this number.

DERELICTS AND FLOATING WRECKAGE.

Date.	Position. Latitude.	Position. Longitude.	Description.
KATTEGAT.			
16.9.32	57°57′N.	11°01′E.	Large piece of wreckage.
NORTH SEA.			
9.9.32	59°09′N.	1°49′E.	Heavy log about 60 ft. long. Dangerous to navigation.
13.9.32	8 miles N.N.W. East Dudgeon Light Vessel.		Floating pile in vertical position. Dangerous to navigation.
22.9.32	55°12′N.	7°53′E.	Drifting red light buoy, one white flash every eight seconds.
ENGLISH CHANNEL.			
14.9.32	49°33′N.	2°26′W.	Waterlogged barge.

Date.	Position. Latitude.	Position. Longitude.	Description.
MEDITERRANEAN.			
17.9.32	25 miles S.E. of Cape Andreas.		Waterlogged schooner reported abandoned.
20.9.32	42°—′N.	3°15′E.	Trunk of a tree. Dangerous to navigation.
NORTH ATLANTIC.			
3.9.32	35°35′N.	67°57′W.	Wreckage apparently part of a wooden vessel.
12.9.32	38°42′N.	74°13′W.	Spar projecting 6 ft. out of water and apparently attached to submerged wreckage.

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 366.

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 16.9.32.	Date Received.
122 †† *Accra*, M.V. ...	Shooter, J. C.... ...	R. B. Ellis	W.T.-M.	Elder Dempster ...	Forms 911 & 138 27.7.32 to 2.9.32	6.9.32
155 *† *Achilles*	Cosker, W.	C. Broad, J. Simpson ...	W.T.	A. Holt	Form 915 5.9.31 to 19.1.32 ...	23.1.32
055 *† *Actor*	Whyte, D. L	G. Penston, E. Pearce, P. Harrow.	No. M.	Harrison	Forms 911 & 138 27.11.31 to 31.1.32	19.2.32
123 †† *Adda*, M V. ...	Lawson, J. H. ...	E. Moore, G. Baker	W.T.-M.	Elder Dempster ...	" " 16.6.32 to 23.7.32	27.7.32
273 *† *Adrastus*	Lloyd, R.	S. R. Evans, J. P. Makepeace, F. E. Jackson.	M.L.	A. Holt...	Form 915 3.3.32 to 4.4.32 ...	24.6.32
050 †† *Adriatic*	Freeman, C. P., R.D., Commr., R.N.R.	R. Hawkins, Finlayson, Keen	W.T.	White Star	Forms 911 & 138 8.8.32 to 28.8.32	31.8.32
090 *† *Aeneas*	Wallace, W. K. ...	G. H. Smith, W. Williams, R. A. Hanney.	"	A. Holt	" " 25.5.32 to 13.8.32	17.8.32
166 *† *Agamemnon* ...	Beswick, W., D.S.C., Commr., R.N.R.	W. K. Hole, W. G. Harrison, O. Thomas.	"	"	" " 15.6.32 to 5.7.32	11.8.32
Alban	Evans, L.	... ...	M.L.	Booth	... ...	...
127 *† *Albion Star* ...	Hopper, G. E. ...	R. White, W. H. Gore ...	No. M.	Blue Star	Forms 911 & 138 18.12.31 to 6.3.32	21.6.32
080 †† *Alcantara*, M.V. ...	Clarke, E., R.D., Commr., R.N.R.	W. W. Dovell, T. Davies, R. Smith.	W.T.	Royal Mail	" " 5.6.32 to 10.7.32	4.8.32
178 *† *Alipore*	Carter, E. A. J. W., R.D., Commr., R.N.R.	J. A. Hunter, — Hugo, — Chandy.	No. M.	P. & O.	" " 28.6.32 to 3.8.32	5.9.32
175 †† *Almanzora* ...	Buret, T.	E. W. Martin, F. J. Brett. J. G. Scott.	W.T.	Royal Mail	" " 31.7.32 to 12.9.32	14.9.32
012 †† *Almeda Star* ...	Turner Russell, W....	L. S. Hassell, O. G. Russell, C. N. Williams.	No. M.	Blue Star	" " 11.7.32 to 24.8.32	31.8.32
103 †† *Andalucia Star* ...	Vernon, R.	R. H. K. Bartley. F. Graham, E. R. Pearce.	" M.	"	" " 19.6.32 to 3.8.32	8.8.32
079 *† *Antilochus* ...	Dougall, A. T. ...	B. L. Parker, W. Murray, C. F. Lock.	W.T.	A. Holt	" " 30.6.32 to 6.9.32	8.9.32
209 †† *Aorangi*, M.V. ...	Spring-Brown, J. F.	E. Anderson, D. H. Richards, S. H. Crawford.	M.L.	Canadian-Australasian	Form 915 3.3.31 to 17.6.32 ...	18.8.32
120 †† *Apapa*, M.V. ...	Beith, A.	V. E. Thomas, S. S. Franklin	W.T.-M.	Elder Dempster ...	Forms 911 & 138. 29.6.32 to 3.8.32	8.8.32
029 †† *Appam*	Draper, J. M	W. M. M. Hutchings, R. K. Palmer, B. C. Haigh.	W.T.	" " ...	" " 13.7.32 to 21.8.32	23.8.32
017 †† *Aquitania*	Irving, R. B., O.B.E., R.D., Capt., R.N.R.	G. Jeffries, E. A. Divers, J. V. Locke.	"	Cunard...	" " 1.8.32 to 6.9.32	8.9.32
115 †† *Arandora Star* ...	Moulton, E. W. ...	J. L. Anderson	W.T.-M.	Blue Star ...	Form 911 14.8.32 to 2.9.32 Form 912 23.6.32 to 29.7.32 ...	12.9.32 30.7.32
Architect	Mowat, I.	G. Dewar	No. M.	Harrison	Form 911 14.12.31 to 21.3.32 ...	5.4.32
293 *† *Ariguani*	Scudamore, J. H. H., D.S.C., R.D., Commr., R.N.R.	G. McKee, A. Crone, A. Sandham.	W.T.	Elders & Fyffes ...	Forms 911 & 138 27.7.32 to 28.8.32	3.9.32
144 †† *Arlanza*	Huff, G. F.	B. A. Gammon, A. E. Randle, H. V. Todd.	"	Royal Mail	" " 25.6.32 to 9.8.32	11.8.32
091 †† *Armadale Castle* ...	Harvey, H. B. ...	W. Pace, A. H. Parry, L. G. May.	"	Union Castle	" " 23.7.32 to 11.9.32	13.9.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
296 *† *Arracan*	Thomson, S.	J. A. C. MacCall, M. M. Ramsay, H. H. Brown.	W.T.	P. Henderson ...	Forms 911 & 138 1.5.32 to 17.7.32	29.7.32
Arundel	Shaw, B.	E. Hill	C.C.	Southern Rly. ..	Telegraphic Report 11.9.32 ...	11.9.32
095 †† *Arundel Castle* ...	Stuart, C. E., R.D., Capt., R.N.R.	G. L. Clarke	W.T.	Union Castle ...	Form 911 24.1.32 to 12.3.32 ...	19.3.32
280 *† *Astronomer* ..	Richards, J.	W. P. Baker, R. Williams, E. B. Stephens.	No. M.	Harrison	Forms 911 & 138 18.4.32 to 7.7.32	20.7 32
065 †† *Asturias* M.V. ...	Hannam, F. S. ...	H. G. Whittle, S. J. Hill, T. W. Stevens.	W.T.	Royal Mail	„ „ 17 6.32 to 28.8.32	31.8.32
281 *† *Auditor*	Windsor, G. R. ...	L. Richardson, A. H. Thompson.	No. M.	Harrison	„ „ 8.3.32 to 27.5.32	6.7.32
212 *† *Australia*	Scutt, W.	E. H. Lidstone, L. Smith, F. M. Jenvey.	„ M.	British India	Form 915 29.3.32 to 16.8.32 ...	1.9.32
124 †† *Avila Star*	Thomas, R. J. ...	F. N. Johnson	„ M.	Blue Star	Forms 911 & 138 29.5.32 to 13.7.32	18.7.32
068 †† *Balmoral Castle* ...	Barron, A.	A. C. G. Price, G. F. Oakley, R. F. Pembry.	W.T.	Union Castle	Forms 911 & 138 25.6.32 to 14.8.32	16.8.32
179 *† *Balranald*	Short, C. E.	E. R. Physick, F. M. Pearce, H. P. Mallett.	No. M.	P & O. Branch ...	„ „ 16.8.32 to 13.9.32	15.9.32
051 †† *Baltic*	Hume, R.	G. Law, N. E. Banke, R. Walker.	W.T.	White Star ...	„ „ 22.8.32 to 12.9.32 Form 912 22.8.32 to 12.9.32 ...	15.9.32 14.9.32
248 *† *Banffshire*	Gibb, A. W. P. ...	R. F. Budeley, A. Hunter, A. Banks.	No. M.	Turnbull Martin ...	Forms 911 & 138 30.5.32 to 4.7.32	8.8.32
180 *† *Baradine*	Elliot Smith, H., R.D, Lt.-Commr., R.N.R.	G. L. Farnfield	„ M.	P. & O. Branch ...	„ „ 20.3.32 to 22.6.32	1.7.32
037 *† *Baronesa*	Compton, R. H. ...	J. R. Faulkner, F. W. Kent, J. G. Freeman.	„ M.	Houlder	„ „ 16.5.32 to 14.7.32	18.7.32
213 *† *Barpeta*	Partridge, H. ...	D. C. Murisan, J. H. Pool, R. C. Davies.	„ M.	British India	„ „ 20.4.32 to 22.6.32	25.7.32
181 *† *Barrabool*	Sheepwash, J. S. ...	W. Elvy, D. Swabey, A. Gething.	„ M.	P. & O. Branch ...	„ „ 17.5.32 to 18.8.32	23.8.32
070 †† *Bayano*	Legge, A. W.	F. H. Leach, J. C. Thomas, S. A. Ray.	W.T.	Elders & Fyffes ...	„ „ 21.7.32 to 19.8.32...	26.8.32
Beaverburn ...	Landy, E.	L. L. Thornton, W. J. P. Roberts, W. E. Halberd.	M.L.	Canadian Pacific	Form 915 7.4.32 to 10.9.32 ... „ 912 7.4.32 to 10.9.32 ...	16.9.32 16.9.32
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, T. Hopkins ...	W.T.-M.	P. & O. Branch ...	„ „ 4.4.32 to 12.6.32	13.6.32
237 †† *Berengaria*	Britten, E. T., R.D., Commr., R.N.R.	W. A. Robson, G. Duguid, F. P. Collins.	W.T.	Cunard	„ „ 8.8.32 to 23.8.32	25.8.32
145 *† *Berwickshire* ...	Evens, E. H.	E. Coulthart, J. O. Woodall, R. Frankish.	„	Turnbull Martin ...	„ „ 21.2.32 to 8.6.32	17.6.32
057 †† *Britannic* M.V. ...	Vaughan, P. R., D.S.C., R.D., Commr., R.N.R.	G. L. Jones, O. V. Lucas, A. J. Fisher.	„	White Star	„ „ 15.8.32 to 3.9.32	6.9.32
269 *† *British Admiral* ...	Putt, R. O.	H. J. Were, C. Finch	No. M.	British Tankers ...	„ „ 3.8.32 to 18.8.32	29.8.32
249 *† *Buteshire*	Westropp, T. G. ...	P. McMillan, S. W. Brown, J. D. Elvish.	W.T.	Turnbull Martin ...	„ „ 21.6.32 to 15.7.32	23.7.32
031 †† *Caledonia*	Collie, A.	J. J. Walmsley, J. K. McMillan, R. Blake.	W.T.	Anchor... ...	Forms 911 & 138 14.6.32 to 14.8.32 Form 912 14.6.32 to 19.6.32	19.8.32 19.7.32
139 †† *California*	Smart, R. W.	D. Morrison, J. F. Adams, R. L. Robertson.	„	„	Forms 911 & 138 17.7.32 to 3.9.32 Form 912 19.6.32 to 9.7.32	6.9.32 12.7.32
Cambria	Copland, C. P. ...	O. W. Ll. Jones	C.C.	L.M. & S. Rly.... ...	Telegraphic Report 13.9.32 ...	13.9.32
190 *† *Cambridge*	Williams, R.	H. Fryer, R. Belfield, T. M. Devitt.	M.L.	Federal	Form 915 8.2.32 to 24.5.32 ...	4.6.32
266 †† *Cameronia*	Gemmell, W.	D. Blair, E. Stormont, D. Bone.	W.T.	Anchor ...	Forms 911 & 138 7.8.32 to 31.8.32 Form 912 15.5.32 to 5.6.32	5.9.32 9.6.32
295 †† *Camito*	Jack, D. A.	C. R. Hodder, R. W. King, G. Binks.	„	Elders & Fyffes ...	Forms 911 & 138 6.7.32 to 5.8.32	8.8.32
Canonesa	Brodie, W. H. ...	F. F. Feint	No. M.	Houlder	... ...	...
Cape of Good Hope	Jacobson, T. A. ...	A. McGregor	„ A.	Lyle S.S. Co.	Form 911 12.7.31 to 30.7.32 ...	16.8.32
282 †† *Carinthia*	Murchie, P. A., O.B.E., R.D., Capt., R.N.R.	G. S. Hutchison, J. Chapman, A. B. Fasting.	W.T.	Cunard ...	Forms 911 & 138 15.8.32 to 2.9.32 Form 912 21.6.32 to 9.7.32	6.9.32 3.8.32
092 †† *Carnarvon Castle* M.V.	Vincent, E. S. ...	G. F. Pettitt, E. Clancy ...	„	Union Castle ...	Forms 911 & 138 3.7.32 to 6.8.32	23.8.32
Carthage	Jack, H. M.	.. ..	W.T.-M.	P. & O.	... ...	...
184 †† *Cathay*	Dalzell Niven, J. ...	A. J. McHatlie, B. H. Nankivell, M. G. Morris.	No. M.	„	Forms 911 & 138 31.7.32 to 12.8.32	29.8.32
011 †† *Ceramic*	Cole, N.	... ...	W.T.	White Star	... ...	...
Cerinthus M.V. ...	Ramsay, N.	E. Allen, C. L. Seaman, J. B. Williams.	M.L.	Hadley Shipping ...	Form 915 6.6.32 to 4.9.32 ...	15.9.32
Changuinola ...	Bostock, R. J. ...	O. H. Pulman	No. A.	Elders & Fyffes ...	Form 911 12.10.31 to 23.10.31 ...	27.10.31
191 *† *Chindwin*	Mc. Pherson, A. ...	D. M Wilkie, J. Aitkin, G. Paterson	W.T.	Henderson	Forms 911 & 138 9.4.32 to 23.6.32	27.6.32
067 *† *Chinese Prince* ...	Irvine, —.	... ...	M.L.	Furness Withy ...	... ...	...
192 †† *Chitral*	Siggers, O.	T. D. Forbes, J. B. Child, F. D. Shaw.	No. M.	P. & O.	Forms 911 & 138 25.7.32 to 5.8.32	12.9.32
265 *† *City of Baroda* ...	Bremner, D. M. ...	E. Bonfield, R. W. Leese ...	W.T.	Ellerman	„ „ 15.3.31 to 23.5.32	8.6.32
City of Cairo ...	Hoppins, E. G. ...	J. F. Macauly	No. M.	„	... ...	...
City of Cambridge	Jackson, —.	H. H. Asher	W.T.	„	Form 911 25.5.32 to 3.7.32 ...	6.7.32
City of Canberra ...	Robinson, T.	... ...	M.L.	„	... ...	...
City of Delhi ...	Whyper, J.	... ...	W.T.	„	... ...	...
274 *† *City of Harvard* ...	MacMillan, J.... ...	F. Deighton, E. Brook-Williams.	„	„	Form 911 20.4.32 to 21.5.32 ...	24.5.32
089 *† *City of Hereford* ...	Baker, J.	J. S. Mackie, J. H. T. Vizer ...	No. M.	„	Forms 911 & 138 26.5.32 to 29.8.32	13.9.32
203 †† *City of Nagpur* ...	McNeil, N., O.B.E. ...	... ...	W.T.	„	... ...	...
271 *† *City of Roubaix* ...	Radcliffe, A. V., R.D., Lt.-Commr., R.N.R.	J. S. Stevenson, L. C. Rithy, A. N. G. Jones.	No. M.	„	Forms 911 & 138 2.5.32 to 14.5.32	26.5.32
272 *† *City of Singapore*	Gardner, A.	C. C. Collard, J. R. Pulford, D. G. Lister.	„ M.	„	„ „ 9.7.32 to 15.8.32	17.8.32
035 *† *City of Sydney* ...	Mason, E.	W. A. Rogerson, L. H. Edmunds, H. G. Griffith.	„ M.	„	„ „ 8.8.32 to 16.8.32	24.8.32
City of Yokohama	Jenkins, D.	... ...	W.T.	„	... ...	...
Clan Macalister ...	Stenson, F. J., R.D., A.D.C., Capt., R.N.R	G. Drake	„	Clan	Form 911 11.6.32 to 3.9.32 ...	6.9.32
241 *† *Clan Macbeth* ...	Giles, H. J., R.D., Capt., R.N.R.	W. C. Woodriffe	„	„	„ 7.2.32 to 15.5.32 ...	20.5.32
287 *† *Clan Macfarlane* ...	Redford, L. F., Lt.-Commr. R.N.R.	W. W. Simpson, J. R. Moss.	„	„	Forms 911 & 138 30.4.32 to 22.5.32	18.7.32
118 *† *Clan Macindoe* ...	Scott-Smith, H. E. G., O.B.E., R.D., Lt.-Commr., R.N.R.	J. C. Dunphy	„	„	Form 911 11.7.32 to 8.8.32 ...	1.9.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
233 *† *Clan Mackellar* ...	Waterhouse, J. ...	J. J. Stormont, E. E. Arthur, W. C. Dazell.	W.T.	Clan	Forms 911 & 138 5.6.32 to 25.6.32	22.7.32
004 *† *Clan Macnair* ...	Holman, W. G. ...	F. H. Petheridge A. Woodrow, J. F. Vooght.	"	"	" " 20.3.31 to 11.6.32	13.6.32
001 *† *Clan Macphee* ...	Giles, H. J., R.D., Capt., R.N.R.	R. G. Bagnall, J. L. Jones, S. W. Easterbrook.	"	"	Form 911 1.8.32 to 22.8.32 ...	12.9.32
168 *† *Clan Mactaggart* ...	West, W. F.	F. H. Houghton. H. Lockyer	"	"	Forms 911 & 138 13.6.32 to 2.6.32	25.7.32
002 *† *Clan Macwhirter* ...	O'Bryne, C E. ...	M. J. Lewis, B. Hardinge, K. Simpson.	"	"	" " 14.7 32 to 7.8.32	24.8.32
003 *† *Clan Malcolm* ..	George, L. S.	A. Lynch, K. Banks, N. N. Birtley.	"	"	" " 11.8.32 to 21.8.32	12.9.32
283 *† *Clan Morrison* ...	Porterfield, W. M., Lt.-Commr., R.N.R.	A. Hambley, E. Croucher, A. G. Beynon.	"	"	" " 28.7.32 to 22.8.32	31.8.32
259 *† *Clan Sinclair* ...	Cater, H.	R. R. Baxter	"	"	Form 911 11.7.32 to 8.8.32 ...	29.8.32
Colonial	Harrendon, W. E. ...	W. Moore, A. P. Brown, A. Smart.	No. M.	Harrison	" 14.4.32 to 26.6.32 ...	29.6.32
298 *† *Comedian*	Cadogan, A.	F. M. Eales, W. G. Ellis ...	" M.	"	Forms 911 & 138 8.4.32 to 28.4.32	9.5.32
185 †† *Comorin*	Lyndon, E. P., R.D., Lt.-Commr., R.N.R.	R. E. Tucker. D. Charles, W. Meikle.	W.T.-M.	P. & O.	Form 911 18.6.32 to 12.7.32 ...	23.8.32
198 *† *Contractor*	Owen, W. T.	N. F. O'Neill, L. Seddon, R. Myles.	No. M.	Harrison	Forms 911 & 138 4.7.32 to 27.7.32	29.8.32
049 ** *Coptic*, M.V. ...	Williams, G.	J. G. James, P. Saville, W. Burt.	W.T.	Shaw, Savill & Albion	" " 4.7.32 to 6.8.32 Form 912 4.7.32 to 6.8.32	9.8.32 9.8.32
258 †† *Corfu*	French, F. E., R.D., Captain, R.N.R.	R. S. Kerridge, D. Fitzgerald Lombard, E. L. Jones.	W.T.-M.	P. & O.	Forms 911 & 138 21.5.32 to 25.8.32	27.8.32
100 *† *Cornwall*	Reilly, H. E.	R. S. Miller, C. Saul, G. V. Harrison.	M.L.	Federal	Form 915 1.2.32 to 26.5.32... ...	1.7.32
006 †† *Coronado*	Thorburn, R. A., R.D., Commr., R.N.R.	K. H. Mackay, A. F. Moss, H. Coffey,	W.T.	Elders & Fyffes ...	Forms 911 & 138 4.8.32 to 2.9.32...	5.9.32
214 *† *Counsellor*	Jackson, J.	A. A. Heaton, J. Davidson, J. L. Curle.	No. M.	Harrison	" " 13.4.32 to 15.7.32	9.8.32
036 *† *Cumberland* ...	Maltby, T. L.	J. McCulloch, S. R. Leggett, J. Brooke Smith.	W.T.	Federal ...	Form 915 4.3.32 to 14.6.32 ... Form 912 4.5.32 to 14.6.32 ...	20.6.32 20.6.32
285 *† *Custodian*	O'Connor, T.	W. H. Corlett, J. D. Williams, J. Glen.	No. M.	Harrison	Forms 911 & 138 9.4.32 to 7.7.32	20.7.32
169 *† *Dalgoma*	Beeching, P. H. ...	... ...	No. M.	British India ...	Forms 911 & 138 1.7.32 to 19.8.32	25.8.32
016 †† *Darro*	Matthews, G. P. ...	F. Jeyes	W.T.-M.	Royal Mail	Form 911 22.6.32 to 8.8.32... ...	16.8.32
Defender	Kinloch, R.	A. M. Dewar	No. M.	Harrison	... ...	...
117 †† *Desna*	Green, J.	W. Eddington, A. Nichols ...	W.T.-M.	Royal Mail	Forms 911 & 138 4.6.32 to 13.6.32	16.7.32
252 *† *Devon*	Clarke, P. B., D.S.C.	G. Chaplin, J. D. Marks. G. McLannahan.	No. M.	Federal	" " 14.5.32 to 28.6.32	7.7.32
Dieppe	Shaw, B.	E. Hill	C.C.	Southern Railway ...	Telegraphic Report 15.9.32 ...	15.9.32
284 *† *Director*	Worthington, B. ...	A. E. Rogers, H. W. Jones, M. G. O'Brien.	No. M.	Harrison	Forms 911 & 138 5.1.32 to 28.4 32	23.5.32
Discoverer	Rowberry, W. ...	... ...	" M.	"	... ...	...
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 5.1.32 to 4.3.32	7.4.32
136 *† *Doric Star*	Mills, D. H.	L. Vernon, H. Butt, J. McLean	No. M.	Blue Star	Form 911 2.11.31 to 25.1.32 ...	11.2.32
275 *† *Dramatist*	Meek, A. J.	G. H. Howard, I. W. Page, R. L. Bryde.	" M.	Harrison	Forms 911 & 138 16.6.32 to 22.7.32	2 8.32
142 †† *Duchess of Atholl*...	McQueen, D. S. ...	A. E. Shergold, C. E. Duggan, E. Glennie.	W.T.-M.	Canadian Pacific	" " 2.9.32 to 5.9.32 ... Form 912 16.7.32 to 19.7.32...	8.9.32 3.8.32
152 †† *Duchess of Bedford*	Sibbons, H.	L Outram, F. Stell	"	" "	Forms 911 & 138 21.8.32 to 9.9.32 Form 912 21.8.32 to 9.9.32 ...	12.9.32 12.9.32
151 †† *Duchess of Richmond.*	Freer, A., R.D., Capt., R.N.R.	J. B. Hewson, E. N. Lloyd	"	" "	Forms 911 & 138 7.8.32 to 25.8.32 Form 912 7.8.32 to 25.8.32 ...	27.8.32 27.8.32
143 †† *Duchess of York* ...	Stuart, R. N., V.C., D.S.O., R.D., Commr., R.N.R.	D. Parsons, S. W. Keary, R. M. Stapleton.	"	" "	Forms 911 & 138 1.8.32 to 18.8.32 Form 912 1.8.32 to 18.8.32 ...	23.8.32 23.8.32
098 †† *Dunbar Castle*, M.V.	Vincent, E. S., R.D., Commr., R.N.R.	T. W. McAllen, J. W. S. Brooks, J. A. Ferguson.	W.T.	Union Castle	Forms 911 & 138 24.6.32 to 27.8.32	31.8.32
Dunrobin	Ramsay, J. D. ...	T. J. Hewlett. W. Edgecombe	No. A.	Glen & Co.	Form 911 29.5.32 to 15.7.32 ...	8.9.32
052 *† *Dunster Grange* ...	Wilson, G. F.	J. Allerton, E. G. Raynor, D. Murray.	" M.	Houlder	Forms 911 & 138 24.4.32 to 28.6.32	1.7.32
102 *† *Duquesa*	Frost, C. R.	E. W. Denman, F. D. Jones, H. W. Brammell.	" M.	Furness Withy ...	" " 2.4.32 to 2.6.32 ...	8.6.32
215 *† *Durenda*, M.V. ...	Blencowe, J.	T. R. Jackson, G. H. Davies...	" M.	British India	" " 30.11.31 to 12.2.32	19.2.32
077 †† *Edinburgh Castle* ...	Gilbert, E. F	L. H. Farrow, J. D. Cromlie	W.T.	Union Castle	Forms 911 & 138 10.7.32 to 27.8.32	5.9.32
107 *† *El Argentino*, M.V.	Ellis, F., D.S.C. ...	W. Findlay, J. Burch, C. G. Adlard.	No. M.	Houlder	" " 6.6.32 to 9.8.32	12 9.32
009 *† *Elmworth*, M.V. ...	Dick, J.	... ...	" M.	R. S. Dalgleish ...	" " 24.5.32 to 8 6.32	25.7.32
158 *† *Elpenor*	Wilson, R. J.	J. Macfarlane, F. Vose, F. Stott.	W.T.	A. Holt	" " 18.2.32 to 23.6.32	29.6.32
108 *† *Elstree Grange* ...	Williams, W. E. ...	P. A. Hawkesworth ...	No. M.	Houlder	" " 16.2.32 to 28.4.32	12.5.32
109 *† *El Paraguayo* ...	Owen, R.	G. Fletcher, F. Rice, R. L. Aldridge.	" M.	"	" " 7.3.32 to 13.5.32	19.5.32
110 *† *El Uruguayo* ...	McNamara. T. ...	F. E. Hailstone	" M.	"	" " 3.8.32 to 18.8.32	25.8.32
088 *† *Empire Star* ...	Owen, G., R.D., Lt.-Commr., R.N.R.	R. Thorne, R. McKraith, P. H. Hunt.	W.T	Blue Star	Form 915 21.2.32 to 28.5.32 ...	1.6.32
066 †† *Empress of Australia*	Griffiths, E., Lt.-Commr. R.N.R.	O. F. Pennington, E. Roberts, A. H. Pigott.	"	Canadian Pacific ...	Forms 911 & 138 18.8.32 to 31.8.32	3.9.32
034 †† *Empress of Britain*	Latta, R. G.	W. P. Phillips, J H. Tudor, N. W. Duck.	"		" " 14.8.32 to 7.9.32 ... Form 912 14.8.32 to 7.9.32 ...	9.9.32 9.9.32
154 †† *Empress of Canada*	Hailey, A. J., Lt.-Commr., R.N.R.	F. Poole, C. F. Altree, G. W. R. Graves.	M.L.	" " ...	Form 915 2.1.32 to 1.6.32	28.7.32
153 †† *Empress of Japan*	Robinson, S., C.B.E., R.D., Commr., R.N.R. Douglas, L. D., R.D., Lt.-Commr., R.N.R.	R. Goss, R. Walfenden, A. Le Maistre.	"	" " ...	" 7.1.31 to 29.6.32 ...	9.9.32
Explorer	Allan, J.	A. Stout	"	Scottish Fishery Brd.	Form 911 8.5.32 to 11.5.32 ...	2.6.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
074 *† *Fordsdale*	Avern, J., Commr. R.N.R.	L. Hopkins, F. Davies, M. Harries.	No. M.	Aberdeen Commonwealth.	Forms 911 & 138 28.4.32 to 27.5.32	21.6.32
030 †† *Franconia*	Gibbons, G., R.D., A.D.C.,Capt.,R.N.R.	P. G. Britten, J. Ashcroft, W. B. Tanner.	W.T.	Cunard	,, ,, 25.7.32 to 31.7.32	12.8.32
159 *† *Fresno City* ...	Davies, D.	F. W. P. Davies, B. E. Duffield, R. E. Shilstone.	M.L.	Sir W. Reardon Smith and Sons Ltd.	Form 915 2.2.32 to 4.8.32	15.8.32
186 †† *Georgic*	Summers, F. F., R.D., Commr., R.N.R.	J. H. Walker, S. W. Boden, H. Morgan.	W.T.	White Star	Forms 911 & 138 1.8.32 to 20.8.32	23.8.32
234 *† *Glaucus*	Beale, H. E.	... ...	M.L.	A. Holt...	... ...	...
125 *† *Glenamoy*, M.V. ...	Ings, W. J.	F. Laycock, L. Eccles, A. C. Radley.	W.T.	Glen Line	Form 915 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 12.11.31 to 13.3.32	19.3.32
085 *† *Governor*	Windsor, G. R. ...	A. Watson, J. Stanhope ...	,, M.	Harrison	,, ,, 3.11.31 to 31.1.32	4.2.32
111 *† *Hardwicke Grange*	Fowler, W. H. ...	W. L. Baker, A. O. Seyvold, W. E. Ellis.	No. M.	Houlder	Forms 911 & 138 8.11.31 to 27.7.32	2.8.32
Harmonides ...	Elwell, F. R. ...	J. H. Kirkwood, H. G. McPherson, T. G. Mitchell.	W.T.	R. P. Houston ...	Form 911 7.7.32 to 21.8.32	13.9.32
262 ** *Hauraki*, M.V.	Hender, W. ... ... Norton, A. T.	H. A. Brockett, J. Sadleir, E. R. Pate.	M.L.	Union S.S. Co., N.Z....	Form 915 2.8.31 to 19.1.32 ...	24.3.32
253 *† *Hertford*	Burton Davies, J. ...	P. Shakespeare, W. H. Timberlake, P. Block.	,,	Federal	,, 24.3.32 to 29.7.32 ...	8.8.32
Hibernia	Williams, E. R. ...	R. Woodall	C.C.	L.M. & S. Railway ...	Telegraphic Report 16.9.32 ...	16.9.32
182 †† *Highland Brigade*	Lloyd, H.	N. Hersee, G. Parry, W. William.	No. M.	Nelson	Forms 911 & 138 16.5.32 to 6.7.32	14.7.32
116 †† *Highland Chieftain*, M.V.	Simmonds, P. C. ...	W. J. Presland, L. Irving, J. E. Pink.	W.T.—M.	,, ...	,, ,, 26.6.32 to 17.8.32	19.8.32
099 †† *Highland Monarch*, M.V.	Ashby Graves, F. ...	E. Card	No. M.	,, ...	,, ,, 12.6.32 to 2.8.32	6.8.32
250 †† *Highland Princess*, M.V.	Collings, D.	C. E. Leech, J. H. Fitton, D. Seabrook.	W.T.—M.	,, ...	,, ,, 13.7.32 to 28.8.32	5.9.32
075 *† *Hobson's Bay* ...	Roberts, T. V., R.D., Commr.,R.N.R.	F. L. Gross, H. C. Smith, C. Carroll.	No. M.	Aberdeen Commonwealth.	,, ,, 21.3.32 to 13.6.32	8.7.32
026 †† *Homeric*	Frank, F. A., D.S.O., R.D.,Commr, R.N.R.	B. Harrison, A. Dyer, J. Waltaire.	W.T.	White Star	Form 138 26.7.32 to 12.8.32 ...	17.8.32
261 *† *Huntingdon* ...	Field, H. G. B. ...	C. W. Roberts, T. K. Macdonald, A. R. Rae.	,,	Federal...	Forms 911 & 138 30.4.32 to 17.8.32	27.8.32
200 *† *Huntsman*	Russell, H.	J. Richardson	No. M.	Harrison	,, ,, 15.12.31 to 25.2.32	29.3.32
235 *† *Hurunui*	Pretty, F. C.	... ...	W.T.	New Zealand Shipping.	... ...	...
289 *† *Inanda*	Gibbings, W. H. ...	D. C. Brown, R. L. Williams, L. G. Potter.	No. M.	Harrison	Forms 911 & 138 17.7.32 to 22.8.32	27.8.32
Ingoma	Richardson, R. ...	D. D. Kerr	,, M.	,, ...	Form 911 19.6.32 to 25.7.32 ...	3.8.32
160 *† *Ixion* ...	Hughes, R. T. ... Corfe, J. S.	C. S. Pope, G. Collier, F. G. Brown.	M.L.	A. Holt	Form 915 17.9.31 to 4.2.32 ...	24.5.32
072 ** *Jamaica Planter* ...	P. D. Allen	G. R. Wortley, I. L. Jones, V. Hill.	W.T.	Jamaica Direct Fruit	Forms 911 & 138 15.6.32 to 15.7.32	25.7.32
226 *† *Javanese Prince*, M.V.	Morrison, B.	W. A. Hall	M.L.	Prince	Form 911 26.3.32 to 2.4.32 ...	15.4.32
187 *† *Jeypore*	Harris, W. L.... ...	A. G. Edwards	No. M.	P. & O.	Forms 911 & 138 31.5.32 to 6.6.32	14.7.32
188 †† *Kaisar-i-Hind* ...	Cotching, W. A. ...	J. D. Strike, H. M. Flint, C. Stokes.	No. M.	P. & O.	Forms 911 & 138 2.5.32 to 3.8.32	9.8.32
041 *† *Karamea*, M.V. ...	Dawson, W.	N. S. Milne, C. Sendall, P. Campbell.	M.L.	Shaw, Savill & Albion	Form 915 29.4.32 to 21.8.32 ... Form 912 23.5.32	7.9.32 14.7.32
217 *† *Karapara*	White, R. W.	C. Jackman, H. Pearson, H. Smith.	No. M.	British India... ...	Forms 911 & 138 30.7.32 to 22.8.32	12.9.32
114 *† *Kenya*	Miller, A. C.	G. E. Stephenson, P. Lusher, J P. Kilbee.	,, M.	,, ,, ...	,, 16.6.32 to 29.7.32	5.9.32
218 *† *Khandalla*	Carter, A. E.	D. W. Dix, W. G. Pitcher ...	,, M.	,, ,, ...	,, ,, 1.6.32 to 14.7.32	15.8.32
147 †† *Laconia*	Hawkes, W., R.D., Capt. R.N.R.	J. D. Archer, M. Boston, G. Noonan.	W.T.	Cunard...	Forms 911 & 138 25.7.32 to 13.8.32	20.8.32
193 *† *Lahore*	Hollow, J. H.... ...	J. G. K. Gregory, F. Hull, H. M. Fawcett.	No. M.	P. & O.	,, ,, 13.4.31 to 4.6.32	14.6.32
167 †† *Lancastria*	Dolphin, G. R., R.D., Commr., R.N.R.	J. C. Dawsons, B. A. Millsom, R. V. Youd.	W.T.	Cunard	,, ,, 23.6.32 to 12.7.32	4.8.32
082 *† *La Paz*, M.V. ...	Morgan, D. R. ...	G. Pattison	No. M.	Pacific S.N. Co. ...	,, ,, 4.1.32 to 17.4.32	22.4.32
134 †† *Lapland*	Harvey, H.	F. Good, —. Wood, W. A. Fletcher.	W.T.	Red Star	,, ,, 1.5.32 to 26.6.32	25.6.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
076 *† *Largs Bay*	Jermyn, W. M. ...	F. B. Marsden	No. M.	Aberdeen Commonwealth.	Forms 911 & 138 15.10.31 to 25.11.31	15.2.32
112 *† *La Rosarina* ...	Bearpark, L.	T. C. Townsend, S. W. Howell, S. Gorlett.	„ M.	Houlder	„ „ 20.3.32 to 28.5.32	31.5.32
267 *† *Lassell*	Leicester, F S. ...	A. N. Blundell, — Sweeney, — Christie.	W.T.	Lamport & Holt ...	„ „ 3.5.32 to 28.7.32	3.8.32
064 †† *Laurentic*	Jackson, W. H. P. ...	H. Solomon, J. Dray, A. Thompson.	„	White Star ...	Forms 911 & 138 23.8.32 to 27.8.32 Form 912 23.8.32 to 27.8.32	29.8.32 29.8.32
083 *† *Lautaro*, M.V. ...	Kite, E.	J. Lloyd Jones, J. Williams, C. Stowe.	No. M.	Pacific S.N. Co. ...	Forms 911 & 138 8.1.32 to 10.2.32	27.2.32
254 *† *Limerick*	Molyneux, P. L. ...	J. Trotter, N. A. Thomas ...	„ M.	Federal...	„ „ 13.4.32 to 10.5.32	23.5.32
093 *† *Llandaff Castle* ...	Hutchings, A. H. ...	J. M. Goode	W.T.	Union Castle	„ „ 20.5.32 to 25.7.32	29.7.32
097 †† *Llangibby Castle*, M.V	Linklater, H.	G. W. Lloyd	„	„ „	„ „ 18.6.32 to 21.8.32	23.8.32
094 *† *Llandovery Castle*	Morgan, A. O., R.D., Commr., R.N.R.	H. S. Warren	„	„ „	„ „ 26.4.32 to 27.6.32	2.7.32
216 *† *Llanstephan Castle*	Bickford, C. N. ...	I. A. Wilson, S. Smith ...	„	„ „	„ „ 2.5.32 to 30.6.32	5.7.32
084 *† *Lobos*, M.V. ...	Good, W. T.	J. Williams	No. M.	Pacific S.N. Co. ...	„ „ 18.7.32 to 2.8.32	18.8.32
137 *† *Logician*	Herschel, R. J. ...	E. L. Stockley, J. Wallis, W. R. Mackenzie.	„ M.	Harrison	„ „ 7.3.32 to 2.6.32	7.6.32
008 *† *Losada*, M.V. ...	Ridyard, A.	L. W. Hutchinson	„ M.	Pacific S.N. Co. ...	„ „ 18.5.32 to 16.8.32	22.8.32
013 *† *Macharda*	Hanna, R. G.	C. Lindsay Miller, C. Parry, G. A. Jackson.	No. M.	Brocklebank	Forms 911 & 138 17.1.32 to 15.2.32	7.3.32
232 *† *Madura*	Morton, R. A. ...	A. Usher, W. Bain, L. G. Tolfree.	„ M.	British India... ...	„ „ 8.5.32 to 1.6.32	23.6.32
078 *† *Magician*	Bury, E. R.	W. E. Shotton, R. F. Hart ...	„ M.	Harrison	„ „ 20.6.32 to 6.8.32	16.8.32
141 *† *Mahia*	Andrews, C. M. ...	G. Sangwin, M. P. Congdon, J. Jackson.	W.T.	Shaw, Savill & Albion	„ „ 24.12.31 to 14.4.32	18.4.32
140 *† *Mahratta*	Colombine, T. F. ...	T. C. Eddy, H. F. Scoins, W. J. Wilson.	No. M.	Brocklebank	„ „ 29.7.32 to 19.8.32	12.9.32
014 *† *Mahronda*	Whitham, F.	W. Le Brocq, M. Melville, H. Willington.	„ M.	„	„ „ 13.7.32 to 6.8.32	29.8.32
015 *† *Mahsud*	Kershaw, R. W. ...	S. Richardson, J. R. Paisley, H. Gillespie.	„ M.	„	„ „ 7.3.32 to 31.5.32	6.6.32
042 *† *Maimoa*	Johnson, J. W. ...	M. Bennett, E. J. Baker, W. R. Rogers.	M.L.	Shaw, Savill & Albion	Form 915 8.2.32 to 24.5.32 ...	2.6.32
054 †† *Majestic*	Trant, E. L., R.D., Commr., R.N.R.	F. Murphy, R. B. O'Brien, E. A. Stuart.	W.T.	White Star	Forms 911 & 138 12.8.32 to 13.9.32	15.9.32
018 *† *Makalla*	Maughan, J. W. ...	A. C. Hocking, J. Richardson	No. M.	Brocklebank	„ „ 21.5.32 to 23.6.32	29.6.32
225 ** *Makura*	MacDonald, D. ...	A. P. Cousin, J. Billingham, J. H. Johnson.	M.L.	Canadian-Australasian	Form 915 23.12.31 to 2.5.32 ...	5.7.32
019 *† *Malakuta*	Adamson, F. L. ...	H. Simpson	No. M.	Brocklebank	Forms 911 & 138 11.5.31 to 2.12.31	29.1.32
020 *† *Malancha*	Cochran, G. N. ...	L. F. Dodson, A. Hill, R. Penston.	„ M	„ ...	„ „ 15.2.32 to 16.3.32	11.4.32
236 ** *Malayan Prince* ...	Holloway, J.	R. M. Dennis, G. P. Freeman, C. Dunford.	M.L.	Prince	Form 915 16.2.32 to 27.6.32	9.9.32
219 *† *Malda*	Denne, G. H. A. ...	D. Macfadyen, F. M. Bencastle, K. K. Boyd.	No. M.	British India ...	Forms 911 & 138 18.10.31 to 12.1.32	15.1.32
195 †† *Maloja*	Browning, J. B. R.D., Commr. R.N.R.	J. D. Green, A. O. Walne, J. R. Brown.	W.T.-M.	P. & O.	„ „ 4.6.32 to 30.8.32	12.9.32
196 †† *Malwa*	Britten, P. O.	F. E. Berner	No. M.	„	Form 911 30.4.32 to 17.6.32 ...	23.6.32
053 *† *Manaar*	Thowless, E.	A. L. Harrop, J. Robinson, R. G. Widdon.	„ M.	Brocklebank	Form 911 & 138 20.7.31 to 9.10.31	21.10.31
Manchester Brigade	Stott, C. H.	E. E. Bonnaud, L. A. Muir, M. E. Bewley.	M.L.	Manchester Liners	Form 915 16.4.32 to 26.8.32 ... Form 912 16.4.32 to 26.8.32 ...	7.9.32 30.8.32
Manchester Commerce.	Linton, P.	T. Makin, F. L. Osborne, R. W. Pickersgill.	„	„ „	„ „ 1.2.32 to 30.7.32 Form 912 1.2.32 to 30.7.32 ...	9.8.32 8.8.32
028 †† *Mandala* ...	Parkin, J. W.	J. F. Hore, J. Toms	W.T.-M.	British India... ...	Form 911 13.6.32 to 12.8.32	9.9.32
146 *† *Mandasor*	Richardson, T. ...	F. C. Madden, J. B. Leigh, E. C. Shore.	No. M.	Brocklebank	Forms 911 & 138 8.8.32 to 3.9.32	12.9.32
220 *† *Manela*	Maples, S. H. ...	W. F. Solly, T. M. Robertson	„ M.	British India	„ „ 21.5.32 to 27.6.32	1.7.32
022 *† *Manipur*	Fulcher, H. D. ...	J. L. Rodger	„ M.	Brocklebank	„ „ 6.2.32 to 8.3.32	4.4.32
221 *† *Manora*	Hudson, H. T., R.D., Commr., R.N.R.	H. MacIntyre H. Treseder, H. Brown.	„ M.	British India... ...	„ „ 24.7.32 to 9.8.32	29.8.32
177 *† *Mantola*	James, D. F.	W. R. Day, S. Henderson, H. I. Fisher.	„ M.	„	„ „ 12.5.32 to 22.7.32	29.7.32
197 †† *Mantua*	Hignett, A. H., R.D., Commr. R.N.R.	C. S. Pirie, J. A. Wilde, G. du Fosse.	W.T.-M.	P. & O.	„ „ 29.5.32 to 2.9.32	6.9.32
299 ** *Marella*	Mortimer, S.	A. W. Blair, D. Pemberton, A. G. W. Thomas.	M.L.	Burns Philp	Form 915 7.11.31 to 21.2.32 ...	5.7.32
222 †† *Margha*	Kitson, G. A.	J. Small, G. Wright, P. Vaughan.	W.T.	British India... ...	Forms 911 & 138 25.6.32 to 7.7.32	22.7.32
104 *† *Marquesa*	Smiles, R. S.	J. Wetherall	No. M.	Furness Houlder ...	„ „ 14.3.32 to 21.5.32	25.7.32
021 *† *Masula*	Fitt, W. A.	J. L. Richardson, W. Ascroft,	„ M.	British India	„ „ 28.6.32 to 19.7.32	29.8.32
251 *† *Matakana*	Gordon, H. R.	H. Thompson, D. L. G. Turner, J. G. Allin.	W.T.	Shaw, Savill & Albion	„ „ 1.4.32 to 10.7.32	13.7.32
023 *† *Matheran*	Mulcahy, J. J. ...	S. S. Slade, J. F. Butterworth, W. Cowrie.	No. M.	Brocklebank	„ „ 21.8.32 to 31.8.32	9.9.32
223 *† *Matiana*	Green, F. V.	J. S. Thomson, W. Solly, H. Wright.	„ M.	British India... ...	„ „ 24.5.32 to 28.6.32	30.6.32
024 *† *Matra*	Cornish, N. P. ...	G. Shaw, W. Robertson, G. Henshaw.	„ M.	Brocklebank	„ „ 31.7.32 to 11.8.32	5.9.32
032 †† *Mauretania*... ...	Townley, J. C., R.D., Capt., R.N.R.	R. H. C. Crawford, E. W. Connell, L. R. Sharpe.	W.T.	Cunard	„ „ 14.8.32 to 29.8.32	31.8.32
101 †† *Melita*	Stewart, A.	G. Mowatt, C. D. Watt, F. W. S. Roberts.	W.T.-M.	Canadian Pacific ...	Form 911 22.8.32 to 1.9.32 ...	5.9.32
278 *† *Middlesex*	Almond, J. G. ...	G. C. Hocart, J. R. Ricketts, J. Clarke.	W.T.	Federal	Form 915 8.2.32 to 5.6.32 ...	11.6.32
224 †† *Minnetonka* ...	Gates, T. F., C.B.E.	W. S. Harrison, H. E. D. McCartney, T. W. Pullan.	W.T.-M.	Atlantic Transport	Forms 911 & 138 21.8.32 to 2.9.32 Form 912 21.8.32 to 10.9.32 ...	13.9.32 13.9.32
157 †† *Minnewaska* ...	Claret, F. H., O.B.E., R.D., Commr., R.N.R.	E. Pengelly, D. Davies, F. Mummery.	„	„ „ ...	Forms 911 & 138 8.8.32 to 27.8.32	29.8.32
194 †† *Moldavia*	Allin, C. H. C. ...	T. E. Heath, J. K. Crone, E. J. Kerridge.	„	P. & O.	„ „ 10.7.32 to 4.8.32	9.8.32
199 †† *Mongolia*	Rhodes, H. R. ...	H. Tee, H. C. Slinn, G. K. Fox,	„	„	„ „ 5.8.32 to 25.8.32	31.8.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed Received up to 16.7.32.	Date Received.
260 *† *Monowai* ...	Toten, A. T.	L. B. Elhert, E. W. Gibson, L. P. Bourke.	M.L.	Union S.S. of N.Z. ...	Form 915 25.11.31 to 8.4.32 ...	1.6.32
148 †† *Montcalm*	Martin, W.					
149 †† *Montclare*	Rothwell, A.	W. P. Haines, T. L. Gillette	W.T.-M.	Canadian Pacific	Forms 911 & 138 13.8.32 to 2.9.32	5.9.32
150 †† *Montrose*	Turnbull, J., C.B.E., R.D., Capt. R.N.R.	J. Soames	W.T.	" "	Form 912 13.8.32 to 2.9.32 ...	5.9.32
164 †† *Mooltan*	Dott, J. F.	A. Mackie, J Saunders ...	W.T.-M.	" " ...	Form 911 14.8.32 to 25.8.32 ...	27.8.32
Morvada	Morton, A. J.	R. M. Richardson, N. H. Thompson, A. D. Dennis.	"	P. & O.	Form 912 29.5.32 to 30.6.32 ...	4.7.32
290 *† *Musician*	Gilchrist, J. W. ...	... ...	No. M.	British India	Forms 911 & 138 8.5.32 to 10.8.32	18.8.32
	Bostock, O.	K. H. Davies, H. Philpott, S. H. Diamond.	" M.	Harrison	... ...	...
					" " 18.3.31 to 12.5.32	18.5.32
073 *† *Nagara*	Falconer, A. C. ...	F. B. Collinson	No. M.	Royal Mail	Forms 911 & 138 14.7.32 to 8.9.32	12.9.32
201 †† *Naldera*	Harrison, R., D.S.O., R.D., A.D.C., Capt. R.N.R.	P. Tonkin, S. H. Baldwin, J. Brown.	W.T.	P. & O.	" " 17.4.32 to 20.5.32	25.7.32
286 *† *Natia*	Womersley, H. ...	F. Thacker, P. A. Yeatman, G. B. Medlycott.	No. M.	Royal Mail	" " 5.3.32 to 18.6.32	27.6.32
227 *† *Nardana*	Reilly, J. V.	D. B. Lattin, A Woodward, H. Grace.	" M.	British India	Form 915 1.11.31 to 17.3.32 ...	23.3.32
202 †† *Narkunda*	Sudell, F., R.D., Commr., R.N.R.	G. Randall, G. Copeland, J. O. Young.	W.T.-M.	P. & O.	Forms 911 & 138 16.7.32 to 6.8.32	29.8.32
027 *† *Nebraska*	Miles, F. R., R.D., Capt. R.N.R.	C. K. Brown, P. R. Cocks, R. J. Finch.	No. M.	Royal Mail	" " 24.1.32 to 19.4.32	27.4.32
162 *† *Nestor*	Adcock, F.	P. Elder, W. Pearse, J. M. Kirk.	W.T.	A. Holt	Form 915 22.1.32 to 1.5.32 ...	6.5.32
210 *** *Niagara*	Hill, T. V.	G. H. Kime, D. A. Menlove, J. W. S. Madden.	M.L.	Canadian-Australasian	" 31.3.31 to 16.7.32 ...	8.9.32
256 *† *Norfolk*	McNish, R. L. H., D.S.O., Lt.-Commr., R.N.R.	J. Lunnon, K. M. L. Jones, G. E. Mason.	"	Federal	" 18.4.32 to 26.7.32 ...	8.8.32
297 *† *Northumberland* ...	Upton, H. L., D.S.C., R.D., Commr., R.N.R.	H. S. Cashmore, G. B. Cathie, H. I. Phillips.	No. M.	"	Forms 911 & 138 27.2.32 to 27.5.32	2.6.32
231 *† *Nuddea*	Ramsay, D. M. ...	D. A. Jones, T. Hodgkinson, B. Emmerson.	" M.	British India	Form 912 21.4.32 to 8.5.32 ...	2.6.32
					Forms 911 & 138 4.5.32 to 8.6.32	4.7.32
Observer	de Legh, A. L. ...	J. Harnden	No. M.	Harrison	... ...	...
294 †† *Olympic*	Binks, J. W., R.D., Lt.-Commr., R.N.R.	O. N. Tugwell, G. Brooks, L. Thompson.	W.T.	White Star	Forms 911 & 138 4.8.32 to 6.9.32	8.9.32
243 *† *Opawa*, M.V. ...	Robinson, F. W. ...	H. D. Horwood, H. P. Williamson, R. H. Chapman.	No. M.	New Zealand Shipping	Form 915 23.4.32 to 27.7.32 ...	25.8.32
170 †† *Orama*	Matheson, C. G., D.S.O., R.D., Capt. R.N.R.	B. W. Gordon, C. H. Denton	W.T.	Orient	Form 912 8.5.32 to 9.7.32 ...	25.8.32
Orari	Ashworth, F.... ...	J. H. Underwood	No. M.	New Zealand Shipping	Forms 911 & 138 22.2.32 to 24.5.32	1.6.32
086 †† *Orcoma*	Benson, E. W. ...	T. R. Scott, H. J. Jones, H. D. Dillon.	W.T.-M.	Pacific S.N. Co. ...	... ...	...
087 †† *Orduna*	Galloway, M.... ...	P. L. Hockey, W. Horsfall, H. B. Reece.	"	" " ...	Forms 911 & 138 2.8.31 to 30.9.31	7.10.31
171 †† *Orford*	Owens, A. L., R.D., Capt., R.N.R.	C. B. Hubert	"	Orient	" " 15.3.32 to 19.5.32	27.5.32
174 †† *Ormonde*	James, L. V., D.S.C.	T. L. Shurrock, N. Smith, C. Blake.	W.T.	"	Form 911 8.4.32 to 10.5.32... ...	17.5.32
172 †† *Cronsay*	Cameron, E. P., R.D., Capt., R.N.R.	R. B. Stannard, C.W. Pinckney	"	"	Forms 911 & 138 6.3.32 to 7.6.32	16.6.32
173 †† *Orontes*	O'Sullevan, F. R. ...	F. S. Gray, J. M. Swanson, W. L. Mackay.	W.T.-M.	"	" " 3.4.32 to 6.7.32	13.7.32
105 †† *Orsova*	Thorne, G. G. ...	J. L. Skilling, J. D. Birch, E. V. Bilger.	W.T.	"	" " 18.6.32 to 25.8.32	14.9.32
206 *† *Otira*	Johnson, J. W. ...	... ...	No. M.	Shaw, Savill & Albion	" " 30.5.32 to 30.8.32	8.9.32
156 †† *Otranto*	Staunton, H. G., C.B.E., R.D., Commr., R.N.R.	A. E. Coles, A. Addison, E. M. McKay.	W.T.-M.	Orient	... ...	...
					Forms 911 & 138 1.5.32 to 2.8.32	6.8.32
Pacific Enterprise	Newman, G. W. A....	... ...	M.L.	Furness Withy ...	... ...	...
279 *† *Pacific Exporter* ...	Holland, C. E., R.D., Commr., R.N.R.	W. Edmonds	W.T.	" " ...	Forms 911 & 138 12.2.32 to 4.5.32	20.6.32
Pancras	Reynolds, W.... ...	W. H. Cross, L. A. Sayers, S. Adams.	M.L.	Booth	Form 915 26.7.31 to 9.3.32 ...	15.3.32
Paris	Hill, A....	T. Mahoney	C.C.	Southern Rly. ...	Telegraphic Report. 16.9.32 ...	16.9.32
Patrician	Lowe, J.	W. E. Williams	No. M.	Harrison	Form 911 24.1.32 to 15.6.32 ...	25.7.32
058 †† *Pennland*	Making, V. L. ...	C. H. Otterson, G. T. Boyle, J. Cross.	W.T.	Red Star ...	Forms 911 & 138 1.8.32 to 19.8.32	22.8.32
204 *† *Peshawur*	Roche, C. B.	P. Haworth, J A. Hunter, A. Nicklen.	No. M.	P. & O.	Form 912 6.6.32 to 25.6.32 ...	27.6.32
Phemius	Dodds, R.	... ...	M.L.	A. Holt	Form 915 2.8.31 to 2.12.31 ...	7.12.31
238 *† *Piako*	Aslin, E. P. C. ...	A. E. Williams, C. A. Cremin, J. F. Clement.	No. M.	New Zealand Shipping	... ...	...
039 *† *Planter*	Ling, J. T.	W. S. Eustance, J. J. Devereux, W. H. Slaughter.	"	Harrison	Forms 911 & 138 6.2.32 to 26.5.32	1.6.32
040 *† *Port Adelaide* ...	Williams, R.	E. N. T. Lawrey, F. W. Elgar, D. F. Morgan.	W.T.	Commonwealth & Dominion.	Form 912 27.2.32 to 30.4.32 ...	1.6.32
255 *† *Port Alma*	Hayter, S. W.... ...	E. E. Roswell, E. Wheeler, J. Moate.	"	" " "	Forms 911 & 138 8.5.32 to 13.7.32	16.7.32
128 *† *Port Auckland* ...	Robinson, C. A. ...	A. G. Rhind, G. C. Langford, A. Brown.	"	" " "	" " 28.2.32 to 13.6.32	18.6.32
268 *† *Port Bowen* ...	Brown, A. H.... ...	F. R. Gorman, T. L. Kidwell, T. Soames.	"	" " "	Form 915 23.1.32 to 18.5.32 ...	26.5.32
130 *† *Port Caroline* ...	Hearn, G. W.... ...	E. W. R. Young, J. G. Thorn, V. N. Ford.	"	" " "	" 21.12.31 to 21.5.32 ...	9.6.32
131 *† *Port Darwin* ...	Steele, H.	K. D. Morgan, G. W. Horton, L. B. Philpotts.	"	" " "	Forms 911 & 138 7.1.32 to 29.3.32	5.4.32
133 *† *Port Dunedin*, M.V.	Mason, W. S., D.S.C.	G. Lovegrove, W. Eastoe, H. Duckling.	M.L.	" " "	Form 915 21.4.32 to 4.8.32 ...	20.8.32
					Forms 911 & 138 24.3.32 to 6.7.32	14.7.32
					Form 915 4.3.32 to 16.7.32 ...	29.7.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
010 *† *Port Fremantle*, M.V	Gilling, W.	A. Naismith, G. F. Parnett, E. J. H. Gorley.	M.L.	Commonwealth and Dominion.	Form 915 6.5.32 to 20.8.32 ...	7.9.32
176 *† *Port Gisborne*, M.V.	Higgs, W. G.	R. B. Linklater, L. J. Skailes, C. E. Midwinter.	,,	,, ,, ,,	,, 16.4.32 to 28.7.32 ...	4.8.32
					Form 912 16.4.32 to 4.7.32 ...	5.8.32
135 *† *Port Hunter* ...	Durham, R. S., D.S.C.	G. T. C. Harris, C. R. Townshend, P. A. Mundy.	,,	,, ,, ,,	Form 915 9.1.32 to 30.4.32 ...	5.5.32
129 *† *Port Wellington* ...	Jones, C. N.	W. B. Hopkins	W.T.	,, ,, ,,	Form 911 26.8.31 to 4.1.32 ...	11.1.32
106 *† *Princesa*	Friend, A. B.	F. Poulson, E. Lougheed, O. Sheard.	No. M.	Houlder	Forms 911 & 138 20.6.32 to 6.7.32	9.7.32
163 *† *Protesilaus*	Williams, J. P. ...	A. Anderson, W. C. McGuigan, E. R. Owen.	M.L.	A. Holt	Form 915 6.10.31 to 11.4.32 ...	24.6.32
205 †† *Rajputana*	Headlam, P. C., R.D., Commr., R.N.R.	G. Aspinall, H. M. Askin, C. F. Wright.	W.T.-M.	P. & O.	Forms 911 & 138 15.5.32 to 17.8.32	26.8.32
063 *† *Rancher*	Mc.Cullum, J.... ...	G. Harvey, C. F. Minshull, A. O. Lewis.	No. M.	Harrison	,, ,, 29.2.32 to 12.5.32	17.5.32
228 †† *Ranchi*	Brooks, C., D.S.O., R.D., Cmmr., R.N.R.	J. Paice	,, M.	P. & O.	Form 911 24.7.32 to 4.8.32 ...	22.8.32
257 †† *Rangitata*, M.V. ...	Hunter, J. L. B. ...	J. Oxnard, D. Chadwick. L. Griffith.	W.T.-M.	New Zealand Shipping	Forms 911 & 138 12.3.32 to 13.6.32	23.6.32
					Form 912 11.3.32 to 21.3.32 ...	23.6.32
240 †† *Rangitiki*, M.V. ...	Barnett, H.	H. Hill, L. F. Malcouronne, T. E. Davies.	,,	,, ,, ,,	Forms 911 & 138 4.6.32 to 5.9.32	9.9.32
207 †† *Ranpura*	Furlong, G. H. S., R.D., Capt. R.N.R.	F. Ferguson, R. A. Perry, H. Toon.	No. M.	P. & O.	,, ,, 6.3.32 to 7.6.32	16.6.32
071 †† *Rawalpindi* ...	Stringer, R.H., O.B.E., R.D., Commr., R.N.R.	E. C. White, D. West, H. V. Forbes.	W.T.-M.	,, ...	,, ,, 20.2.32 to 25.5.32	3.6.32
247 *† *Recorder*	Egerton, J. J. ...	A. S. Milne, H. C. Blyth, A. Robertson.	No. M.	Harrison	,, ,, 22.5.32 to 12.8.32	19.8.32
132 *† *Reina del Pacifico*, M.V.	Kite, E.	W. A. Hearle, R. Bridson, J. K. Campbell.	,, M.	Pacific S.N. Co. ...	,, ,, 28.6.32 to 17.8.32	22.8.32
239 *† *Remuera*	Wilde, H. J.	F. Cooke, A. J. Angell, A. D. Wilson.	M.L.	New Zealand Shipping	Form 915 6.5.32 to 13.8.32 ...	17.8.32
Rhexenor	Stout, G. L.	G. Edge	No. A.	A. Holt...	Form 911 12.6.32 to 26.7.32 ...	3.8.32
189 *† *Rother*	Sherwood, R. H. ...	H. L. Marshall, W. Cole	W.T.	Goole Steam Shipping	Forms 911 & 138 20.8.32 to 10.9.32	14.9.32
062 *† *Royal Star*... ...	Walsh, W.	A. F. Day, J. Higgin, J. W. McHugh.	No. M.	Blue Star	Form 915 24.12.31 to 16.3.32 ...	23.3.32
246 *† *Ruahine*	Kinnell, G	A. Hocken, R. Warren, L. Mercer.	W.T.	New Zealand Shipping	Forms 911 & 138 17.6.32 to 27.7.32	8.9.32
St. Helier	Pitman, R.	E. Hicks	C.C.	G.W. Railway ...	Telegraphic Report 14.9.32 ...	14.9.32
St. Julien	Richardson, L. ...	H. O. Freeman	,,	,, ,, ...	,, ,, 13.9.32 ...	13.9.32
St. Minver, S.T. ...	Hatton, A.	... ...	No. A.	Bunch Steam Fishing Co.	Form 911 19.7.32 to 15.8.32 ...	19.8.32
					,, 912 19.7.32 to 15.8.32 ...	19.8.32
St. Patrick	Sanderson, C. W. ...	T. D. Thomas	C.C.	G. W. Railway ...	Telegraphic Report 13.7.32 ...	13.7.32
038 †† *Samaria*	Malin, R. G., Lt.-Commr., R.N.R.	E. Gleave J. A. Myles, H. Hudson.	W.T.	Cunard	Forms 911 & 138 1.8.32 to 19.8.32	23.8.32
					Form 912 4.7.32 to 22.7.32 ...	26.7.32
061 *† *Saxon Star* ...	Griffiths, G. A. ...	K. Griffiths	,,	Blue Star	... ...	...
291 *† *Scholar*	Peterkin, A. G. ...	T. E. Steel, D. O. Percy ...	No. M.	Harrison	Forms 911 & 138 24.4.32 to 13.6.32	20.6.32
Scotia	O'Neill, J.	W. H. Hughes	C.C.	L.M. & S. Railway ...	Telegraphic Report 13.8.32 ...	13.8.32
033 †† *Scythia*	Oram, B. B., R.D., Commr., R.N.R.	W. H. Stewart, A. Bridgewater, H. L. Pryse.	W.T.	Cunard	Forms 911 & 138 11.7.32 to 30.7.32	3.8.32
					Form 912 13.6.32 to 2.7.32	8.7.32
211 *† *Shropshire*, M.V. ...	English, G. L. ...	D. Hetherington, I. D. Minto, G. W. Dobson.	,,	Bibby	Forms 911 & 138 15.5.32 to 23.7.32	26.7.32
121 *† *Siamese Prince* ...	Jones, E. E.	... ...	M.L.	Prince	... ...	...
230 *† *Somerset*	Pilcher, C. R.	C. Edgecombe, H. M. Knight, H. V. G. Hastings.	,,	Federal	Form 915 7.1.32 to 1.5.32	5.5.32
277 *† *Spero*	Montgomery, H. ...	H. W. Vickers, A. Kirk ...	,,	Ellerman Wilson ...	,, 12.3.31 to 4.9.32 ...	10.9.32
Stephen	Barlow, F. P. ...	J. Whayman, G. H. Daniels, W. W. Torkington.	,,	Booth	,, 18.1.32 to 21.6.32 ...	2.7.32
270 †† *Strathaird*	Townshend, W. P., R.D., Capt. R.N.R.	R. H. Hand, H. Fitzmarshall, W. J. Alington.	W.T.-M.	P. & O.	Forms 911 & 138 13.2.32 to 20.5.32	24.5.32
044 *† *Tacoma City* ...	Paul, H.	T. J. Paull	M.L.	Reardon Smith ...	Form 911 24.12.31 to 2.6.32 ...	9.6.32
229 *† *Tactician*	Trinick, F., O.B.E. ...	E. P. Simmons, A. Frew, S. Leyland.	No. M.	Harrison	Forms 911 & 138 10.4.32 to 20.7.32	26.7.32
045 †† *Tainui*	McIntosh, A. ...	G. A. Harvey, J. Worrall, D. Pickersgill.	M.L.	Shaw, Savill & Albion	Form 915 23.4.32 to 6.8.32 ...	16.8.32
081 *† *Tairoa*	Grayston, E. T., D.S.C., R.D., Commr., R.N.R.	G. L. Almond, W. Thowless, L. B. Miller.	W.T.	,, ,, ,,	,, 26.3.32 to 28.6.32 ...	7.7.32
046 †† *Tamaroa*	Hartman, W. H. ...	L. R. Bull, R. R. Roseman, F. Lutyen,	W.T.-M.	,, ,, ,,	Forms 911 & 138 29.1.32 to 8.5.32	11.5.32
264 ** *Tanda*	Pilcher, E. T., Lt.-Commr., R.N.R	F. O. Colvin, G. Chadwick Smith, A. Wilcox.	M.L.	E. & A. S.S. Co. ...	Form 915 4.3.31 to 22.6.32 ...	8.9.32
165 *† *Tantalus*, M.V. ...	Melling, C. F.... ...	E. Saville, W. B. Hailstone, L. A. Munday.	W.T.	A. Holt	Forms 911 & 138 24.6.32 to 18.7.32	8.8.32
047 *† *Taranaki*, M.V. ...	Wood, C., D.S.C. ...	A. C. Jones, B. M. Morris, C. Stewart.	,,	Shaw, Savill & Albion	,, ,, 9.6.32 to 6.7.32	8.8.32
Tasmania	Williams, J. W. ...	... ...	W.T.	New Zealand Shipping	... ...	...
069 *† *Tekoa*	McNish, R. H. L., D.S.O., Lt.-Commr., R.N.R.	C. W. Roberts	No. M.	,, ,,	Form 911 30.12.31 to 25.1.32 ...	15.2.32
048 †† *Themistocles* ...	Elford, H. C.	L. Hopkins, H. Davies, H. Last.	W.T.-M.	Aberdeen Commonwealth.	Forms 911 & 138 10.7.31 to 3.3.32	20.4.32
007 *† *Thistleglen*	Whitfield, G.A., O.B.E.	S. B. Davis, G. L. Hetherington.	No. M.	Allan Black & Co. ...	,, ,, 7.7.32 to 6.8.32	5.9.32

Name of Vessel.	Captain.	Observing Officers.	Meteorological Equipment.	Line.	Last Log, Register, or Record Contributed. Received up to 16.9.32.	Date Received.
161 *† *Titan*	Rundle, G. G.... ...	F. B. Smith, G. Roberts, E. Butler.	W.T.	A. Holt	Forms 911 & 138 24.6.32 to 20.7.32	22.8.32
244 *† *Tongariro*	Hamilton, F. S. ...	E. A. Quick, D. Baldwin, H. Dawson.	M.L.	New Zealand Shipping	Form 915 6.2.32 to 13.5.32	23.5.32
025 †† *Transylvania* ...	Bone, D. W.	A. Middleton, J. Lefevre, J. O. Dunn.	W.T.	Anchor	Forms 911 & 138 5.6.32 to 26.6.32 Form 912 5.6.32 to 26.6.32 ...	28.6.32 28.6.32
288 *† *Traveller*	Barrow, W. T. C. ...	R. Ledger	No. M.	Harrison	Forms 911 & 138 5.6.32 to 4.8.32...	8.8.32
119 *† *Trojan Star* ...	Griffin, G. A.	L. S. Hassell, K. Griffiths, D. W. Marshall.	,, M.	Blue Star	,, ,, 9.10.31 to 30.12.31	29.1.32
245 *† *Turakina*	Laird, J.	H. G. Letts, E. G. Williams, J. Reeve.	,, M.	New Zealand Shipping	,, ,, 29.11.31 to 18.4.32	30.4.32
276 †† *Tuscania*	Rome, W. B.	J. Noble, G. Squires, G. Robertson.	W.T.	Anchor... ...	,, ,, 31.7.32 to 20.8.32 Form 912 18.6.32 to 24.7.32 ...	23.8.32 26.7.32
113 *† *Upwey Grange*, M.V.	Goodrick, H. P. ...	A. Bradbury, G. T. Hurst, P. J. Walker.	No. M.	Houlder	Forms 911 & 138 5.7.32 to 22.8.32	29.8.32
292 †† *Viceroy of India* ...	Thornton, E. J., R.D., Capt., R.N.R.	R. H. Turner, M. F. Shute, E. R. Physick.	W.T.-M.	P. & O.	Forms 911 & 138 8.5.32 to 8.6.32...	13.6.32
242 ** *Waiotapu*	Davis, —	... ...	M.L.	Union S.S. Co. of N.Z.	... ...	...
263 ** *Wairuna*	Hender, W. H. ...	J. B. Williams, R. E. Suckling.	,,	,, ,,	Form 915 7.12.31 to 3.3.32 ...	5.5.32
005 †† *Warwick Castle* ...	Owens, G.	P. Clissold, W. D. Roach, J. Wilson.	W.T.	Union Castle ...	Forms 911 & 138 18.6.32 to 7.8.32	9.8.32
060 †† *Westernland* ...	Doughty, J. H. ...	J. H. Mackie, J. L. McLaren, W. T. Godwin.	,,	Red Star ...	,, ,, 13.8.32 to 3.9.32 Form 912 19.6.32 to 9.7.32 ...	5.9.32 11.7.32
056 *† *Westmoreland* ...	Holland, E.	... ...	,,	New Zealand Shipping	... ...	...
208 †† *Winchester Castle* M.V.	Morton Betts, W. ...	G. F. Moon, A. G. Patey. ...	,,	Union Castle	Forms 911 & 138 16.7.32 to 3.9.32	6.9.32
096 †† *Windsor Castle* ...	Kerbey, J. H.... ...	H. Close	,,	,, ,, ...	,, ,, 11.6.32 to 31.7.32	2.8.32
Worthing	Hill, A....	C. Munton, F. Balcombe ...	C.C.	Southern Railway ...	Telegraphic Report 16.9.32 ...	16.9.32
043 ** *Zealandic*, M.V. ...	Summers, W. G. ...	C. A. Meyers, J. Steele, G. Campbell.	W.T.	Shaw, Savill & Albion	Forms 911 & 138 23.5.32 to 22.8.32	31.8.32
Conway, H.M.S. ...	Richardson, F. A., D.S.C., Commr., R.N.	The Senior Cadets	Cadets' M.L.	... ...	Cadets' Met. Log. 24.4.32 to 25.7.32	2.8.32
Pangbourne Nautical College	Tracy, A. F. G., Commr., R.N.	,, ,, ...	,,	... ...	Cadets' Met. Log. 21.4.32 to 16.7.32	29.7.32
Worcester, H.M.S.	Steele, G. C., V.C., Commr., R.N.	,, ,, ...	,,	... ...	Cadets' Met. Log. 6.5.32 to 27.7.32	3.8.32
Abaco	... ...	The Keepers	Lighthouse Register.	... ...	Lighthouse Register 1.1.32 to 30.6.32	4.8.32
Cay Lobos	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.32 to 30.6.32	4.8.32
Double Headed Shot	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.32 to 30.6.32	4.8.32
Inagua	... ...	,, ...	,,	... ...	Lighthouse Register 22.9.31 to 27.3.32	9.9.32
Sombrero	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.32 to 30.6.32	28.7.32
Watling Island ...	... ...	,, ...	,,	... ...	Lighthouse Register 1.1.32 to 30.6.32	4.8.32
Cape Pembroke ... (Falkland Is.)	... ...	,, ...	,,	... ...	Lighthouse Register 1.7.31 to 31.12.31	18.2.32

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Name of Vessel.	Captain.	Observing Officer.	Line.	Last Case of Water Samples, Reports, etc., received up to 31.8.32.	Date Received.
Dakarian	Hannaford, W.	A. A. Johnson	Leyland	Water Samples	10.6.32
Darian	... ...	W. R. Vaughan	,, ...	,, ,, ...	18.9.31
Darro	Matthews, G. P.	F. R. Jeyes	Royal Mail	,, ,, ...	18.8.32
Davisian	Thomas, R.	H. B. Peters	Leyland	,, ,, ...	27.6.32
Dorelian	Hughan, C.	A. F. Wood	,, ...	,, ,, ...	12.7.32
Hilary	Buck, R. H., R.D., Capt., R.N.R.	F. H. Good	Booth	,, ,, ...	6.8.32

November, 1.O., 1932.

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MARINE METEOROLOGY, ATLASES, BOOKS AND MEMOIRS.

CHARTS:—

ATLANTIC (NORTH AND SOUTH):—

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.)

ATLANTIC (SOUTH):—

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.)

CHARTS:—*continued*.

INDIAN OCEAN:—

Meteorological Charts of the East Indian Seas for each month of the year, giving Normals of Pressure, Air and Sea Temperatures and Ocean Currents, with Frequencies of Winds. (No. 181A, 1923.) 1*s*. each. (35 × 22½ in.) Sold by J. D. Potter, 145, Minories, E.1.

Monthly Current Charts for the Indian Ocean, from information collated and prepared in the Meteorological Office. (No. 124, 1896.) (20 × 24½ in.) (Published by the Admiralty.)

PACIFIC OCEAN:—

Quarterly Current Charts for the Pacific Ocean, from information collated and prepared in the Meteorological Office. (No. 134, 1897.) (26½ × 28½ in.) (Published by the Admiralty.)

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.)

RED SEA:—

Meteorological Charts of the Red Sea. (No. 106, 1895.) 21*s*. (22 × 13½ in.)

SOUTHERN OCEAN:—

Meteorological Charts of the Southern Ocean between the Cape of Good Hope and New Zealand. (No. 123, 1917.) 7*s*. 6*d*. (12½ × 9½ in.)

BOOKS:—

Wireless and Weather, An Aid to Navigation, with Appendices. (No. 297, 1928.) 5*s*. (4to.)

The Marine Observer's Handbook. Fifth Edition. (No. 218, 1930.) 2*s*. 6*d*. (8vo.)

PAMPHLET:—

Decode for use with the International Code for Wireless Weather Messages from Ships. Second Edition. (No. 329, 1931.) 3*d*. (8vo.)

GEOPHYSICAL MEMOIRS (4TO.):—

19. Hurricanes and Tropical Revolving Storms. By Mrs. E. V. Newnham, M.Sc. With an Introduction on "The Birth and Death of Cyclones," by Sir Napier Shaw, F.R.S. (No. 220i, 1922.) 12*s*. 6*d*.

28. The Doldrums of the Atlantic. By C. S. Durst, B.A. (No. 254h, 1926.) 1*s*. 6*d*.

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