

VOL. VII. No. 81.

THE MARINE OBSERVER.

SEPTEMBER, 1930.

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THE WORLD'S TONNAGE AND MARINE METEOROLOGY.

The 1930-31 edition of Lloyd's Register of Shipping has been published while this number of *THE MARINE OBSERVER* was in the press. We therefore hasten to give an amended Table to that published in the January, 1930, number, in the general description and instruction for the British "Selected Ship" system of communication.

It will of course be included in Ships' Weather Signals in the January number next year.

This will be of interest generally, but of special interest to all those who take part in the work of organised voluntary marine meteorology; and of particular interest to those, like ourselves of the Marine Division, in other Countries, who are engaged in organizing the International "Selected Ship" fleet of 1,000 ships of all maritime nations.

It will be seen that the World's tonnage of Steam and Motor vessels of over 100 tons has increased by nearly three million tons, during the past two years and when the figures given by the Chamber of Shipping of the United Kingdom, published to-day in Lloyd's List, of the tonnage laid up—no less than 927,000 tons in the principal ports of Great Britain—together with the general depressed state of trade are considered, it will be obvious that the maintenance of the British Regular Voluntary Observing Fleet presents more difficulties than usual. That it remains at a number little short of the limiting total of 500 is due to the splendid spirit of the Merchant Navy whose officers continually step in to take the place in the Corps of Voluntary Marine Observers of those in ships which go out of commission.

Of the countries party to the Convention on Safety of Life at Sea, the proportionate increases and decreases of tonnage which may be seen exactly by the Table have had the following effect upon the number of "Selected Ships" to be maintained by each nation according to the Agreement reached through the International Marine Meteorological Commission.

Decreased Numbers.

Great Britain, Australia and New Zealand, United States of America, and Italy.

Increased Numbers.

Finland, France, Germany, Holland, Norway, Russia, Spain and Sweden.

To-day, Friday, July 18th, 1930, the actual number of British "Selected Ships" on the list and functioning as such, is 289 while the total number of observing ships at the present moment is 473. With a view to maintaining Great Britain's complement at this particularly difficult time for British shipping and seamen, we ask the Corps of Voluntary Marine Observers to point out to Captains and Officers of British ships interested in marine meteorology, that they should get in touch with the appropriate Port Meteorological Officer or Agent.

Owing to the Port of London until lately not having been served by a Port Meteorological Office, it is in the complement of London ships that we are short. New observing ships most desired to complete the complement are ships using the Port of London and

trading to the Pacific via Panama, on Southern Ocean voyages, and in trades which will help to maintain a network of observation well distributed over all oceans.

Ships having long range continuous wave wireless transmission, and carrying a reliable mercurial barometer will be particularly welcome for making up the British complement of "Selected Ships."

It should be remembered that only 27 vacancies exist in the list for all ports.

Total Merchant Tonnage approximate (Steam and Motor) of the World

(Vessels over 100 tons, Lloyd's Register Book, 1930-31)

and Number of Selected Ships required for making W.T. Weather Reports, in all oceans, World Wide.

Country.	Steamers and Motor Vessels.		Percentage of World Tonnage.	Number of "Selected Ships" required.	Number of Ships fitted for C.W. trans-mission. (Long Wave).
	Number	Gross Tons.			
Great Britain and Ireland.	7,856	20,321,920	31.2	312	184
Australia and New Zealand.	603	677,981	1.0	10	—
Canada (excluding Lakes).	629	919,464	1.4	14	12
Hong Kong ...	121	286,845	0.4	4	—
India and Ceylon	147	182,313	0.3	3	—
South Africa and Other Colonies*	490	406,338	0.6	6	2
British Empire	9,846	22,794,861	34.9	349	198

* Including Dominion of Newfoundland.

Country.	Steamers and Motor Vessels.		Percentage of World Tonnage.	Number of "Selected Ships" required.	Number of Ships fitted for C.W. trans-mission. (Long Wave.)
	Number	Gross Tons.			
British Empire	9,846	22,794,861	34.9	349	198
America (United States) (excluding Lakes).	2,975	10,744,692	16.4	164	95
Argentina ...	292	297,564	0.5	5	—
Belgium ...	238	546,002	0.8	8	7
Brazil ...	346	543,613	0.8	8	6
Chili ...	120	184,973	0.3	3	—
China ...	210	314,817	0.5	5	—
Danzig...	36	134,961	0.2	2	—
Denmark ...	643	1,071,521	1.7	17	12
Estonia ...	79	60,982	0.1	1	—
Finland ...	244	243,112	0.4	4	—
France...	1,501	3,470,591	5.3	53	18
Germany ...	2,138	4,199,096	6.4	64	34
Greece...	546	1,390,899	2.1	21	—
Holland ...	1,381	3,079,000	4.7	47	25
Italy ...	1,105	3,261,922	5.0	50	25
Japan ...	2,060	4,316,804	6.6	66	—
Jugo-Slavia ...	161	302,481	0.5	5	—
Norway ...	1,905	3,663,237	5.6	56	15
Portugal ...	174	238,669	0.4	4	11
Russia (Soviet Union).	344	529,095	0.8	8	—
Spain ...	795	1,207,093	1.9	19	15
Sweden ...	1,306	1,594,313	2.4	24	22
Turkey ...	190	177,199	0.3	3	—
Other Countries	704	883,489	1.4	14	2
Total ...	29,339	65,250,986	100.0	1,000	485

A NEW NORTH ATLANTIC OCEAN CURRENT CHART ATLAS.

The "Atlas of Currents on the Main Trade Routes of the North Atlantic," which has been under construction since 1927, and to which we have referred on several occasions in THE MARINE OBSERVER, is now ready, and will have been published before this note appears.

This Atlas of currents is the first published since 23rd October, 1897, when the "Atlas of Quarterly Current Charts for the Pacific Ocean" was published by the Admiralty, under the superintendence of Rear Admiral Sir W. J. L. WHARTON, K.C.B., F.R.S., closely following Atlases of Monthly Current Charts for the Atlantic Ocean and the Indian Ocean. Since then some progress has been made in the investigation of ocean currents. The data for the old Admiralty Current Charts were prepared in the Marine Division, arrows representing each observation of set and drift between the years 1830 and 1896 being plotted on working charts; and the estimated resultant arrows shown in the Atlases were drawn by eye from these. Since 1924 the currents along the main trade routes have been charted for each quarter of the year in THE MARINE OBSERVER, and it is from these sectional charts that the present Atlas has been constructed.

Observations of set and drift of current observed since 1910 only were used, and of course navigation had by that time become much more accurate. Consequently it has been found possible to calculate the Resultant Current for small areas from the actual sets and drifts found by the navigator, so that each resultant arrow in the new Atlas represents a true vector mean, based on the number of observations shown.

Current Roses computed from all observations within larger areas are also given upon separate charts, with Tables of maximum drifts.

Thus the new Atlas affords reliable information of the mean current to be expected during the four quarters of the year along the routes most used by shipping; also the vagaries of current which have been experienced. It is to this latter feature that we would particularly direct the attention of navigators, for ocean currents are more fickle than has often been realized.

In this survey of the currents of the North Atlantic it has been possible to calculate the mean quarterly drift in the greater part of the circulation of the North Atlantic surface waters; and for the first time, the seasonal variations of the principal North Atlantic currents are given in Table I.

Annual variations in the velocity of the Equatorial Current, the seasonal variation of the boundary between the Equatorial and Guinea Currents, and other information are given by means of diagrams.

The new Atlas is produced by lithography upon a scale of 2 inches to 10 degrees of longitude, and as the scale of length for the arrows used in the Current Roses is 2 inches for 100 per cent. of frequency, the charts are read with ease. It is hoped in time to produce uniform meteorological and current atlases upon this scale for all oceans.

A large portion of the charts in this Atlas is left blank, and it will take many years before sufficient observations can be collected and prepared to fill all blanks. The charts have been so constructed that the data upon them can be added to and the Atlas revised as necessary from time to time.

Only a limited number of these Atlases is available; a copy can be supplied as part of the equipment of regular observing ships navigating the routes charted in them, and written application should be made by the Commander. It will be convenient if such applications are sent in through the appropriate Port Meteorological Officer or Agent.

This Atlas is published and sold by H.M. Stationery Office, price 6s. 6d.

We wish again to gratefully acknowledge the fine work of the Corps of British Voluntary Marine Observers in providing the information which has made possible the publication of this Atlas.

MARINE SUPERINTENDENT.

London,

21st June, 1930.

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 AND NAVIGATION IN THE INDIAN OCEAN.

The following is in reply to the Marine Superintendent's note which was published in Volume VII, No. 74.

Commander E. P. Cameron, R.D., R.N.R., R.M.S. "Orsova."

SUMMARY OF CURRENTS S.S. *ORSOVA* BETWEEN CEYLON AND AUSTRALIA
TAKEN BETWEEN YEARS 1919-1929.

NEAR CEYLON.

GENERAL TENDENCY OF
CURRENT ON WHOLE ROUTE.

	Current.	Wind.	
JAN.	Nil to strong W.	N.E. force 2-4.	Variable. Mostly E.
FEB.	Variable from S.W. to S.E. slight.	Var. force 2-3.	Slightly E. from Latitude 1° S. to Latitude 7° E., 1 knot E.
MAR.	W. slight.	N.E. force 2-3.	Mostly E.
APRIL.	Slight to strong E.	W. force 2-6.	Mostly E. from Ceylon to Latitude 11° S., thence Wly.
MAY.	Slight E.	W. force 2-6.	Mostly E. Sometimes very strong. 2 knots between Ceylon and Equator.
JUNE.	Slight to strong E.	W. force 2-4.	Mostly W.
JULY.	Slight N. to N.W.	W. force 2-3.	Mostly strong W.
AUG.	Slight E.	W. force 3-4.	Mostly strong W.
SEPT.	Strong E.	S.W. force 3-4.	Mostly strong W.
OCT.	Slight to very strong E.	S.W. force 2-6.	Mostly W. Sometimes very strong E. between Ceylon and Equator.
Nov.	Very strong E. to slight W.	W. force 2-4.	Mostly W.
DEC.	Varies, strong E. to strong W.	N.E. force 2-3.	Mostly W.

"The currents on this track are very variable—there is a general tendency Westward from Fremantle to past the Cocos Islands during the whole year—but strong easterly currents may be felt near Fremantle.

"If passing the Cocos Islands at night—it is the general rule to give them a wide berth—say, 60 miles. Making up towards Ceylon, it is our usual custom to pick up Dondra Head with a view to getting a cross later on with Galle.

"Should the current be setting strongly to the Eastward—Dondra is picked up, and if to the Westward—Galle is picked up.

"The current near Ceylon appears to change very strongly in December to the Westward, but the general tendency for most of the year seems to be to the Eastward. The wind appears to have little or nothing to do with the current.

"Making Fremantle it is always advisable to allow for a possible strong set into the coast."

Colombo to Suez During S.W. Monsoon.

"It is my invariable practice at this time of the year to pass 40 miles to the Northward of Socotra, for the following reasons:—

- (1) No anxiety in making the land.
- (2) Few hours less bad weather is experienced.

I do not consider there is any advantage to be gained by taking the Southern Route, as the weather experienced is practically the same on both routes.

Due to the uncertainty of the ship's position there is always a certain amount of anxiety in making the land near Cape Guardafui.

The following comparison of voyages 39 and 41 in this ship may be of interest:—

The first is the Southern route; the second the Northern.

A very careful study of the daily positions in the Log Books showed that practically the same weather and current conditions prevailed. The time of year being the same.

In looking at this comparison it will be observed there is perhaps a slight difference in favour of the Southern route; this is more than compensated for by the lack of any anxiety in passing to the Northward."

Year.	Voy.	COLOMBO. Date leaving.	SUEZ. Date arriving.	Dis- tance.	Speed.	Revs.	Slip.	Coal. Tons Cons.	Time Occ.
1925	39	June 18, 0.24 a.m.	June 27, 6.55 a.m.	3454	Knots. 15'29"	75'3"	11'5"	1,452	D. H. M. 9 10 1
1926	41	June 17, 0.39 p.m.	June 27, 1.22 a.m.	3411	14'7"	73'5"	12'8"	1,490	9 16 13

PHOSPHORESCENCE.

Malacca Strait.

The following is an extract from the Meteorological Report of S.S. *Daga*, Captain N. WILES, Suez to East Indies. Observer Mr. J. S. WHITEHEAD, 2nd Officer.

"September 9th, 1929. Bands of phosphorescent light were observed apparently flickering and wheeling continuously just below the surface of the sea. The intervals were very regular, approximately every two seconds, the bands appearing to roll up from horizon to horizon (so far as poor visibility allowed) then fade away. Lasted from 2.0 a.m. to 3.0 a.m. and combined with vivid lightning was very trying to the eyes, making it almost impossible to see lights of passing vessels. Latitude 3° 30' N., Longitude 99° 40' E. (Malacca Straits)."

SPEED OF PORPOISES.

North Atlantic Ocean.

The following is an extract from the Meteorological Log of S.S. *Andes*, Captain H. A. LEBRECHT, Buenos Aires to Southampton. Observers Messrs. R. MATHESON and L. A. WOOD.

"September 25th, 1929, 17.14 A.T.S. in Latitude 25° 10' N., Longitude 17° 35' W., sea slight N.E., temperature sea water 73° F. Swell slight E.N.E. Course 024°. Speed 14.5 knots. In above position, observed about 20 porpoises on the port beam distant ¼ mile, swimming on an estimated course of 045°, estimated speed 13 knots.

"17.20 A.T.S. Porpoises passed astern of ship and were lost to view."

The following is an extract from the Meteorological Report of S.S. *Auditor*, Captain W. T. OWEN, Liverpool to Galveston. Observer Mr. D. O. PERCY, 3rd Officer.

"At 5.10 p.m. A.T.S. on Tuesday, 27th September, 1929, in Latitude 47° 18' N., Longitude 14° 35' W., a large 'School' of Porpoises were seen crossing our bow from Starboard to Port; when right ahead of vessel 8 of them collected in mass formation about three feet ahead of the stem and proceeded in the same direction as the ship.

"They maintained their distance from the ship for a period of 7 minutes remaining submerged all the while, when two of them leaping out of the water fell back on to the stem injuring themselves and on regaining the water quickly dropped astern. At this period the remainder scattered; the speed of the vessel at the time was 11.5 knots. The observation was made from the Fo'castle head and the porpoises which were of a medium size and somewhat frightened, appeared to be swimming at their utmost capacity."

CONDITIONS APPROACHING SOUTH GEORGIA.

September 1929.

THE following is an extract from the Meteorological Report of S.S. *Southern King*, Captain W. WILLIAMS, C. Verde Islands to South Georgia. Observer Mr. J. S. GARDNER, 2nd Officer.

"During my six years of trading into these whaling grounds, I may state that this is the first time that I have ever seen the seas clear of Icebergs and the temperature in the shade has also been exceptionally high, also observations, both Lunar and Stellar, have been very favourable during the whole of the passage as against previous voyages.

"Morning of arrival objects such as points of land and peaks were visible at least 39 miles. The glare of the Island could be seen during moonlight, 96 miles off (previous voyage when approaching the Island during daylight peaks were visible 54½ miles good observation). 65 per cent. of the year these high peaks are covered over with mist and heavy clouds.

"Kelp. Large patches of kelp were seen 300 miles from the Island floating on the sea surface."

RAIN SQUALL.

Australian Waters.

THE following is an extract from the Meteorological Report of S.S. *Maloja*, Captain J. B. BROWNING, R.D., R.N.R., Colombo to Fremantle. Observer Mr. R. H. TURNER, 3rd Officer.

"S.S. *Maloja* en route from Colombo to Fremantle while in Latitude 13° 28' S., Longitude 97° 10' E., between 0159 and 0204 G.M.T., or 08.29 and 08.34 ship's time, on the 20th September, 1929, encountered two rain squalls as shown in sketch.

"The squall centred to the S.E'ward and ahead of the ship was of ordinary intensity although at its height the horizon was not visible through it. The one centred to the S.W'ard and on our Starboard beam was of a heavy nature and of unusual formation; on its Southern half was a well-defined rainbow which gradually faded out of sight as it neared the centre of the squall, while on the Northern half of the squall the bottom edge of a very heavy and dark bank of nimbus continued the line of the rainbow till it reached to within about 1° of the horizon whence it ran parallel and gradually faded away—the rain falling upon the sea

gave the appearance as though there was an uncovered sand bank there, which was clearly defined and of a dull buff colour. Throughout the duration of the squalls the sun was shining and bore 078° at an altitude of 37°. The course and speed at the time was 138°, 15½ knots. Barometer 30.01 in., Air 75°F, Wind E.S.E., force 5. Sea E.S.E.4. Swell S.E.5. Weather throughout the day was cloudy with occasional rain squalls. Wind between S.E. and E.S.E. force 5."

TYPHOON.

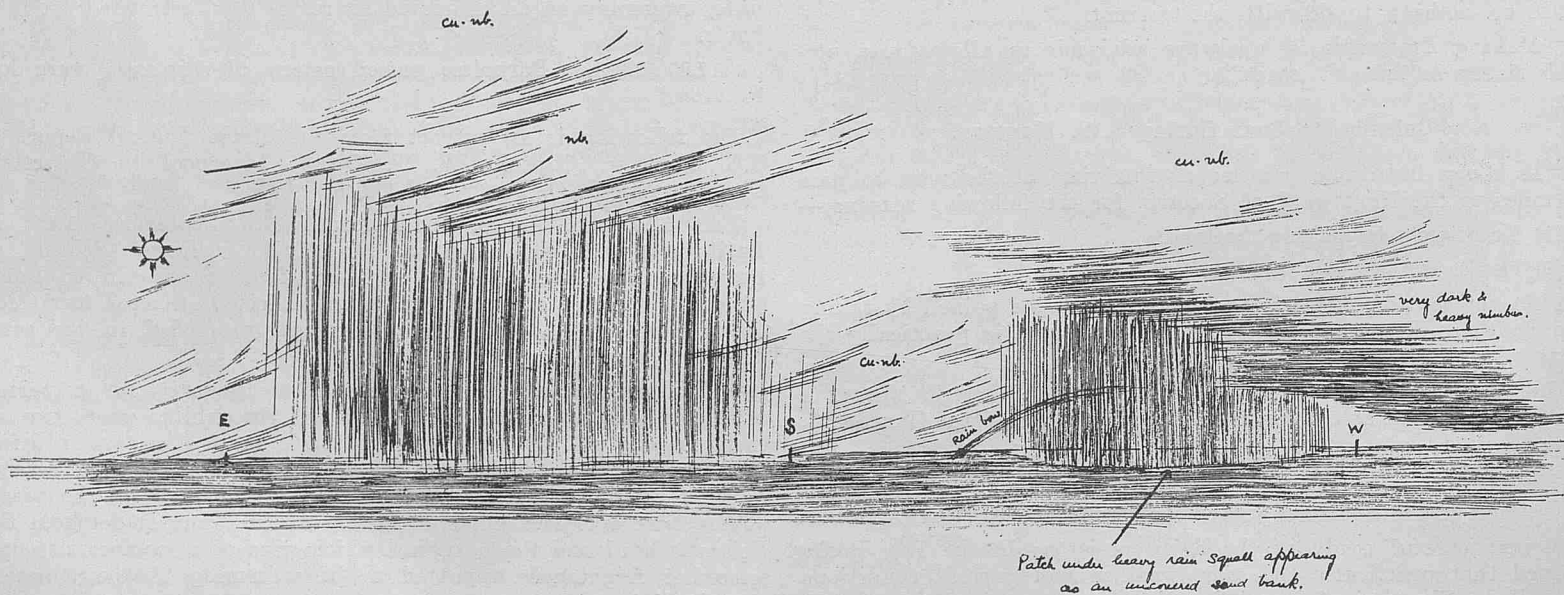
Japanese Waters.

THE following is an extract from the Meteorological Report of S.S. *Talthebius*, Captain G. A. FLYNN, Vancouver to Yokohama. Observer Mr. R. H. CLIBBORN, 4th Officer.

"September 10th, 1929, during our Pacific passage from Vancouver to Yokohama during the early part of September, several Typhoon warnings were received from Tokyo. On September 10th, 1929, when Inuboye Zaki bore about West (true) distant 6 miles, wireless reports indicated a Typhoon in approximately Latitude 34° N., and Longitude 138° E., travelling N.E. with a velocity of about 24 miles per hour. This placed the ship directly in the path of the storm which at that time would be distant about 170 miles. At 4 p.m. there was a sudden and marked increase in the force of the wind which reached gale force and shifted from S.S.E. to South. The ship was now in the dangerous semi-circle but slightly clear of the centre. Between 4.27 p.m. and 4.44 p.m. the wind attained hurricane force with a mountainous sea. There was considerable rain with poor visibility, the sea being covered with spindrift. At 4.45 p.m. our mercurial barometer recorded its lowest reading 28.76 in. and at 4.53 p.m. the wind shifted to W.S.W. with terrific squalls of hurricane force. The glass now commenced rising slowly. The sea was now confused and the ship was labouring, spraying and shipping water, but not in excessive quantities.

"At 5.38 p.m. the wind shifted to N.W. with the glass rising rapidly, the vessel now proceeding full speed. Very shortly after this the weather moderated considerably, and by 8 p.m. it was comparatively fine. At this time Katsuura Light was sighted bearing S. 76° W., 20½ miles."

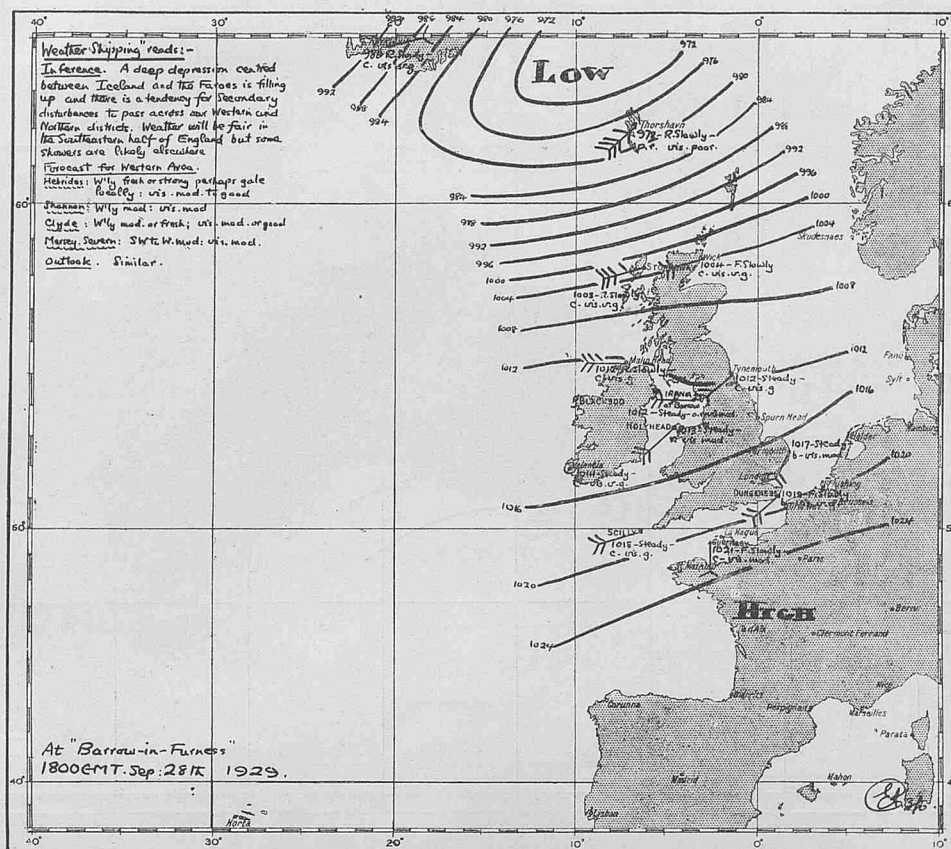
Zemich



WEATHER CHARTS MADE AT SEA.

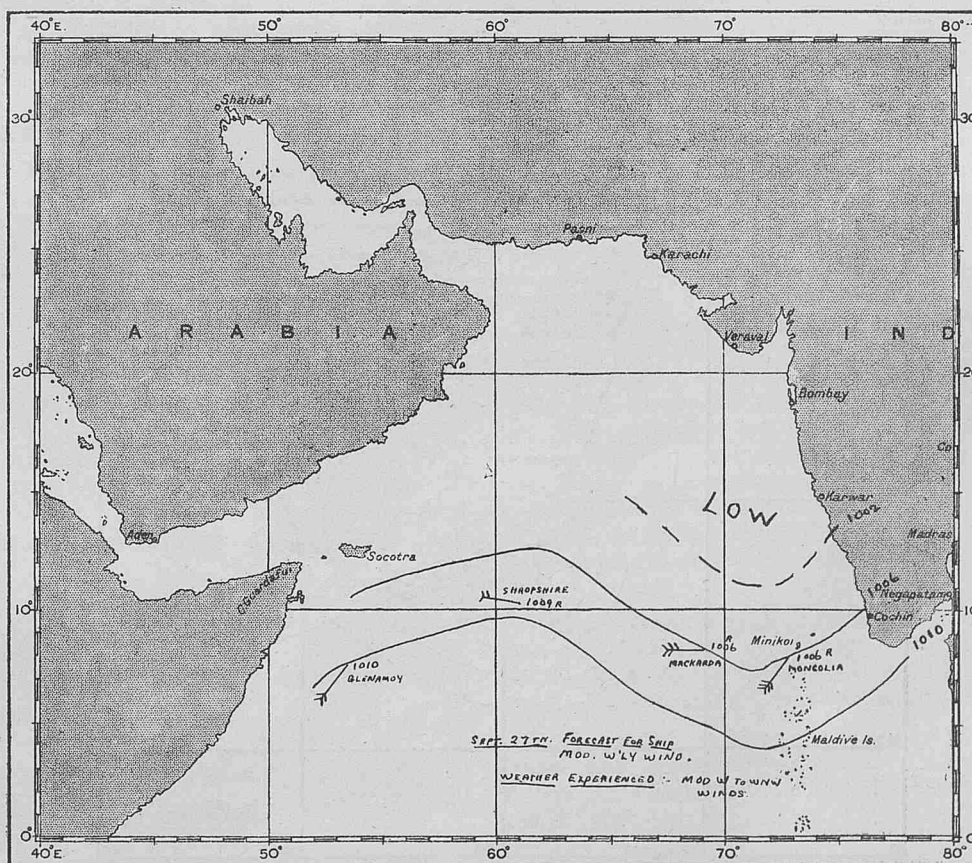
Eastern North Atlantic.

Weather Chart (one of a series) made on board M.V. *Irania*, Captain J. F. AULD, by Mr. E. ALLEN, 3rd Officer.



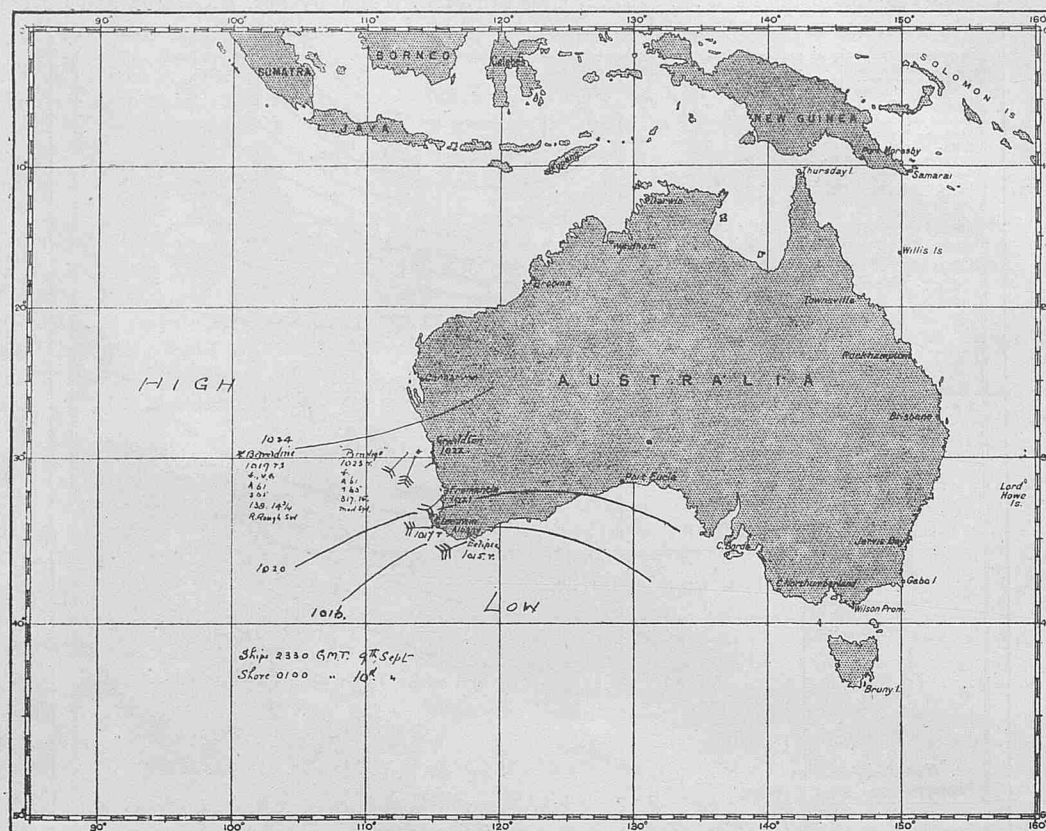
Arabian Sea.

Weather Chart (one of a series) made at sea on board M.V. *Shropshire*, Captain G. L. ENGLISH, Liverpool to Rangoon, by Mr. A. N. QUAYLE. A cyclone was reported in the Arabian Sea on this date. Reports of this cyclone are published on page 191.



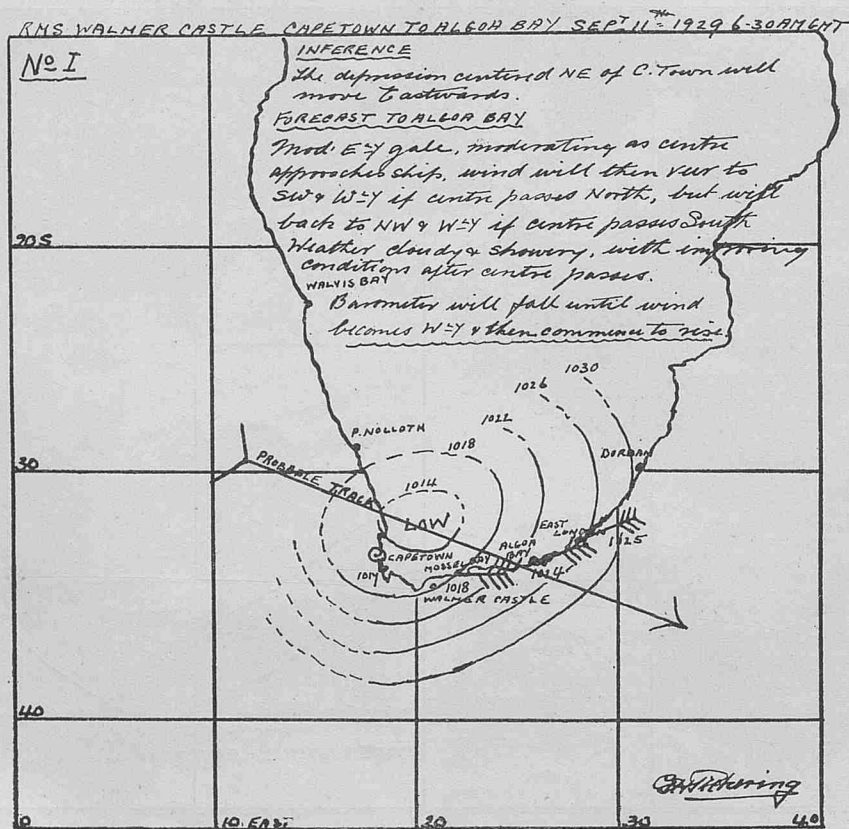
Australian Waters.

Weather Chart (one of a series) made at sea on board S.S. *Baradine*, Captain C. H. C. ALLIN, Liverpool to Fremantle via Suez, by Mr. C. B. ROCHE, Chief Officer.



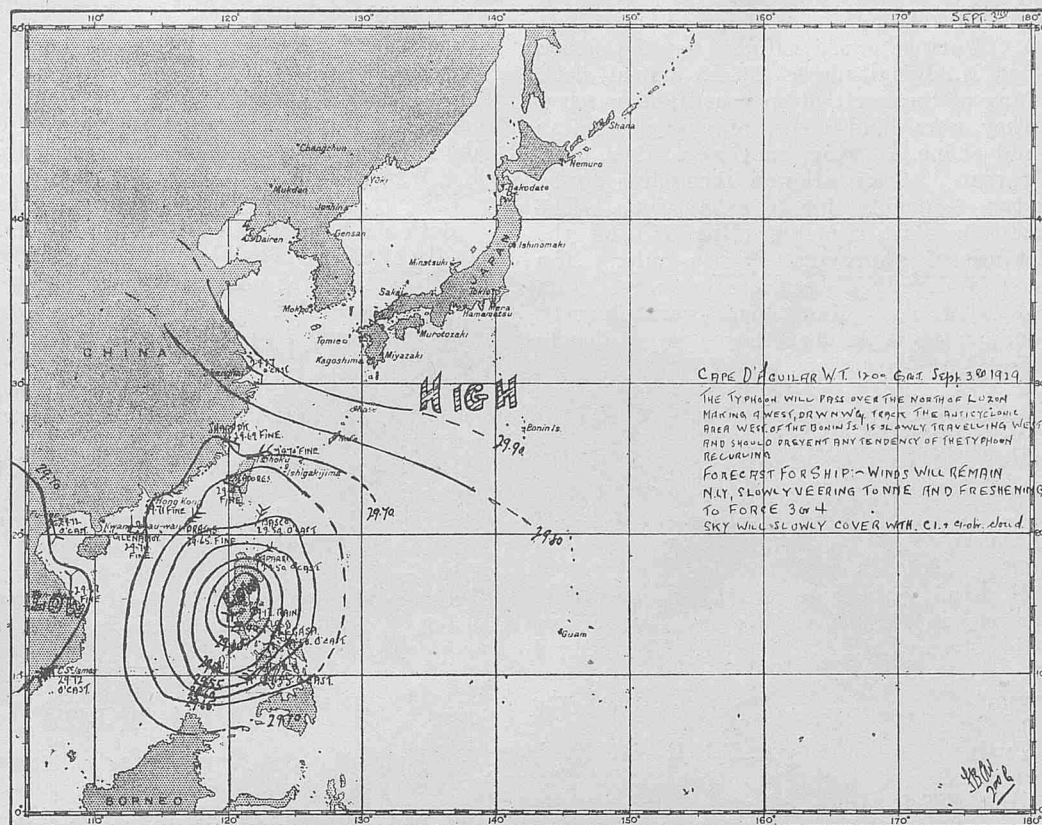
South African Waters.

Weather Chart (one of a series) made at sea on board S.S. *Walmer Castle*, Captain W. MORTON BETTS, Cape Town to Algoa Bay, by Mr. G. H. PICKERING.



China Sea.

Weather Chart (one of a series) made at sea on board M.V. *Glenamoy*, Captain C. E. HOMAN, Hong Kong to Singapore, by Mr. F. B. C. WETHERLY, 2nd Officer.



REPORTED CYCLONE.

Arabian Sea.

THE following is an extract from the Meteorological Report of S.S. *City of Valencia*, Captain W. W. ANDERSON, Liverpool to Bombay. Observers Messrs. A. TRAVIS, 2nd Officer, and C. B. P. BRADBURY, 3rd Officer.

"28th September, 1929, course 77°, speed 12 knots. 8.0 a.m. A.T.S. Latitude 16° 54' N., Longitude 63° 16' E., the first indication of the proximity of a depression was a slight confused swell and a smooth oily sea, the sea gradually increasing from the N.N.W. Barometer 1007.5 mb. At noon the barometer commenced to fall slowly and Ci-St. spread all over the sky from the eastward. At 4.0 p.m. A-St/Cu. and an ugly threatening appearance of the sky to the S.E. the barometer still falling slowly. 8.0 p.m. Barometer still falling, wind veered from N.N.W. to N. by W. and increased in force, St-Cu/Cu. from N. by W. At 9.0 p.m. a line squall in the form of a great arch-shaped dark cloud stretching right across the sky in N.E.—S.W. formation passed over us travelling rapidly in a W'ly direction, no disturbance to barometer occurring during its passage. From 9.35 p.m. to 11.45 p.m. we experienced frequent violent rain squalls, the wind increasing to a moderate gale and veering to N.N.E. and N.E., at midnight the barometer read 1001.0 mb.

"29th September, 1929. 2.0 a.m. Barometer 1000.0 mb. Wind veered to E. by N. rough E'ly sea and moderate E'ly swell, Ci-St/Nb. from N.E. At 6.0 a.m. the barometer began to rise and the wind veered to East, the sea moderating and a moderate swell running from the E.S.E.

"Noon, Latitude 18° 08' N., Longitude 68° 20' E., Course 080°, speed 11.5 knots. Barometer 1005.7 mb. and rising slowly, the wind had now veered to E.S.E. and large patches of blue sky appeared, occasional rain squalls were sighted to the S.W., Cu. from South.

"At midnight the barometer was steady and a gentle S. by E. breeze was blowing with a moderate S'ly sea and swell, Cu. 3/10.

"30th September, 1929, 8.0 a.m., A.T.S. Latitude 18° 49' N. Longitude 72° 11' E., light S'ly breeze, smooth sea and slight swell from S.W. Barometer 1010.0 mb. steady."

THE following is an extract from the Meteorological Report of S.S. *British Dominion*, Captain D. J. TAYLOR, Suez to Abadan. Observers Messrs. C. A JAMES, 2nd Officer and J. F. TRICKEY, 3rd Officer.

"September 30th, 1929, at 0902 G.M.T. Noon at ship in Latitude 12° 30' N., Longitude 44° 09' E., a wireless message was received from Aden asking all ships to look out for Tug *Mehentu* with request to inform her that a storm was near her vicinity. The tug was bound from Aden to Gulf of Cambay, and had no wireless on board. This request was followed at 0955 G.M.T. with a report that a storm of severe intensity was centred at 0800 G.M.T., within one degree of Latitude 18° N., Longitude 63° E., and moving in a N.W'ly direction. At 1400 G.M.T. it was centred within one degree of Latitude 18° N., Longitude 62° E., and moving in N.W'ly direction; and at 1800 G.M.T. the same message was received with exception that the word 'near' was substituted for 'within one degree.'

"On October 1st, Aden reported that at 0800 G.M.T. 'believe storm centred within one degree of Latitude 19° N., Longitude 59° E., and weakening. Ship's observations lacking.' The final report at 1758, stated, storm was weakening rapidly into depression crossing Arabian coast this evening, near Latitude 20° N. According to reports the cyclone travelled 240 miles from September 30th to October 1st, 0800 G.M.T. This cyclone must have been of exceedingly small diameter, for some of this Company's vessels were scattered over the vicinity of the supposed path of the storm, and report fine clear weather throughout. Although we were well to the West in the Gulf of Aden, our own weather was ideal, and no indications of a storm were present."

NOTE.—

This disturbance originated to the N.W. of Minikoi on September 26th and remained practically stationary until the 27th when it moved in a North-Westerly direction at approximately 10 knots, crossing the Arabian Coast on the evening of the 1st October.

From returns received from Observing Ships in the area the storm was apparently of small dimensions and slight intensity. A weather chart made on board *Shropshire* is reproduced on page 189.

LAND BIRDS. North Indian Ocean.

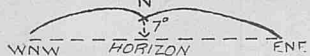
THE following is an extract from the Meteorological Log of S.S. *Port Denison*, Captain J. FERRIS, Wyndham to Colombo. Observer Mr. P. J. HOWE, 3rd Officer.


"24th September, 1929. During p.m. twilight on the above date in about Latitude $1^{\circ} 40' N.$, Longitude $88^{\circ} 23' E.$, a small flock of birds was observed. Many of these settled on board and perched about the bridge, etc. They were land birds, of a type similar to the swallow in size and shape of wing, and were of a dark blue colour with white throat. They allowed themselves to be fed and appeared quite tame—possibly due to exhaustion. The nearest land at the time was Port Simalur (Hog Is.) off the coast of Sumatra—a distance of approximately 440 miles. The weather for the previous two days had been gentle to moderate N.E'ly winds with occasional rain. Many birds were observed flying around the ship during the night, but it was impossible to note any distinguishing features about them."

AURORA BOREALIS. North Atlantic Ocean.

THE following is an extract from the Meteorological Log of S.S. *Newfoundland*, Captain A. W. FOXWORTHY at Halifax. Observer Mr. R. T. HANDLEY, 2nd Officer.

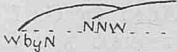
"AN INTERESTING WATCH. September 22nd, 1929. Weather at midnight moderate N.N.E. wind with sea getting less. Sky 3/10 Cirrus and no sign of movement. 1.05 a.m. Observed Cirrus over moon to be from E.S.E. then from E.N.E. to W.N.W. Well-defined

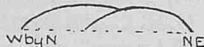
Aurora Borealis as follows  formed, the

heart shape bearing due North. At 1.30 a.m. from E.N.E. to N.N.W. a reflection observed 3° below original which was now 10° high. Sky now 4/10 Cirrus, Ci-St. from E.S.E. and the heart centre bearing N.N.E. The body is now moving up in the West and down in the East  2.10 a.m., Ci., Ci-Cu. from W.S.W.

reflection rising and joining main body. Heavy white Ci-St. in S.E. 2.20 a.m. large halo round moon, diameter about 7° - 10° and from E.N.E. end.

"Pencil ray of steady white light as in a searchlight beam. N.E. another ray not so bright. 2.30, whole body gone. 2.45, halo round moon disappears, body reforms low. Heart bearing North gradually

assuming greater power and forming  and with curtain effect in N.E. portion. 3.00, ring round moon again well defined. 3.02 a.m., Seal Island light now plainly above horizon bearing 52° , distant $28\frac{1}{2}'$. The halo round the moon has again gone

and the body is now  The curtain is much intensified and the W. by N. end begins to show signs of producing some curtain too. 3.10, body

and very bright. Wind now N.E. by E. force 2-3, sky 7/10 Ci. Sea N.E. by E., 3. No swell to be felt. 3.25, Venus observed rising on horizon, huge diameter and giving changes of red (deep red) and white, like an alternating light, continued so till altitude of $3\frac{1}{2}^{\circ}$ reached. 3.40 a.m., Ci-St. now pronounced 8/10, Venus looks greasy. Aurora is almost gone and the halo round the moon is very inconsistent. Made clearer when cloud passes over. 3.50, Aurora now gone. Sky clearer, Venus very bright."

IN PONTUS MARIS.

COMMODORE WILLIAM MARSHALL, C.B., D.S.O., R.D., R.N.R.

Oh, fair green-girdled mother of mine,
Sea that art clothed with the sun and the rain,
Thy sweet hard kisses are strong like wine,
Thy large embraces are keen like pain:
Save me and hide me with all thy waves,
Find me one grave of thy thousand graves,
Those pure, cold populous graves of thine,
Wrought without hands in a world without stain.

SWINBURNE.

DOUBLE RAINBOW.

China Sea.

THE following is an extract from the Meteorological Log of S.S. *Kiungchow*, Captain C. B. L. STRINGER, Hong Kong to Singapore via Hoihow. Observer Mr. O. Fox, Chief Officer.

"In Latitude $10^{\circ} 36' N.$, Longitude $109^{\circ} 17' E.$, at the conclusion of a passing rain squall, whilst in the above position on a voyage from Hoihow to Singapore, at 6.20 a.m. on September 24th, 1929, a double rainbow was observed covering an arc of the horizon from a S.S.W. point to N.W. for the Primary bow, and a S. by W. point to N.W. by W. point for the Secondary bow.

"Both the bows were continuous and unbroken for an arc of 180° and the Primary bow lasted from 6.20 to 6.50 a.m., whilst the Secondary bow was only visible from 6.20 to 6.28 a.m.

"The sequence of colours in the Primary Bow was Red, Yellow, Green, Blue and Purple, the Red predominating both in luminosity and width.

"The same sequence of colours prevailed in the Secondary bow, but of lesser luminosity, Red again predominating as in the Primary.

At 6.50 a.m. the Primary bow dissolved and nothing further was observed.

"Wind S.E. force 3. Weather cloudy with passing showers. Clouds A-St., Cumulus, amount 7."

NOTE.—In the Secondary rainbow as usually observed the sequence of colours is opposite to that of the Primary rainbow, violet on the outside and red on the inside.

RAINBOW.

South Pacific Ocean.

THE following is an extract from the Meteorological Log of S.S. *Rimutaka*, Captain C. B. LAMB, Wellington, N.Z. to Balboa, Observers Messrs. F. C. PRETTY, Chief Officer and R. J. STEPHENS, 4th Officer.

"September 26th, 1929, at 4.45 p.m. A.T.S. in Latitude $31^{\circ} 05' S.$, Longitude $140^{\circ} 30' W.$, observed a rainbow, red, yellow, green, purple. Maximum green vertex 18° , secondary red and green. The peculiarity of the phenomenon observed was that under the Primary, clear sky was visible whilst at an angular distance of 4° away from it, could be seen a thin purple stripe, visible 3 minutes."

LUNAR RAINBOW.

North Atlantic Ocean.

THE following is an extract from the Meteorological Report of S.S. *Inkum*, Captain J. T. MEETHAN, New York to Brisbane. Observer Mr. J. R. PARRY, 3rd Officer.

"September 20th, 1929, 8.30 p.m. in Latitude $14^{\circ} 09' N.$, Longitude $71^{\circ} 19' W.$, observed a lunar rainbow commencing at the base of a low lying bank of Nimbus clouds about 2 points on Starboard bow. It did not at first present a distinct arc but had the appearance of a searchlight, being milky white in colour. It gradually extended until a perfect arc was formed from 2 points on Starboard bow to 1 point abaft Starboard beam and remained visible for about 15 minutes.

"Moon's Altitude in opposite quarter 18° approximate. Very clear weather, sky sparsely clouded with Cumulus and bank of Nimbus to S.W., moving slowly N.E. Barometer 29.76 in. Temperature $84^{\circ} F.$ "



The Master of the *Majestic* 1928-1930.

COMMODORE WILLIAM MARSHALL, C.B., D.S.O., R.D., R.N.R.

H.M.S. *Conway*. Leaving that old alma mater of so many officers of the Merchant Navy in 1891, he was apprenticed to Messrs. ISMAY, IMRIE & Co., serving his time in their full rigged ship *Copley*. In this ship he remained until 1895, and it was in the previous year, in San Francisco, that the present writer first met the late Commodore, who was then serving as third mate, with Captain DIXON in command. He served all his sea career with the WHITE STAR LINE, with the exception of two voyages he made as second mate and first mate in GILLISON and CHADWICK's ship *Drumlanrig*. In 1898 he passed for extra master and in 1899 was appointed a junior officer in the service of his old company, the WHITE STAR LINE; during part of the South African war he served as third officer in the old *Britannic* (Transport 62), under the command of Captain (now Sir) BERTRAM HAYES, one of his predecessors in command of *Majestic*. In 1900 he received a commission as sub-lieutenant, Royal Naval Reserve, and in 1902-3 he completed gunnery and torpedo courses at Whale Island, and served for twelve months as Acting Lieutenant R.N.R., in H.M.S. *Collingwood*, on the completion of which training he re-joined his Company, serving in the various grades of officer until 1911, when he received his first command.

In the early part of the late war Captain MARSHALL was in command of *Afric*, a ship in which this writer once served for two years as a junior officer: we were together with the first Australian-New Zealand convoy, he in *Afric*, I in *Hawkes Bay*, when the German cruiser *Emden* met her fate by the guns of *Sydney*, one of our escorting cruisers. In October, 1914, the late Commodore was promoted Commander, R.N.R., and appointed in command of an armed patrol vessel early in 1915; in 1917 he was again promoted, being gazetted Captain, R.N.R., 5th July, 1917, and appointed for special service, which service was mine sweeping. While carrying out his duties on this hazardous service, he was awarded the D.S.O., and later he received a Bar to this Order.

At the end of the war Captain MARSHALL returned to his lawful occasions in the WHITE STAR LINE, commanding in due course all the more important ships of the company; in 1925 he was created a military C.B., and in 1926 he was appointed a Royal Naval

Reserve Aide-de-Camp to H.M. THE KING, attending HIS MAJESTY in that capacity when he opened the new Gladstone Dock at Liverpool in 1927. In that year he was honoured by promotion to Commodore, 2nd Class, being at that time in command of the R.M.S. *Olympic*. Next year Commodore MARSHALL retired from the active list of the Reserve, and at the beginning of the present year he was appointed Commodore of the WHITE STAR LINE, flying his pennant in *Majestic*, which ship he had commanded since the end of the year 1928.

Commodore MARSHALL had been a member of the Corps of Voluntary Marine Observers for some years, and the various ships under his command had made regular returns since 1921, gaining several Excellent Awards. He was a skilled navigator, and ever ready to advise young officers who consulted him regarding the many problems with which they were constantly confronted in this age of swift progress.

He relinquished command of *Majestic* some few weeks prior to his death, owing to indisposition; that indisposition proved fatal, and death claimed him at the early age of fifty-seven years. He leaves an abiding memory among those of us who were privileged to claim his friendship, and a professional reputation which will endure.

At his own request his body was buried at sea, and the Admiralty honoured his memory by detailing a destroyer to convey his remains to their sepulchre in the depths of the sea that he loved, for WILLIAM MARSHALL was above all a true seaman, one to whom the sea was not only an element to navigate, but an intimate companion whose every mood and condition was known to him—a seaman of masts and sails.

And now he is with the ages, and I who write pay to a departed breath the tribute of an enduring regard: life is a fateful enigma, but the record of an honourable and generous one endures like a fragrant perfume, and those among us who knew him will cherish his memory with fidelity, with admiration and with affection.

F.G.C.

INDIAN OCEAN CURRENTS.

II—The Region of Sokotra and Cape Guardafui during the South-West Monsoon.

IN MARINE OBSERVER, Volume VI, No. 66, June, 1929, an article by the Marine Superintendent was published on "Steamship Route from Colombo, and the East, to Perim, during the S.W. Monsoon, with a brief survey of Currents, Wind, Cloud and Conditions of Visibility, in the Region of Sokotra and Cape Guardafui." Three lithographic charts of the Sokotra region accompanied the article:—I. Mean Current, Sea and Swell for July and August. II. Mean Wind, Cloud Amount, and State of Obscurity of the Atmosphere—July and August. III. Mean Current for September. The currents shown in these charts were computed in one-degree squares from the observations of British ships made during the period 1870 to 1922 inclusive.

The current charts above referred to have been revised by the inclusion of the currents observed by British ships during the years 1923 to 1929 inclusive. The other data given on the original charts are not included. These inset charts for July and August combined, and for September, for the period 1870—1929, will be found in the lithographic pages at the end of the present number.

The S.W. Monsoon reaches Cape Guardafui about the end of April and blows in this region for the five months May to September inclusive, being at its maximum strength during the months of June, July and August. As was stated in the second of the articles on the Monsoons, MARINE OBSERVER, Volume VI, 1929, page 132, there are two regions in the Indian Ocean where the S.W. Monsoon at its strength blows strongest and one of these is on the diagonal from the African coast south of Cape Guardafui, in about Latitude 5° N., to the central longitudes of the Arabian Sea in Latitude 15° N. to 20° N. This region is in fact the "strong streak" of Lieutenant A. DUNDAS TAYLOR, Indian Navy, and was shown by

him on a chart published in 1853. Roughly the area of strong monsoon lies to the right of a diagonal line passing through Latitude 10° N., Longitude 54° E., i.e., about 150 miles south of Sokotra. In the area between Cape Guardafui and Sokotra the Monsoon though fairly steady is considerably weaker, but is stronger to the northward of Sokotra. TAYLOR's "soft patch in the S.W. Monsoon," the existence of which is not confirmed by the modern charts, lies immediately to the right of the area of these inset current charts between Latitudes 5° N., and 12° N.

The East African Coast Current runs northward following the trend of the coast during the S.W. Monsoon period. North of the Equator the S.W. Monsoon drift sets in directions between N.E. and E. over the ocean generally, but the East African Coast Current is distinguishable nearly to Cape Guardafui on account of its greater drift. According to Admiral SOMERVILLE's "Ocean Passages of the World" the actual rate of the current observed along the coast is 1½ knots between Negro Bay and Ras Hafun. Presumably these observations were taken close inshore as the Admiralty Current Charts show currents up to 100 miles per day in August between Latitude 7° N. and Ras Hafun, and currents up to 80-90 miles per day in other monsoon months. FINDLAY's "Sailing Directory for the Indian Ocean" gives the drift of the East African Coast Current as from 2 to 4 knots.

The charts which accompany this article show that the mean strength of the East African Coast Current between Latitudes 7° N. and 11° N. varies between 30 and 54 miles per day, in different areas, during the months of July and August. In September the mean current is more variable. The strongest mean current between the coast and Longitude 53° E. is found in September in Latitude

9° N. to 10° N., Longitude 51° E. to 52° E., N. 53° E., 71 miles per day. The mean strength of the East African Coast Current as a whole is shown by the new charts to be from $1\frac{1}{2}$ to 2 knots.

There is an area of very strong mean current about 170 miles due south of Sokotra, in Latitude 9° N. to 10° N., Longitude 53° E. to 55° E. The mean current in this region is one of the strongest known in the world, with drifts of over 70 and 90 miles per day, stronger than the Gulf Stream in its strongest part and season. The mean drifts for September differ only by one mile per day from those of July and August. The only small point of difference shown between July and August on the one hand and September on the other is that in the former months the mean currents in the squares immediately to the south of the above region of strong current are rather stronger than those immediately to the north; this state of affairs is reversed in September. It is interesting to note that the Admiralty Current Charts also show this area of strong current and place it in the same Latitude, about 9° N.

The following passage is quoted by FINDLAY, the information having been derived from TAYLOR:—"To the South of Sokotra, at a distance of about 150 miles, is a great whirl of current, caused probably by the interposition of the island; or, it may be, that shoal water exists at that spot; it commences about the parallel of Ras Hafun, when the current strikes off to the eastward to the 55th meridian, then to the southward, to the 5th parallel, whence it again curves up to the north-eastward, forming a complete whirl. At the northern limit the velocity is very great, being 4 to 5 miles per hour, while at its southern extreme it is only $\frac{3}{4}$ to 1 mile per hour. A very heavy confused sea is created by this whirl. Care should be taken to avoid the strongest portion of the current in making the coast of Africa from the eastward, by keeping well to the southward."

The inset chart for July and August clearly shows that the northern half of TAYLOR's whirl exists between the coast and Longitude 56° E., formed by the north-easterly East African Coast Current, the strong area of easterly current in Latitude 9° N., and the south-easterly currents between Longitudes 54° E. and 56° E. It is also seen on the September chart, somewhat interrupted on the eastern side. The charts do not extend far enough to show the southern part of the whirl, if it exists; it is not shown by the Admiralty Current Charts, save in a very partial manner in those for August and September. It is therefore possible that the current south of Latitude 7° N. does not turn westward but eastward, as it is clearly shown to do, between Latitudes 2° N. and 4° N., in the Admiralty chart for July.

Some further features of interest may be noted on the one-degree inset charts. There is a marked weakness and variability of mean current in the area south of Latitude 11° N. and east of Longitude 57° E. in September, as compared with July and August. It is probable that the main cause of this weakening is the decrease of the monsoon which begins in that month. As we have seen there is no weakening of the East African Coast Current, as a whole, in September.

The weak counter-currents shown in various localities depend on too few observations to be regarded as significant. According to FINDLAY the current passes through the channel between Cape Guardafui and Sokotra at the rate of about $1\frac{1}{2}$ knots. The new charts show, however, that the rate is half this, approximately $\frac{3}{4}$ knot.

In Table I are given particulars of all currents with drifts of 5 knots or more observed during the period 1910-1928 in this area.

TABLE I.

Latitude 7° N. to 15° N., Longitude 50° E. to 60° E. Currents observed during the period 1910-1928 with drifts equalling or exceeding 120 miles per day.

Name of Ship.	Date.	Middle.		Current.		Actual Period Observed. (Hours.)
		Latitude N.	Longitude E.	Set.	Drift (24 hrs.).	
<i>Port Albany</i> ...	Sept. 1, 1923	9° 17'	51° 59'	N. 76° E.	168	7
<i>Port Augusta</i>	Aug. 12, 1922	9° 22'	53° 34'	S. 71° E.	128	6
<i>Port Augusta</i>	Aug. 12, 1922	9° 45'	53° 17'	S. 78° E.	125	5
<i>Rotenfels</i> ...	Sept. 9, 1920	9° 10'	53° 56'	S. 61° E.	144	7
<i>Nore</i> ...	Aug. 24, 1922	10° 24'	53° 07'	N. 75° E.	144	6
<i>Nore</i> ...	Aug. 24, 1922	9° 24'	54° 35'	S. 58° E.	120	11
<i>Knight Companion.</i>	July 3, 1927	9° 18'	53° 03'	N. 69° E.	127	13

All the drifts given in this table for 24 hours are derived from short-period observations, as stated. All but two of these currents lie within the area of exceptionally strong current referred to above, and the others are closely adjacent.

An examination of all currents observed during the period 1910-1928 in the two one-degree squares of strong current shows that there is no exceptional current in this region in the months of May and October and that the strong currents are confined to the period July to September, June being a transition month. This is confirmed by the Admiralty Current Charts which show exceptional currents only in the four months June to September.

Speaking of the S.W. Monsoon period FINDLAY says:—"Little is known of the currents at this season close to the northward of Sokotra, but there is said to exist a whirl similar to, but of less magnitude than that South of the island." THE MARINE OBSERVER Charts show no evidence of any such whirl.

The portion of the East African Coast Current shown on the inset charts for the S.W. Monsoon season appears to be a coastline current formed by the blowing of the Monsoon along the African coast. Away from this current and the strong offshoot south of Sokotra the current is distinctly weaker though the wind is the same, and in the open ocean it more nearly resembles a drift current. It is difficult to account for the very strong currents south of Sokotra, as the conformation of the bed of the ocean is not known in this region. The inset current charts plainly show that the eastward deflection of the current in Latitude 9° N. to 11° N. follows the eastward trend of the coast, that is including the island of Sokotra and the shoals stretching out from it and from Cape Guardafui. We also know that the region of strongest current is in the neighbourhood where the strongest part of the Monsoon starts. A coastline current, according to EKMAN's theory, is deflected to the right (in the Northern Hemisphere) when moving over a gradually decreasing depth and it was shown in the article on the currents of the North Atlantic Ocean, MARINE OBSERVER, Volume IV, December, 1927, that the northern edge of the Gulf Stream was probably deflected eastward by the southern edge of the Grand Banks of Newfoundland in this manner. It is possible that a similar state of affairs accounts for the deflection to E. and S.E., south of Sokotra, of the East African Coast Current.

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

I.—SHIPS' WIRELESS WEATHER SIGNALS.

No. 73, MARINE OBSERVER, the list below gives information of those stations which have been detailed, up to the time of going to press, to receive on C.W., reports from **A Selected Ships**, and Chart X herewith illustrates this, also spark stations which may intercept reports from **B Selected Ships**, addressed to **CQ**.

Request for Information.

[illegible]

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, page 27, Vol. VII, No. 73.

For full particulars of "Selected Ships" Routine Meteorological Reports with Schedule for Communication, see pages 22 to 24, Vol. VII, No. 73.

See List of W/T Stations detailed to receive reports from **A Selected Ships** with particulars up to date on previous page.

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 24, Vol. VII, No. 73 (January, 1930, MARINE OBSERVER).

B Selected Ships when within range of stations ringed in on Chart X, in making their reports to **CQ** should make special endeavour to ensure that the report is received at these shore stations.

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.

II.—WIRELESS WEATHER SIGNALS.

WIRELESS WEATHER BULLETINS.

The method of decoding station weather reports made in code from shore stations intended for shipping was described in the British "Weather Shipping" Bulletin, on page 52 of Volume VII, No. 74. (The February, 1930, Number.)

The same method of decoding weather reports applies in all cases where the International Ships' Wireless Weather Telegraphy Code is used having regard to the Key figures given in each case where they differ from the British Weather Shipping Bulletin.

United States of America (Pacific Coast).

(C.W. Issues.)

San Francisco, California, W/T Station, approximate Latitude 38° 06' N., Longitude 122° 17' W., call sign **NPG**, broadcasts weather bulletins as follows:—

At 0330 G.M.T., and at 1530 G.M.T., on wavelengths of 7,000 and 2776 metres (C.W.) simultaneously.

The bulletins commence with the letters **USWB** (U.S. Weather Bureau) and are divided into two parts.

Part I is broadcast in code* and contains observations from the stations in the list below, taken at 0100 G.M.T. for the 0330 G.M.T., bulletin and at 1300 G.M.T., for the 1530 G.M.T., bulletin, except as follows, where the observations do not synchronise:—

St. Paul, Juneau, Kodiak and Dutch Harbour, Alaska, observations are taken at Midnight and Noon G.M.T. Observations at remaining Alaskan stations are taken at 1700 and 0500 G.M.T.

Honolulu observations taken at 0630 and 1830 G.M.T.

* No information is available up to the time of going to press as to changes of Key Letters or Code, following the Conference of Safety of Life at Sea, 1929, and the International Meteorological Conference at Copenhagen, 1929.

Guam, Manila, China and Japan observations taken at 2200 G.M.T.

Midway observations taken at 0630 G.M.T.

First Part.

Indicator Letters and Stations.

Indicator Letters.		Station.						Position (approx.). Latitude.	Longitude.

Canada.

ED	- Edmonton, Alberta - - - - -	53° 33' N.	113° 30' W.
KA	- Kamloops, B.C. - - - - -	50° 41' N.	120° 29' W.
CY	- Calgary, Alberta - - - - -	51° 02' N.	114° 02' W.
SC	- Swift Current, Sask. - - - - -	50° 19' N.	108° 02' W.
PR	- Prince Rupert, B.C. - - - - -	54° 18' N.	130° 18' W.

Indicator Letters and Stations—cont.

Indicator Letters.	Station.	Position (approx.).
		Latitude. Longitude.
United States, etc.		
TAT	- Tatoosh I, Wash. - - - - -	48° 23' N. 124° 44' W.
SE	- Seattle, Wash. - - - - -	47° 38' N. 122° 20' W.
NH	- North Head, Wash. - - - - -	46° 16' N. 124° 04' W.
PD	- Portland, Oreg. - - - - -	45° 32' N. 122° 41' W.
RO	- Roseburg, Oreg. - - - - -	43° 13' N. 123° 20' W.
EUR	- Eureka, Calif. - - - - -	40° 48' N. 124° 11' W.
RB	- Red Bluff, Calif. - - - - -	40° 10' N. 122° 15' W.
SM	- Sacramento, Calif. - - - - -	38° 35' N. 121° 30' W.
SF	- San Francisco, Calif. - - - - -	37° 48' N. 122° 26' W.
FN	- Fresno, Calif. - - - - -	36° 43' N. 119° 49' W.
SPE	- San Pedro, Calif. - - - - -	33° 44' N. 118° 16' W.
PAR	- Point Arguello, Calif. - - - - -	34° 35' N. 120° 39' W.
LA	- Los Angeles, Calif. - - - - -	34° 03' N. 118° 15' W.
DI	- San Diego, Calif. - - - - -	32° 43' N. 117° 10' W.
SPO	- Spokane, Wash. - - - - -	47° 40' N. 117° 25' W.
WW	- Walla Walla, Wash. - - - - -	46° 02' N. 118° 20' W.
BA	- Baker, Oreg. - - - - -	44° 46' N. 117° 50' W.
HL	- Helena, Mont. - - - - -	46° 34' N. 112° 04' W.
BS	- Boise, Idaho - - - - -	43° 37' N. 116° 13' W.
DL	- Lander, Wyo. - - - - -	42° 50' N. 108° 45' W.
WM	- Winnemucca, Nev. - - - - -	40° 58' N. 117° 43' W.
R	- Reno, Nev. - - - - -	39° 32' N. 119° 49' W.
SLC	- Salt Lake City, Utah - - - - -	40° 46' N. 111° 54' W.
MD	- Modena, Utah - - - - -	37° 48' N. 113° 54' W.
DV	- Denver, Colo. - - - - -	39° 45' N. 105° 00' W.
GJ	- Grand Junction, Colo. - - - - -	39° 04' N. 108° 34' W.
SA	- Santa Fe, N. Mex. - - - - -	35° 41' N. 105° 57' W.
PH	- Phoenix, Ariz. - - - - -	33° 28' N. 112° 00' W.
YU	- Yuma, Ariz. - - - - -	32° 45' N. 114° 36' W.
HO	- Honolulu, Hawaii - - - - -	21° 19' N. 157° 52' W.
MDI	- Midway Island - - - - -	28° 12' N. 177° 22' W.
FMA	- Manila P.I. - - - - -	14° 35' N. 120° 59' E.
FGM	- Guam. - - - - -	13° 27' N. 144° 53' E.

China and Japan, etc.

FHO	Hong Kong, China	22° 18' N.	114° 10' E.
FSH	Shanghai, China	31° 15' N.	121° 29' E.
FBI	Bonin Island	27° 05' N.	142° 11' E.
FKO	Koshun, Formosa	25° 08' N.	121° 45' E.
FNA	Naha, Japan	26° 13' N.	127° 41' E.
FKA	Kagoshima, Japan	31° 34' N.	130° 33' E.
FTO	Tokio, Japan	35° 41' N.	139° 45' E.
FNE	Nemuro, Japan	43° 20' N.	145° 35' E.

Weather reports from ships in the North Pacific Ocean follow the reports from the land stations in Part I. Ship's observations taken at Midnight G.M.T. being broadcast in the 0330 G.M.T. bulletin and those taken at Noon G.M.T. being broadcast in the 1530 G.M.T. bulletin. They are broadcast in two five-figure groups* for each ship, preceded by the W/T call sign of the reporting ship.

Part II of the bulletins is in plain language and consists of a summary of general pressure distribution; wind and weather forecasts for ocean zones (see CHARTLET below); storm warnings (for particulars see p. 199), and flying weather forecasts for zones 12, 13 and 14 (see CHARTLET below).

Periods covered by Forecasts.

In 0330 G.M.T. bulletins:

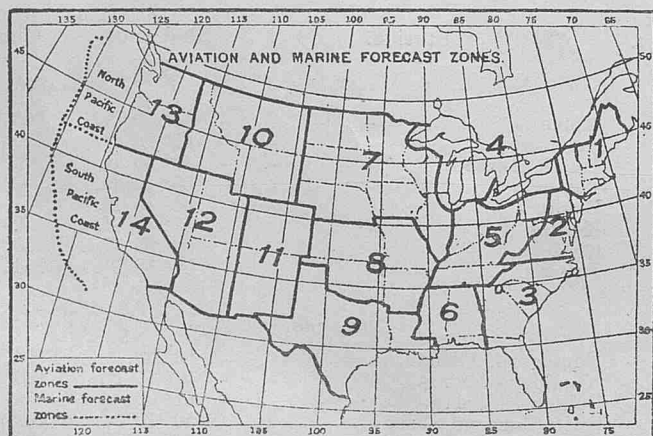
Wind and weather forecasts; 24 hours, beginning at 0800 G.M.T.

Flying weather forecasts; 12 hours, 0800 G.M.T., until 2000 G.M.T.

In 1530 G.M.T. bulletins:

Wind and weather forecasts; 24 hours beginning at 2000 G.M.T.

Flying weather forecasts; 12 hours, 2000 G.M.T., until 0800 G.M.T.



San Francisco W/T Station also transmits a report of the weather conditions in the Bonita Channel, every four hours, commencing with 0000 G.M.T. Wavelength, 2,776 metres (I.C.W.).

Hawaiian Islands.

(I.C.W. Issue.)

Honolulu-Pearl Harbour W/T Station, approximate Latitude 21° 12' N., Longitude 157° 58' W., call sign **NPM**, broadcasts weather forecasts for the Hawaiian Islands and neighbouring ocean areas at 0230 and 2230 G.M.T., on a wavelength of 5,552 metres (I.C.W.). The station also broadcasts the barometric reading, wind direction and force and state of weather at Honolulu at 0630, 1830 and 2230 G.M.T. on a wavelength of 5,552 metres (I.C.W.).

Mexico.

(C.W. Issue.)

Chapultepec W/T Station approximate Latitude 19° 25' N. Longitude 98° 11' W. call sign **XDA**, broadcasts weather bulletins at 0100 and 1900 G.M.T. after Time Signal on a wavelength of 2,000 metres (C.W.).

The bulletin is in two parts, the 1900 bulletin containing observations of 1300 G.M.T.

Part I., in code,* contains observations from the following stations:—

Station.	Position approx.	
	Latitude.	Longitude.
Acapulco	16° 52' N.	99° 50' W.
Chihuahua	28° 32' N.	106° 28' W.
Frontera	18° 35' N.	92° 38' W.
Guaymas	27° 58' N.	110° 48' W.
Leon	21° 01' N.	101° 15' W.
Lerdo	—	—
Manzanillo	19° 00' N.	104° 20' W.
Islas Marias	21° 40' N.	106° 30' W.
Matamoros	25° 53' N.	97° 33' W.
Mazatlan	23° 10' N.	106° 22' W.
Monterrey	25° 34' N.	100° 20' W.
Payo Obispo	18° 29' N.	88° 22' W.
La Paz	24° 10' N.	110° 18' W.
Progreso	21° 16' N.	89° 36' W.
Salina Cruz	16° 17' N.	95° 15' W.
Tacubaya	19° 24' N.	99° 12' W.
Tampico	22° 11' N.	97° 53' W.
Tapachula	15° 10' N.	92° 27' W.
Vera Cruz	19° 12' N.	96° 10' W.

Part II. sent *en clair* (Spanish) gives information concerning the general weather situation, position of centres of High or Low pressure areas, and weather forecasts for 24 hours.

WIRELESS STORM WARNINGS.

United States of America. (Pacific Coast.)

(C.W. and Spark Issues.)

The following W/T Stations broadcast storm warnings at the times stated below. Ships may request any of the stations mentioned to furnish the latest storm warning. The warnings are for a period of 24 hours beginning at the hour indicated in the messages.

* No information is available up to time of going to press as to changes of Key Letters or Code, following the Conference of Safety of Life at Sea, 1929, and the International Meteorological Conference at Copenhagen, 1929.

W/T Station and position (approx.).	Call Sign.	Wave-length. metres.	Broad-casting Time G.M.T.	Particulars.
Puget Sound - Lat. 47° 42' N. - Long. 122° 37' W.	NPC	2,941 (C.W.)	0100 0400, 1300 1700, 2100	Storm Warnings.
Tatoosh I., Wash. - Lat. 48° 23' N. - Long. 124° 44' W.	NPD	800 (Spk.)	0100, 0400 1300, 1700 2100	
Eureka, Calif. - Lat. 40° 42' N. - Long. 124° 16' W.	NPW	2,776 (C.W.)	2018	Storm Warnings for the coast of Washington and Puget Sound.
			0018, 0433 0818, 1218 1638, 2018 0330, 1530	Storm Warnings for the coast of California N. of San Francisco and advices concerning storm warnings for the N. Pacific Coast.
San Francisco, Calif. - Lat. 37° 39' N. - Long. 122° 23' W.	NPG	7000 (C.W.) 2,776 (C.W.)		Storm Warnings. In Second part of weather bulletin.
		2,776 (C.W.)	0000, 0400 0800, 1200 1600, 2000	Storm Warnings. For N. California coast.
San Diego, Calif. - Lat. 32° 42' N. - Long. 117° 15' W.	NPL	2,941 (C.W.)	0500, 1630 2200	Storm Warnings. Broadcast on receipt and at times stated.

III. WIRELESS TIME SIGNALS.

United States of America.

For method of transmission of the undermentioned Time Signals see diagram, p. 183, Vol. VII, No. 80.

United States of America, Pacific Coast.

(C.W. Issues.)

W/T Station.	Call Sign.	Wavelength metres.	Time of Signal being made G.M.T.	—
Astoria, Wash. - Lat. 46° 11' N. - Long. 123° 51' W.	NPE	2,941 (C.W.)	h. m. s. h. m. s. 16 55 00-17 00 00	Sent daily.
Eureka, Calif. - Lat. 40° 41' 22" N. - Long. 124° 16' 10" W.	NPW	2,776 (C.W.)	16 55 00-17 00 00	
San Francisco, Calif. - Lat. 38° 05' 55" N. - Long. 122° 16' 37" W.	NPG	4,543 (C.W.)	{ 5 55 00- 6 00 00 } 19 55 00-20 00 00	Sent daily.

NOTE.—The time signal, broadcast from San Francisco W/T Station, emanates from the Chronometer and Time Station, Mare Island.

Hawaiian Islands (C.W. Issue).

W/T Station.	Call Sign.	Wavelength metres.	Time of Signal being made G.M.T.	—
Honolulu, Pearl Hbr. - Lat. 21° 20' 45" N. - Long. 157° 57' 56" W.	NPM	11,490 (C.W.) and 2,828 (I.C.W.)	h m s h m s 23 55 00-0 00 00	Sent daily.

NOTE.—These time signals are relayed from the standard clock at Pearl Harbour, which is checked periodically by means of the time signals broadcast from San Francisco. They are not so accurate as the Washington-Arlington time signals explained in this Journal, Vol. VII, No. 80, page 182.

IV. VISUAL STORM WARNINGS.

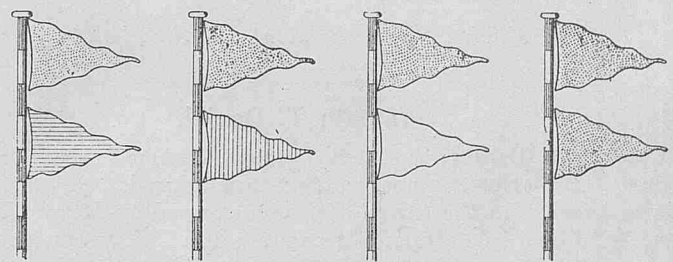
United States of America (Pacific).

The United States system of Visual Small-craft, Storm, and Hurricane Warnings as explained on p. 183 of Vol. VII, No. 80, is in operation at a number of stations on the Pacific Coast of the United States.

Mexico.

The following system of (1) visual storm and (2) wind signals has been established at ports on the coasts of Mexico.

(1) Storm signals are used to give warning of the existence of cyclonic disturbances whether distant or near, or, of the existence of bad weather outside the port. The storm signals consist of pennants only and their meanings, are as follows:—

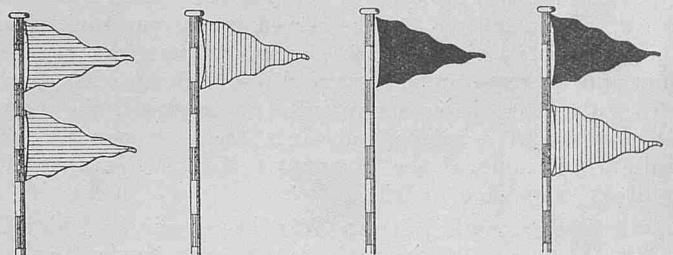


Bad weather North of the port.

Bad weather South of the port.

Bad weather East of the port.

Bad weather West of the port.



Northerly gale from Matamoras begun. (Gulf ports only.)

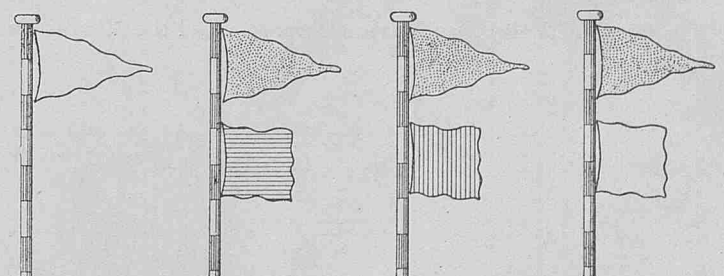
Gulf ports.—Cyclone in Caribbean Sea. Pacific ports.—Distant cyclone.

Gulf ports.—Cyclone in Gulf of Mexico. Pacific ports.—Cyclone close by.

Cyclone at the Port, or will pass close by on that day.

Night Signals.—Two red lights, vertical, are hoisted to indicate that navigation may be dangerous.

(2) The following signals consisting of pennants, denoting the strength, and flags the direction of the wind, are used to indicate its probable strength and direction from the time of hoisting the signal until the following 0600. They will be lowered, if necessary, to hoist a storm signal and in the evening when no longer visible:—

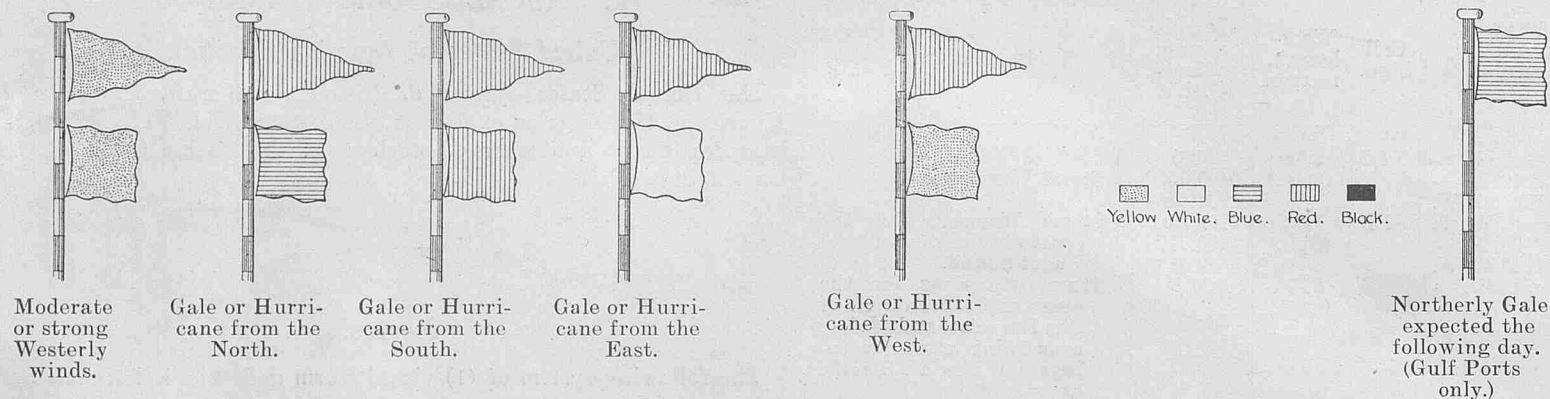


Light or moderate winds.

Moderate or strong Northerly winds.

Moderate or strong Southerly winds.

Moderate or strong Easterly winds.



Special Notices Regarding Personnel.

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

Captain T. Daniel.

Captain T. DANIEL of R.M.S. *Orduna*, Commodore of the PACIFIC STEAM NAVIGATION Company's fleet has retired. He served his apprenticeship in the barque *Britannia* owned by Messrs. HAMILTON Bros. of Liverpool. During the four and a half years spent in her he made voyages to Singapore, Chittagong, Calcutta, California and Oregon. After leaving the *Britannia* he passed for 2nd Mate and entered the employment of JOHN ALLEN and Co. of Leadenhall Street, with whom he remained for three years as 2nd and Chief Mate. In 1892 he passed for Master and Extra Master and obtained an appointment as 4th Officer of the PACIFIC STEAM NAVIGATION Co.'s *Iberia*. From 1892 to 1906 he served in various ranks from 4th to Chief Officer in eight of the Company's steamers on the PACIFIC LINE and ORIENT-PACIFIC LINE and also did some Norway cruising.

In July, 1906, he was appointed to command the PACIFIC LINE intermediate *Esmeraldas* and since then commanded four Intermediate and nine of the Company's Mail Steamers, and was appointed Commodore in 1925.

During the South African War he served as Chief Officer of H.M.T. *Ortona* and during the late war as Navigating Lieutenant in H.M.S. *Oropesa* in the 10th Cruiser Squadron. On the *Oropesa* being transferred to the French Navy he returned to the PACIFIC Co. and commanded various transports until 1919. In 1919 and 1920 he commanded the H.M.A.T. *Panama* during the operations in Asia Minor and took part in the evacuation of Syria and South Russia. During the last 3½ years of his sea career he commanded the R.M.S. *Orduna*.

During the 46 years of sea life, 38 were spent in the service of the PACIFIC STEAM NAVIGATION Co.

Captain DANIEL has been a member of the Corps of Voluntary Marine Observers since 1920.

Lieutenant-Commander R. H. Dominy, C.B.E., R.N.R.

Captain R. H. DOMINY of R.M.S. *Orbita* has recently retired. He first went to sea in November, 1884, in the Ship *Oronsay* belonging to Messrs. JAMES SHEPHERD & Co., London, who were the remains of Messrs. KELLY and MARTIN of China Tea Trade fame. The *Oronsay* was engaged in the Australian trade and usually loaded wool, homeward. After serving Messrs. SHEPHERD for eight and a half years Captain DOMINY had a year in Tramp steamers. He then joined the P.S.N. Co., in May, 1894, and remained with them until his retirement in April, 1930. He was appointed to his first command in 1906 and commanded various Cargo and Mail Steamers which included the *Orcoma* and *Orbita*.

His War work extended for a period of nearly five years, starting with a hurried trip to the Falkland Islands, and then returned for the Gallipoli Campaign. Then followed continuous War work which included convoy work until the Armistice, after which he was engaged in North Russia and finally finished Government work in July, 1920.

He was awarded the C.B.E. and holds the Royal Humane Society's Medal for Life-Saving.

Captain DOMINY was a member of the Corps of Voluntary Marine Observers from 1923.

Captain J. B. Wright.

Captain JOSEPH BANKS WRIGHT, Commander of S.S. *Accra*, has retired after 41 years' service with the ELDER DEMPSTER LINE.

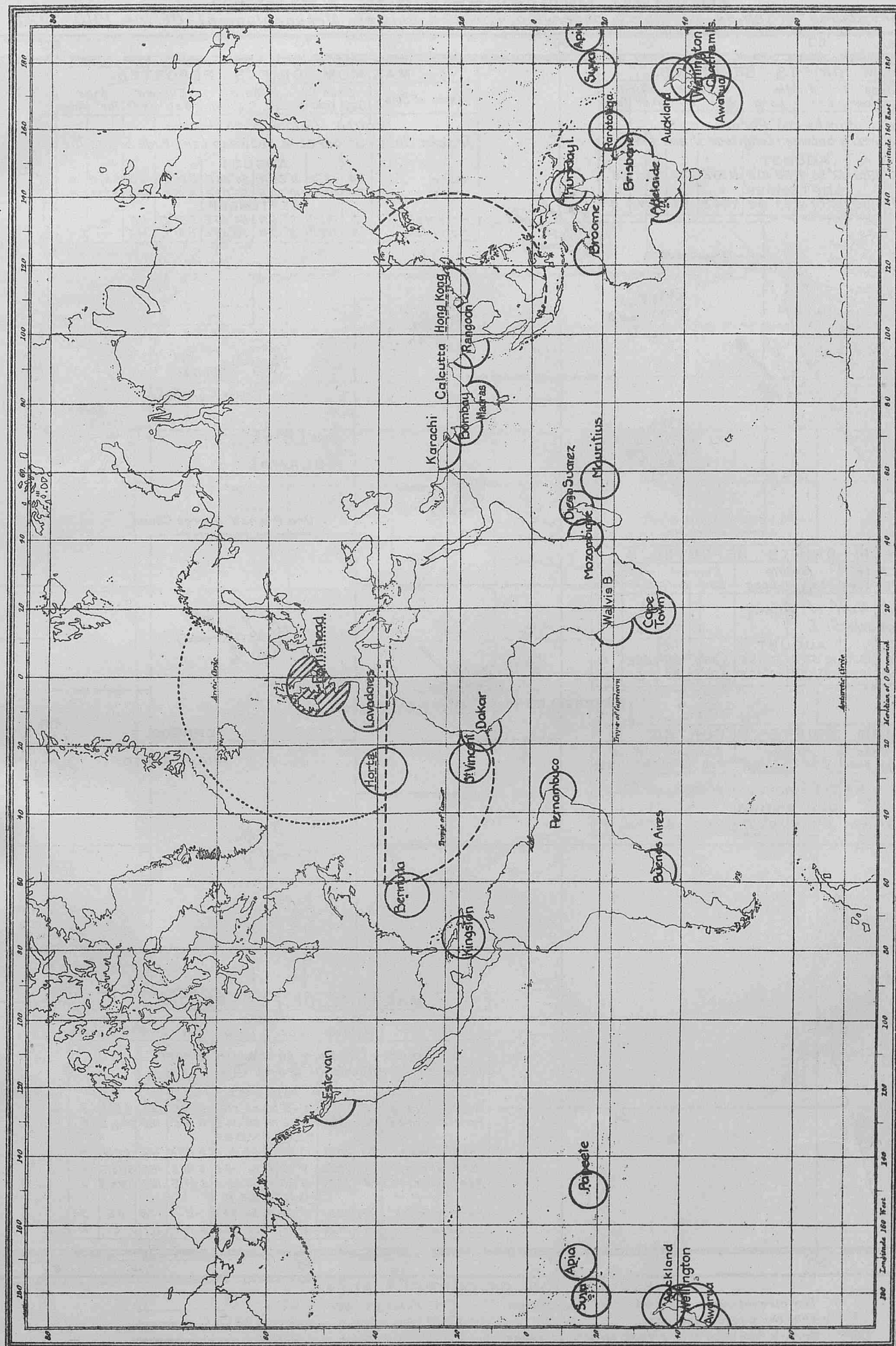
Following service in sail he joined Messrs. ELDER DEMPSTER & Co., as third officer in 1889 and obtained his first command in 1894 when he was appointed master of the *Ambriz*. Since then he has commanded no fewer than 15 of the Company's fleet of which he was Vice Commodore when he retired. Captain WRIGHT has been a regular member of the Corps of Voluntary Marine Observers since 1921.

The Corps of Voluntary Marine Observers and the Marine Division join in wishing these officers long life, health and happiness in their well earned retirement.

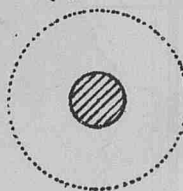
Chart X. — SHIPS' WIRELESS WEATHER SIGNALS.

Vol. VII. No 81.

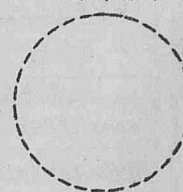
Stations for Reception of Routine Wireless Weather Reports from "Selected Ships."



The dotted circle indicates the area in which British "A Selected Ships" report to Portishead. The small shaded circle indicates the area from which reports are prohibited 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 also underlined with a pecked line.



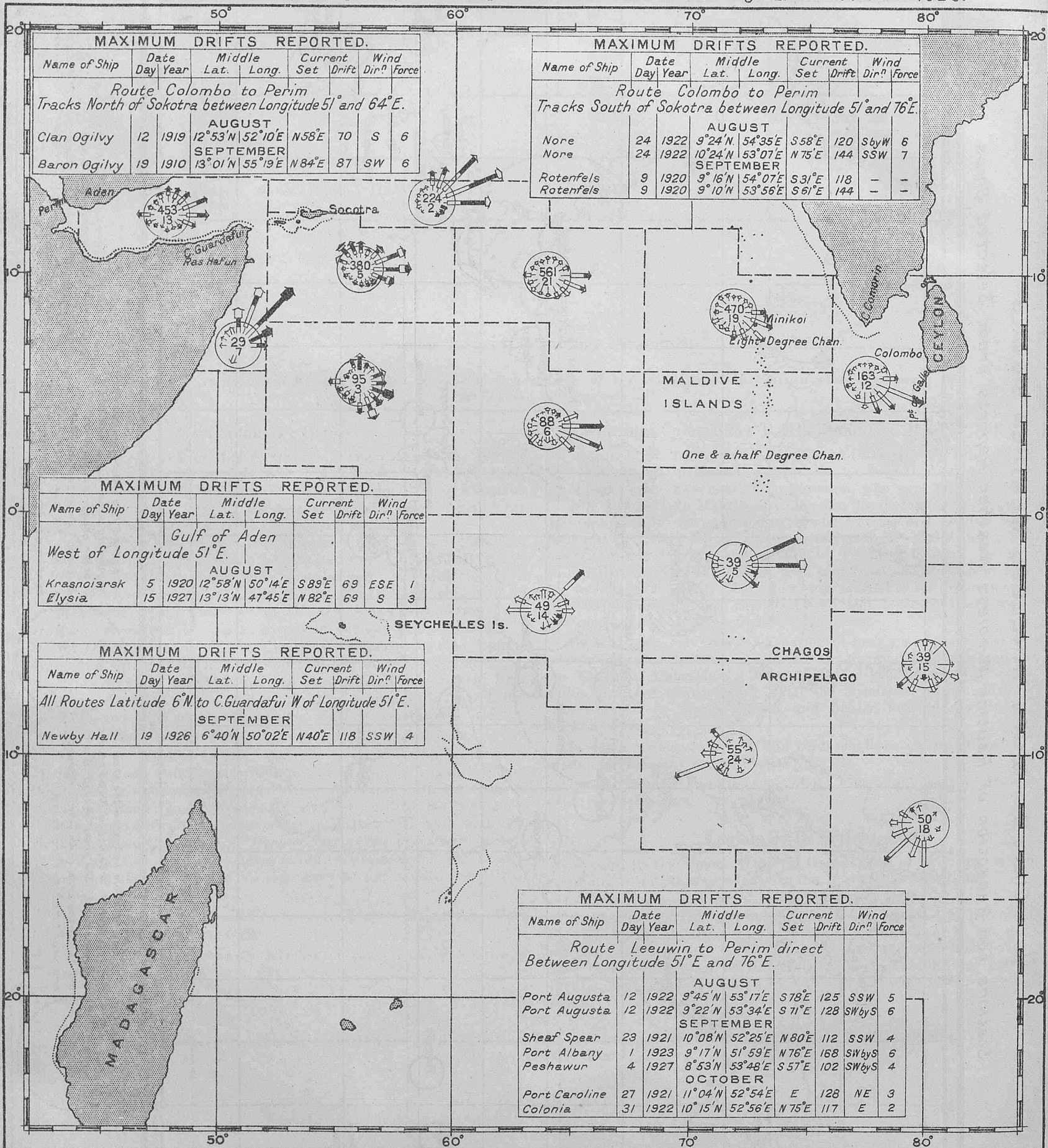
The full-line circles indicate the areas round islands and coast stations which could receive spark "Selected Ships" reports to C.Q.



CURRENTS ON THE TRACKS FROM CAPE LEEUWIN TO PERIM, DIRECT AND VIA COLOMBO, (WESTERN PORTION).

AUGUST, SEPTEMBER AND OCTOBER.

Observations of ships regularly observing for the British Meteorological Office 1910-1928.



EXPLANATION OF CURRENT ROSES.

The current roses are drawn from observations within the pecked lines.

Arrows flow with the current, length represents frequency, thickness strength.

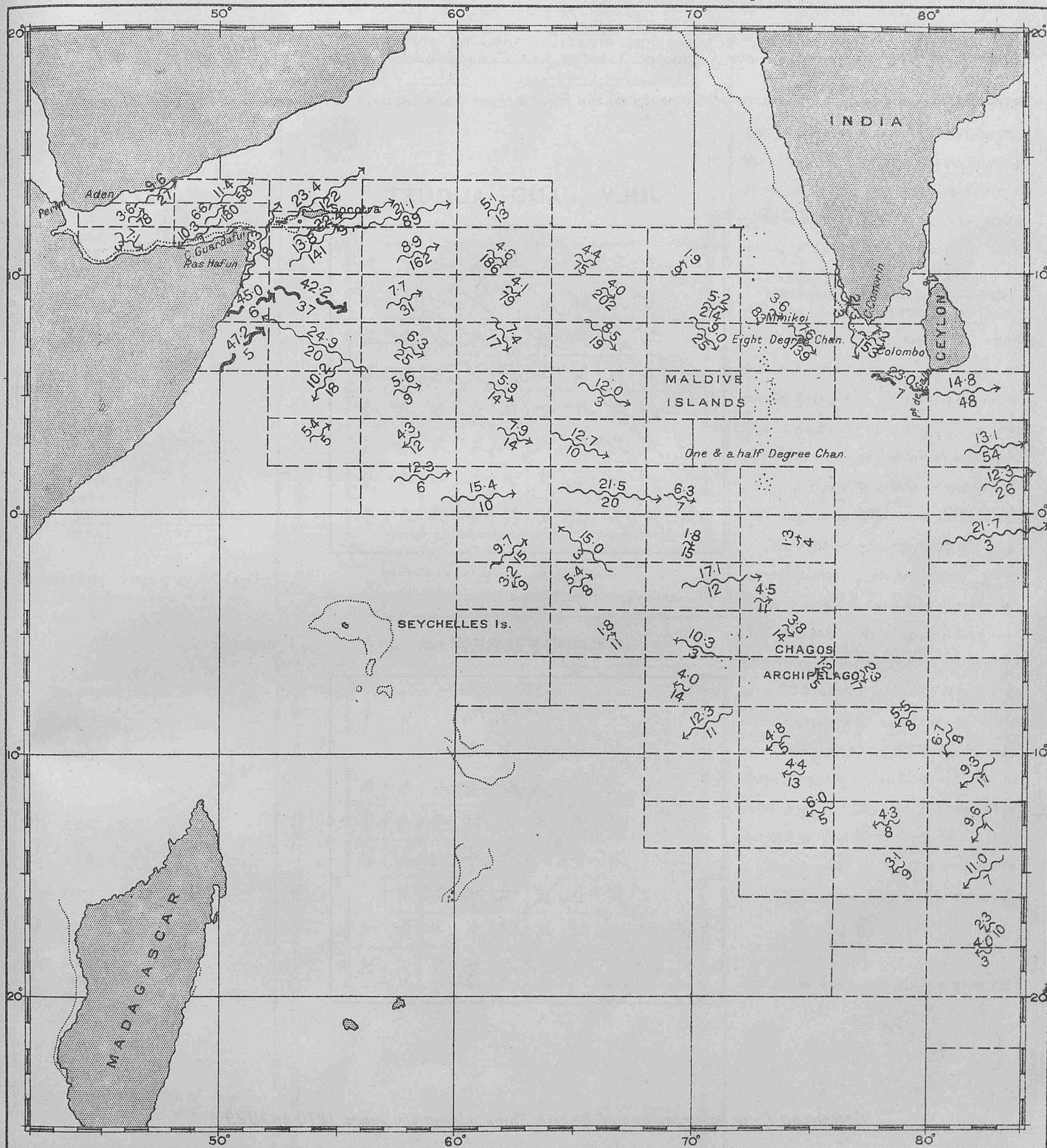
6-12 miles per day ...
13-24 " " " ...
25-48 " " " ...
49-72 " " " ...
73 " " " and above ...

Distance from tail of arrow to circle represents 5%. Scale 10 20 30 40 50%

The upper figure in centre of rose gives total number of observations, the lower figure the percentage frequency of currents less than 6 miles per day.


CURRENTS ON THE TRACKS FROM CAPE LEEUWIN TO PERIM, DIRECT AND VIA COLOMBO, (WESTERN PORTION).

AUGUST, SEPTEMBER AND OCTOBER.

Observations of ships regularly observing for the British Meteorological Office 1910-1928.

EXPLANATION OF CURRENT ARROWS.

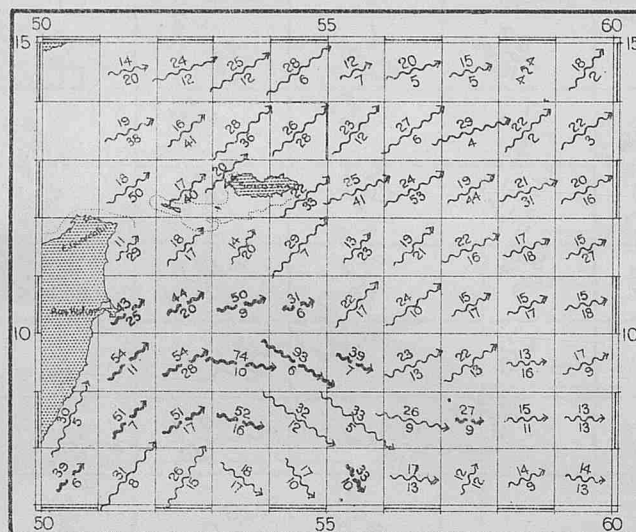
The arrows flow with the current and represent the resultant of currents observed within the pecked lines. The centre of each arrow lies in the mean position of observation. The figures above the arrows give the velocity of current in miles per day; the figures below the arrows the number of observations.

In cases where the arrows drawn to scale are inconveniently long the symbol  is substituted.

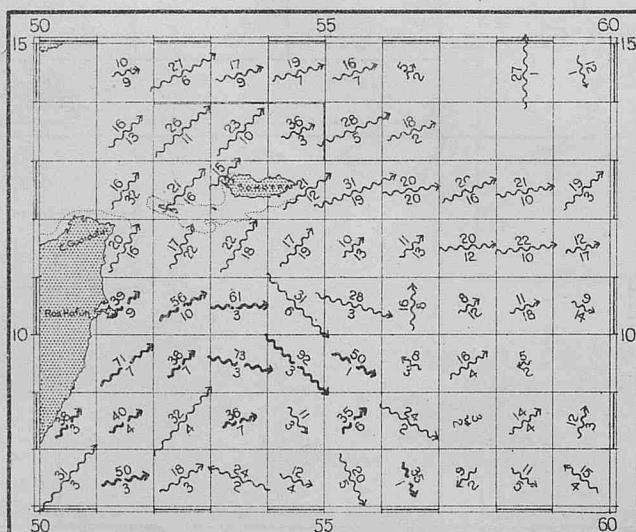
Charts of Mean Current for the Region of Sokotra and Cape Guardafui during the S.W. Monsoon Period.

Inset Charts accompanying Charts of Currents on the Tracks from Cape Leeuwin to Perim direct, and via Colombo.

JULY. AND AUGUST,



SEPTEMBER



Computed from observations of British Ships during the years 1870 to 1929.

SEPTEMBER

WIND, FOG AND MIST.

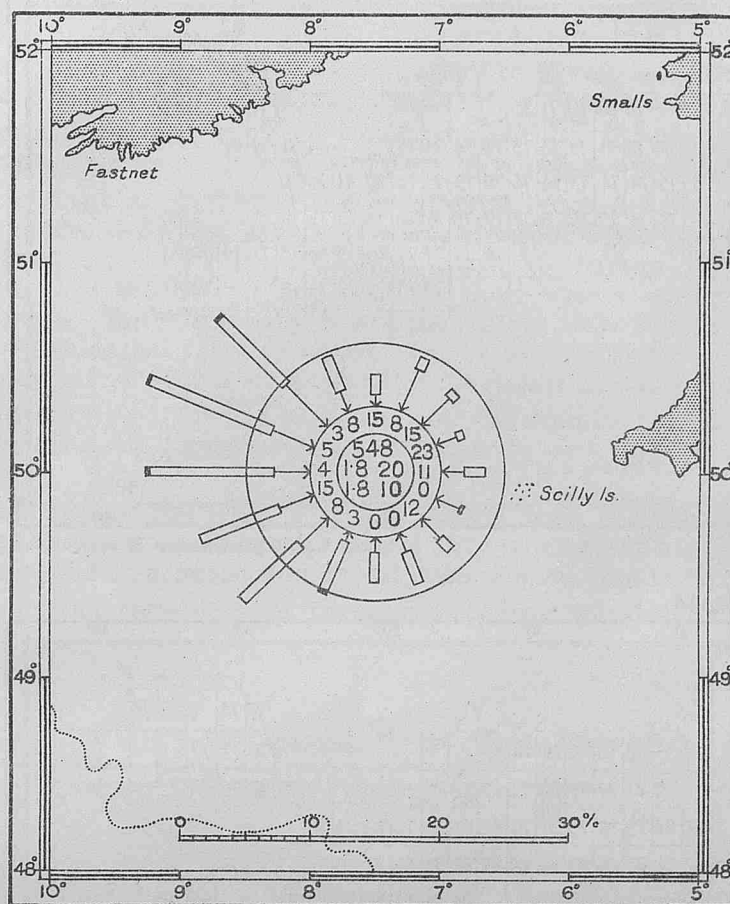
S.W. Approaches to Great Britain and Ireland

Frequency of fog per thousand observations for each 2 points of compass, 1921 to 1928.

Latitude 48° to 52° N.
Longitude 5° to 10° W.

Direction.	Frequency.
N	4
NNE	4
NE	5
ENE	5
E	4
ESE	0
SE	4
SSE	0
S	0
SSW	2
SW	7
WSW	15
W	6
WNW	7
NW	4
NNW	4
Calm	4
Var.	2
TOTAL	77

Percentage Frequency of Fog and Mist for area = 7.7 %.



EXPLANATION.

The arrows in the roses fly with the wind and show by their length the frequency of the winds and by their thickness the various forces, light winds forces 1 to 3, moderate winds 4 to 7 and gales 8 to 12.

Gales Light
Moderate

The outer circle supplies a scale for estimating the frequency of winds from any direction. From the heads of the arrows to the circumference of the circle represents 5 per cent of the whole number of observed winds. (100 per cent = 10° longitude).

The figure at the head of the arrow gives the percentage of wind from that direction with fog or mist, for example:- In September in the Approaches to Table Bay on all occasions when W.S.W'y. winds were observed 21 per cent of them were accompanied with fog or mist, therefore the probability of fog or mist with a W.S.W. wind during this month is 1 in 5.

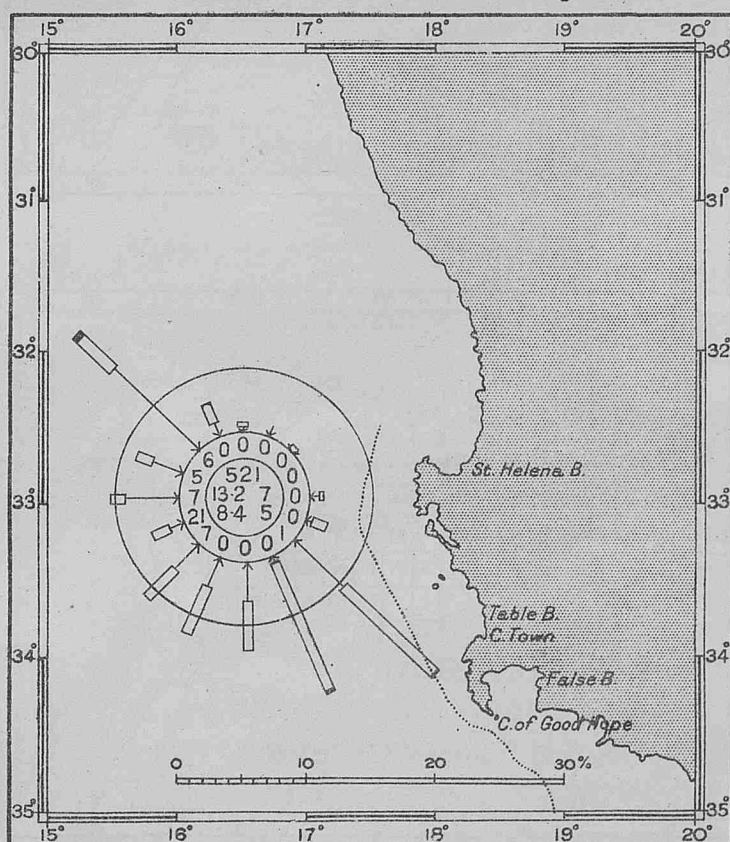
Fog is most probable in this month with Calms the percentage being 1.0

Approaches to Table Bay.

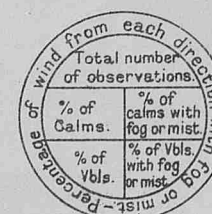
Latitude 30° to 35° S.
Longitude 15° to 20° E.

Direction.	Frequency.
N	0
NNE	0
NE	0
ENE	0
E	0
ESE	0
SE	2
SSE	0
S	0
SSW	0
SW	4
WSW	6
W	4
WNW	2
NW	8
NNW	0
Calm	10
Var.	4
TOTAL	40

Percentage Frequency of Fog and Mist for area = 4.0 %.



KEY TO NUMBERS IN CENTRE OF ROSES.



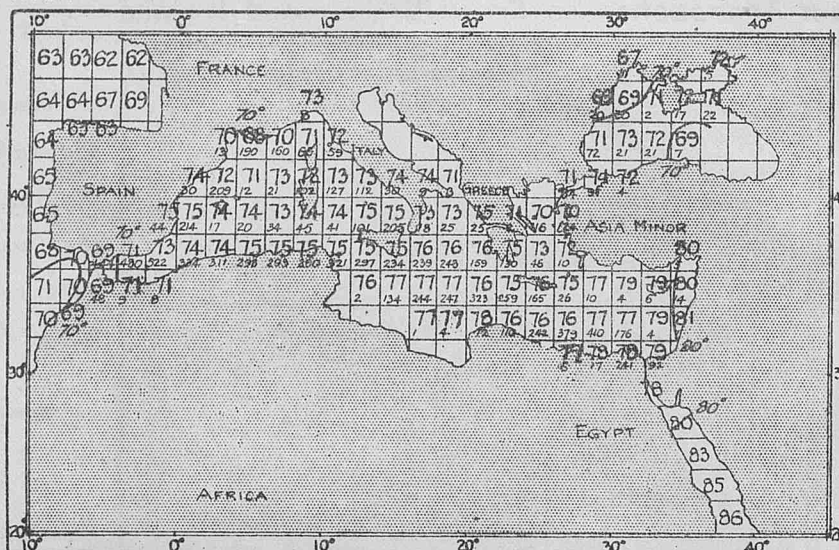
Compiled from observations of British Ships received since the adoption of the Hollerith system of extraction covering the years 1921 to 1928.

MEDITERRANEAN SEA

SEA SURFACE TEMPERATURES

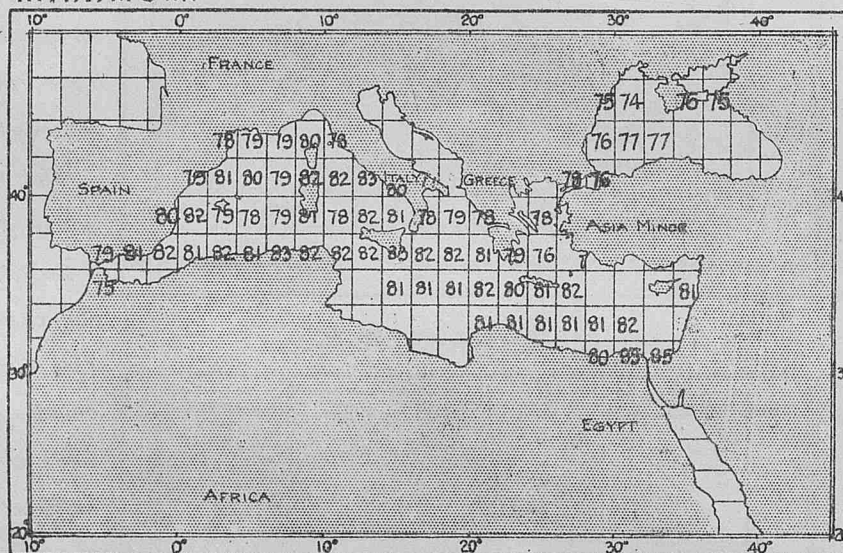
MEAN.

SEPTEMBER

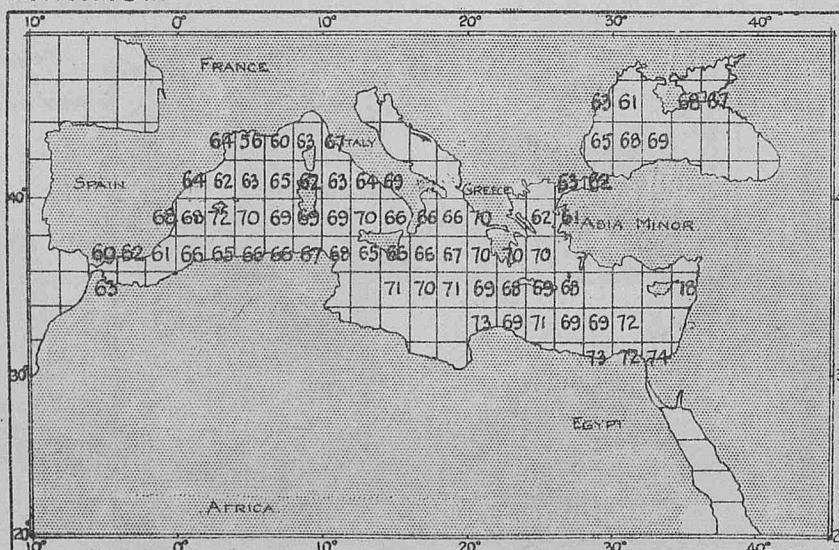


Small figure gives number of observations.

MAXIMUM.



MINIMUM.



Computed from observations of British Ships during the years 1900-1914 in the Mediterranean and Black Seas.

Maximum and Minimum figures are not shown unless the Mean Temperature has been computed from not less than 12 observations.

RECOMMENDED ROUTES FOR STEAM AND MOTOR VESSELS DURING THE S.W. MONSOON FROM THE EAST TO PERIM.

Upon completion of the charting of currents on the tracks from Cape Leeuwin to Perim and from Fremantle to Perim via Columbo (which cover most of this ground) in this year's MARINE OBSERVER it is intended to re-examine the above and to see what modifications may be desirable. These routes are given in "Ocean Passages for the World" published by the Admiralty and on pages 127 to 129 and accompanying charts of Volume VI, MARINE OBSERVER.

Since the matter was investigated in 1920 and reported upon on the back of the June, 1921, (No. 182), East Indian Seas Meteorological Chart many masters of ships trading to the east have sent in their views.

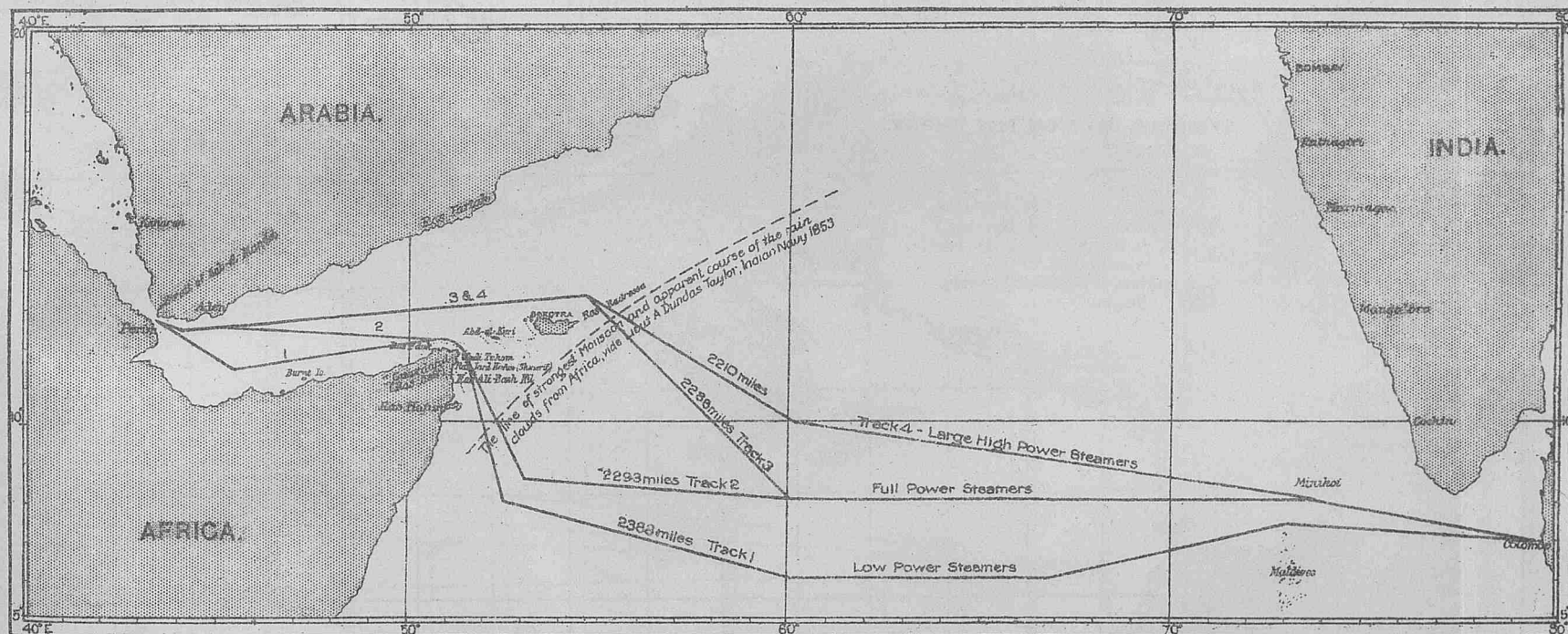
Recently the Master Attendant at Colombo has suggested modifications in these recommended tracks for the S.W. Monsoon season from Colombo to Perim, based upon the views of some 70 masters of ships calling at Colombo. All those who have previously sent in their views and who, owing to further experience, may wish to modify them, and masters of ships trading to the East who have not sent in their views are invited to do so as soon as possible. The Commanders of Regular Observing Ships are asked to enter their remarks upon this subject in the space provided for additional remarks in the Meteorological Log or Record. Commanders of ships not on the list of Regular Observing Ships should send in their remarks by letter addressed to the Marine Superintendent, Meteorological Office, London.

It will greatly assist if these suggestions are made as brief and concise as possible consistent with clearness. By using the chart hereunder and showing the modifications desired in red ink, Commanders may usefully illustrate their suggestions.

Suggestions as to the routes during the S.W. Monsoon season from Singapore, Sumatra and Java to Perim as well as from Colombo are desired from the masters of every class of ship from great high speed liners to low powered small steam and motor vessels. In each case the size, speed and description of ship should be given.

Information as to the benefit and reliability of Direction Finding Wireless in the vicinity of Cape Guardafui will be of great assistance.

CHART IV. STEAM TRACKS RECOMMENDED—COLOMBO TO PERIM, SOUTH-WEST MONSOON.



Tracks 1 and 2 should only be adopted by Navigators who are accustomed frequently to fix the position by stellar observations: and the precautions given in the "Gulf of Aden and Red Sea Pilot" should be carefully observed when making the land and rounding Cape Guardafui.

GREAT BRITAIN.

Wireless Telephony (R/T) Issues.

"Weather Shipping" Bulletin.

Temporary Arrangement.

During the Promenade Concert Season Aug. 9th to Oct. 4th, inclusive, it has been found necessary to change the time of broadcasting the parts of the "Weather Shipping" Bulletin broadcast through Daventry, from 2015 G.M.T. to 2110 G.M.T. Sunday remaining 2000 G.M.T.

ICE CHART. WESTERN NORTH ATLANTIC.

LETTERS OF TRANSATLANTIC TRACKS INDICATE.

- (C) From 1st September to 31st March, inclusive.
(F) From 16th May to Opening of Belle Isle route and to 30th November when not using the Belle Isle route.
(F) Westbound, on approaching Cape Race steer a course to pass 10 miles S. of Cape Race.
(F) Eastbound, steer from position 25 miles S. of Cape Race.
(G) From the opening of the Straits of Belle Isle to 14th November.

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

ROUTE NOTICES.

For latest information re Tracks see pages 89-90 of Vol. VII, No. 76, April, 1930, Number.

SYMBOLS USED ON THE CHART.

- Iceberg.
- Floeberg.
- Growler.
- Field Ice, Floe Ice, Pack Ice, Hummocky Ice, Bay Ice.
- Drift Ice, Brash Ice, Sludge Ice, Pancake Ice.
- Indicates W/T Ice Warning Station.

PHENOMENAL POSITIONS OF ICE.

Date.	Ship or Source of Report.	Lat.	Long.	Remarks.
Sept. 2, 1883	Bque, Olive	35°40' N.	30°00' W.	Lump of ice.
" 1, 1895	S.S. Gulf of Taranto	36°35' N.	71°36' W.	2 bergs 30 ft. high, 300-400 ft. long, and much field ice over 2 miles area.
" 19, 1906	S.S. Lord Lansdowne	54°20' N.	29°00' W.	Small berg 20 ft. by 6 ft.
" 10, 1908	S.S. Deutschland	45°28' N.	27°18' W.	2 small bergs and 1 large.
" 6, 1920	U.S. Hyd. Bulletin	47°10' N.	38°04' W.	Berg.
" 2, 1922	S.S. Hallgjerd	50°00' N.	40°05' W.	Berg.
" 15, 1922	S.S. Empress of Britain	52°52' N.	40°12' W.	Large berg.
" 3, 1923	S.S. Djambi	40°19' N.	31°38' W.	Piece of ice, about 30 ft. long 1 1/2 ft. out of water.

Reports of Ice sighted between July 1st and July 31st, 1930, 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.

ICE IN GREENLAND WATERS.

INFORMATION RECEIVED BY CABLEGRAM FROM DANISH METEOROLOGICAL INSTITUTE, COPENHAGEN.

1st July..... "Between Cape Farewell and Arsuk. Storis very open, navigation unimpeded; about twenty icebergs sighted.

The northern edge of the ice consists of open ice and extends to Nunarsuit."

10th July..... "Free of ice 75 miles off Cape Farewell. Icebergs met with in Longitude 42°W."

CO-OPERATION OF SHIPOWNERS, MASTERS AND MATES.

Captains and officers who wish to co-operate regularly with the Meteorological Office should apply *by letter* to The Director, Meteorological Office, Air Ministry, Kingsway, London, W.C.2, or in person to the Marine Superintendent at the same address, or any of the gentlemen whose names and addresses appear below, acting as agents at the respective ports. A general description of Marine Meteorological Work, including the particulars desired from intending Marine Observers, is given in Chapter I of *THE MARINE OBSERVER'S HANDBOOK, 5TH EDITION*, which may be obtained from H.M. Stationery Office direct, or through any bookseller, price 2s. 6d.

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

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

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

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

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

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

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

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

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

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

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

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

LATE PRESS.

DERELICTS AND FLOATING WRECKAGE.

Date.	Position.		Description.
	Latitude.	Longitude.	
BALTIC.			
11.7.30	56° - 'N.	16° - 'E.	Danish jagt <i>Inger</i> , floating on cargo.
ENGLISH CHANNEL.			
2.7.30	50°28'N.	0°04'E.	Drifting mast, rigging attached.
28.7.30	50°22'N.	1°02'W.	Buoy drifting upside down.
NORTH ATLANTIC.			
2.7.30	39°08'N.	11°13'W.	Large conical buoy surmounted by cage, dangerous.
4.7.30	30°17'N.	74°13'W.	Red gas and whistle buoy, light extinguished, no marks visible.
5.7.30	30°19'N.	79°09'W.	Light and whistle buoy.
6.7.30	27°12'N.	70°40'W.	Black can buoy.
6.7.30	33°06'N.	73°54'W.	Gas buoy, skeleton superstructure 10 ft. high, light extinguished.
6.7.30	30°21'N.	74°16'W.	Black gas buoy, light extinguished, no marks.
12.7.30	51°15'N.	11°10'W.	Conical buoy adrift.
13.7.30	37°50'N.	73°00'W.	Floating wreckage, 50 ft. long, 15 ft. wide.
13.7.30	40°56'N.	68°27'W.	White conical buoy.
15.7.30	41°07'N.	45°50'W.	Large cylindrical buoy.
16.7.30	42°12'N.	27°41'W.	Drifting buoy.
16.7.30	34°20'N.	76°20'W.	Drifting survey buoy marked <i>KIN</i> .
19.7.30	31°13'N.	47°06'W.	Large bell buoy.
19.7.30	49°11'N.	21°16'W.	Red gas buoy, light extinguished, <i>S</i> painted on side, dangerous.
19.7.30	64°30'N.	6°45'E.	Submerged dangerous derelict.
22.7.30	10°04'N.	27°54'W.	Buoy, black and white top, lamp extinguished, partly submerged.
24.7.30	43°00'N.	9°07'W.	Small black spherical buoy three quarters submerged.
24.7.30	48°11'N.	5°29'W.	Red conical buoy unlit.
26.7.30	49°17'N.	8°06'W.	Black conical light buoy marked <i>No. 2</i> in white.
GULF OF MEXICO.			
2.7.30	28°45'N.	92° - 'W.	Log 30 ft. long, 1 ft. diameter.
4.7.30	22°42'N.	84°22'W.	Large buoy, skeleton superstructure.
8.7.30	28°05'N.	89°52'W.	Large wooden deckhouse awash.
9.7.30	27°50'N.	91°07'W.	Heavy spar, 30 ft. long.
NORTH PACIFIC.			
1.7.30	30°04'N.	124°45'W.	Log, 20 ft. long, 2 ft. diameter.
8.7.30	7°23'N.	80°00'W.	Large tree trunk 50 ft. long, 2 ft. diameter.

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