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THE MARINE OBSERVER

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October, November, December

The Marine Observers' Log is a quarterly selection of observations of interest and value. The observations are derived from the logbooks of marine observers and from individual manuscripts. Responsibility for each observation rests with the contributor.

Observing officers are reminded that preserved samples of discoloured water, luminescent water, etc. considerably enhance the value of such an observation. Port Meteorological Officers in the U.K. will supply bottles, preservative and instructions on request.

TROPICAL STORM 'BERNADETTE'

Indian Ocean

s.s. *Bendoran*. Captain R. Griffiths. Durban to Port Kelang. Observers, the Master, Mr. A. S. Rankin, 1st Officer, Mr. S. C. Lee, 2nd Officer, Mr. M. Roberts, 3rd Officer and Mr. D. McDonald, Cadet.

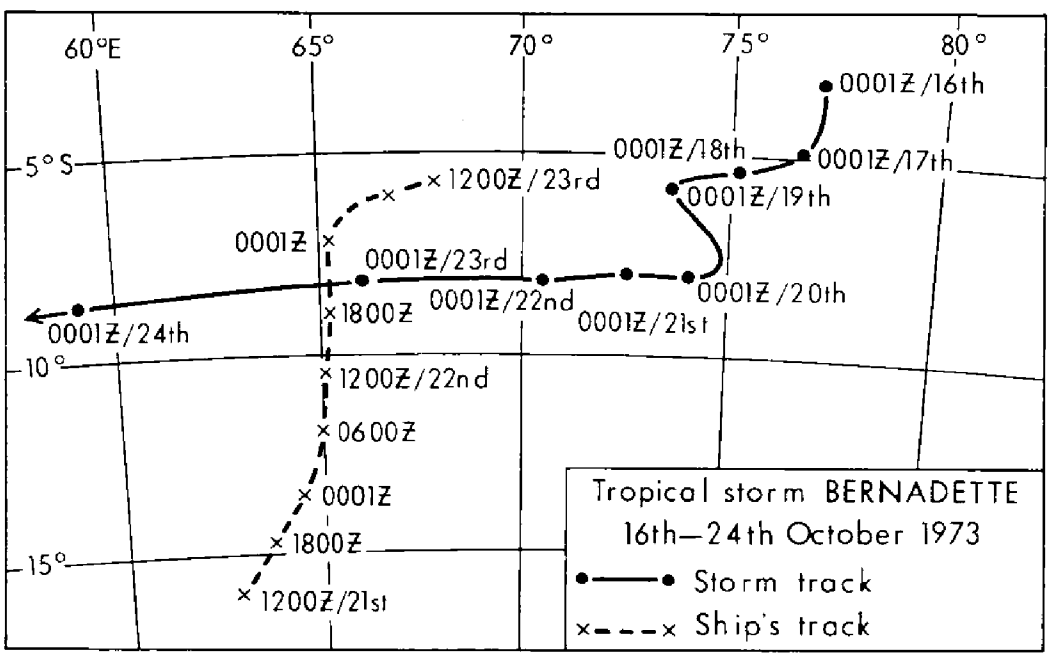
18th–23rd October 1973. At 1800 GMT on the 18th a storm warning was received from Mauritius Radio of the formation of a moderate tropical depression Bernadette centring within 30 miles' radius of 8° 00′S, 75° 00′E and moving in a W'ly direction at a speed of 5 kt. At that time our position was 25° 54′S, 48° 00′E. Wind ESE, force 5. Pressure 1021·8 mb. Air temp. 20·5°C. There was moderate spray on the starboard side. Between the 19th and 21st the depression, according to the forecast, was situated between 7° 30′S, 75′ 00′E and 8° 30′S, 73° 30′E. Most of the time it was nearly stationary or moving slightly to the west. All the watch-keeping officers were instructed to keep a close watch for any changes in weather and any sudden change in pressure. Meanwhile the ship maintained her course (059°T) and speed.

At 0001 on the 22nd the depression was reported to be within 30 miles' radius of 8° 00′S, 70° 30′E, moving W'ly at 5 kt; it was then about 500 miles to the north-east of us. After carefully studying the track of the depression, the Master altered course to 003°T in order to be in the navigable semi-circle in the event of the depression recurving. By 1700 the wind had increased to SE′S, force 9. The pressure was 1007·5 mb, falling rapidly. Air temp. 25·4°. The vessel was pitching and rolling heavily at times in a very rough sea and a short, heavy swell. Visibility was reduced to less than 2 miles in rain showers. The sky was densely overcast with Fs (C_L7). At 2100 the wind showed signs of weakening and the pressure had steadied at its lowest value, 994·2 mb. Air temp. 25·4°.

By 0001 on the 23rd the wind had veered to W′N, force 5, pressure had risen to 1004·9 mb and continued to rise steadily. Moderate sea and confused swells were observed. The visibility had improved though there was occasional light rain.

Reports showed that the vessel was well above the navigable semi-circle by this time, the weather was improving gradually and the wind weakening.

Position of ship at 0001 on the 23rd: 07° 10′S, 65° 05′E.



Note. The tracks of the *Bendoran* and tropical storm Bernadette are shown on the chart.

SEVERE STORMS

North Atlantic Ocean

m.v. *Gladstone Star*. Captain G. Ferriday. Cristobal to Liverpool. Observers, the Master and all officers.

31st October–2nd November 1973. At 1200 SMT (1400 GMT) on the 31st, in position 41° 17′N, 29° 02′W, the pressure was 1017·1 mb, wind N′W, force 4, air temp. 15·0°C. During the afternoon and evening the pressure began to fall slowly but during the middle watch it had fallen 5 mb to 1004·4 mb and the wind had veered to NNW, force 5–6. By noon (1300 GMT) on the 1st the wind had increased to NW, force 10–11 and the pressure was still falling rapidly. Visibility was seriously affected by rain and spray. There were high seas and a steep NW'ly swell. Air temp. 10·0°, sea 16·0°.

By 1500 the sea had died away, the wind had dropped to variable, force 2–3, the visibility had improved and there were large breaks in the cloud. Air temp. 14·0°. The vessel had reached the centre of the depression and the pressure finally levelled off at 979·1 mb. For the next few hours this comparatively calm weather prevailed until, by 1800, the wind had become s'ly, force 5 and the pressure started to rise rapidly.

At 0001 on the 2nd the wind was SSE, force 10–11; rain and spray again reduced visibility. Pressure had risen to 986·0 mb but the stormy conditions continued for another 5–6 hours before the wind started to moderate. By 0600 it was force 8, with the pressure now 995·0 mb, and by noon the wind had eased to SE′E, force 6.

Position of ship at 0600 on 2nd: 47° 00′N, 17° 36′W.

m.v. *Edinburgh Clipper*. Captain S. D. Mayl. Brownsville, Texas to Kiel Canal. Observers, the Master and ship's company.

1st November 1973. During the morning the vessel was on a course of 065°T, making for Start Point. A low-pressure system had formed a few days earlier north-east of the Azores and had deepened. It was forecast to move northwards. At

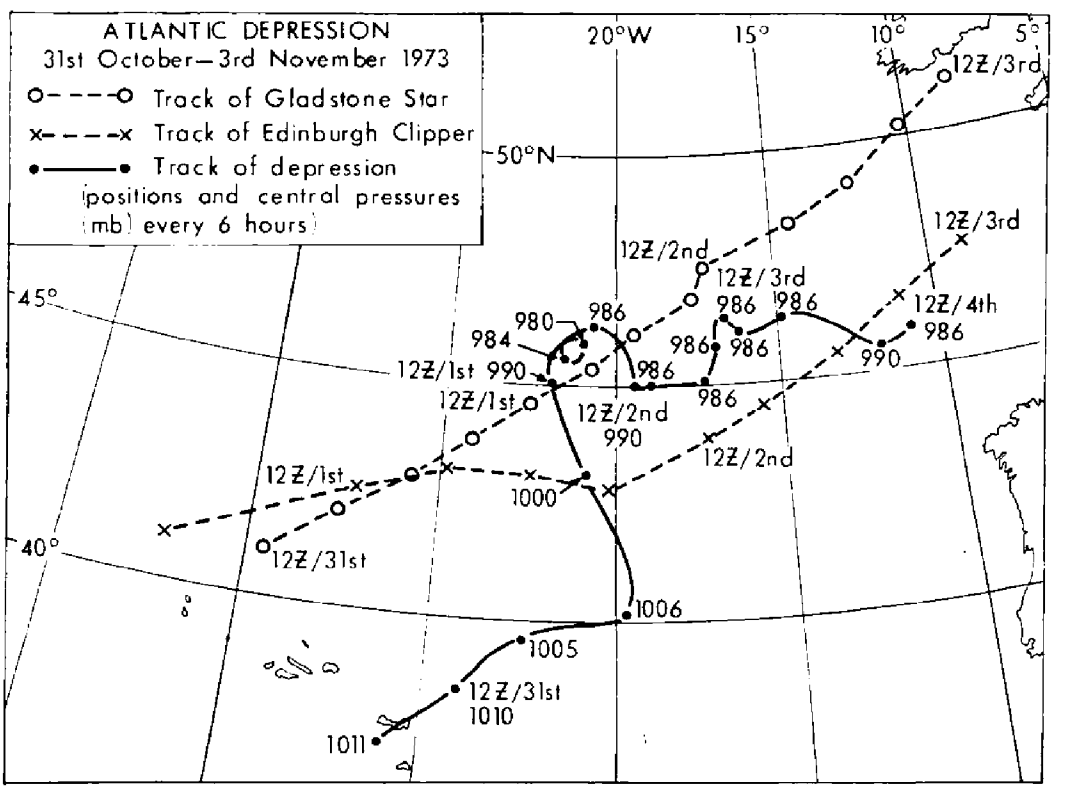
1200 GMT we started to take avoiding action with the intention of passing south and east of the low where advantage from fair winds could be expected.

At 1730 it became apparent that the low was centred around 43°N, 22°W and not moving north as fast as expected. Our position was 43° 14'N, 25° 00'W when we altered course to 090°T. At 2130 a storm warning was issued and the vessel was prepared for heavy weather.

The vessel was overtaken at 2220 by a freak wave train. The ship pitched and rolled very heavily for several oscillations. The main engine stopped on overspeed trip and, on reaching port, it was found that the stow of oranges in wooden cases had been shifted. Ladders in the stow were bent and cases on the starboard side had collapsed.

At 2230 course was altered to 110°T and thereafter courses were adjusted to give optimum motion and progress round the storm centre. No further violent motion was experienced. During passage round the storm the average wind direction was astern, with the swell two points abaft the port beam. Average speed of ship 18 kt.

Position of ship at 2230: 43° 14'N, 23° 00'W.



Note. The path of the depression which affected the *Gladstone Star* and the *Edinburgh Clipper* is shown on the above chart.

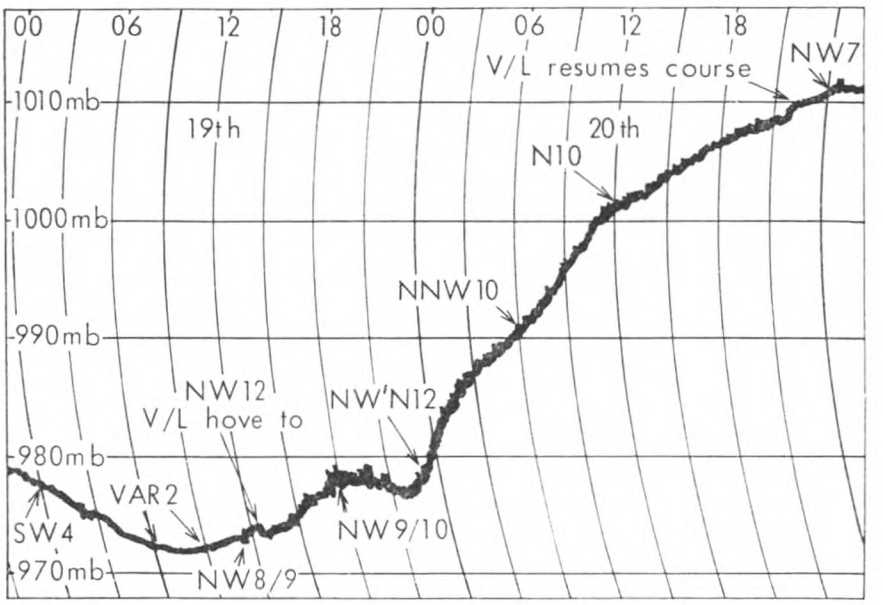
North Atlantic Ocean

m.v. *Geest-tide.* Captain M. Macleod. Barry to Barbados. Observers, the Master, Mr. A. J. A. Richards, Chief Officer, Mr. K. P. Slade, 2nd Officer and Mr. R. A. Hampson-Jones, Extra 2nd Officer.

17th–20th December 1973. At 2336 GMT on the 17th the vessel set sail for Barbados. Wind w'ly, force 3. Pressure 1010 mb. Air temp. 8·6°C. Slight sea, low swell.

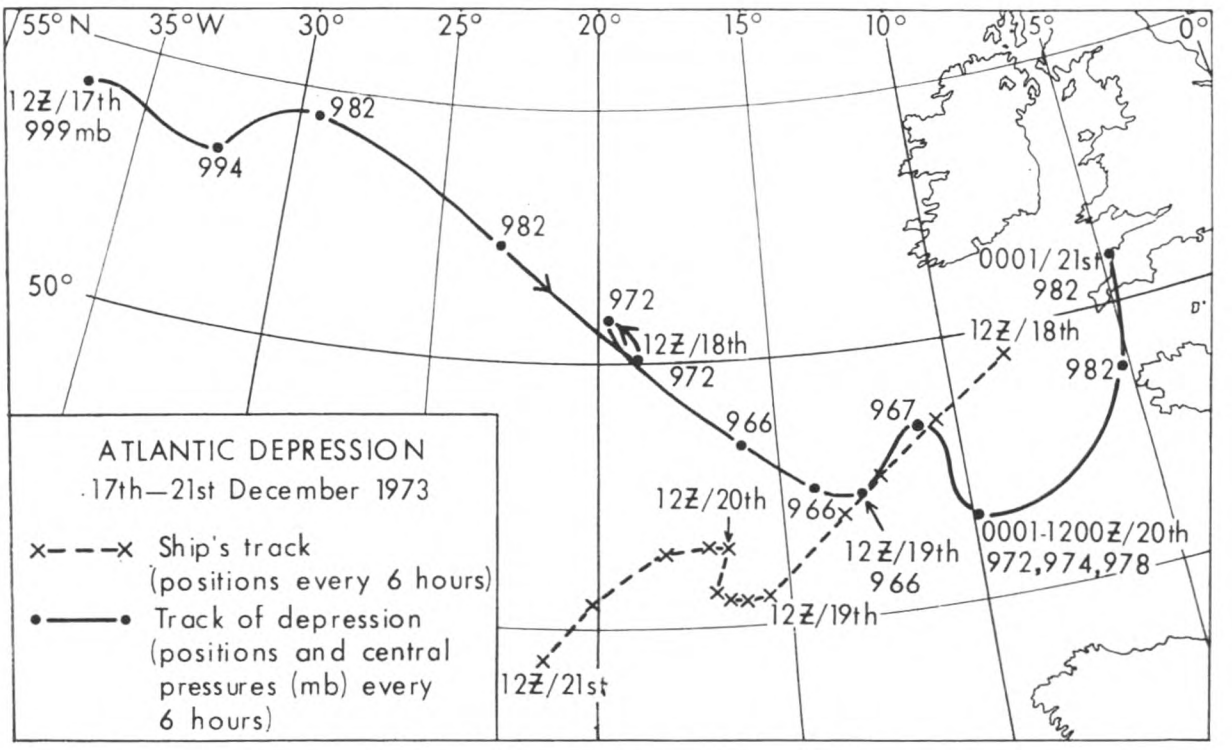
At 0600 on the 18th the wind started to increase and back until, by 1800, it was S'E, force 8 and pressure had fallen to 986·6 mb. The sky had become overcast and there were frequent rain showers, a rough sea and heavy swell. At 2000 the wind started to decrease and the pressure dropped more slowly.

Meanwhile the sea had dropped but the swell had built up to become heavy s'ly



and the vessel had to reduce speed at 2200 in order to avoid pounding. By 0001 on the 19th the wind had veered to WSW, force 4, visibility was reduced by rain and pressure had fallen to 977·3 mb. At 0600 there was a heavy W's swell but the wind was variable, force 2, and pressure was steady at 972 mb. Air temp. 10·8°. The sky had cleared to $\frac{1}{8}$ Sc and As. Our position at 0747 was 46° 26'N, 14° 00'W, course 233°T, speed (15 kt) still reduced because of the heavy swell. By this time it was assumed that we were at the centre of a depression which had been forecast to pass north of us, travelling eastwards.

At 1100 the pressure started to rise slowly, the wind increased rapidly to NW, force 8–9 and by 1300 it was estimated as force 12. The vessel had hove to at 1230 on a heading of WNW in a very rough sea and a very heavy NW'ly swell. The sky was overcast and the visibility was substantially reduced by rain and spray. The weather remained the same until 1800 when the pressure steadied at 977·7 mb and the wind decreased to force 9. At 2200 the pressure dropped 1 mb before starting to rise and the wind veered and increased to NW'N, force 12. This may have been caused by a secondary depression passing very close to us.



For the next 8 hours the wind varied between force 10 and 11, the swell shortening slightly and having an estimated height of 15 m; in fact the height of eye at the time was 15 m and it was possible to look up at some swell waves! Pressure continued to rise rapidly until it was 997·1 mb at 0930 on the 20th when the wind began to decrease; it was N'ly, force 9 at 1130.

By 1800 the wind had dropped to force 8 and the pressure was then 1006·5 mb. The swell was unabated; in fact from 1000 to 1500 the main engines had been used frequently to help keep the vessel hove-to. By 2200, however, the swell had decreased sufficiently to allow the vessel to resume passage. We had been hove-to for a total of $33\frac{1}{2}$ hours.

Position of ship at 1800 on 20th: 46° 31′N, 17° 07′W.

Note. The path of the depression which affected the *Geest-tide* is shown on the chart, together with the ship's track. The variability of the direction, speed and central pressures of this depression—and the one which affected the *Gladstone Star* and the *Edinburgh Clipper*—highlight the problems associated with the prediction of their movement and development.

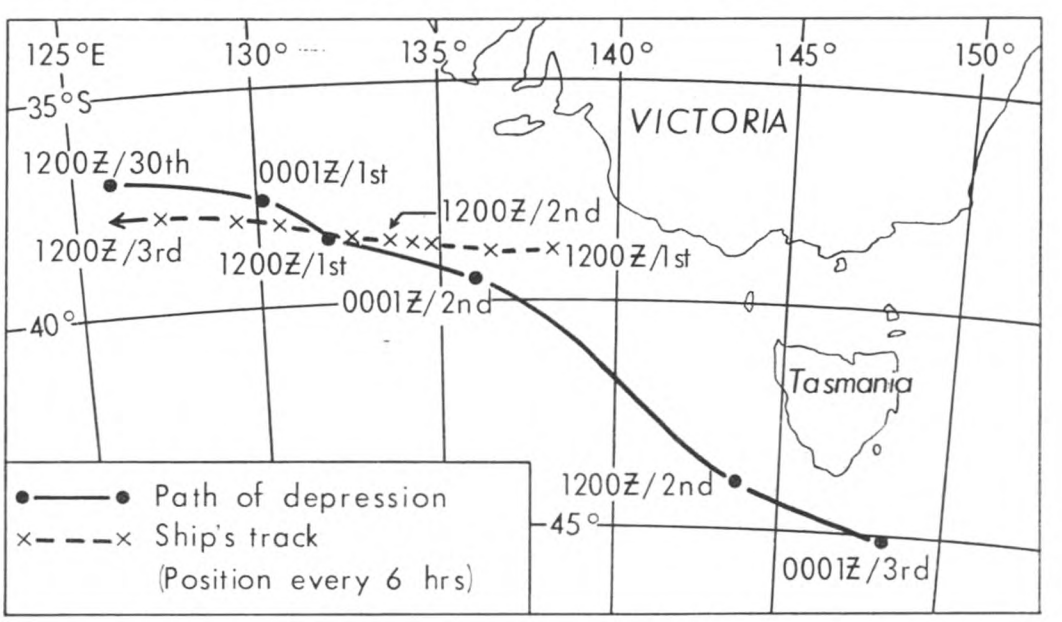
Great Australian Bight

m.v. *British Holly*. Captain E. F. Henderson. Westernport, Victoria to Fagerstrand, Oslo. Observers, the Master, Mr. P. A. Edwards, Chief Officer, Mr. R. M. Bruce, 2nd Officer, Mr. C. J. Coxhead, 3rd Officer and Mr. N. S. Bradley, Radio Officer.

1st–3rd December 1973. At the time of the 1200 GMT observation on the 1st the barometer had been falling for over 24 hours at the rate of just over 1 mb an hour and gale warnings had been received from Adelaide Radio. Within 30 minutes of our report a storm warning was received from Adelaide and by 1300 the wind had increased to force 7 and torrential rain was being driven horizontally across the ship.

It was decided that we had better send in reports every 3 hours because of the probable sparsity of 'weather' ships in the vicinity and this proved to be the case: from the ship reports sent out by Adelaide Radio we seemed to be the only ship in the area.

The rain stopped at about 1700 and the sky cleared at the same time though it clouded over again at about 2100. At 2330 a steady line running NE/SW was seen on the radar, stretching right across the screen ahead of the ship, even on the 48-mile range. The line appeared to be rain clutter and the ship approached collision point very quickly. At 2350 we appeared to pass through the line and immediately the wind changed from N'ly to W'ly, increasing dramatically to force 12.



During the next two hours the sea built up immensely with waves averaging 18 m in height (just topping the monkey island) and occasional monsters estimated at up to 30 m (topping the mainmast 27 m above sea level). The height of the storm seemed to occur at about 0500 on the 2nd and after that the winds dropped to a mere force 10. The heavy seas continued and, although the pressure rose very sharply, gale-force winds continued until 1200 on the 3rd.

At the height of the storm visibility was reduced to less than a mile by the never-ending spray and from 0200 till 0600 on the 2nd the vessel only logged 3 miles.

Position of ship at 1200 on 1st: 38° 54′S, 138° 12′E.

Position of ship at 1200 on 3rd: 37° 48′S, 127° 12′E.

Note. The *British Holly* encountered a vigorous depression which formed in the western part of the Great Australian Bight on 30th November and moved ESE during the next few days (see chart). The depression passed close southward of the vessel just before 0001 GMT on 2nd December, its cold front (observed on the ship's radar) accounting for the marked wind change reported.

COLD-FRONT SQUALLS

South African waters

m.v. *Ocean Bridge*. Captain J. W. Jewell. Das Island to Quintero, Chile. Observers, Mr. J. B. Williams, Chief Officer and Mr. P. C. Chakraborty, helmsman.

5th October 1973. During the middle watch, when the vessel was on a course of 216°T, the wind was NE, force 4 and the pressure was steady at 1003·0 mb after a steep fall and an even steeper rise. By 0230 GMT the wind had decreased to force 2 and remained so until 0400.

Within a period of 5 minutes the wind changed to SSW, force 7. During the change-over period the wind cannot be said to have backed or veered but rather became confused for a few minutes before settling to SSW.

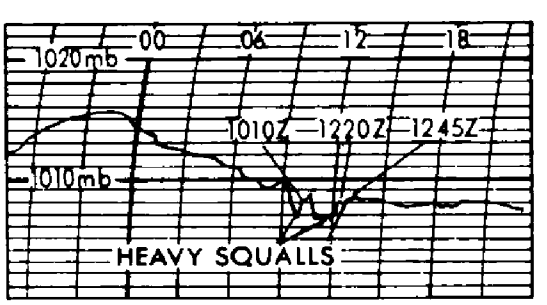
A rapid change of wind direction and force has been observed in these waters before but never, in the observer's limited experience, at such quick pace.

Position of ship: 30° 40′S, 30° 55′E.

m.v. *Kohistan*. Captain D. M. Foster. Port Louis to Cape Town. Observers, the Master, Mr. R. Madden, 2nd Officer and Mr T. J. Shone, 3rd Officer.

24th October 1973. At 0945 GMT, when the vessel was on course 263°T, a long line of heavy roll cloud was sighted ahead across the bow. At the time the wind was SE, force 3, but shortly before passing under the cloud the wind changed suddenly to SW, force 7, followed soon afterwards by very heavy rain for about 15 min. This was followed by a period of equally strong W'ly winds before a second squall at 1220 and a third at 1245. All were followed by periods of very heavy rain.

The barograph trace was falling rapidly before the passage of the first squall, then there was an equally rapid rise. There was then an almost vertical fall for 1·8 mb without any appreciable squall, but there was another very heavy squall at the next rise at 1220. The third and final squall at 1245 showed only as a small rise on passing. After that the wind was SE, force 5, later backing to NW'ly, force 4.



The Decca Navigator, which had been working perfectly, ceased to function during the passage of the first squall for a period of about 10 min. The radar was not affected.

Position of ship at 1000: 34° 44′S, 22° 05′E.

Note. The wind changes reported by the *Ocean Bridge* and the *Kohistan* were associated with the passage of cold fronts. These features are often vigorous in the western part of the southern Indian Ocean.

CURRENTS

Moçambique Channel

t.t. *Herminios.* Captain A. Neves Cabral. Lisbon to Persian Gulf. Observers, Mr. M. B. Rodrigues, Chief Officer and Mr. P. N. Mendes, 1st Officer.

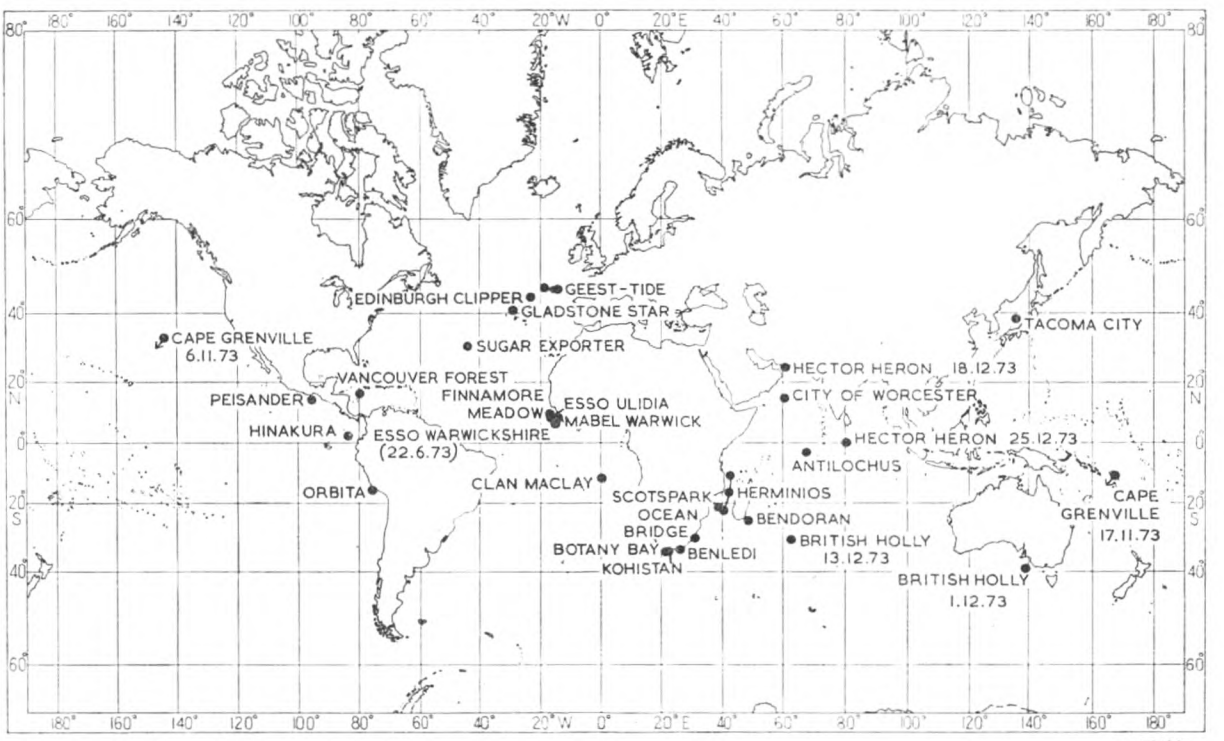
2nd–3rd November 1973. The following observations on currents were made in the eastern side of the Moçambique Channel when the vessel was in ballast.

Ref.	Date	Time (GMT)	Position	Type of Fix	Remarks
A	2nd	0355	22° 25′S 40° 10′E	D/F bearing and radar distance	Ile Europa RC, bearing 061°T, distance 10 miles
B	2nd	0900	21° 11′S 40° 38′E	Sun sight (noon)	
C	2nd	1900	18° 41′S 41° 52′E	Star sights	Near bank 105 miles SSW of Ile Juan de Nova
D	3rd	0030	17° 05′S 42° 28′E	Light bearing and radar distance	Ile Juan de Nova Lt. bearing 082°T, distance 13·5 miles
E	3rd	0900	14° 41′S 42° 41′E	Sun sight (noon)	
F	3rd	1534	12° 48′S 42° 52′E	Star sights	
G	3rd	1900	11° 50′S 42° 50′E	D/F bearing and radar distance	Ile Grande Comore RC bearing 070°T, distance 23 miles

From/ To	Course (°T)	True Speed (kt)	Currents Direction (°T)	Currents Speed (kt)	Wind Direction/ Force	Sea
A–B	020	15·35	234·5	1·58	ENE/3; NNW/2; NE/2	Smooth
B–C	025	16·55	123·5	0·60	NNW/2; NE/2	Smooth
C–D	020	18·55	020	2·18	NE/2; light	Rippled
D–E	005	17·06	054	0·59	NE/2; NNE/2	Smooth
E–F	006	17·18	044	1·07	NNE/2	Smooth
F–G	358	17·20	337	1·17	NE/2; NE/3	Smooth

Note 1. The *South Indian Ocean Pilot*, N.P. 39 (8th edition, 1971), draws attention to the fact that considerable caution should be exercised when navigating through the Moçambique Channel, for it is a region of strong and variable currents. The *Pilot* stresses that the most frequent current direction in mid-channel is NNE and the rate is often strong. The currents reported from the *Herminios* are in fairly close agreement with that statement.

Note 2. We are pleased to publish this contribution from a Portuguese Selected Ship. In his covering letter, Senhor Mendes mentioned that he reads *The Marine Observer* with interest.



Position of ships whose reports appear in "*The Marine Observers' Log*".

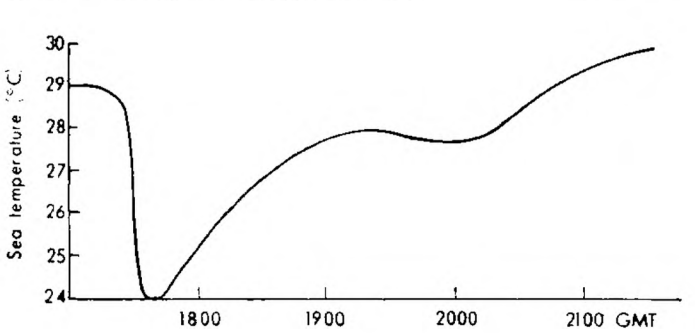
SUDDEN FALL IN SEA TEMPERATURE

Eastern North Pacific

m.v. *Peisander*. Captain D. K. Dunlop, R.D. Kobe to Balboa. Observer, Mr. N. W. Hunt, 3rd Officer.

19th November 1973. At approximately 1730 GMT the sea-water temperature dropped from a steady 29°C to 24°C and this was recorded graphically on the print-out of the 'Cargocaire Dew-pointer System'. The temperature remained at this level for about 5 min before climbing steadily to 27° at about 1830. It was not until nearly 2100 that the original temperature of 29° was reached. These variations were confirmed by engine-room intake readings and by bucket. There was no change in the colour or appearance of the sea. Air temp. 26·9°, wet bulb 24·1°. Pressure 1009·8 mb. Wind light and variable. Visibility 15 miles. Course 117°T at 20·5 kt.

Position of ship at 1800: 14° 06'N, 95° 11'W.



Note. Unusually low sea-surface temperatures in the Gulf of Tehuantepec are associated with upwelling resulting from strong off-shore winds. However, the *Peisander* was too far off-shore for this effect and in any case strong off-shore winds did not occur during the previous few days. The upwelling of cold water in this report is most likely associated with divergence on the northern flank of the west-setting North Equatorial Current.

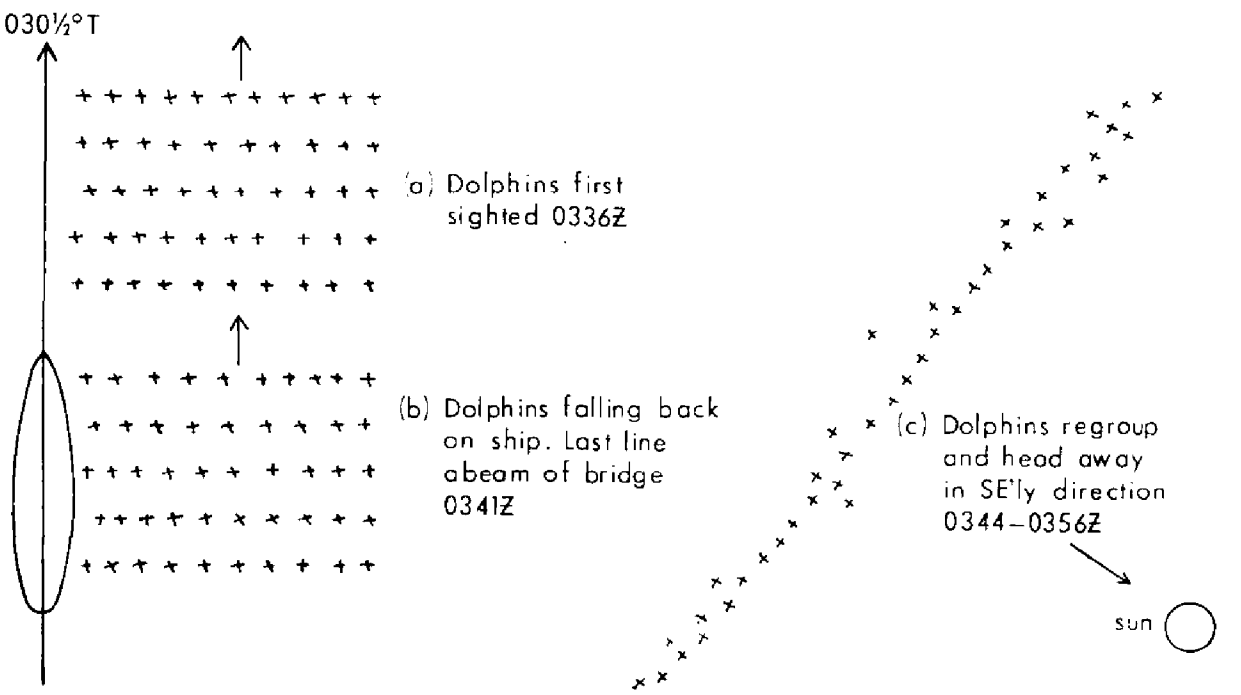
DOLPHINS

Arabian Sea

m.v. *City of Worcester*. Captain P. Redhead. Durban to Bombay. Observer, Mr. K. C. Johnson, 3rd Officer.

1st December 1973. At 0336 GMT a school of dolphins was sighted within 30 m of the ship and about 10 m to starboard of the ship's track. The formation in which these dolphins were moving was very interesting; the school was heading in the same direction when first observed. The formation was made up of 5 lines, about 10–11 dolphins in each line, each line about 3 m apart and altogether about 15–20 m wide (see sketch). The first line of dolphins would leap out of the water at the same time, followed a few seconds later by the second line, and so on, right down the formation. This went on for about 5 min, each line jumping clear of the water every 5–8 sec. The ship was travelling slightly faster than the dolphins. When the rear line was level with the bridge, the formation regrouped about 50 m away from the ship, all dolphins heading in a SE'ly direction in one line about 100 m wide and all still jumping out of the water at the same moment. When the ship was about 2½ miles away the school could still be seen, heading away from the ship, because of the regular spray and surf sent up when the dolphins landed back in the water at the same time.

I have often seen dolphins jumping out of the water simultaneously but never have I seen so many, with such precision and timing, carry out such manœuvres.



It is difficult to say what type of dolphins these were as one only saw a hind view most of the time. They were light grey and about 2–3 m long. The only other observed feature was their lack of a pronounced snout.

Position of ship: 14° 59′N, 60° 36′E.

FISH

North Atlantic Ocean

m.v. *Sugar Exporter*. Captain B. E. Evans. Cristobal to London. Observers, the Master and ship's company.

4th December 1973. At 1000 GMT a flying-fish was found on the for'ard main deck, starboard side. All the ship's personnel who viewed it agreed it was the biggest example of a flying-fish they had seen. The body measured 42·5 cm long with a

wing span of 35·5 cm. Wind SW'S, force 7. Rough quarterly seas and heavy swell. The specimen was wrapped and placed in the ship's deep-freezer.

[Before that flying-fish was found the Master had written (in November) from Panama: "We had, or thought we had, two flying-fish specimens which managed to board us during the night. Unfortunately they were left unattended for a little while soon after being found. Our Chief Engineer, who is of Burmese origin, considers flying-fish a great delicacy and, during the time the fish were unguarded, the Chief happened along on his rounds. Before the missing fish could be traced they were out of the frying pan and on to the Chief's breakfast plate! However, we are still trying to attract more flying-fish with a light at night, so we may have further luck before the end of the voyage."]

Position of ship: 32° 00'N, 44° 00'W.

Note. Mr. A. Wheeler, Department of Zoology, Natural History Museum comments:

"I was very interested to receive the flying-fish from the *Sugar Exporter*; it was in beautiful condition.

"It proved to be one of the double-finned species, *Cypsilurus lutkeni*. Members of this group of flying-fish have very long pectoral fins and well-developed pelvic fins as well, and are the best of the gliders. It was a very large specimen indeed, larger than others in the Museum Collection."

Peruvian waters

m.v. *Orbita.* Captain R. K. C. Thomas. Matarani, Peru to Callao. Observer, Mr. I. F. McRae, 2nd Officer.

28th December 1973. Between 1710 and 1745 GMT large numbers of pelicans, other birds (possibly terns) and seals were seen feeding on a shoal of fish that appeared to be of vast dimensions. The vessel covered a distance of 9 miles while the fish were in abundance. Also, by the direction the birds and seals were following the shoal, it appeared to be moving in a south-easterly direction, opposite to the ship's course, which suggests an even larger area. Sea temp. 14·9°C.

Position of ship at 1800: 15° 12'S, 75° 36'W.

Note. We had heard that the fish, mainly anchovies, in Peruvian waters had recovered from the disastrous decline in 1972, but it is nice to receive first-hand information. The Peruvian fish-meal industry, the largest in the world, was seriously affected when the number of anchovies declined to the lowest ever recorded. As fish-meal is in heavy demand in the live-stock-feed industry, the shortage sent prices rocketing and started the chain reaction which led to much dearer meat and poultry in this country and elsewhere.

MARINE LIFE

Arabian Sea

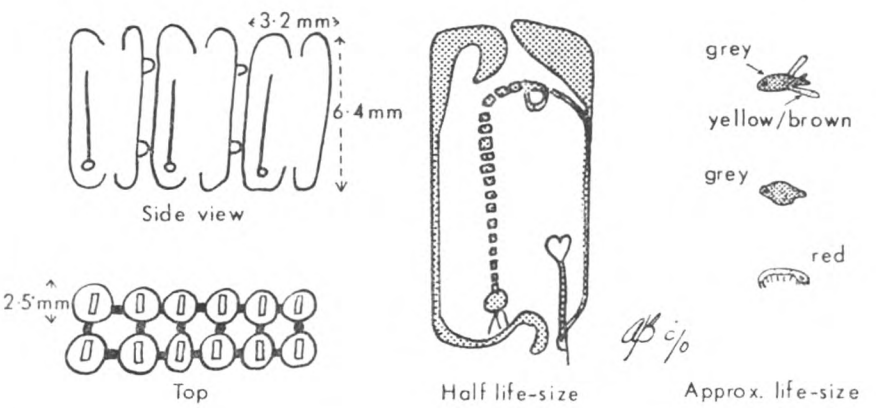
m.v. *Hector Heron.* Captain G. E. Trowsdale. Bandar-e Māhshahr to Adelaide. Observers, the Master and ship's company.

18th December 1973. At 0900 GMT, while the vessel was lying stopped, long jelly-like objects were seen in the water. Half of one was captured in a bucket for study by curious observers; the other half broke away and escaped during capture. Our studies revealed a variety of marine life.

The jelly lump was a series of individual tubular units joined by two tiny membranes to its adjacent units and were arranged in rows of two like a school 'crocodile'. Each unit was identical in shape, size and colour but each acted as an individual. Although generally transparent there was a faint tint of blue all over. Each member of the chain had a pea-sized blob which was brown with a touch of white, a thin blue-striped tube leading from the blob and a white heart-shaped spot (see sketch). When the bucket was kicked they instantly behaved the same by stopping all movement and sinking to the bottom. Normally the lump floated at the surface with a pulsating opening just clear of the water.

Small fish and prawn-like objects were seen to be swimming around, entering and leaving at will and even swimming inside the jelly. They came to no apparent harm. Some pieces of dried rice were dropped into the openings on the surface and quickly rejected, either back through the top or at the bottom which, on closer examination, had a similar pulsating opening.

After dark all movement stopped until a light was shone on the object. Then it was noticed that some units had babies swimming inside the large ones; one was seen to give birth through the top opening and baby then swam away fast. A few minutes later the parent broke away from the other units. No sign of luminescence was given by any creature in the bucket by any natural or artificial stimulant.



The other life (see sketch) included several small fish with two tails. They were grey with yellow/brown tails, some small red shrimps or prawns with a mass of white legs but no feelers, a small grey globular fish with a tubular tail and several things too small to see in detail without magnification. All appeared to live on and inside the jelly. (The next morning all varieties were dead.)

During the day the weather was fine with small amounts of cloud. Air temp. 26°C falling to 21°. Sea temp. steady at 25·6°.

Position of ship (approx.) at 0900: 24° 02′N, 60° 28′E.

Note. Miss A. M. Clark, Echinoderm and Protochordate Sections, Natural History Museum, comments:

"The jelly-like double strings of objects must be the aggregated form of a salp, probably *Pegea confederata* (Forskaal), which was recorded in large quantities from the Gulf of Oman and S.E. Arabia by Sewell, during the John Murray Expedition of 1933–4. The relatively large size (*c.* 65 mm length of an individual, judging from the drawing) also agrees with this identity, though it is interesting that they were still attached at this size, separation being recorded as taking place any time after reaching a length of 25 mm.

"Salps have a complicated life cycle, the egg developing into a solitary asexual individual which buds off a series of aggregated sexual individuals linked in a double chain (except in *Cyclosalpa* where they form a series of wheels); these in turn produce eggs, often only one in each, and being viviparous the embryo is retained within the aggregate individual until it escapes to form another solitary individual, while the aggregates dissociate themselves to live separately. Sewell reported high densities of chains of aggregates up to three feet long in this area in October–November in 1933, attributing their frequency to upwelling of deeper water due to the SW monsoon winds.

"The discontinuous opaque line up the middle is the endostyle, a mucus-secreting organ along one side of the (transparent) branchial sac which leads to the coiled intestine—the brown blob at the base. The white heart-shaped spot should be the embryo, according to published illustrations.

"Sewell recorded three different copepods (one with the nice name *Schmackeria*) and an amphipod with *P. confederata*. These are small crustacea (amphipods have numerous paired legs and copepods are often fish-shaped, sometimes with a pair of opaque, brownish, elongated egg-sacs, one each side of the tail, as in the two-tailed 'fish'). I think it likely that all the associates seen were crustacea of some kind."

South African waters

s.s. *Botany Bay*. Captain R. A. Wilson. Fremantle to Genoa. Observer, Mr. P. J. Sizer, Cadet.

24th December 1973. At 0555 GMT a pinkish discolouration of the sea was noticed to the north. The ship's course was 263°T and the discolouration was on the starboard bow. Since it was shortly after civil twilight, yet before sunrise, it was at first assumed to be abnormal refraction, possibly caused by warm currents meeting cooler ones at the surface. As the range decreased and it could be seen clearer it was then thought to be surface deposits of a pinkish chemical, possibly discharged from a passing ship. As the ship actually passed through the discolouration it was seen to be pink surface plankton in lines running approximately N/S. The lines of plankton varied between 15 and 50 m in width and were about 200 m apart. The ship went through 8 or 10 of these lines altogether. When the bow had passed through the edge of one line, the resultant wave broke up the plankton but the pinkish colour remained. The depth of the top layer could not have been more than 2 m below the surface. The ship took about 5 minutes to cross this unusual phenomenon making the overall width of the area not more than 1·5 miles. No more of this plankton was observed around the ship after 0600.

Position of ship at 0555: 34° 48′S, 21° 54′E.

BATS

Eastern North Atlantic

m.v. *Mabel Warwick*. Captain R. F. Jackson. Porto Salazar, Angola to Hartlepool. Observers, the Master and ship's company.

29th–30th November 1973. At 1300 GMT a large brown bat was observed flying round the ship. It was about 20 cm long and had a wing span of about 40 cm. The bat was later seen suspended under the starboard wing lifebuoy chute. During the evening it was visited by nearly all hands and did not object to being stroked. It was very thirsty as it seemed to drink a great quantity of water for its size and also had a few nibbles from a Golden Delicious apple. It was last seen at 0300 on the 30th. Looking at *The Marine Observer* for October 1968 [report from m.v. *Ripon*], it seems that it was possibly an African Fruit Bat. Air temp. 28·7°C, sea 28·5°. Calm sea with slight swell, no wind, thick haze. Course 311°T at 11 kt.

Position of ship at 1300 on 29th: 08° 10′N, 14° 38′W.

Note. Mr. J. Edwards Hill, Mammal Section, Department of Zoology, Natural History Museum, comments:

"The bat reported by the *Mabel Warwick* was certainly an African Fruit Bat, but there are insufficient data to establish the exact species with certainty."

s.s. *Esso Ulidia*. Captain K. Mackenzie. Ra's Tannūrah to Milford Haven. Observers, Mr. J. F. Pykett, 2nd Officer, Mr. C. N. Perry, 3rd Officer, Mr. G. Craig, A.B. and Mr. J. Clements, A.B.

2nd December 1973. At 0900 GMT a small bat was found lying on the deck just abaft the funnel. No reference books were available on the subject; however, after looking through various *Marine Observers*, a practically identical description of the bat was found to have been sent in by Captain W. A. Murison of the *Britannic* in March 1972. The description and size of the bats were almost identical so I can assume that they were of the same family, Molossidae or free-tailed bats.

The vessel at the time was approx. 210 miles off Freetown and the last port of call had been in Saudi Arabia though the vessel had stopped some 15 miles off Cape Town.

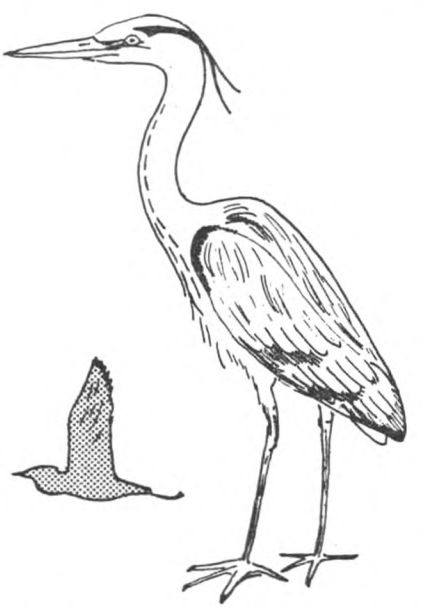
Position of ship at 0900: 08° 00′N, 16° 50′W.

BIRDS

South African waters

m.v. *Benledi*. Captain W. C. Watson. Cape Town to Penang. Observers, Mr. J. C. Thomson, 2nd Officer and Mr. M. K. Judson, 3rd Officer.

30th–31st December 1973. At about 1150 GMT on the 30th, when the vessel was 6·5 miles off Bird Island on the South African coast, a large bird flew aboard the vessel and landed on No. 1 hatch. It was about 70 cm in height when standing in repose but it could stretch itself to about 100 cm when alerted. Its body was mainly light grey on top and white underneath and its neck was speckled with black. The wings had darker grey feathers with a broad band of jet-black feathers at the tips.



A small black crest adorned the back of its head and its bill was yellow, with bluish speckles on the upper beak. The eyes were yellow with a piercing black pupil and surrounded by greenish-yellow feathers. The legs were those of a wading bird, dark-greenish and shiny, with three toes pointing forward and one pointing back, all ending in a small claw. It did not appear to be very frightened of humans. It was only when we approached to within a few feet that the bird would take off, fly round the vessel, and land on another part of the ship. When in flight the bird tucked its head in close to the body and trailed its long legs behind it.

On reaching Hood Point course was altered to make for the southern tip of Madagascar and, although the bird seemed to look longingly at the receding coast-line, it did not leave us. The time was about 1745.

At 0630 the next day our feathered passenger was seen on No. 5 hatch but during the morning it must have decided that a voyage to the Far East was not to its liking for it took off and flew away, seeking pastures new.

Position of ship at 1200 on the 30th: 33° 51′S, 26° 25′E.

Note. This would have been the Common or Grey Heron which is a native of Europe, ranging through central and southern Asia, but also found in Africa, including Madagascar. Both herons and egrets retract their necks in flight, unlike the storks, spoonbills, ibises and cranes which fly with both neck and legs outstretched.

Moçambique Channel

m.v. *Scotspark*. Captain F. Danks. Mormugao, Goa to Durban. Observer, Mr. J. E. Tirel, 3rd Officer.

14th–15th November 1973. On the 14th, during the first watch, an albatross

was observed flying alongside the port bridge wing; after a few minutes it disappeared and was not observed again for about half an hour when it attempted to land on the gyro compass repeater. Being unsuccessful, it departed only to return and try to land on top of the officer of the watch, namely me! This happened about five times then the bird eventually disappeared.

Just after midnight the bird was once again observed perched on the monkey island rails; he then moved from there to the dodger on the port wing. An attempt was made to feed it but we were rebuked by a snap of its beak. The bird was all white except for the tops of its wings which were a brownish-grey. From beak to tail it measured about 69 cm and had a wing span of about 137 cm.

Position of ship at 1800 GMT: 21° 36′S, 37° 48′E.

Indian Ocean

m.v. *Antilochus*. Captain R. M. Simpson. Colombo to Durban. Observers, the Master and ship's company.

15th–17th November 1973. During the forenoon watch on the 15th a bird was captured. It was first seen during the previous watch perched on the foremast. When not perched there it was making a fruitless attempt at fishing. At 0900 SMT it was found on the bridge wing in an apparently exhausted condition. It was captured without too much difficulty or struggling and placed in an open box in the chart room. The Captain identified it as a Peregrine Falcon from a photograph in Eric Hoskins' book *An Eye for a Bird*. It was 36 cm from its beak to the tip of its tail, with a wing span of about 90 cm, and was predominantly black with a freckled white underside and white patches behind its head.

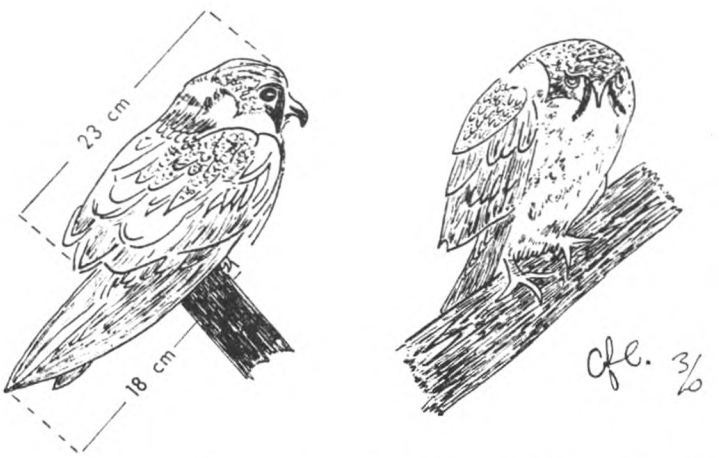
A saucer of water was put in its box but the bird did not want it. However, strips of raw bacon had a different effect on it. It worked its way through a rasher in a few minutes, leaving all the fat. We then gave it pieces of steak which it ate more slowly. In between nibbles it looked as though it was trying to sleep. During the afternoon it was asleep in its box but it livened up at night. By this time it was obvious that it could not use its feet properly and it was no longer making any efforts to fly. On the morning of the 16th it was given some more steak, about 2 oz, some of which it ate and then spent the rest of the day in various parts of the chart room asleep. By the morning of the 17th its condition had deteriorated still further. It did not want any of its meat and by then it could be picked up with hardly a squeak. It used to say very little anyway, most of the time just giving 'silent screams' when picked up.

To make it happier, its box was moved out on to the bridge wing into the fresh air. While in the shade it seemed quite content but once it was in the full sunlight it struggled out of its box with a great effort and limped into the shade. By this time we had decided that it was a 'dolly bird' because of its mania for making anything it could find into a nest, e.g. plate, saucer, coconut mat. We all thought she had not long to live, the only sign of life being the alert expression in her eyes. During the afternoon watch the impossible happened. She got up, stretched her wings and flew! Without any great effort she flew round the ship several times and finally perched on the mainmast on what had been useless legs only a few hours previously. She remained with us till midnight, flying round the ship quite happily before she disappeared. We were then in 09° 30′S, 54° 00′E in fine weather with the wind SE, force 2–3. Her recovery seemed little short of miraculous unless she had been 'playing possum' before.

Position of ship on 15th: 03° 00′S, 67° 40′E.

m.v. *British Holly*. Captain E. F. Henderson. Westernport, Victoria to Fagerstrand, Oslo. Observers, the Master and ship's company.

13th December 1973. The bird shown in the sketch landed on the ship at 0600



GMT when we were 700 miles from the nearest land, Mauritius. The bird was very battered and sections of its plumage were standing out in tufts. Due to its exhausted state we were able to approach it within a few feet to inspect and photograph it.

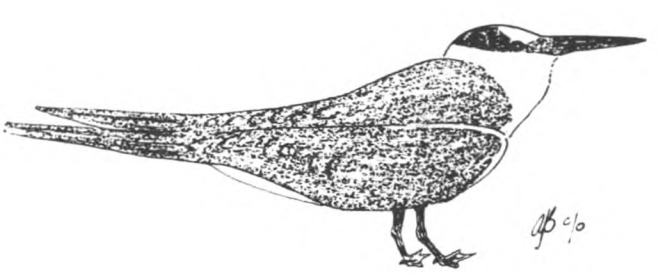
Its total body length was about 38 cm with a wing span of about 90 cm. The wings were dark grey tipped with white and the breast was creamy-white with brown flecks. The top of its head was a slaty blue/grey colour and there were two black vertical streaks on either side of its beak which extended over the very distinctive white 'collar'. The dark, hooded eyes had a yellow ring round the eyelids and the beak was short and pointed, yellow at the base but turning to green with a black tip. The feet were an orange-yellow with claws of about 5 cm.

According to our Scottish expert, Mr. M. H. Brown, Deck Cadet from Inverness, the bird was a young Falcon similar to a Hobby.

Position of ship at 0600: 31° 06′S, 63° 24′E.

m.v. *Hector Heron.* Captain G. E. Trowsdale. Bandar-e Māhshahr to Adelaide. Observers, the Master, all observing officers and cadets.

24th–25th December 1973. At about 1730 GMT on the 24th a loud crash was heard on the monkey island by the 3rd Officer. Upon investigation a bird was seen to have crashed into the radar mast but it evaded capture until dawn (0030). It was incapable of flying but was quite lively so it was put in the wheelhouse on a flag shelf. Later a box was provided but this it refused in favour of the flags. It had no fear of humans and enjoyed being stroked under the chin.



We think it was a Sooty Tern. It was dark brown/black on its upper parts and white all over underneath. The neck and forehead were white with a black cap on its head. Its legs were black with one rear claw and webbed feet and its long black beak, 3·8 cm long, was more vicious-looking that it actually was. Its wing span was 91 cm and its overall length 35·5 cm.

Food was at first refused when a flying-fish was offered; there was no interest shown by the bird but the fish was eaten for breakfast by the Chief Officer! Later, bread soaked in water and a deep-frozen fish was offered and devoured eagerly when forced into its beak.

It is thought that during the torrential rain and violent thunderstorm during the

night the bird had lost its feather oils and its ability to become airborne. During the storm many similar birds were seen and heard near the mast light. Visibility at the time was reduced to about 15 yd.

Position of ship at 0100 on 25th: 00° 04′N, 80° 50′E.

Note. This may have been a Bridled Tern which is easily confused with the Sooty Tern. The Bridled Tern has a white 'collar', whereas the black on the Sooty Tern's head continues unbroken down its back. The white on the latter's forehead does not extend beyond the top of its eye, as in the case of the Bridled Tern.

Sea of Japan

m.v. *Tacoma City*. Captain T. McNulty. Moji, Japan to Vancouver Island. Observer, Mr. A. M. Beevor-Reid, 3rd Officer.

1st October 1973. At 0100 GMT the vessel was proceeding on a course of 048°T heading for Tsugaru Kaikyō, nearest land being estimated at over 60 miles away. A small bird of the humming-bird family flew into the bridge and was eventually captured but found to be very weak. The size of the bird was such that it would easily fit into the palm of one's hand, its over-all colour was light grey and it had the characteristic long, thin beak of the humming-bird family. After trying unsuccessfully to feed it, the bird was set free.

Position of ship: 38° 18′N, 135° 40′E.

Pacific Ocean

m.v. *Cape Grenville*. Captain S. J. Readman. Vancouver Island to Sydney. Observers, the Master and most of ship's company.

6th–17th November 1973. At 0630 GMT on the 6th a young Peregrine Falcon was observed on No. 4 crane. Due to the crew members' activities during the day on or around the crane, it decided to perch on the for'ard mast light.

On the 7th it was observed sitting on the cross trees and moved from there to the port radio aerial stanchion on the 9th, where it remained until leaving the vessel on the 17th when it was last seen heading for Vanikaro Island.

While the falcon stayed with the vessel it lived on a diet mainly of various seabirds and flying-fish. Although meat and water were left out for it, it did not touch either and although it was observed near or in fresh-water puddles trapped on the deck it was not observed to drink at any time.

The following is a tally of its kills during the first week:

6th: 4 assorted birds
7th: 5 assorted birds
8th: 6 assorted birds
9th: 2 flying-fish
10th: 2 birds

Position of ship on 6th: 33° 00′N, 148° 42′W.

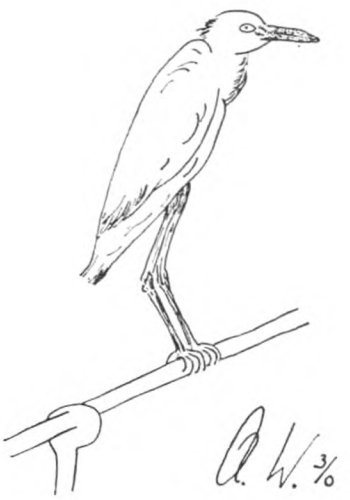
Position of ship on 17th: 11° 32′S, 167° 26′E.

Note. The *Cape Grenville* is a Canadian Selected Ship.

Eastern North Pacific

m.v. *Hinakura*. Captain P. E. Kelso. Timaru, N.Z. to Balboa. Observers, the Master and Mr. A. Wymark, 3rd Officer.

15th December 1973. At 1400 GMT a peculiar bird was seen flying round the ship and appeared to be making an effort to land. After several attempts at landing on mast stays, etc. it finally alighted on the bulwark rail forward but appeared most uncomfortable. After a short while tottering in the wind it eventually flew off, obviously in search of a more comfortable roost. The Master stated that he thought it looked like a member of the Egret family but did not realize they were found in



this part of the world. The wing span was possibly 60 cm and the beak was approx. 10–12 cm. It had a fairly long neck which was drawn back in flight.

Later, on reading the October 1973 edition of *The Marine Observer*, we are almost certain that this was a Common Egret, as sketched by Mr. R. G. Marshall of the *Scotspark*.

Position of ship: 03° 00′N, 83° 06′W.

Note. The Common Egret (*Casmerodius alba*) is seen from North America to the Argentine. During the breeding season it may have as many as 50 ornamental crest feathers, each up to 50 cm in length. The bird was once on the verge of extinction in the days when these lovely feathery plumes were used to adorn women's hats but now, after active protection, it has recovered its former numbers.

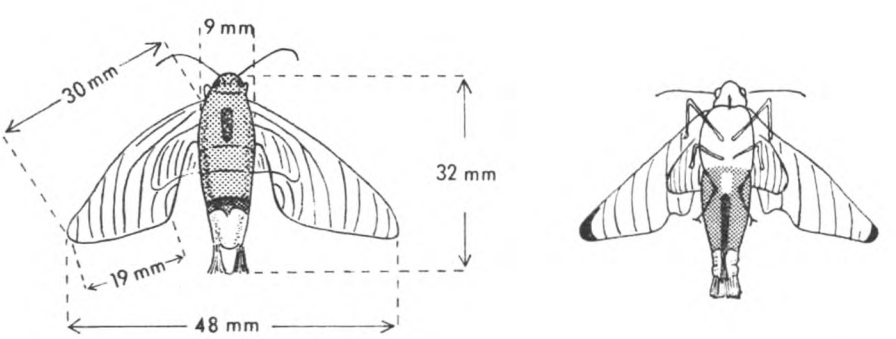
INSECTS

Eastern North Atlantic

s.s. *Esso Warwickshire*. Captain I. D. Grigor. Fawley to Cape Town. Observer, Mr. N. O'Dowd, 3rd Officer.

22nd June 1973. When the vessel was approx. 130 miles from the nearest land an insect was captured on board. It was killed with an insecticide and the drawing made.

Position of ship: 06° 45′N, 15° 00′W.



Note. Although this report should have been published in the April 1974 edition it is included here because an identical insect was caught on the *Finnamore Meadow* later (see below) and Mr. O'Dowd's sketch serves to illustrate both reports.

m.v. *Finnamore Meadow*. Captain J. A. McCulloch. Newport, Mon. to Mossamedes, Angola. Observer, Mr. T. G. Tobiassen, 2nd Officer.

27th–28th November 1973. During the 27th the wind was E'ly, force 2 and the

vessel was on a course of 180°T. At 0600 on the 28th, in position 10° 14′N, 18° 15′W, course was altered to 130°T when the vessel was 120 miles from the nearest land, Ilha de Orange. From midnight there had been calm weather with light, variable wind. Shortly after noon an insect (specimen enclosed) was captured in the ship's library but the colours have since faded and the insect has shrunk about 5 mm.

Position of ship at 1200 SMT: 09° 30′N, 17° 20′W.

Note. Mr. A. H. Hayes of the Department of Entomology, Natural History Museum, comments:

"The moth shown in the drawing from the *Esso Warwickshire* and the specimen sent from the *Finnamore Meadow* is that of the hawk moth *Cephonodes hylas virescens* Wallengren which is a common African insect. It is interesting that scales covering the hyaline [transparent] areas are shed on the insect's first flight."

Eastern South Atlantic

m.v. *Clan Maclay*. Captain M. D. Whiteley. Mombasa to Avonmouth. Observers, the Master, Mr. P. D. Williams, 2nd Officer and Mr. I. C. Scott, Radio Officer.

28th–29th November 1973. At 1230 GMT on the 28th a locust/grasshopper-type insect was observed on the port bridge wing. Another was seen about half an hour later, forward of the accommodation. Their predominant colour was light green with mauve on the back of the head and along the fore part of the front wings. Length from tip of head to tip of folded wings, 60 mm. Each had two pairs of wings and six legs, the back pair being the large gripping ones. Photographs were taken [and forwarded to Dr. Jago].

The vessel had been steering a course of 323°T with a speed of about 13 kt for the past five days; the wind was SE'ly for most of the time.

The next day more of these insects were seen, two of them without the mauve markings.

Position of ship at 1230 on 28th: 12° 20′S, 00° 13′E.

Note. Dr. N. D. Jago of the Centre for Overseas Pest Research comments:

"Let me first thank the 2nd Officer of the *Clan Maclay* for the evident trouble he has taken to send us a record of these insects. His photographs clearly show specimens of the migrant bush cricket *Homorocoryphus*. This genus of grassland bush cricket is noted for its ability to migrate great distances and the *Clan Maclay* record has been of great value to Dr. D. R. Ragge at the British Museum (Natural History) who is amassing reports of these insects. The genus contains several species, some of which are notable for forming large swarms which sing in unison at night. At times of swarming they are also often caught as an important food item as they are attracted to light. They are occasional minor pests.

"All future records will be greatly appreciated as they help us to follow migration patterns several hundred miles out to sea and will add to the total picture so vital to understanding the movement of pest species in the tropics."

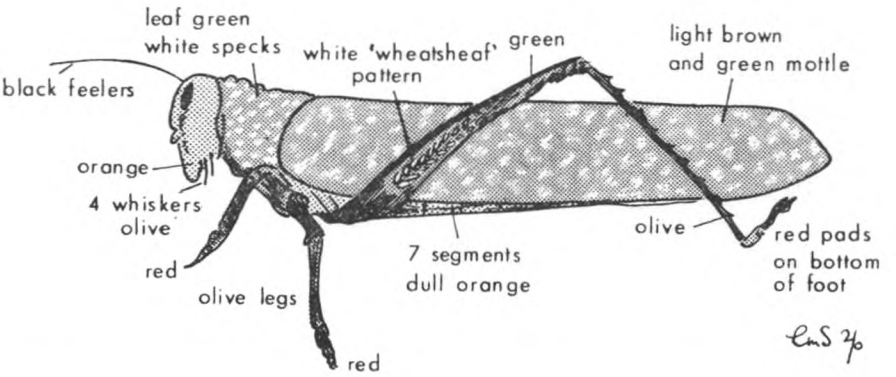
Caribbean Sea

m.v. *Vancouver Forest*. Captain D. M. R. Maxwell. Panama to Port Everglades, Florida. Observer, Mr. C. M. Satchel, 2nd Officer.

7th October 1973. It was reported this afternoon that the British freighter *Vancouver Forest*, on passage to Port Everglades, had been boarded by a large unidentified insect which took over the bridge, held the 2nd Mate at leg-point, and demanded: "Take me to Cuba". It was decided in the interests of safety of the crew that this request should be complied with.

[There was only room in the logbook for a few more meteorological observations, the last one from position 23° 00′N, 84° 24′W. The shipping press made no mention of any intermediate stops but stated that the *Vancouver Forest* had arrived at Baltimore on 13th October.]

Position of ship at 1800 GMT: 16° 36′N, 78° 54′W.



Note. Dr. D. R. Ragge, Department of Entomology, Natural History Museum, comments:

"This was a large grasshopper belonging to the Central and South American genus *Tropidacris* which includes the largest known grasshoppers."

AURORA

The following notes have been received from Mrs. Mary Hallissey of the Aurora Survey:

"A summary of auroral observations made in British ships during the three months 1st October–31st December 1973 is given in the accompanying table. The reports have been received at the Balfour Stewart Auroral Laboratory of the University of Edinburgh and are gratefully acknowledged.

"The line on the sunspot number chart continued its downward path during this period. With the minimum in the solar cycle predicted for mid-1975, this is expected. These notes however are being written in July 1974, and earlier this month, 4th–8th July, as readers may be aware, there was an unusually high level of solar and related geophysical activity. It was in fact feared at one time that the radiation accompanying the numerous major flares, which leapt from the sun's surface to distances as high as ever recorded, might be dangerous for the astronauts in the Russian-manned spacecraft. Scientists are inviting reports of any unusual events or activity, e.g. disturbance to navigational systems, disruption of communications, auroral displays, occurring at this time.

"Geomagnetic activity during October was unsettled with minor storm conditions recorded between the 28th and 31st. This disturbance was of a recurrent nature but was rather more severe than anticipated. During its most active period—around 2200 on 29th—aurora was visible here to the latitude of North Wales, but more intense associated activity was seen in geomagnetic latitudes 61–63°, as shown by the report from the *Summity* in the Gulf of Bothnia on 28th and 29th October (we thank the observers who emerged from the warmth below deck while the ship was in port to make the observations of long red-topped rays), and over the western Atlantic from the *C.P. Voyageur* during the early morning of 31st October.

"Other reports from ships during October record aurora associated with more moderate levels of geomagnetic activity. Aurora on 2nd/3rd October was widely reported in the British Isles and observers in the *Challenger*, off the west coast of Scotland, reported at 2305 a rayed arc with base overhead in the Faroes and rays almost to the ship's zenith.

"The rayed band seen from the *Weather Reporter* on 16th October was seen at the same time from central Scotland. These disturbed conditions continued on 17th/18th October when the aurora was seen as a broad arc passing through the zenith above the *Buccleuch*, south-west of Greenland, as a rayed glow in Scotland and as an arc over northern Norway.

"Further disturbed conditions on 21st October were occurring at the time of the report from the *Queensgarth* in the western Atlantic of coronal forms overhead in geomagnetic latitude 64° at 2240, i.e. an equatorwards move of several degrees from the 'auroral zone'. An auroral glow was reported some hours earlier from the *Act 1* in the southern hemisphere and confirms extensive northwards movement of the aurora australis.

"During November a short period of activity occurred on 16th–18th when multiple bands of aurora, seen to the southern horizon of an Icelandic observer, were observed from the *Weather Reporter* as a glow. The ship was stationed at 'Juliett' some 11° geomagnetic south of the observer in Iceland. The British Isles were largely cloud-covered, so we had no other reports of the southward extension.

"The most widely reported aurora during November related to minor storm conditions

on 24th/25th when activity was recorded on our chart from 1730 to 0600, maxima 2100 and 0230 GMT. The display inspired the delightful pen and ink sketches of Mr. Galloway in the *Acavus* and a fine report. We regret the presence of the 'belligerent coaster' during the earlier part of the display which may have denied us further colourful description. Observers in the *Weather Adviser* supplied a series of drawings covering the display from 1820 to 0400 and for the following night from 2000 to 0400. We greatly appreciate this way of conveying a complexity of forms and conditions.

"Much of our December data comes from observers in the *Weather Monitor* stationed at 'Alfa' and the Netherlands Weather Ship *Cumulus* at 'India'. A portfolio of excellent pictures of the displays, coloured and fully annotated, accompanied the reports made in the *Weather Monitor*. These high-latitude observations now have the additional value of possible comparison with the impressive photographs taken from U.S. satellites. These circle at about 850 km above the earth and each frame shows an almost 3,000 km-wide coverage.

"We thank you all for your helpful contributions to our data collection."

Date (1973)	Ship	Geographic Position		A	Φ	I	Time (GMT)	Forms
2nd Oct.	*Challenger*	56°34′N	09°02′W	080	61	+71	2305–0215	RA, RR
16th	*Weather Reporter*	58°56′N	18°40′W	070	65	+72	2155–2330	RB
17th	*Buccleuch*	58°14′N	51°00′W	030	69	+76	2220	HA, V
18th	*Weather Reporter*	59°07′N	18°58′W	070	65	+72	2140–2340	RB, N
20th	*Weather Reporter*	56°09′N	09°37′W	080	60	+70	2300, 2345	HA, N
21st	*Act 1*	38°00′S	113°47′E	180	−49	−72	1320–1335	N
	Queensgarth	53°20′N	50°52′W	030	64	+74	2240–2250	RA, RB, RR
28th	*Summity*	63°33′N	20°47′E	110	61	+74	2120–0315	RR, N
29th	*Summity*	64°41′N	21°15′E	110	62	+75	1840–1910	HA, RB, RR, P, N
31st	*C.P. Voyageur*	52°55′N	45°30′W	030	63	+73	0500–0545	N
16th Nov.	*Weather Adviser*	59°00′N	18°42′W	070	65	+72	2100–0030	N
18th	*Weather Reporter*	52°45′N	19°52′W	060	59	+69	0245	N
23rd	*Weather Adviser*	59°12′N	19°08′W	070	65	+72	1900–2300	HA, RR, P, N
24th	*Weather Adviser*	59°06′N	18°48′W	070	65	+72	1820–0400	All forms
25th	*Acavus*	49°00′N	64°10′W	010	61	+75	0230–0250	HB, RB, RR, P
	Weather Adviser	58°54′N	18°48′W	070	65	+72	2000–0500	HA, HB, RB, P, N
28th	*Weather Adviser*	59°00′N	18°54′W	070	65	+72	0505–0510	RR
7th Dec.	*Weather Monitor*	59°28′N	21°27′W	070	66	+73	2300–2315	RR
8th	*Weather Monitor*	60°57′N	27°18′W	060	68	+75	2306–2330	HA, P
9th	*Weather Monitor*	61°22′N	31°06′W	060	69	+76	2145	P
10th	*Weather Monitor*	61°56′N	32°16′W	060	70	+76	2250–2338	HB, RA, RB, SB, P
16th	*Weather Monitor*	61°54′N	32°59′W	060	70	+76	0205–0302	HA
		62°08′N	33°19′W	060	70	+76	1930–1940	N
17th	*Weather Monitor*	61°55′N	33°33′W	060	70	+76	1945–2400	HA, HB, RR, P, N
18th	*Weather Monitor*	61°52′N	33°36′W	060	70	+76	0145, 0340	RA, P
		61°54′N	32°50′W	060	70	+76	2045	RR
19th	*Weather Monitor*	61°54′N	32°41′W	060	70	+76	0230	N
21st	*Weather Monitor*	61°49′N	33°39′W	060	70	+76	0440	RR
22nd	*Weather Monitor*	60°07′N	26°03′W	060	67	+74	1950–2400	HA, RB, RR, P, N
23rd	*Weather Monitor*	59°39′N	23°56′W	060	66	+74	0305–0430	V

Key: A = geomagnetic longitude; Φ = geomagnetic latitude; I = inclination; HA = homogeneous arc; HB = homogeneous band; RA = rayed arc; RB = rayed band; R(R) = ray(s); P = Patch; V = veil; S = striated; SB = striated band; N = unidentified auroral form.

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The Royal National Life-boat Institution

The story of the Royal National Life-boat Institution and, indeed, of all saving life at sea from the earliest days, has been told against the darkest back-cloth of the sea: gales, shuttering snow and sleet, fog and bitter, penetrating cold. When its temper is aroused, air, of all the elements, is perhaps the sailor's primary enemy, both provoking and allying itself with water, as it does, to create the wild fury which can be the seaman's undoing or his glory.

It is no chance coincidence that early in the report of every lifeboat service will be found a brief note on the state of weather and of sea: "Force 9–10 north-north-east wind, rough sea with a heavy swell, low water, visibility down to about a half to one mile on an overcast morning with frequent hail and snow squalls . . ."; "The wind was north-west, gale Force 8, with seas of 20 feet running against a northerly ebbing tide. It was cloudy and raining . . .". And, as a report continues: "The wind had increased to Force 12, gusting 13, and visibility was greatly reduced by the heavy squalls and spray . . .". "By now the wind was south-south-easterly, Force 10, giving extremely rough seas and accompanied by sleet showers . . .".

This is the challenge which the lifeboatman accepts when, as the maroons go up, he hurries to the boathouse to launch the lifeboat and put to sea at a time when most other shipping is in harbour waiting for the weather to abate, or, if caught out, making for shelter.

Who are the lifeboatmen? Fishermen mostly, though nowadays joined by men from many other ways of life. Often there is a long family tradition of lifeboat service. They share a common understanding of the sea and a bond of trust in each other's skill. They know their own home waters, know them in every phase of the tide and every mood of the weather; they know the channels and the shoals, the nature of the waves, the rocks, the currents and the reliance that can be placed on holding grounds. Thus they can feel their way instinctively through the worst storm to the very edge of the possible.

Such knowledge is vital because a lifeboatman's work, by its very nature, has to be done in the most dangerous area of all in bad weather—coastal waters. He cannot avoid the neighbourhood of lee shore, rock and shoal; that is where those who need his help are most likely to be. Inevitably, he has to go out from and come back to the land. Yet lifeboatmen are the first to reject any claim to bravery; they may be, they say, just as apprehensive as anyone else as they wait for the launching pin to be knocked out; they just go because help is wanted and because there is no other course possible. It has always been a voluntary service and there has never been a want of men ready to risk their own lives to save those in peril of drowning. On the contrary, there is a reserve waiting and, even after tragic disasters have resulted in the loss of a whole crew, other seamen have come forward immediately to take their place.

It was 150 years ago, on 4th March 1824, that a meeting was held in the City of London Tavern, presided over by the Archbishop of Canterbury, Dr. Manners Sutton, at which it was resolved to form the body which is today known as the Royal National Life-boat Institution. The RNLI has therefore reached its 150th anniversary and is celebrating 1974 as 'The Year of the Lifeboat'. But the idea of lifeboats manned by volunteers was by no means new in 1824. The great expansion of coastal trade in small, vulnerable sailing vessels which began in the eighteenth century had already turned men's thoughts to the problem of shipwreck and saving life at sea.

The earliest known lifeboat station in Great Britain—and probably in the world—was established at Bamburgh, Northumberland, in 1786, when Dr. John Sharp, Archdeacon of Northumberland and chief administrator of the Crewe Trust, persuaded Lionel Lukin to convert a fishing coble for use as a lifeboat. Lukin had been

experimenting on ways of giving a boat greater buoyancy, and his 'unimmergible' vessel was fitted with cork gunwales and with watertight compartments built into her stem and stern, sides and bottom.

A few years later, William Wouldhave thought up an idea for the design of a boat which would right herself if she capsized, an idea which came to him when he was playing idly with an old women's curved wooden water dipper: if a hull has high buoyant ends these will not support her should she capsize, and the weight of the body of the boat will automatically right her. Wouldhave's model was known to Henry Greathead when he produced the *Original* (*see* photograph opposite page 178), the first boat specifically designed as a lifeboat, which was launched at South Shields in 1790; however, although unsinkable, she was not self-righting.

By 1824 there were 39 lifeboats stationed round the coast; but the meeting at the City of London Tavern was the result of an appeal for the formation of 'A National Institution for the Preservation of Lives and Property from Shipwreck' made by Sir William Hillary after a winter of unusually strong winds in 1822, during which he was in command of ordinary pulling boats which had saved more than 200 sailors from wrecks round Douglas Bay in the Isle of Man.

Sir William Hillary was later awarded three gold medals for gallantry and his coxswain, Isaac Vondy, three silver medals. Their most famous rescue was of the crew of the Royal Mail steamer *St. George* after she had been driven on to the rocks of Douglas Bay. A new unsinkable lifeboat had recently arrived at Douglas but it was not ready for service, so Hillary and 15 men rowed out to the wreck in a big open boat, successfully taking off all 22 of the *St. George*'s crew. As the boat neared the beach, she broached to in the heavy seas and Hillary and two other men were washed overboard. Hillary was dragged ashore with six of his ribs broken, but that did not stop him from wading back into the breaking waves to help rescue those still in the waterlogged boat.

One of the most famous of modern services, to the Greek ship *Nafsiporos* on 2nd December 1966, also started off the Isle of Man (*see* photograph opposite page 179). The ship was first reported 8 miles off Douglas Head. The wind was north-westerly, Force 10 gusting 11, and the *Nafsiporos*, sailing light ship, was being blown off towards the coast of Wales. Later reports gave her position as 12, 23½ and then 25 miles from Douglas Head. Douglas lifeboat, *R. A. Colby Cubbin No. 1* (*see* photograph opposite page 179), a 46-foot 9-inch Watson, was launched at 0820 and followed for 36 miles, searching for the ship through the storm without success, and only returning to station when it was learned that Holyhead lifeboat had made contact with *Nafsiporos*.

The Holyhead boat, *St. Cybi* (*Civil Service No. 9*), a 52-foot Barnett lifeboat, was launched at 1030, when *Nafsiporos* was reported 20 miles north of Point Lynas. An attempt by a Russian vessel to tow the ship failed because of the tremendous strength of the wind and the state of the sea, and eventually she fetched up less than a quarter of a mile west of the West Mouse Rock, in a depth of only about 6 fathoms.

By this time Moelfre lifeboat *Watkin Williams* (a 41-foot Watson) had also been called out—it was her second service that day. The two lifeboats were faced with an enormous task, with very little daylight left. The *Nafsiporos* was rolling up to 35° either side of vertical; in one extreme roll to starboard, with a heavy yaw, her counter crashed down on *St. Cybi*'s port quarter. Another hazard was *Nafsiporos*'s starboard boat; it had been turned out and the forward fall let go, so that it was hanging vertically from the after davit; before the rescue was completed the remaining fall parted and the boat crashed down on the Holyhead lifeboat's deck. By that time, however, 5 men had already been successfully taken off by the Holyhead boat, and the Moelfre boat was able to keep alongside long enough for 10 more men to be taken aboard. The Greek captain and 3 other men would not abandon ship, so the survivors were taken ashore, the Holyhead lifeboat returning to stand by until, at 0656 next morning, the *Nafsiporos* was finally taken in tow by the Dutch tug *Utrecht*.

Seventeen medals for gallantry were awarded for this service, including a second gold medal to Coxswain Richard Evans of Moelfre, a gold medal to Lt.-Cdr. Harold Harvey, the inspector of lifeboats for the north-west who went out with the Holyhead lifeboat and, at Coxswain Thomas Alcock's request, took his place at the wheel to free the coxswain to supervise operations on deck; a silver medal to Coxswain Alcock; and a silver medal to Motor Mechanic Eric Jones of Holyhead.

The record of the lifeboat service is one of 150 years of persistent and loyal hard work, highlighted by moments of unbelievable tenacity and courage such as these. Many of the greatest epics have started even before the lifeboat has reached the water. Lifeboat crews can always count on unstinted support from the community. Almost commonplace is the story of a January night in 1922 when a trawler had run aground on the rocks off Holy Island, Northumberland. Every man and woman in the village turned out in the dark and snow to launch the lifeboat and, despite the bitter cold, waded out waist-deep into the sea to get the boat afloat. Nine men were saved from drowning that night. The coxswain of the lifeboat was awarded a silver medal for his skill and courage, and a special letter of thanks was sent to "the women of Holy Island" for their gallantry.

Extraordinary feats have been achieved in the launching of lifeboats. On 19th January 1881 a Whitby brig, *Visitor*, bound for London with a cargo of coal, sank in Robin Hood's Bay, six miles south of Whitby. Her crew took to their boat but could not reach shore, and no boat could put out from Robin Hood's Bay. The only way to help them was for the Whitby lifeboat to be taken overland across six miles of hill country. Hundreds of men, women and even children dragged the boat along roads deep with snow. As word went round, fifty pairs of horses were brought in from surrounding farms and a way had to be forced through snowdrifts, hedges and walls. The top of the hill overlooking Robin Hood's Bay was reached at last but, with the road down to the bay a sheet of ice, the horses could no longer help. The great crowd of helpers carried the boat down the hill and launched her, and even then it was only by the most tremendous effort that her crew succeeded in rowing out to the *Visitor*'s boat and rescuing the eight survivors.

Most famous of all launches, however, is probably that from Lynmouth on 12th January 1899 when a ship, the *Forrest Hall*, was reported drifting ashore off Fore Point in North Devon. With a full gale blowing from the west-north-west and the seas so heavy that the roads at Lynmouth were under 3 feet of water, it was impossible to launch the lifeboat, the 34-foot *Louisa* pulling ten oars. So the boat was taken, on her carriage, by road to Porlock and launched there. That sounds easy enough until it is remembered that the route is thirteen miles across Exmoor and includes two of the steepest hills in England—Countisbury Hill, 1 in $4\frac{1}{2}$, and Porlock Hill, 1 in 4; it was midwinter, night-time, with only flares and lanterns to light the way, and there was a full gale blowing.

While a team of nearly twenty horses pulled the boat, a team of men went on ahead with pickaxes and shovels to dig down the banks and widen the road. Even so, the $7\frac{1}{2}$-foot wide boat had to be taken off her carriage and dragged on skids for about a mile through one narrow part; the wall of a cottage had to be knocked down and a tree felled.

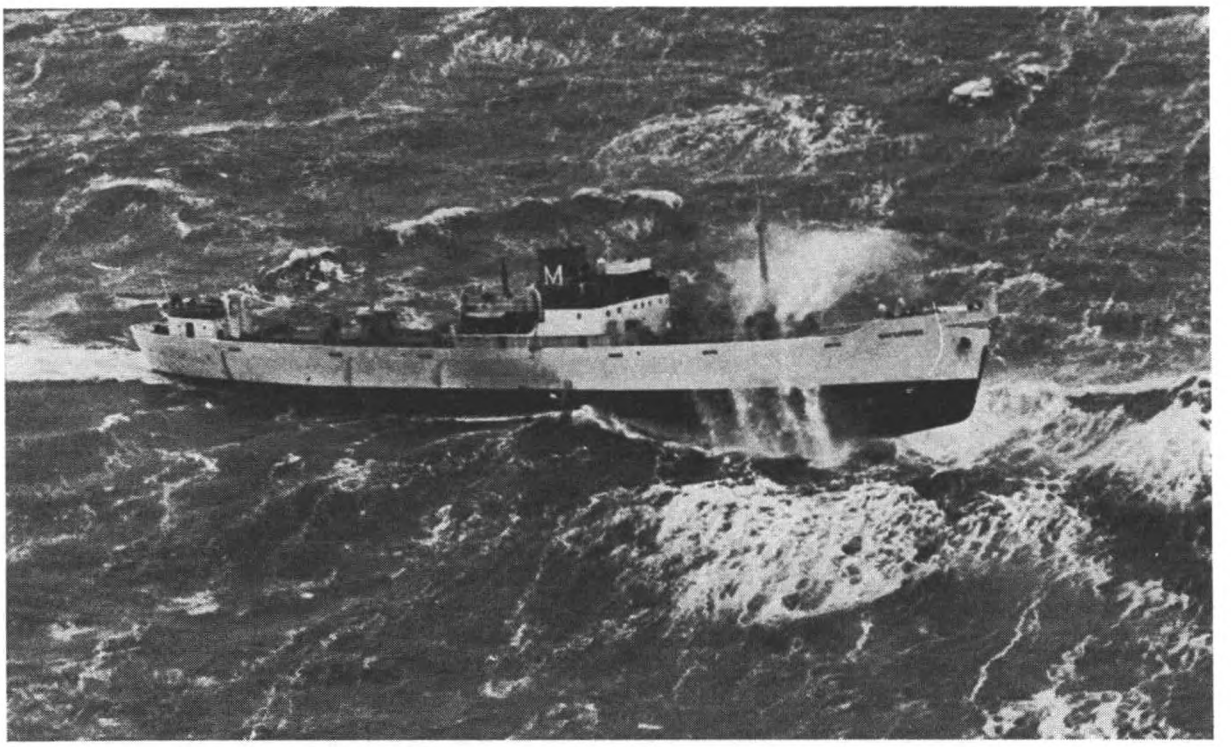
By the time Porlock was reached, at about 6 o'clock next morning, the crew were soaked to the skin, tired and hungry, but they launched the boat immediately and stood by the *Forrest Hall* until, at daylight, a tow rope could be passed to her by a tug, and then they escorted her across the channel to Barry. And all this while the gale still raged.

From the earliest days of the service there has been concern that the lifeboats themselves should be as safe and as well-fitted for their task as contemporary thought made possible. As a means of power, oar and sail have given way, first to steam and petrol engines, now to diesel. The needs of different stretches of coast have produced an increasingly varied fleet until, today, it ranges from the 70-foot trawler-type boats (*see* photograph opposite page 186) such as the one anchored off Clovelly,

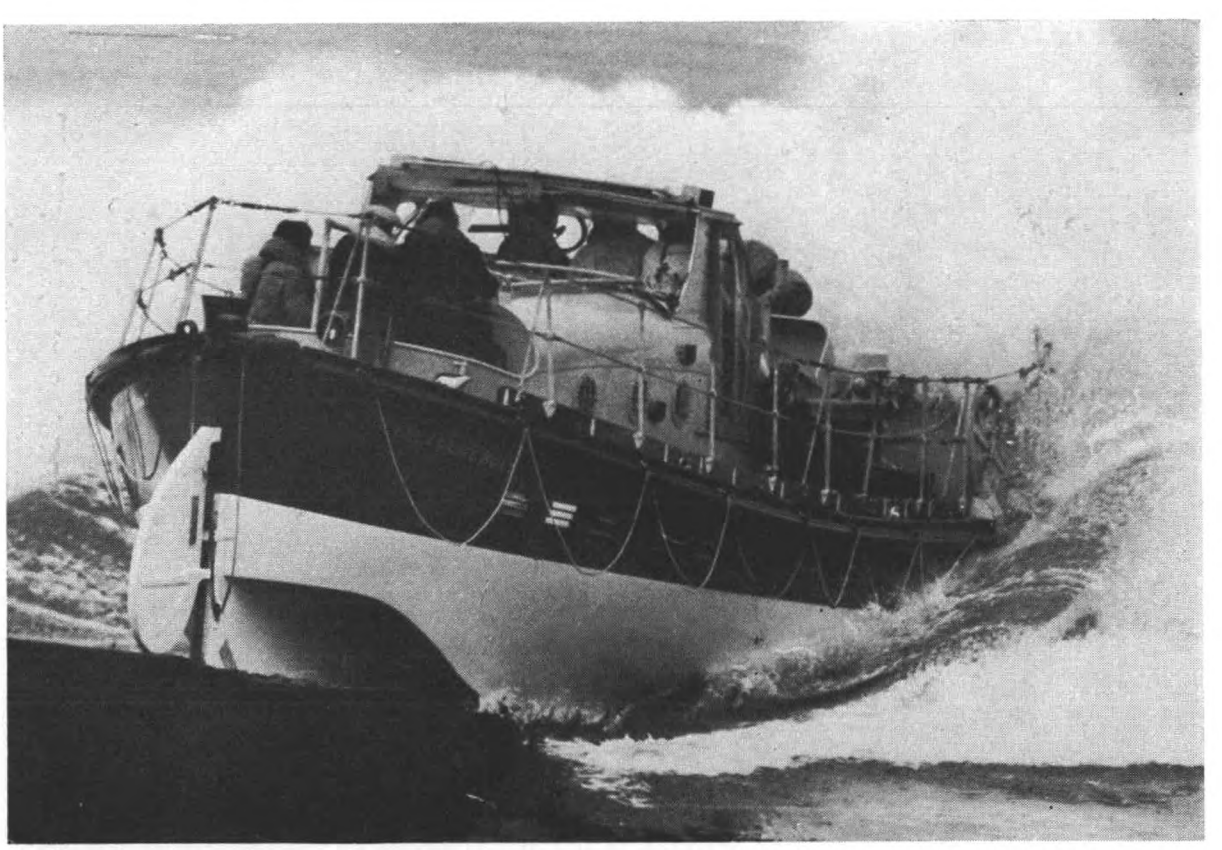
W. Elmes' painting and engraving of the *Original* lifeboat in a rescue incident off Tynemouth Castle, as published in 1803 by Henry Greathead, the builder of this the first lifeboat (*see* page 177).

(*Opposite page 178*)

(*Opposite page* 179)



The Greek ship *Nafsiporos* adrift in the Irish Sea, December 1966 (*see* page 177).



The Douglas lifeboat, *R. A. Colby Cubbin No. 1* (*see* page 177).

capable of remaining at sea for long periods, if necessary, without refuelling, to 15-foot inflatable inshore lifeboats launched off the beach.

At no time has there been greater progress in lifeboat design than in the past decade. Faster boats can now be built without sacrificing seakeeping qualities; self-righting can be achieved without loss of initial stability. But perhaps the most revolutionary change has been brought about by the development of the inflatable lifeboat, the ILB. These little boats, ranging from 15½ feet to the recent 'Atlantic 21' (*see* photograph opposite page 186), are easy to launch off the beach or to transport over land; they ride the sea well and can work among rocks or in shoal water; and they are capable of close on 30 knots. Since their introduction in 1963 they have taken over a large part of the inshore work of the RNLI and have saved more than 5,300 lives.

With a target of making every lifeboat self-righting by 1980, the lifeboat service in Britain and Ireland is now engaged on the biggest building programme in its entire history. To achieve its object the RNLI depends entirely on popular support, and 'The Year of the Lifeboat' is providing an opportunity for that support, so willingly given, to be demonstrated in a remarkable number of ways; for what better way can there be of honouring the men of the past than by ensuring that the crews of the present and future are provided with the best possible boats for their job?

Year by year, calls on the lifeboat service grows. Originally storm victims were mostly fishermen or the crews and passengers of merchant ships; now, a large proportion are people who have gone off shore for pleasure, for the peace and the beauty and the challenge of the sea draws more people away from the land every year; and holidaymakers, bathing and exploring unfamiliar coastlines, do not always have the respect for the sea which longer acquaintance brings.

Since 1824 more than 98,500 lives have been saved by the lifeboat service, 1,757 of them in 1973. The roll of honour also grows. Of 17 medals awarded for gallantry last year, two were silver; one went to Coxswain John King of Bridlington for the rescue of the crew of five from a motor fishing vessel in winds gusting to hurricane force; and the other to Coxswain Michael Berry of St. Helier, Jersey for the rescue in gale-force winds with very rough seas and a heavy swell, of a crew of six from a yacht in an area of notoriously dangerous rocky outcrops.

The description of a lifeboat given by Mr. Winston Churchill, at the celebration to mark the centenary of the foundation of the Institution, is as true today, in the 150th anniversary year of the RNLI, as it was in 1924:

"It drives on with a mercy which does not quail in the presence of death; it drives on as a proof, a symbol, a testimony, that man is created in the image of God, and that valour and virtue have not perished in the British race."

Editor's note. We are grateful to the Royal National Life-boat Institution for providing this article and the photographs referred to in the text.

551.466

The Unusual Waves off South-east Africa

By R. M. Sanderson
(Meteorological Office)

Over the past ten years or so, several reports of unusual waves off the south-east coast of Cape Province and the Natal coast, between about 29° 30′ and 33° 30′s, have been published in this journal and elsewhere (*see* Table 1). In August 1964 the *Edinburgh Castle* encountered a wave which caused considerable passenger discomfort. This report prompted the recalling of a large wave all but sweeping over the cruiser H.M.S. *Birmingham* in the same area during World War II. It was suspected that an unusual wave in June 1968 caused the *World Glory* to break in two and eventually sink and in August of that year a wave swept unbroken over the monkey island (height 18 metres) of the *Esso Lancashire* when she was already rising from the previous trough! The deck cargo of the *Clan Maclay* was dislodged by an unusual wave in October 1969. On the very next day the *Southern Cross* encountered several steep waves causing her to pitch heavily. In August 1971 the *Moreton Bay* reported 24-metre waves which were unusually steep. Following a report in May 1973 from the *Bencruachan*, which suffered such damage that her forecastle deck was set down eight degrees below normal, the Admiralty issued Notice to Mariners No. 1670 in early September 1973, drawing attention to the occurrence of unusual waves off this coast. Later that month the *Svealand* suffered smashed coamings to Nos. 1 and 2 hatches which released dangerous gases. The positions of these occurrences are shown in Fig. 1. On 1st August 1973 the *Neptune Sapphire* broke in two in heavy weather in this area but the cause of the damage has not yet been established.

Table 1. List of reports of unusual waves

Ship (and g.r.t.)	Date and Position	Course	Wind	Waves	Reference
Birmingham	World War II 100 n.m. SSW of Durban	SW	—	Moderate sea and swell (SW)	*Mar. Obsr.* Oct. 1965, p. 196
Edinburgh Castle (28,600)	21.8.64 31° 39′S 29° 46′E	SW	Strong SW	Heavy SW swell	*Mar. Obsr.* Oct. 1965, p. 195
World Glory (28,300)	13.6.68 29° 29′S 32° 08′E	SW	Strong to gale SW	Heavy SW swell	Lloyd's *Casualty Returns*
Esso Lancashire (49,400)	5.8.68 29° 20′S 32° 00′E	SW	Strong to gale SW	Heavy SW swell	*Mar. Obsr.* July 1969, p. 107
Clan Maclay (6,388)	10.10.69 30° 35′S 30° 44′E	SW	SW force 3	Moderate SW swell	*Mar. Obsr.* Oct. 1970, p. 160
Southern Cross (19,300)	11.10.69 32° 02′S 29° 17′E	NE	SW force 7–8	Heavy S'ly swell	*Mar. Obsr.* Oct. 1970, p. 160
Moreton Bay (28,900)	5.8.71 33° 36′S 27° 51′E	WSW	WSW force 11–12	Up to 80 ft	*Mar. Obsr.* July 1972, p. 102
Bencruachan (12,100)	3.5.73 31° 05′S 31° 33′E	SW	SW force 6–7	Moderate to heavy SW swell	Logbook
Svealand (152,100)	25.9.73 33° 28′S 28° 22′E	SW	Strong SW	Heavy SW swell	*Lloyd's List*

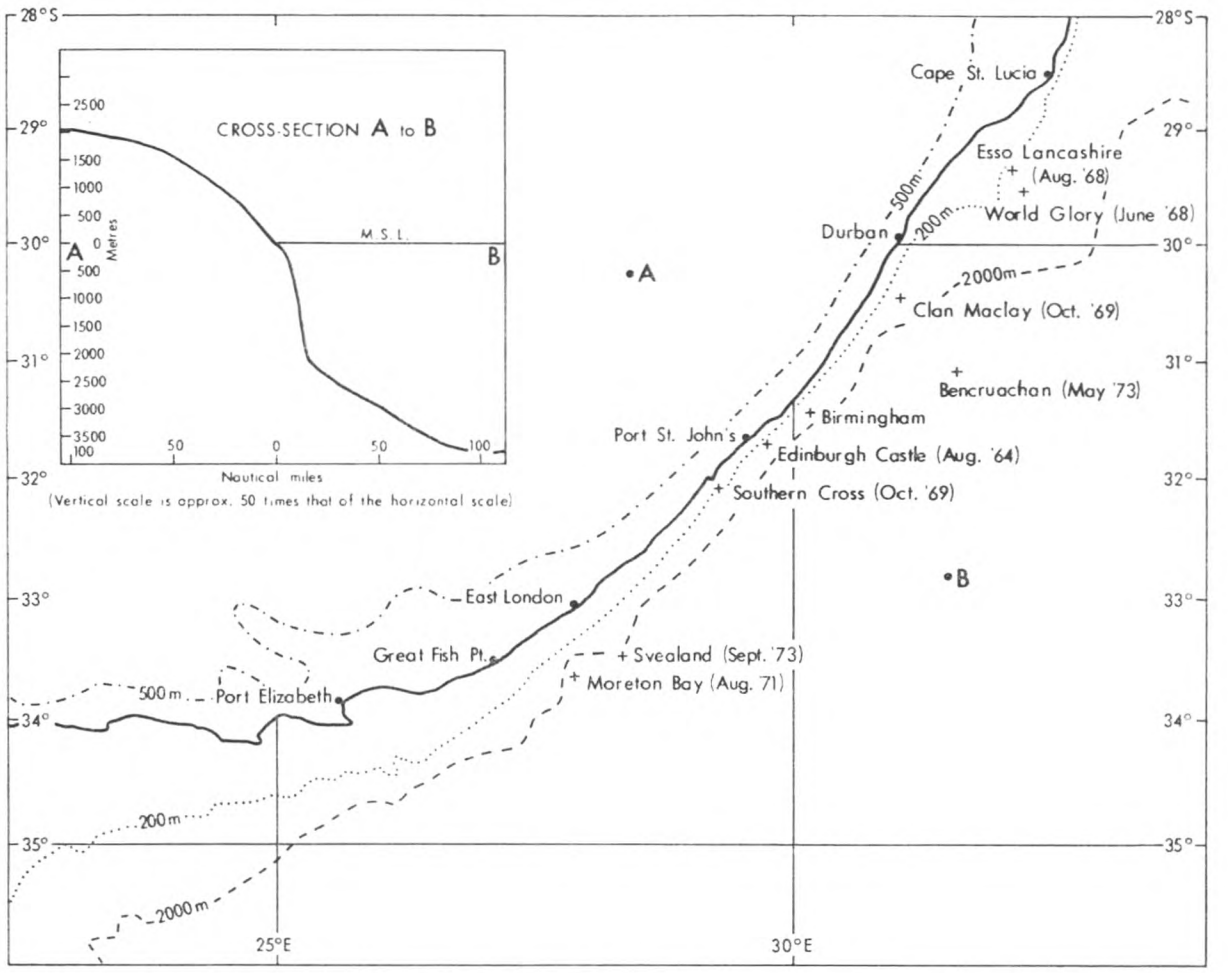


Fig. 1. Positions of occurrences of unusual waves off Cape Province and Natal coasts.

Smit[1] suspects that standing waves caused by canyons in the continental shelf account for these unusual waves, but the reports received in the Meteorological Office are for positions over, or seaward of the continental slope.

In these reports it is not so much the height of the waves which has been unusual; in fact higher waves occur elsewhere. It is the steepness of the waves in some of these reports which has caused alarm and attracted attention. This characteristic may well be peculiar to this particular region where land and sea-bed topography significantly influence the meteorological and oceanographical factors which affect the state of the sea surface, perhaps to an extent unknown in any other part of the world.

There is a direct relationship between the force, duration and fetch of the wind and wave height.[2] For example, when winds of 35 knots have persisted for 12 hours, in any 10-minute period the significant wave height (the mean of the highest one-third of the waves) will be about 4 metres and the highest wave about 6·5 metres; with winds of 60 knots lasting for 6 hours the corresponding values will be about 12 and 19 metres respectively. However, the state of the sea surface is due not only to the locally-formed wind waves but also to swell (waves generated by winds in an adjacent or more distant region). The height of swell is usually less than wind waves (the lower limit of heavy swell is only about 3·5 metres) and the period is longer; moreover, more than one swell may be present simultaneously. Thus, when wind waves and swells occur at the same time (a not infrequent occurrence) several wave trains, of differing height and period, run across the area. Occasionally these waves will come into phase with each other to produce a crest (or trough) which is higher (or lower) than its neighbours. Statistics based on wave-recorder data indicate that

the highest wave will reach about 9 metres when winds of 35 knots have persisted for 12 hours, and about 26 metres when 60-knot winds prevail for 6 hours. The duration of one of these large waves will depend on the relative speeds of its various components; it may sometimes last for several minutes.

In the region off south-east Africa the wind, affected by the high hinterland, is at times unusually strong for these latitudes. Some of the usually heavy swell from the Southern Ocean is refracted round South Africa to run north-east off the coasts under discussion. The steepness of the waves is affected by the current which, in this region, sets against the predominant direction of the larger waves. These factors will now be considered in turn.

For most of the year this area lies within the influence of the sub-tropical high-pressure area of the South Indian Ocean which moves sufficiently far north in the winter half of the year (May to October) to allow the cold fronts of depressions, moving east-south-east south of the Cape, to sweep across the area from time to time. The winds behind these cold fronts are typically south-westerly and strong. The annual percentage frequency of near-gale and gale-force winds (Force 7 or above) is higher in this area than any other region in similar latitudes north or south of the equator. The percentage frequency of these winds is greatest in winter (10–30 per cent in July) and least in summer (5–10 per cent in January); their predominant direction is south-westerly. The higher annual frequency can be chiefly attributed to the topography of this part of South Africa. Fig. 1 displays the position of the 500-metre contour and also contains an inset cross-section through a point northward of Port St. John's, which can be considered typical of the region between about 29° 30′ and 32° 30′s. Over this region the ground rises quickly from the coast to the high interior plateau: the 500-metre contour lies within 15 miles of the coast over much of this region. This plateau acts as a barrier to the low-level post-cold-front south-westerlies which are consequently 'channelled' into the region perhaps up to 200 miles wide off shore. These strong south-westerly winds usually have sufficient duration and fetch to generate fully developed wind waves.

Some of the usually heavy swell of the Southern Ocean is refracted around the south-east extremity of South Africa to run north-east across the area. Another source of swell is the depressions passing eastwards off South Africa. The swell generated within these depressions spreads north to north-east across the area as the depressions pass by to the south; this normally coincides with the onset of the strong south-westerly winds to the rear of the cold fronts associated with these depressions. The frequency of heavy swell is higher in winter than in summer.

Thus the waves generated by strong winds and the often heavy swells of this area frequently run in the same direction, towards the north-east.

The final factor contributing to the wave conditions of this region and the one which probably makes it almost singular, is the Agulhas Current which runs strongly towards the south-west throughout the year. The Agulhas Current runs most strongly between about 31° and 33° 30′s, where it often attains and sometimes exceeds 4 knots. The inner flank of this current lies near the 200-metre contour (see Fig. 1) and the axis of strongest flow lies only a few miles further seaward. In common with other 'western boundary currents' there is no sharp limit on the eastern flank of the Agulhas Current; instead the current gradually decreases to become negligible some considerable distance further east. Atlases show that the Agulhas Current still runs strongly at distances of 100 and sometimes 200 miles from the coast.

The effect of this current is to tend to reduce the speed of the front parts of the waves, which are predominantly running in directions opposing the current, with the result that these become more steep. When this happens to a giant wave, a ship experiencing the resulting conditions could sustain the kind of damage suffered by the *World Glory* and the *Bencruachan*. This effect may well account for many of the ships which have previously been lost without trace off this coast.

Table 1 shows that the reports so far received are confined to the zone between about 29° 30′ and 33° 30′s—the zone where strong south-westerly winds and heavy swell are by no means uncommon and where the Agulhas Current runs at a considerable rate. Due to the seasonal variation in the frequency of strong winds and heavy swell, these unusual waves are more likely to be encountered in the winter half of the year (May to October) than in summer, as Table 1 shows.

Thus the effects of wind, topography and current, together with a high frequency of heavy swell, combine to produce unusually steep large waves which do not mean to develop in any other part of the world. Ships heading south-west during the winter off the coasts of southern Natal and eastern Cape Province in the axis of strongest flow of the Agulhas Current and experiencing or expecting large steep waves may avoid damage and delay by forsaking the aid of the Agulhas Current and taking a course within the 200-metre contour. Those vessels heading north-east for the Moçambique Channel may avoid the worst wave effects by shaping a course which lies about 200 miles off shore.

(When this article had been written it was learnt that a paper on the same subject, written by Professor J. K. Mallory, had been published.[3])

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THE *Triton* INCIDENT

In our July 1974 edition we published (page 111) a short account of the rescue of the *Triton* survivors by the s.s. *Benalder*, taken from the logbook, with a few details added from press reports. Mr. Frank Paterson, Radio Officer, who elicited most of the story from the survivors while they were aboard the *Benalder*, has kindly sent us the following detailed account.

On 2nd July 1973 the trimaran *Triton* (registered at Tacoma in the State of Washington) sailed from Seattle on a voyage to Costa Rica. On board were Mr. and Mrs. Robert D. Tininenko and Mr. James Fisher. The *Triton* was a 31-foot trimaran of marine-plywood construction having a 36-foot mast Bermuda-rigged with mainsail and two jibs, small engine and R/T radio.

From 2nd July until the morning of 10th July the *Triton* experienced southerly winds and had beat down the coast of Washington and north California in a series of long dog-legs. On 10th July the wind backed from south to north-east and gradually increased, until on the morning of the 11th a strong gale was blowing. Small-boat warnings had been broadcast by the American coastal radio stations and these had been received on board the *Triton*. It was decided, however, that as the craft was some distance off shore, they would ride out the storm at sea. The *Triton* shortened sail to a storm jib and a sea anchor was streamed, approximately

400 feet of line with two canvas buckets, attached by a bridle to the bows of the outrigger hulls. Contact was made by R/T radio with San Francisco Radio at approximately 0900 on 11th July and a message was passed reporting the *Triton*'s position, estimated at 37° 50'N, 124° 20'W, encountering a very strong gale and high confused sea. After this message had been sent the *Triton*'s batteries were swamped by sea-water and failed, rendering the radio useless, and contact with shore was lost.

A little later, at about 0930, Mr. Fisher was at the helm when, in his own words, "*Triton* slid into a hole which was about sixty feet deep and capsized." The vessel was dismasted and lay upturned and helpless. The three crew members were all wearing safety belts with lines attached to the yacht, and, although thrown into the sea, managed to regain and cling to the upturned hulls. An attempt was made by the crew to re-enter the main hull by piercing the exposed bottom. This they successfully accomplished by using the heavy buckle on Mr. Fisher's safety belt as a combined scraper and hammer. After six hours' struggle a hole had been made in the 5/16-inch plywood bottom large enough to admit one of the men who, after re-entering the hull, found their tool chest and they then rapidly extended the opening until it was large enough to admit free access. By entering the hull in this manner the crew were able to escape the worst effects of exposure, although constantly immersed in sea water.

After the weather had abated efforts were continued to improve their conditions, and these resulted in a floor or platform being laid some 13 to 18 inches under the main hull bottom. This was accomplished by drilling holes along each side of the hull through which ropes were rove to make a support for planks and what suitable timber they could find. This took many days to complete and weeks before they finally managed to secure the timber in such a manner that it was not washed out of the securing ropes when a large sea rose under the hull. In this tiny space under the hull the survivors managed to exist for the next 72 days. An efficient rain-catcher had been rigged up out of canvas to maintain a supply of drinking-water.

In the meantime the following information had been received aboard the *Benalder* from the U.S. Coast Guard, Honolulu. "Early on the morning of 12th July a major search and rescue operation was instituted by the American Coast Guard authorities to locate the *Triton*. This operation involved many ships and aircraft and continued until 16th July. No sightings were reported and the search was abandoned."

Mrs. Tininenko died on 6th August. Until their rescue, the *Triton* with the survivors had drifted approximately 900 miles (an average of 12½ miles per day), they had sighted 5 aircraft and 12 ships. Fishing attempts were unsuccessful; one fish was speared but their improvised harpoon broke and the fish escaped. No other sea food was obtained. When rescued, their total supply of food had dwindled to 2 tins of sardines, 1 packet of caramel chips (cake decoration), 1 packet of biscuits, 1 small tin of tomatoes, 1 can of beer and 1 gallon of water.

On 21st September 1973 the s.s. *Benalder* (Captain A. McKenzie) was proceeding at 24 knots along a great circle course from Panama to a point some 50 miles north of Midway Island *en route* for Tokyo. The wind was northerly, Force 2–3, the weather was mainly overcast, fine and clear, with a slight sea and a long, low swell.

At approximately 1300 local time, in position 26° 57'N, 134° 36'W, the Mate on watch (Mr. H. Blain of Aberdeen) sighted the capsized *Triton* at a distance of about two miles, two and a half points on our port bow. An alteration of course was made so as to pass close to the wreckage; on passing, no sign of life was observed. Captain McKenzie decided to return for a closer inspection and the *Benalder* was stopped close to the *Triton* at about 1400. The port lifeboat was launched with Mate M. Humby of South Shields in charge. There had been no sign of life on board the *Triton* up to that point and it was only when the lifeboat was within about 30 yards of the wreck that Mr. Tininenko, the stronger of the two, managed to raise an arm

and wave to the lifeboat's crew. Both survivors were so weak that they had to be lifted out of the *Triton*'s hull; neither could stand or walk and both were very emaciated. Considering their condition, both were in great spirits; by the time they were landed on Midway Island about 1030 on 25th September both were taking plenty of soft food and never seemed to have enough to drink (food beverage and fruit juice mostly).

Editor's note. From Midway Island the survivors were flown to San Francisco for medical treatment. We read later in the American journal *Mariners Weather Log* that "one of the two survivors died on 2nd October".

INDIAN EXCELLENT AWARDS

(From the Deputy Director-General of Observatories (Forecasting), India)

The year 1972–3 has been yet another year of active co-operation between the ships of the Indian Voluntary Observing Fleet (V.O.F.) and the India Meteorological Department for collecting meteorological information from the high seas. Year by year the ships traversing the oceans have a greater part to play in their contribution to the progress of science. While the Department appreciates the valuable meteorological work done by ships, we also look forward to their co-operation in the collection of more and more data from the oceans. The international community is already engaged in serious thought for developing a co-ordinated Marine Pollution monitoring programme. The ships would eventually be called upon to make visual observations and reporting of oil slicks, particularly on the main oil-tanker routes. Their co-operation would also be welcome for affording facilities for (*i*) making upper-air observations, (*ii*) sub-surface temperature measurements, (*iii*) sampling of floating particulate petroleum hydrocarbons or tar balls and (*iv*) collection of sea-water samples.

During the year ended 31st March 1973, 54 new ships were added to the strength of the Indian V.O.F. and 11 ships were decommissioned. At the end of the year there were 209 ships on the V.O.F. list, consisting of 43 Selected Ships, 131 Supplementary Ships and 35 Auxiliary Ships. These ships rendered commendable service by recording and reporting valuable meteorological observations from their routes. Meteorological logs received from these ships during the year contained 24,057 meteorological observations.

This Department undertakes periodical studies of the in-transit delays of the weather messages from the ships to the coastal radio stations and to the forecasting offices and takes remedial measures to eliminate delays, wherever possible, since such observations provide information for forecasting purposes. Special encouragement is given to those of our ships which send crucial observations, in particular when a depression or a cyclonic storm is in its formative stage or when it is intensifying into a severe cyclonic storm. Due recognition is also given to other ships which transmit such important and very useful observations, even though they do not belong to our V.O.F.

The meteorological work of the ships of the Indian V.O.F. during 1972–3 has been assessed, taking into account the quality and quantity of observations and also the percentage of recorded observations which have been actually transmitted to coastal radio stations. Allowance has been given to individual ships for the actual number of days spent at sea. The number of ships so selected to receive Excellent Awards in the form of books is 16 while another 16 ships will receive Certificates of Merit. The Captains and other officers who have served for at least six months on board these ships during 1972–3 are awarded the books/certificates. The names of these ships are given below in their order of merit.

Name of Vessel	Owner
State of Haryana	Shipping Corporation of India Ltd.
Akbar	Mogul Line Ltd.
Jaljawahar	Scindia S.N. Co. Ltd.
Jalakala	Scindia S.N. Co. Ltd.
Jalamani	Scindia S.N. Co. Ltd.
Vishva Bhakti	Shipping Corporation of India Ltd.
Jalagirija	Scindia S.N. Co. Ltd.
Vishva Maya	Shipping Corporation of India Ltd.
State of Assam	Shipping Corporation of India Ltd.
Jalakanta	Scindia S.N. Co. Ltd.
Mozaffari	Mogul Line Ltd.
State of Madras	Shipping Corporation of India Ltd.
Indian Industry	India S.S. Co. Ltd.
Karanja	British India S.N. Co. Ltd.
Jag Jwala	Great Eastern Shipping Co. Ltd.
Shahjehan	Shipping Corporation of India Ltd.

The Excellent Awards were distributed at the National Maritime Day function in Bombay on 5th April 1974. The Certificates of Merit for the following ships were handed over to the appropriate shipping companies for onward transmission:

Vishva Kaushal	*Jalajyoti*	*Apj Akash*	*Jalamohan*
Mohemmedi	*Indian Security*	*State of Punjab*	*Jalamangala*
Vishva Jyoti	*Jalagopal*	*Jaladharma*	*Jalavikram*
Rajula	*Jaladuhita*	*Vishva Raksha*	*Jag Jawan*

ICE CONDITIONS IN AREAS ADJACENT TO THE NORTH ATLANTIC OCEAN FROM APRIL TO JUNE 1974

The charts on pages 188 to 190 display the actual and normal ice edges (4/10 cover), sea-surface and air temperatures and surface-pressure anomalies (departures from the mean) so that the abnormality of any month may be readily observed. (The wind anomaly bears the same relationship to lines of equal pressure anomaly as wind does to isobars. Buys-Ballot's law can therefore be applied to determine the direction of the wind anomaly.) Southern and eastern iceberg limits will be displayed during the iceberg season (roughly February to July). In any month when sightings have been abnormally frequent (or infrequent) this will be discussed briefly in the text.

The periods used for the normals are as follows. Ice: Eurasian sector, all data up to 1956,[1] North American sector, 1952–56 (for north of 68°N)[1] and all data up to 1963 (for south of 68°N).[2] Surface pressure: 1951–66.[3] Air temperature: 1951–60.[4] Sea-surface temperature: area north of 68°N, 1854–1914 and 1920–50,[5] area south of 68°N, 1854–1958.[6]

April

The excess of ice near Newfoundland and southern Labrador (which had been a feature of the preceding months) persisted, air temperatures being below average. Off the east coast of Greenland south of about 70°N there was a deficit of ice, the pressure distribution favouring onshore winds more than it normally does; north of Jan Mayen, however, the anomaly for south-westerly winds produced an extension of the ice edge eastwards beyond the normal position. Over the Barents Sea the deficit of ice which had been in evidence over the past three months was maintained, despite an anomaly of wind favouring some spread of ice from the north. Temperatures were well above normal in the Baltic and the deficit of ice there continued.

Icebergs off Newfoundland south of 48°N were numerous—about 200 compared with the normal (period 1900–1972) of about 100.

May

Off the coasts of Labrador, south of about 55°N, an excess of ice persisted but was somewhat reduced by a north-easterly wind anomaly; further north, though, a northerly anomaly

(*Opposite page* 186)

A 70-foot trawler-type lifeboat (*see* page 178).

An inflatable 'Atlantic 21' lifeboat (*see* page 179).

(Opposite page 187)

Lt. Cdr. Philpott (seated) handing over to his successor, Mr. J. D. Brown (*see* pages 193 and 194).

produced a new excess of ice. The east to north-east wind anomaly near eastern Greenland encouraged the flow of ice along the coast and may account for the excess of ice west of Cap Farvel. North of Iceland and west of Jan Mayen there was a large deficit of ice associated with the anomalies for south-easterly winds and higher-than-normal temperatures. Over the Barents Sea lower-than-normal temperatures reduced, to some extent, the large deficit that had been predominant in this area since January.

Again icebergs were numerous off Newfoundland, there being about 250 bergs south of 48°N against the normal of about 125.

JUNE.

Despite a north-easterly wind anomaly an extensive belt of ice remained along coasts of Labrador and Newfoundland which are normally clear by the end of June. In Hudson Bay the ice was moved away from the eastern coast as a result of the south-easterly wind anomaly but the ice was kept close to the western coast; however, the over-all coverage of ice in Hudson Bay was near to normal. The deficit of ice west of Jan Mayen continued, with easterly winds more common than usual in that area and temperatures above normal. In the Barents Sea a tendency for warm south-easterly winds maintained the deficiency of ice.

Off Newfoundland there were about 200 icebergs south of 48°N—roughly three times the normal number.

P.A.

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2. Washington, D.C., U.S. Naval Oceanographic Office. Oceanographic atlas of the North Atlantic Ocean. Pubn. No. 700, Section III: Ice, 1968.
3. London, Meteorological Office. Various publications.
4. Washington, D.C., U.S. Department of Commerce Weather Bureau. World weather records, 1951–60. Vol. 1: North America, 1965.
5. London, Meteorological Office. Monthly meteorological charts and sea surface current charts of the Greenland and Barents Seas. Met.O.575, 1966.
6. Washington, D.C., U.S. Naval Oceanographic Office. Oceanographic atlas of the North Atlantic Ocean. Pubn. No. 700, Section II: Physical Properties, 1967.

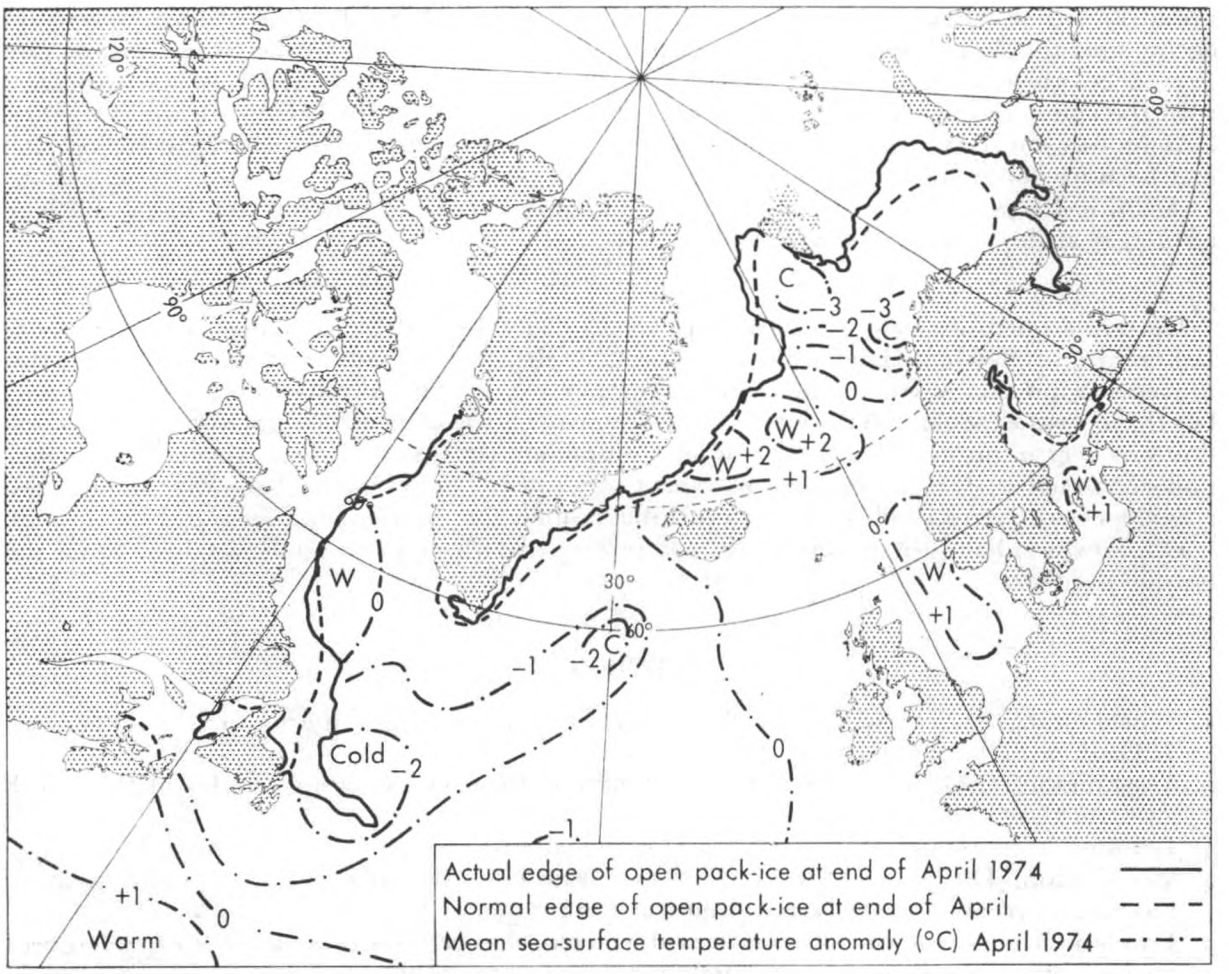
Baltic Ice Summary: April–June 1974

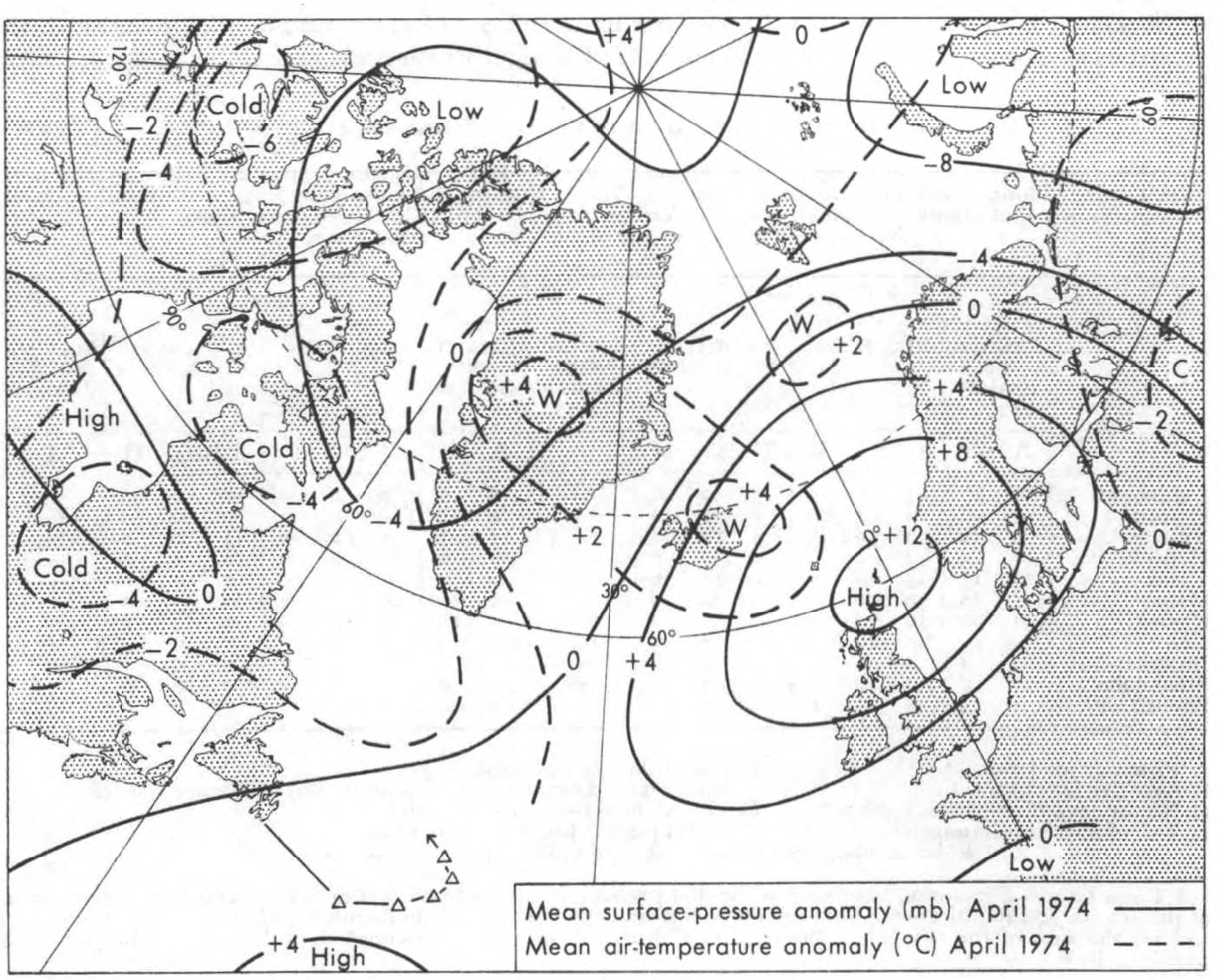
No ice was reported at the following stations during the period: Riga, Klaipeda, Ventspils, Tallin, Mariehamn, Turku, Mantyluoto, Sundsvall, Kalmar, Göteborg, Visby, Emden, Lubeck, Hamburg, Bremerhaven, Kiel, Flensburg, Stettin, Gdansk, Stralsund, Rostock, Aarhus, Copenhagen, Oslo, Kristiansandfjord.
No ice was reported at any of the stations during June.

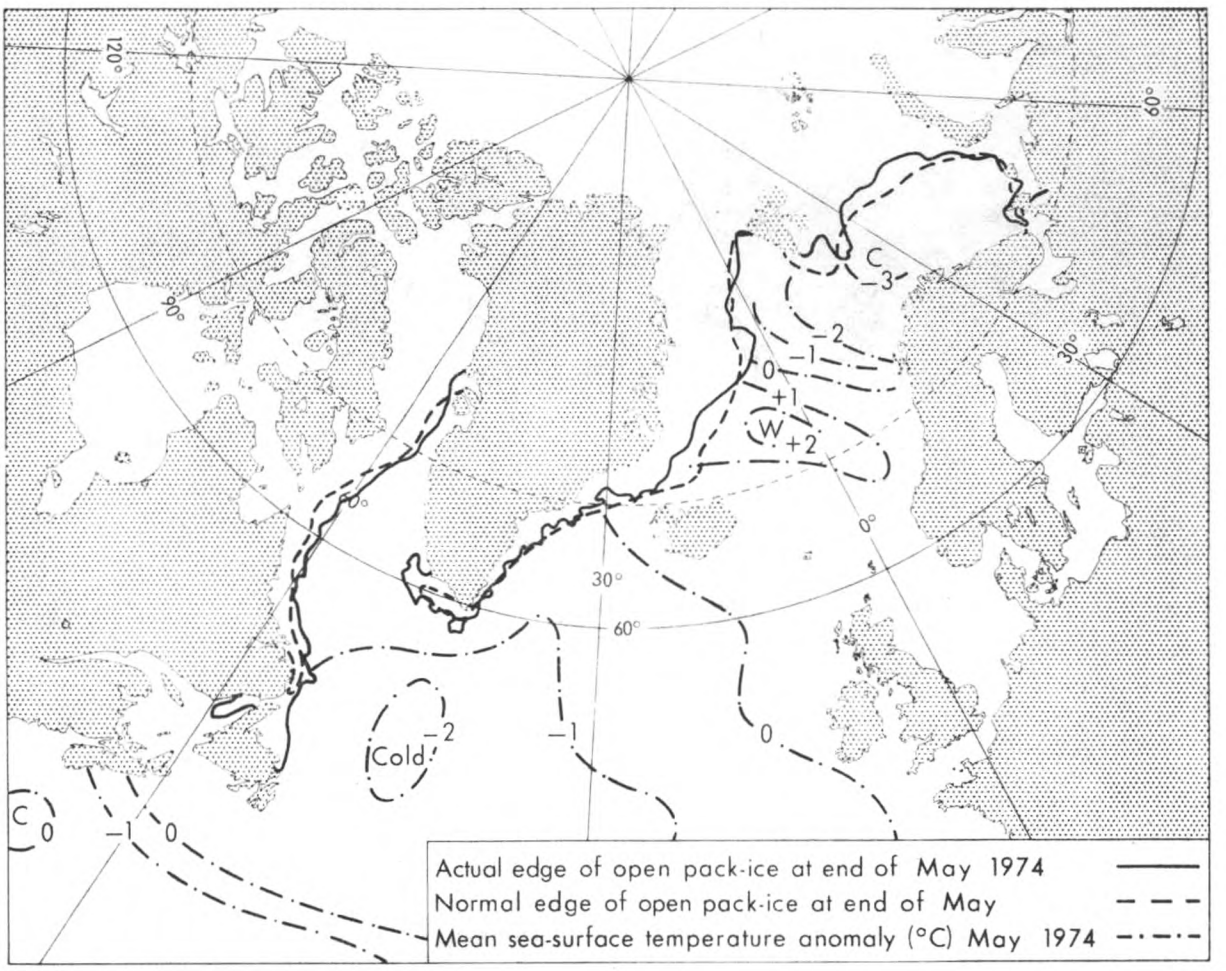
Station	April									May								
	Length of Season		Ice Days			Navigation Conditions			Accumulated Degree Days	Length of Season		Ice Days			Navigation Conditions			Accumulated Degree Days
	A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I
Leningrad ..	1	17	13	0	1	5	0	0	—	0	0	0	0	0	0	0	0	—
Pyarnu ..	1	12	12	1	6	1	7	0	—	0	0	0	0	0	0	0	0	—
Viborg ..	1	30	30	30	0	5	17	8	—	1	1	1	0	0	1	0	0	—
Helsinki ..	1	3	3	0	0	0	0	0	—	0	0	0	0	0	0	0	0	—
Vaasa ..	1	15	15	14	1	0	15	0	—	0	0	0	0	0	0	0	0	—
Oulu ..	1	30	30	30	0	0	30	0	—	1	6	6	6	0	0	6	0	—
Roytaa ..	1	30	30	30	0	0	30	0	—	1	13	13	13	0	0	13	0	—
Lulea ..	1	30	30	26	2	3	24	2	63	1	9	9	0	7	7	0	0	—
Bredskar ..	4	4	1	0	0	1	0	0	—	0	0	0	0	0	0	0	0	—
Stockholm ..	1	12	12	0	0	1	0	0	—	0	0	0	0	0	0	0	0	—
Skelleftea ..	1	5	5	5	0	0	5	0	—	0	0	0	0	0	0	0	0	—

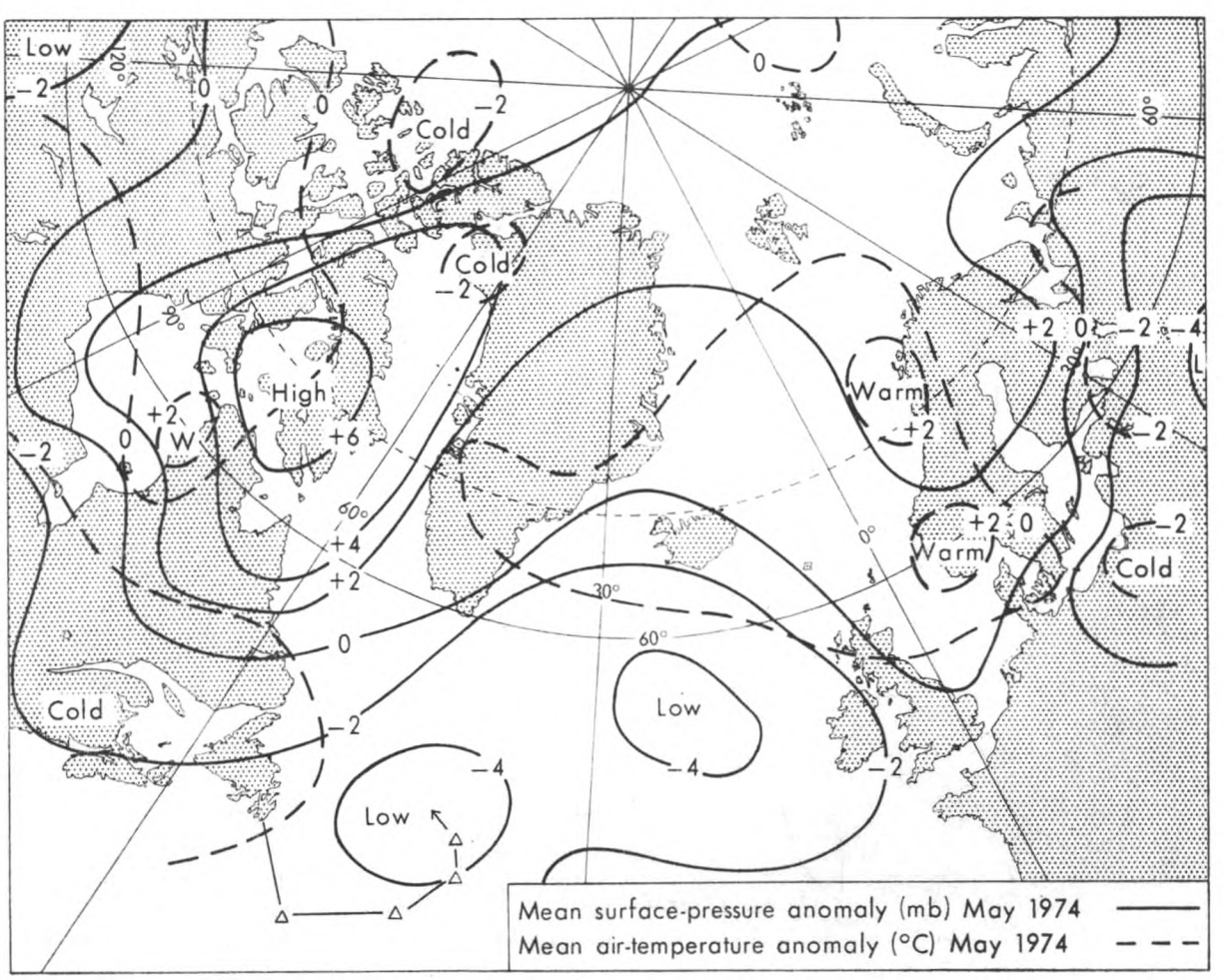
A First day ice reported.
B Last day ice reported.
C No. of days that ice was reported.
D No. of days continuous land-fast ice.
E No. of days of pack-ice.
F No. of days dangerous to navigation, but assistance not required.
G No. of days assistance required.
H. No. of days closed to navigation.
I Accumulated degree-days of air temperature (°C) where known.*

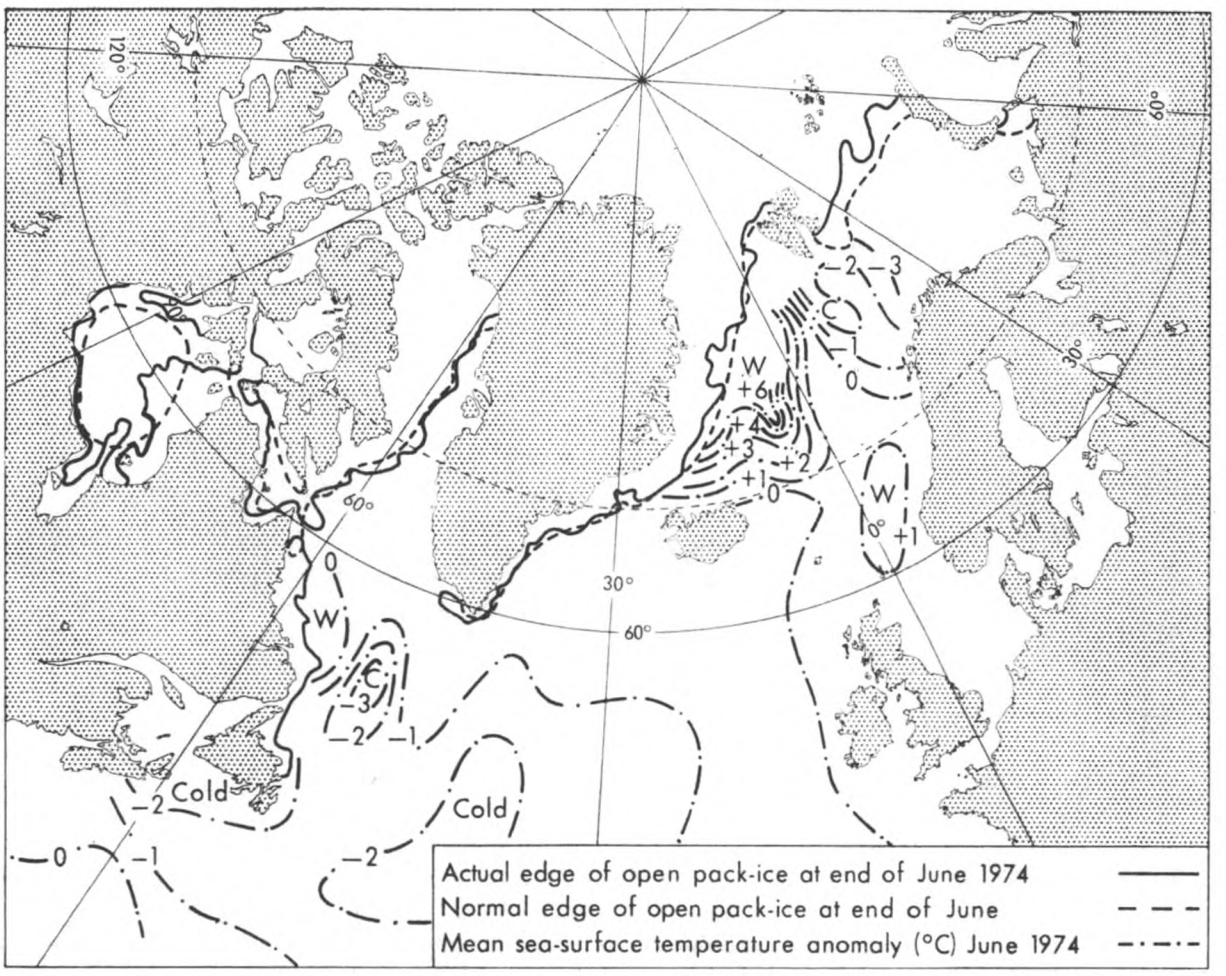
* These figures give a rough measure of the first probability of the formation of sea ice, and later the progress of the growth and its thickness. They are derived from daily averages of temperature (00 + 06 + 12 + 18 GMT) and are the sum of the number of the degrees Celsius below zero experienced each day during the period of sustained frost.

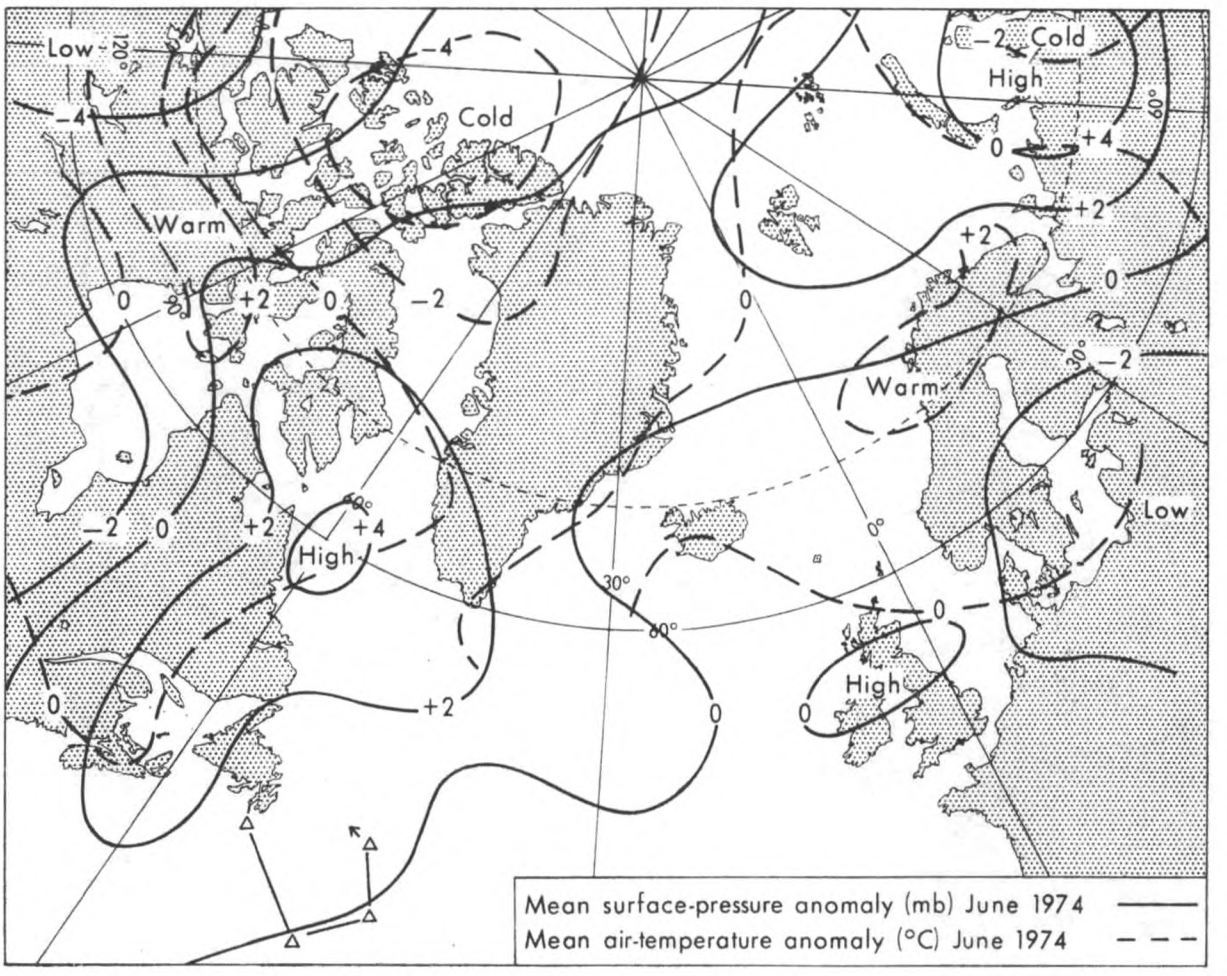

Actual edge of open pack-ice at end of April 1974
Normal edge of open pack-ice at end of April
Mean sea-surface temperature anomaly (°C) April 1974
Cold
Warm
W
C


Mean surface-pressure anomaly (mb) April 1974
Mean air-temperature anomaly (°C) April 1974
Low
High
Cold
W
C


120°
90°
60°
30°
0°
C
−3
−2
−1
0
+1
W
+2
Cold
−2
−1
0
C
0
−1
0
Actual edge of open pack-ice at end of May 1974
Normal edge of open pack-ice at end of May
Mean sea-surface temperature anomaly (°C) May 1974


Low
−2
120°
90°
60°
30°
0°
0
Cold
−2
Cold
−2
High
+6
+4
+2
0
W
+2
0
−2
Warm
+2
+2
0
−2
−4
Warm
+2
0
−2
Cold
Cold
−2
Low
−4
Low
−4
−2
Mean surface-pressure anomaly (mb) May 1974
Mean air-temperature anomaly (°C) May 1974


120°
60°
30°
60°
W
+6
+4
+3
+2
+1
0
−2
−3
−1
W
0°
+1
W
−3
−2
−1
Cold
−2
Cold
−2
0
−1
Actual edge of open pack-ice at end of June 1974
Normal edge of open pack-ice at end of June
Mean sea-surface temperature anomaly (°C) June 1974


Low
120°
−4
−4
Cold
−2
Cold
High
0
+4
60°
Warm
+2
+2
0
+2
0
−2
0
0
30°
−2
Warm
Low
−2
0
+2
+4
60°
High
0°
30°
60°
0
High
+2
0
0
Mean surface-pressure anomaly (mb) June 1974
Mean air-temperature anomaly (°C) June 1974

Book Reviews

Normandy Harbours and Pilotage, by E. Delmar-Morgan. 248 mm × 190 mm, pp. 136, *illus*. Granada Publishing, 3 Upper James Street, London, W1R 4BP, 1974 (2nd Edition). Price: £5·00.

This second edition of a book well known to Channel yachtsmen up-dates, as far as is possible, the first edition published in 1969; its format is identical. The harbours and their approaches between Calais and Cherbourg (including the Seine up to Rouen), both deep-water and drying, are arranged geographically; the inside covers display a map of their positions. The description of the harbours is based on the author's experience of this coast which now spans more than fifty years. The hazards on the approaches to each harbour are adequately described. Identification is facilitated by the generous use of photographs and charts which provide considerable reassurance when entering a strange harbour for the first time. Invaluable information is given on the states of weather and tide when these harbours should not be approached. The description goes on to provide directions for moorings, locks, yacht basins and clubs. The facilities described cover fuel, water, repairs, chandlery, slipping and, for some larger ports, the addresses of useful contacts are also given. The author presents tidal-stream data for each port in the form of a vector diagram; data on tidal range are also provided.

This book is the yachtsman's *Pilot* for this area; it should be included in the inventory of each yacht likely to visit this coast.

R.M.S.

Spare Time at Sea, by Ronald Hope. 222 mm × 140 mm, pp. 230, *illus*. Stanford Maritime Ltd., Mansbridge House, 207 Balham High Road, London SW17 7BH, 1974 (2nd Edition). Price: £2·50.

This revised version of Dr. Hope's earlier work has been described as "a compendium of all the activities which can make life at sea more agreeable". It is that and something more, as Dr. Hope has taken an astute look at some of the changes in ships, trade and pressures on seafarers in the last twenty years. He also points out some pitfalls, for everyone from the user right back to the drawing board, in the supply of facilities.

In trying to blend a community spirit with privacy for the individual it is impossible to please everyone, but everyone should find something in this book to please, interest or guide. Even the rather lengthy section on Crossing the Line made interesting reading for itself.

The other sections, Keeping Fit, Games, Hobbies, and so on, are well filled and tidily put together, and the appendices on books and clubs should satisfy the most demanding.

Whoever picks up this book, for whatever purpose, will find something of use in it. While changes are still being made, this may not be quite the last word, but there cannot be many left to come.

P.E.R.

Personalities

OBITUARY.—We regret to record the death of CAPTAIN I. A. W. WILLIAMSON on board the *Clan Macnair* on 2nd May 1974; he was buried at San Lazaro Cemetery, Las Palmas.

Ian Andrew Wallace Williamson was born in Edinburgh and educated at Melville College. He became an indentured apprentice with Messrs. H. Hogarth and Sons, Glasgow in April 1933. He obtained his Second Mate's Certificate in December 1937

and was promoted to 3rd Officer. In May 1939 he joined the Ben Line of Leith. While he was serving 2nd Officer in the *Benvrackie* the ship was sunk by enemy action on 13th May 1941 and Captain Williamson was picked up by the hospital ship *Oxfordshire* on 26th May 1941. He came ashore on medical advice and from September 1942 until 1st January 1945 was commissioned as Lieutenant in the Royal Naval Reserve and served in Suez, Berbera, Aden and finally at Calcutta as Staff Officer (Operations).

He joined the Clan Line as 3rd Officer in May 1947, obtained his Master's Certificate in October 1948 and was promoted to 2nd Officer. He was finally promoted to Master in April 1967, commanded various vessels of the group and joined the *Clan Macnair* in January 1973.

Captain Williamson's first meteorological logbook was received fron the *Clan Brodie* in 1950, and in 15 years' observing he sent in 20 logbooks of which 7 were classed as Excellent: sadly, his Excellent Award for 1973 was not announced until after his death.

We tender our condolences to his widow Mrs. Mary R. Williamson and his two married daughters.

J.C.M.

RETIREMENT.—CAPTAIN P. S. MORRISON, O.B.E. has retired after 46 years with the Ellerman Lines.

Peter Smith Morrison was born in Cambuslang, Lanarkshire in 1912 and came from a long line of seafaring ancestors on the maternal side and, to a lesser degree, on the paternal. Grandfather Donald Smith was Master and part-owner of the topsail schooner *Finlaggan*, 250 tons of Campbeltown generally trading from the Clyde to Labrador and the Mediterranean whilst an uncle, Peter Smith, sailed in the *Finlaggen* as a boy, eventually passed for Master square-rigged and sailed as Master in steam before serving in the R.N.V.R. during World War I. There were earlier seafaring ancestors also who served in small craft and, Captain Morrison tells us, were "pretty certainly engaged in smuggling". Two ancestors were press-ganged into the services and subsequently attained high rank.

Captain Morrison himself signed indentures with the Ellerman Lines in 1928 and made his first voyage in their *City of Calcutta*, a ship which was then 25 years old.

He passed for 2nd Mate in 1933 and was appointed 4th Officer of the *City of Paris*. He passed for Master in 1944.

Captain Morrison had an adventurous World War II; he was present at the withdrawal of British Forces from Crete in May 1941 and also saw the fall of Singapore in February 1942 and Java a month later. In July 1943 he was on the way to the Allied invasion of Sicily, one of the great turning points of the war, when his ship was torpedoed. This was his second torpedoing, the first one had occurred in the North Channel earlier on. In 1946–47, as Staff Captain of the *Citta di Tunisi*, an Italian-manned ship partially managed by the Ellerman Lines for the Ministry of War Transport, Captain Morrison was engaged in Operation Medloc, designed to expedite the transit of troops to and from the Middle and Far East stations. The sea passage was made to Toulon and the rest of the journey by rail and vice versa. The service, which comprised many British and Italian ships, was used also for the repatriation of Service personnel due for demobilization and for the repatriation of ex-enemy prisoners of war.

Returning to the more usual service of the Ellerman Lines, Captain Morrison was appointed to his first command, the *City of Rochester*, in 1957. He had been twice commended for his services and in the New Year Honours of 1965 was appointed to the Order of the British Empire.

As a voluntary marine observer, Captain Morrison's record with us goes back to October 1933 when we received his first meteorological logbook from the *City of*

Paris. Altogether he observed for us in 12 separate years and had sent us 21 meteorological logbooks. He received an Excellent Award for the year 1973 in which his ship, the *City of Worcester*, was nominated as one of the best three observing ships of the year and, in consequence, had her photograph published in the July 1974 number of *The Marine Observer*.

We wish him health and happiness in his retirement.

L.B.P.

RETIREMENT.—Lieutenant Commander L. B. Philpott, D.S.C., R.D., R.N.R., retired as Nautical Officer in the Marine Division of the Meteorological Office on 3rd July 1974 after more than 23 years' service.

Leslie Benjamin Philpott ('Joe' to his colleagues and many friends) was born at Broadstairs, Kent, in 1909 and in 1925 signed indentures with the Commonwealth and Dominion Line (later to be named the Port Line) of London, his first ship being their *Port Hacking*. He passed for 2nd Mate in 1929 and was appointed 4th Officer of the *Port Melbourne*.

He had joined the Royal Naval Reserve as a probationary Midshipman in 1927 during his apprenticeship and, having completed his peace-time training, was ready, after passing for Master in 1935, to volunteer for temporary service in the Royal Navy during the Italo-Abyssinian war. He spent six months in H.M.S. *Arethusa* in the eastern Mediterranean and then returned to the Port Line. Whilst in the Port Line he served in several voluntary observing ships and sent in 17 meteorological logbooks.

In August 1939 he was called into the Royal Navy for the period of World War II and appointed to H.M.S. *Dunedin*, his first winter being spent as boarding officer on the patrol lines between Shetland and Greenland. Later, when in the West Indies, he was awarded the Distinguished Service Cross for his part in the capture at sea of the German m.v. *Hannover* which had broken internment from Curaçao. This ship was subsequently converted to become H.M.S. *Audacity*, the first auxiliary aircraft carrier, a type of ship which was to prove so successful later on in the war.

Lt. Cdr. Philpott then spent four years in escort ships, mainly in the North Atlantic, initially as 1st Lieutenant of H.M.S. *Saladin* and then in command successively of H.M.S. *Hastings* and H.M.S. *Londonderry*. During this period he was three times mentioned in dispatches.

He brought the *Londonderry* south for the allied return to Europe in June 1944. With a few other escort vessels she had been fitted with a highly secret position-finding device, which has now become almost commonplace even in merchant ships, and her job on D-Day was to mark positions for the laying of buoys across to the Far Shore and to protect the buoy-laying vessels. Lt. Cdr. Philpott's buoys were laid by the *Discovery II* which, in happier times ten years later, he was to meet as a voluntary observing ship.

Towards the end of the war in Europe Lt. Cdr. Philpott was sent East as Assistant Senior Officer in a Naval Assault Group. He was present at the allied landings in Burma and Malaya and, after the Japanese surrender, went on to Java with the Group to fill the post of King's Harbour Master, Surabaja.

He was released from Naval Service in May 1946 and entered the Civil Service as master in charge of civilian-manned boom-defence and salvage vessels at Turnchapel, Plymouth, from where he joined the Meteorological Office as Nautical Officer in October 1950.

With the exception of occasional short spells at the ports, Lt. Cdr. Philpott spent the whole of his Meteorological Office career in the one job, Nautical Officer at Headquarters at Harrow until 1961 and afterwards at Bracknell. He thus became known, at least by name, to a whole generation of voluntary marine observers for he wrote a letter of thanks and comment to the master of the ship after each and

every meteorological logbook had passed through his hands. They were not a few: Lt. Cdr. Philpott calculated that he had scrutinized upwards of 27,000 meteorological logbooks; enough, when placed end to end in the open position, to float in the river from the King George Dock to Greenhithe Pier. His initials L.B.P. must also be familiar to all readers of *The Marine Observer*, appearing as they did at the conclusion of so many editorials and articles.

Lt. Cdr. Philpott is a Member of the Society for Nautical Research, a Liveryman of the Honourable Company of Master Mariners and a Freeman of the City of London.

As part of his official duties he has always been very active in liaison with the Royal Naval Bird Watching Society and, until recent years, he took part in social activities of the Meteorological Office, particularly amateur dramatics.

We wish him a happy retirement and many years to enjoy his chief hobby of umpiring cricket matches on the green fields of Berkshire.

Lt. Cdr. Philpott has been succeeded in office by Mr. J. D. Brown (see below) and they are shown together in the photograph opposite page 187.

G.V.M.

Notices to Marine Observers

APPOINTMENT OF NEW NAUTICAL OFFICER, MARINE DIVISION, METEOROLOGICAL OFFICE

Mr. James David Brown has been appointed as the new Nautical Officer in the Marine Division, Meteorological Office, to succeed Lt. Cdr. Philpott (*see* photograph opposite page 187).

Mr. Brown served 17 years of his sea career with Alfred Holt & Co., the Blue Funnel Line. After serving his apprenticeship from 1942 to 1946 he obtained his 2nd Mate's Certificate and then served in various companies until passing for Mate. He then rejoined the Blue Funnel Line as 3rd Officer and subsequently, on obtaining his Master's Certificate, was promoted to Chief Officer.

In 1971 Mr. Brown joined the Meteorological Office on the scientific side with his appointment as Assistant Scientific Officer at the Port Meteorological Office, London. He remained there until, after a short posting to RAF Acklington, he returned to the Marine Division as the new Nautical Officer.

G.V.M.

COASTAL RADIO STATION MAURITIUS

The Naval Radio Station on Mauritius (GXO) has resumed the acceptance of radio weather messages from merchant ships. Radio address: METEO Mauritius. Call signs and frequencies used by the station for answering calls in the bands indicated are given below with the hours of watch-keeping (GMT).

Calling Band (kHz)					
4177–4187	6265·5 6280·5	8354–8374	12531–12561	16708 16748	22220–22270
—	GXO3 6393·5 1600–0001 and 0001–1600 (on request)	GXO4 8554 Continuous	GXO5 12831 Continuous	GXO6 17108 0001–1600 and 1600–0001 (on request)	GXO7 22535 (on request)

NAUTICAL OFFICERS OF THE MARINE DIVISION OF THE METEOROLOGICAL OFFICE, GREAT BRITAIN

Headquarters.—Captain G. A. White, Marine Superintendent, Meteorological Office (Met.O.1a), Eastern Road, Bracknell, Berks. RG12 2UR. (Telephone: Bracknell 20242, ext. 2456.)

Captain G. V. Mackie, Deputy Marine Superintendent. (Telephone: Bracknell 20242, ext. 2543.)

Mr. J. D. Brown, Nautical Officer. (Telephone: Bracknell 20242, ext. 2461.)

Mersey.—Mr. W. G. Cullen, Master Mariner, Port Meteorological Officer, Room 709, Royal Liver Building, Liverpool L3 1HN. (Telephone: 051–236 6565.)

Tyne.—All enquiries to Mr. W. G. Cullen above.

Thames.—Mr. J. C. Matheson, Master Mariner, Port Meteorological Officer, Movement Control Building, South Side, Victoria Dock, London, E16 1AS (Telephone: 01-476 3931.)

Bristol Channel.—Mr. D. J. F. Southon, Master Mariner, Port Meteorological Officer, 2 Bute Crescent, Cardiff CF1 6AN. (Telephone: Cardiff 21423.)

Humber.—Mr. W. A. McCrindle, Master Mariner, Port Meteorological Officer, c/o Principal Officer, Dept. of Trade and Industry, Trinity House Yard, Hull HU1 2LN. (Telephone: Hull 223066, ext. 27.)

Clyde.—Mr. H. M. Keenan, Master Mariner, Port Meteorological Officer, 118 Waterloo Street, Glasgow G2 7DN. (Telephone: 041-248 4379.)

Forth.—All enquiries to Mr. H. M. Keenan above.

Southampton.—Captain D. R. McWhan, Port Meteorological Officer, Southampton Weather Centre, 160 High Street below Bar, Southampton SO1 0BT. (Telephone: Southampton 20632.)

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