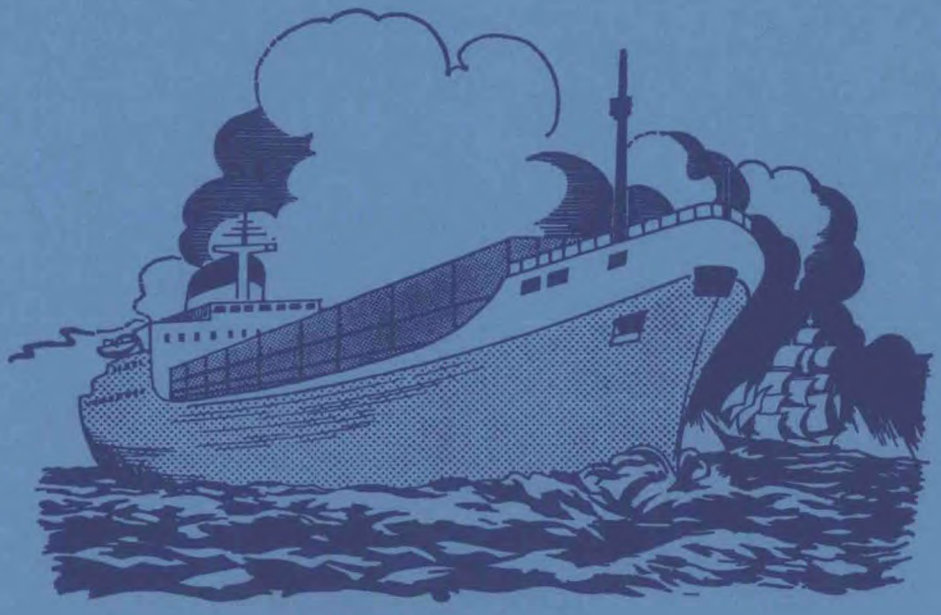
Met. O. 963

The Marine Observer

A quarterly journal of Maritime Meteorology



Volume LIV No. 286
October 1984

£2·40 net

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THE MARINE OBSERVER

A QUARTERLY JOURNAL OF MARITIME METEOROLOGY PREPARED BY THE MARINE DIVISION OF THE METEOROLOGICAL OFFICE

VOL. LIV **No. 286** **OCTOBER 1984**

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Letters to the Editor, and books for review, should be sent to the Editor 'The Marine Observer', Meteorological Office, Eastern Road, Bracknell, Berkshire RG12 2UR

Published for the Meteorological Office by
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To be purchased direct from HMSO at any of the following addresses: 49 High Holborn, London WC1V 6HB; 13a Castle Street, Edinburgh EH2 3AR; Brazennose Street, Manchester M60 8AS; Southey House, Wine Street, Bristol BS1 2BQ; 258 Broad Street, Birmingham B1 2HE; 80 Chichester Street, Belfast BT1 4JY, or from booksellers.

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Editorial

'O Wild West Wind, thou breath of Autumn's being,
Thou, from whose unseen presence the leaves dead
Are driven, like ghosts from an enchanter fleeing,
Yellow, and black, and pale, and hectic red;
. . . O wind,
If Winter comes, can Spring be far behind?'
From *Ode to the West Wind*
By *Percy Bysshe Shelley*

The first edition of *The Marine Observer* was published just 60 years ago. In his foreword to that January 1924 number, the Director of the Meteorological Office, Dr George C. Simpson, CBE, FRS, wrote: 'There is no doubt that since the War there has been a marked increase in the interest taken by mariners in meteorological matters . . . I cannot help but think, with the deepest feelings of gratitude, of all the unselfish work of a whole army of marine observers, many passed away and many still with us; work which has extended our knowledge of winds, weather and currents into the uttermost parts of the sea. The taking of observations at the correct time in all kinds of weather and often in difficult and dangerous conditions, the drudgery of compiling the "fair" registers, and the constant care of the instruments, have all been done in the faith that the observations would lead to a knowledge of the laws of the atmosphere which would prove of use and comfort to future generations of sailors. And this brings me to my second thought: the desire of the Meteorological Office to extract this knowledge from the data provided and hand it back to the seaman in a form which he can understand and suitable for use in daily life at sea. The gratitude I must ask the observer to accept on my assurance, but *The Marine Observer* will, I hope, be a tangible proof that the Meteorological Office is doing its share in this common undertaking.

'*The Marine Observer* is a magazine for seamen, edited by a seaman, and will be largely written by seamen. I have every confidence that the British Seaman can be relied upon to make it a success.'

If that sounds familiar stuff to us in today's Meteorological Office, who strive to lose no opportunity, sixty years after, to emulate our forbears in showing our observers how much we appreciate their efforts, hopefully those at sea will see the similarity also. The only difference applies to the Director's final paragraph, for we feel the emphasis has shifted to a wider range of readership, and we can say that there is an important and sizable scientific input into the current editing of the journal, which is intended to improve the content for our readers. Nevertheless, the aim is to publish reports from seafarers and items of interest to them as much as possible.

The original journal of 1924 was published in two sections, each with a much larger page size, about 12 in×10 in, compared with today's 9½ in×6 in. The main section of the journal consisted of from 12 to 16 pages of text and illustrations, including photographs, followed by from 6 to 12 pages of charts of cyclone tracks, ocean currents experienced along main shipping routes and weather charts; the information contained in the latter was of course, very sparse in comparison to today's charts. A supplement of about 16 pages contained advertisements, fleet lists, ice charts, lists of derelicts, Port Meteorological Officers and Met. Office publications available.

The style of the journal continued until 1939, with minor changes only, such as the incorporation of the supplement in the main publication as well as separately. Captains of observing ships were invited to meet the Marine Superintendent any day between 10 a.m. and 4 p.m. at his office in Adastral House, Kingsway, London, 'nearest station—Temple, District Railway'.

The Marine Superintendent of the day, Captain L. A. Brooke-Smith, RD, RNR, wrote in the first edition of *The Marine Observer*, inter alia: 'It has been said that shipping and seamen since the advent of steam have lost interest in Meteorology. Post-war experience emphatically disproves such a contention; dealt with on seamanlike lines the Corps of Voluntary Marine Observers generally are unsurpassed as sea observers and are very efficient in practical application of the work too. We have many inspiring examples of observational record, including that of HIS MAJESTY THE KING (George V); for it is surely appropriate to recall that a Meteorological Log was kept in H.M.S. *Thrush* when as Captain H.R.H. PRINCE GEORGE, His Majesty commanded that ship'. *The Marine Observer* was not produced during the Second World War, but in July 1947 it was reintroduced in a new format under the auspices of the Marine Superintendent of the time, Commander C. E. N. Frankcom, OBE, RD, RNR (RTD). In a note introducing the new edition, the layout of which has been retained to this day, Commander Frankcom wrote: 'It is perhaps interesting to recall, at this stage, the great efforts which both sides made, throughout the war, to obtain their badly needed meteorological information from the oceans, previously supplied gratuitously by merchant ships. Past records and climatological atlases assumed immense importance in an endeavour to increase our scientific meteorological knowledge and to probe the mysteries of the future weather—an all important subject for all Naval, Military and Air Force operations. . . .

'Since November 1945, the Port Meteorological Officers and Merchant Navy Agents in British Ports have been busily engaged in recruiting voluntary observing ships to rebuild the observing Fleet'. By February 1947 the figures had reached 422 selected ships, 197 supplementary and 79 Marids; also involved were 2 Lighthouses and 6 Light vessels. The number of selected ships in 1984 stands at about the same level.

Commander Frankcom was Marine Superintendent of the Meteorological Office from 1939 to 1969, save during the war years when his assistant deputized for him, and though it is 15 years since his retirement, he remains very active. He is shortly to publish a new book entitled *Maritime Meteorology—A Guide for Deck Officers*, which he says he has written jointly with Charles Roberts, a Master Mariner and former lecturer at the College of Nautical Studies, Warsash. Commander Frankcom describes his book as a short, concise guide in simple language for those at sea. We wish him well in his venture, as we do all those who might have the opportunity to use it, or who make the voluntary effort to study the weather conditions for the common good.

J.F.T.H.

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 UK will supply instructions on how to preserve and pack such samples on request.

PASSAGE OF HURRICANE 'TICO'

North Pacific Ocean

m.v. *California Star*. Captain D. A. Ganderton. Los Angeles to Lazaro Cardenas (Mexico). Observers: the Master, Mr N. M. Bower, 2nd Officer and Mr D. J. Dawson, 3rd Officer.

18–19 October 1983. On receiving and plotting weather reports of hurricane Tico it became apparent that the predicted path of the storm would approach within 85 n. mile. At 1900 GMT on the 18th, speed was increased in order to outrun the hurricane and secure a greater distance from the centre. Tico, in position 19·3°N, 110·3°W at 1800 GMT on the 18th, was predicted to move NNE at 6 knots. However, it soon became apparent that the storm was moving more rapidly and in a more easterly direction than had been predicted, resulting in the ship passing closer to the storm than desired. Through quick and decisive action the *California Star* was able to avoid the full force of the storm, nevertheless wind velocities of 42 knots (force 9) were experienced.

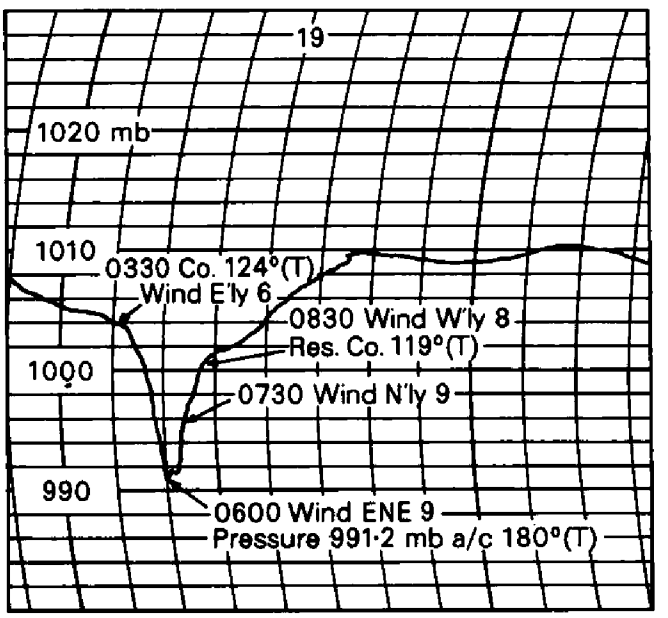
The following extracts are taken from the ship's deck and meteorological logs:

Course 124°(T), speed 18 knots.

18 October, 1830 GMT: Wind NNW, force 4, barometric pressure 1010·0 mb, slight sea, low SSE'ly swell, overcast, fine and clear.

2230 GMT: Wind N'ly, force 5, pressure 1005·7 mb, moderate sea, low SSE'ly swell, overcast, fine and clear.

19 October, 0000 GMT: Wind N'ly, force 4, pressure 1004·3 mb, moderate sea, moderate SSE'ly swell, overcast, fine and clear.
0230 GMT: Wind N'ly, force 4, pressure 1002·6 mb and falling rapidly, moderate sea, moderate SSE'ly swell, overcast, occasional rain showers.
0330 GMT: Wind veered and increased in strength.
0430 GMT: Wind E'ly, force 6, pressure 998·0 mb, rough sea, moderate confused swell, overcast, moderate rainfall.
0600 GMT: Wind ENE, force 8, pressure 991·2 mb, very rough sea, heavy confused swell, overcast, continuous moderate rain.
0605 GMT: Vessel deduced to be in navigable semicircle of storm (wind commenced backing and pressure still falling). Placed wind on starboard quarter and altered course to port as wind backed. Eventually on course 180°(T). Forced to reduce speed in order to ease passage.
0630 GMT: Wind ENE, force 9, pressure 988·3 mb, very rough sea, heavy confused swell, overcast, continuous moderate rain.
0730 GMT: Wind N'ly, force 9, pressure 996·0 mb, very rough sea, heavy confused swell, overcast, continuous moderate rain.
0800 GMT: Wind W'ly, force 8, pressure 998·0 mb, rough sea, moderate confused swell, overcast, light drizzle. Seas and swell easing, passage resumed on course 119°(T).
1000 GMT: Wind W'ly, force 7, pressure 1002·1 mb, moderate sea, moderate confused swell, overcast, clear.
1200 GMT: Wind WNW, force 5, pressure 1004·1 mb, moderate sea, moderate W'ly swell, mainly overcast and clear.
1400 GMT: Wind WNW, force 5, pressure 1006·9 mb, moderate sea, moderate W'ly swell, cloudy, fine and clear.
1800 GMT: Wind W'ly, force 4, pressure 1009·5 mb, moderate sea, moderate W'ly swell and confused swell, overcast with light drizzle.



N.B. Barograph did not record lowest observed pressure, which was 988·3 mb at 0630 GMT on 19th

Position of ship at 1830 GMT on 18 October: 23° 20′N, 111° 44′W.
Position of ship at 0605 GMT on 19 October: 21° 22′N, 108° 37′W.

HEAVY WEATHER

Gulf of Alaska and North Pacific Ocean

m.v. *Falmouth Bay*. Captain A. J. Fee. Seattle to Incheon (S. Korea) via Unimak Passage and Bering Sea. Observers: the Master, Mr S. D. Smith, 1st Officer, Mr J. N. Kelleher, 2nd Officer and Mr S. Barraclough, 3rd Officer.

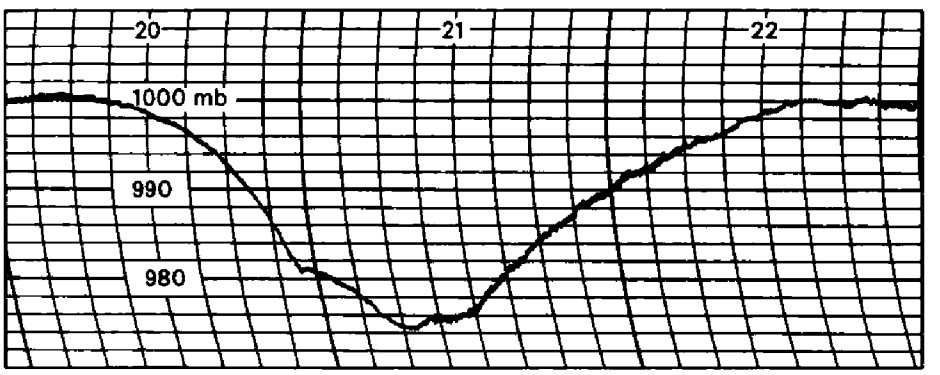
18–27 October 1983. The vessel departed Seattle on 18 October and initially headed on a wsw'ly course to avoid a deep depression, which was forecast to move north-eastwards into the Gulf of Alaska. Unfortunately, the depression, as indicated by the facsimile maps received on board, had changed direction, and was heading eastwards at approximately 25 knots. At noon on the 18th it was decided by the Master to steer a course of 300°(T) at full speed, 17½ knots, and make for the Unimak Passage, whereby it was hoped to avoid the worst of the storm.

The following details are extracted from the meteorological and deck logs. The barograph traces also record a second and a third depression which the vessel passed through on the 25th and 28th respectively.

Date	Time GMT	Baro. Pressure (mb)	Wind Dir'n and Force		Remarks
20 Oct.	0900	1000·6	WSW	4	Vessel rolling easily in slight seas, long mod. swell.
	1700	995·5	SSW	3	Vessel moving easily in mod. sea and confused swell.
21	0100	982·0	SW'W	5	Vessel pitching moderately in rough sea and mod. swell.
	0900	976·3	NW	4	Vessel pitching moderately in heavy SSW'ly swell.
	1100	975·0	W'N	7	Barometer 'bottomed-out' at 975 mb. Vessel pitching and rolling heavily, rain showers.
	1300	979·0	W'N	9–10	Barometer rising. Vessel in hand steering; r.p.m. reduced to maintain steerage way.
	1700	984·0	W'N	10	Vessel's speed reduced to 4 knots to avoid overstraining ship.
	1900	986·4	W'N	11	Vessel's course adjusted to 270°(T) in an attempt to avoid heavy pitching.
	2100	988·7	NW'W	9–10	Vessel pitching heavily in very rough head sea and heavy w'ly swell.
	2200	—	—	—	Vessel's master gyro started 'wandering'; vessel in hand steering, steered by starboard compass.
22	0100	991·9	WNW	10	Frequent snow, hail and sleet showers. Vessel pitching heavily.
	0500	995·0	WNW	8–9	Wind decreasing slightly. Master gyro working correctly; vessel remains in hand steering.
	0900	997·3	WNW	9	Hail showers throughout; 8/8 cloud cover.
	1300	1000·2	W	7	Vessel's speed slowly increased. Barometer steady. Auto steering engaged.

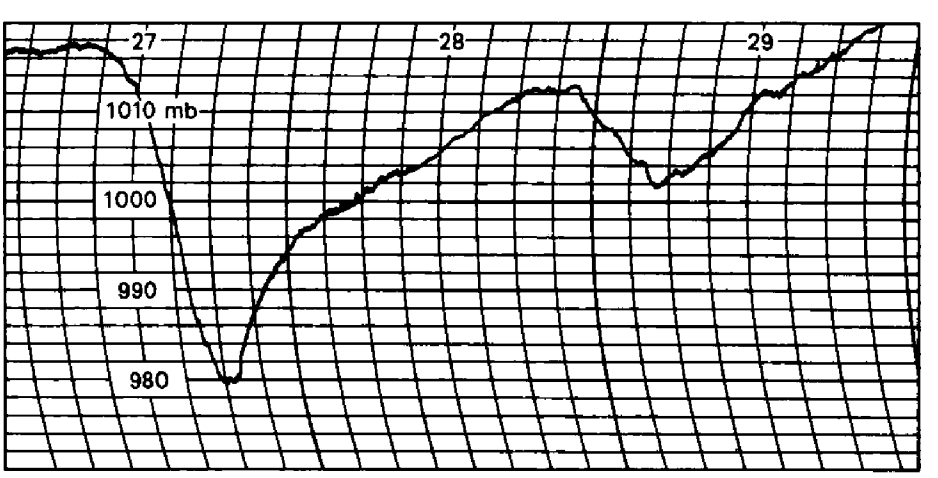
On the evening of the 22nd the vessel transited the Unimak Passage and entered the Bering Sea. The barometer continued to rise, to a pressure of 1030 mb. On the evening of the 25th the barometer started to fall, and the vessel experienced w'ly, force 8 winds. The barometer fell to a pressure of 996 mb and engine revolutions were reduced to 95 r.p.m. on the evening of the 26th to avoid overstraining the ship. By noon on the 27th the wind and swell had decreased sufficiently to permit the resumption of 140 r.p.m. (17½ knots). The wind was now W'N, force 6 and the pressure had risen to 1017 mb.

The vessel continued on its transit through the Bering Sea and on the 27th was on a sw'ly course, heading for Tsugaru Kaikyo (Japan). On the morning of the 28th the vessel encountered a third depression, the pressure gradient of which was very steep as shown on the appropriate barograph trace.



1st Depression Max. Winds W'N, force 11

2nd Depression Max. Winds W'ly, force 9



3rd Depression Max. Winds W'S, force 11

Date	Time GMT	Baro. Pressure (mb)	Wind Dir'n and Force		Remarks
28 Oct.	0500	1017·0	WSW	3	Vessel on easy motion, moderate bow seas.
	0900	1008·0	SE	3	Overcast throughout. Rain showers. Wind backing throughout.
	1300	982·4	SE'S	8	Vessel rolling heavily to very rough beam seas.
	1400	—	SSW	9	Speed reduced to 125 r.p.m.
	1500	980·0	WSW	9	Barometer 'bottomed-out' at 980 mb at 1500. Vessel in hand steering.
	1600	—	W	10	Vessel pitching and rolling heavily in rough seas and heavy swell.
	1900	—	W'N	10	Speed further reduced to 110 r.p.m. owing to heavy swell and very rough head seas.

	2100	997·6	W	10	Speed reduced to 95 r.p.m. at 2030.
29	0100	1001·4	W's	11	Vessel's speed through water 4 knots. Visibility reduced owing to large amounts of spray in air.
	0500	1004·1	W	7	—
	0700	1006·4	W	7–8	140 r.p.m. resumed. Vessel pitching moderately in heavy swell from west.

After the weather recorded above, the ship's company are not too keen on taking the northern route, via Unimak Passage and Bering Sea, across the North Pacific in winter!

Position of ship at 0000 GMT on 20 October: 50° 06′N, 138° 42′W.

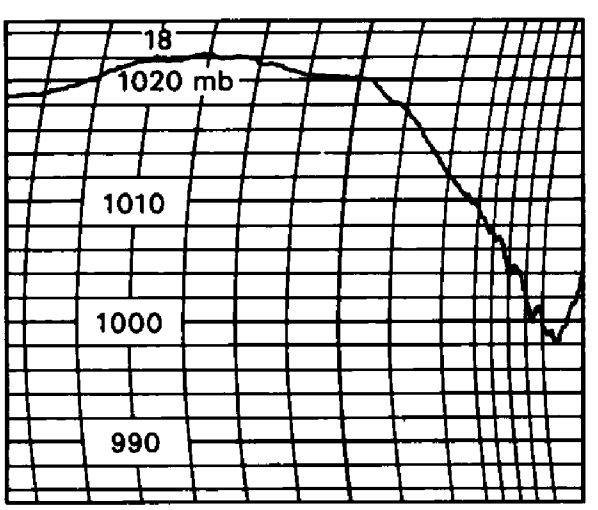
Position of ship at 0000 GMT on 28 October: 45° 54′N, 152° 54′E.

South Atlantic Ocean

m.v. *Keren*. Captain R. Brownbill. Stanley to Ascension Island. Observer: Mr N. D. J. Butler, 3rd Officer.

19 December 1983, 0100–1400 GMT. The vessel was proceeding on a course of 037°(T) at a speed of 18 knots, when the following severe frontal weather conditions were experienced:

The fall in pressure was noted to begin at 0100 GMT, with the wind NE'ly, force 4, dry bulb 16·4 °C and wet bulb 14·5.



At 0500 GMT the wind veered to E'N, increasing to force 5, and by 0920 GMT had become E'ly, force 6—the most dramatic fall in pressure commencing at this time.

At 0945 GMT the rain commenced and the weather worsened to the extent that by 1000 GMT the wind was up to force 9 and from a SE'ly direction with temperatures dry bulb 16·6 °C and wet bulb 16·5. At 0955 GMT the speed was reduced to 15 knots to alleviate the intermittent heavy slamming and pounding.

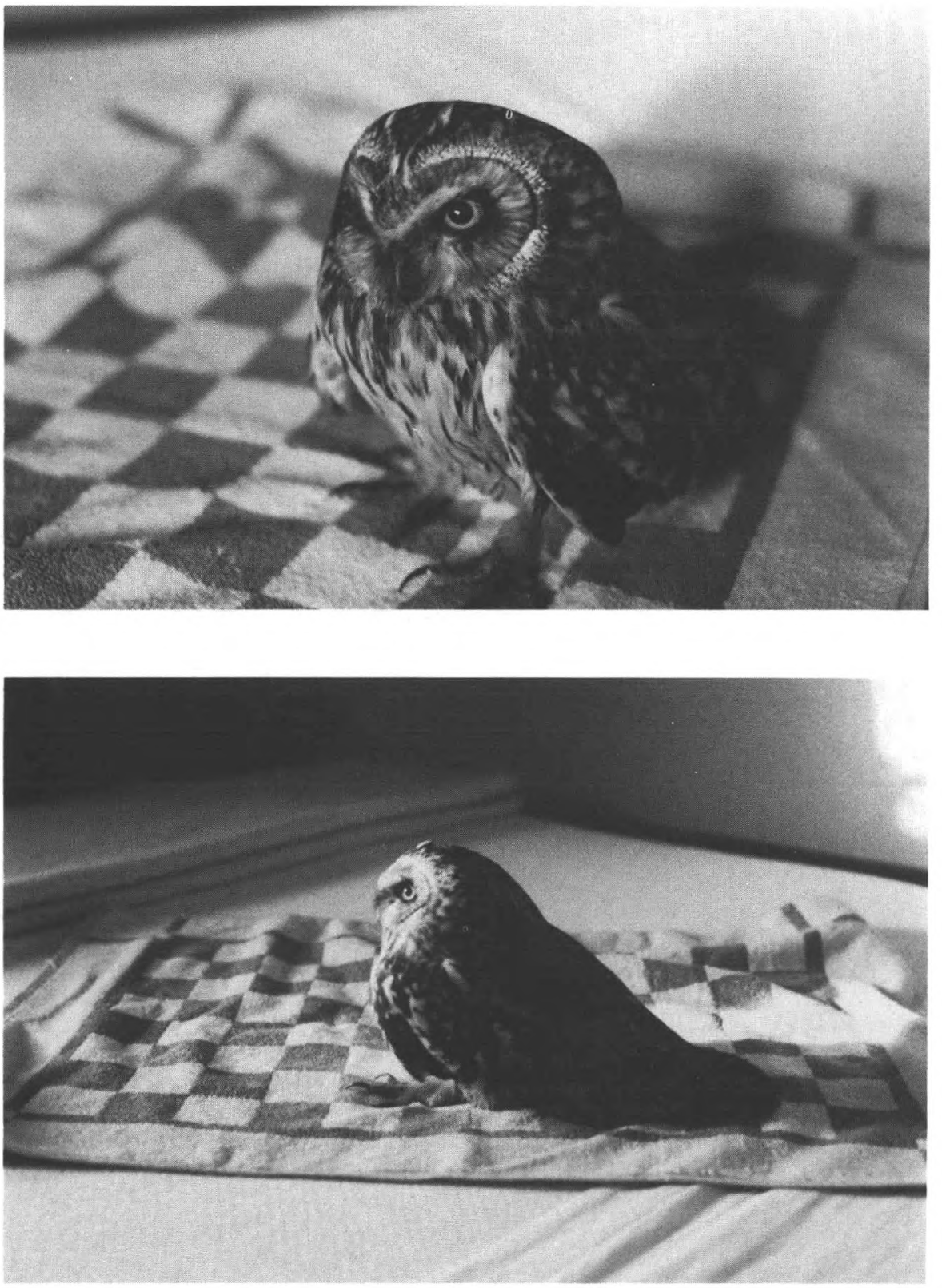
1015 GMT saw the onset of very heavy rain and reduced visibility down to less than 3 n. mile. At 1020 the wind had veered to S'ly. The vessel increased to full speed and altered course to 350°(T) in an attempt to clear the bad weather as quickly as possible, at position 36° 29′S, 37° 42′W.

By 1110 GMT the heavy rain had eased to light rain or drizzle, the wind was still from a S'ly direction but gusting to force 10. Soon after, the cloud began to clear, and a general brightening-up was observed, which was such that the rain had completely ceased by 1120 GMT in position 36° 12′S, 37° 48′W.

Opposite page 184

State of sea at 1400 GMT on 7 December 1983 of Skikda as observed by m.v. *Lincolnshire* (*see* page 185).

Opposite page 185



Owl found on m.v. *London Enterprise* (*see* page 194).

The wind had eased to force 8–9 by 1230 GMT, conditions were more settled and the barometric pressure began to rise. The weather then continued to improve gradually. At 1317 GMT in position 35° 34′S, 37° 56′W, the vessel reverted to the original course of 038°(T).

By 1400 GMT in position 35° 26′S, 37° 46′W, the wind had dropped to force 6 from a S'ly direction. Seas were rough and there was a moderate, confused swell. There were few clouds and the weather was fine and clear. The dry bulb temperature was 20·8 °C and the wet bulb 18·1.

It is unfortunate that the weather described above should have coincided with the end of the barograph chart, but the pressure continued to rise gradually from 1430 GMT.

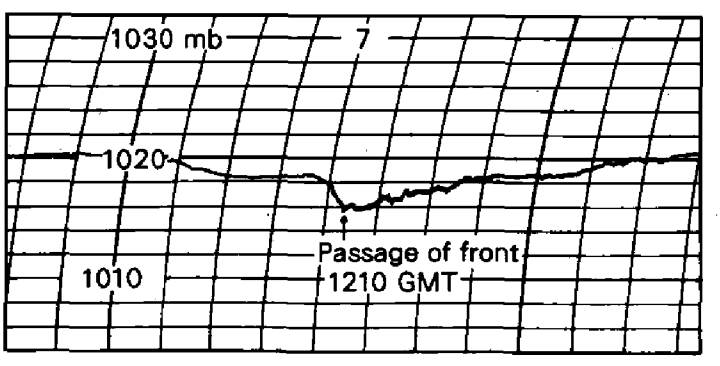
Position of ship at 1020 GMT: 36° 29′S, 37° 42′W.

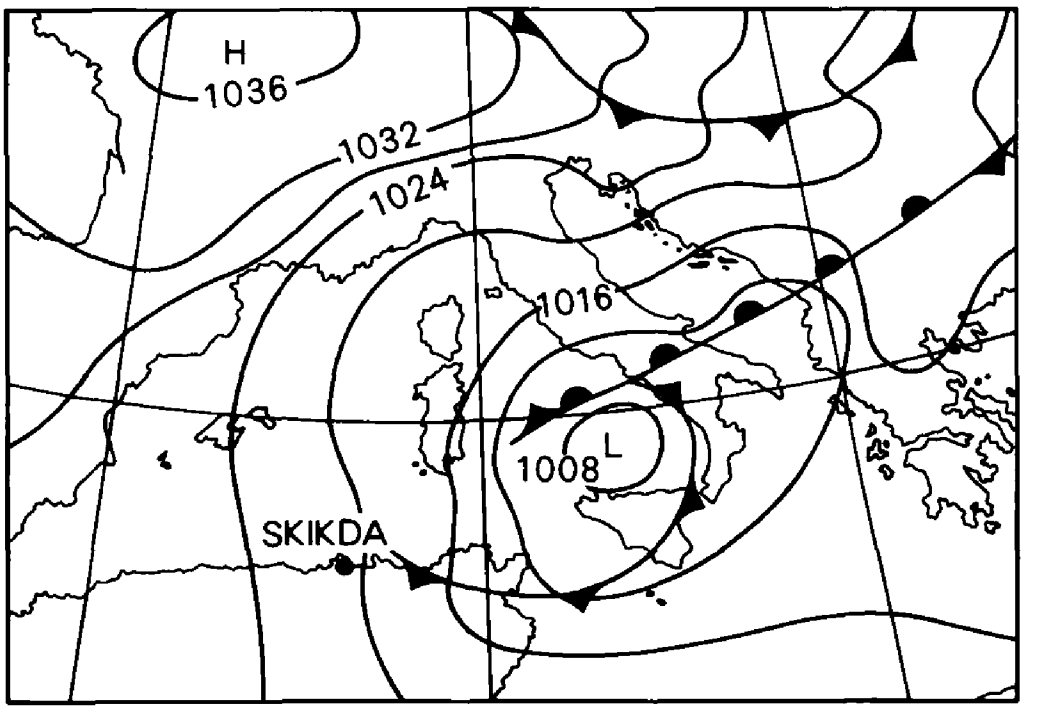
FRONTAL PASSAGES

Algerian waters

m.v. *Lincolnshire*. Captain C. O. Thomas. At anchor off Skikda. Observers: the Master, Mr R. Hodgson, Chief Officer, Mr D. C. Morgan, 2nd Officer, Cadet M. Byrom, and other members of the ship's company.

7 December 1983. At 0900 GMT the wind suddenly veered off the sea to 300°(T) and was rapidly increasing in strength. By 1030 GMT the vessel was hove-to in a 35 knot wind. Pressure was falling rapidly. Courses remained various throughout the afternoon but were generally north. At 1115 GMT the pressure was 1017·5 mb and falling rapidly, the wind from 300°(T) at 40 knots, and there were wind waves with height 3 metres and period 5 seconds. No medium or high cloud but 6 oktas of stratocumulus and cumulus fractus. At 1138 GMT a large squall could be seen approaching. Between 1143 and 1205 there was a severe squall with wind increasing to 50 knots and very heavy rain. The cloud base was down to 100 ft and visibility was only ½ n. mile. The barometric pressure was 1017·1 mb and the swell from 330°(T) was developing to an 8 second period and a height of 4 metres. The front passed at 1210 GMT and the cloud dissolved to 2 oktas of small cumulus. At 1230 GMT the wind was storm force 10 (55 knots). At 1400 the sea was covered by long white streaks (*see* photograph opposite page 184) and the pressure was rising steadily. At 1430 4 oktas of large cumulus invaded from the north and the wind veered to 340°(T), 50 knots. At 2005 thunder and lightning were observed in the vicinity of the ship and at 2300 lightning was observed in the distance. At 0200 GMT on the 8th there was another squall with winds rising to force 9 and 8 oktas cloud but by 0500 the wind had fallen to 24 knots.





7 December 1983, 0600 GMT

Position of ship: 36° 54′N, 06° 54′E.

15–16 December 1983. The following details of the passage of a warm-sector depression are extracted from the hour-by-hour log which was recorded while the ship was again at anchor off Skikda.

15th, 1200 GMT: Dry bulb 17·0 °C, wet bulb 12·2, barometric pressure 1014·1 mb, wind 210°(T), 11 knots. Persistent contrails observed.

1800: Dry bulb 15·8 °C, wet bulb 10·4, barometric pressure 1012·5 mb, wind 210°, 13 knots. Halo observed around moon, i.e. cirrostratus.

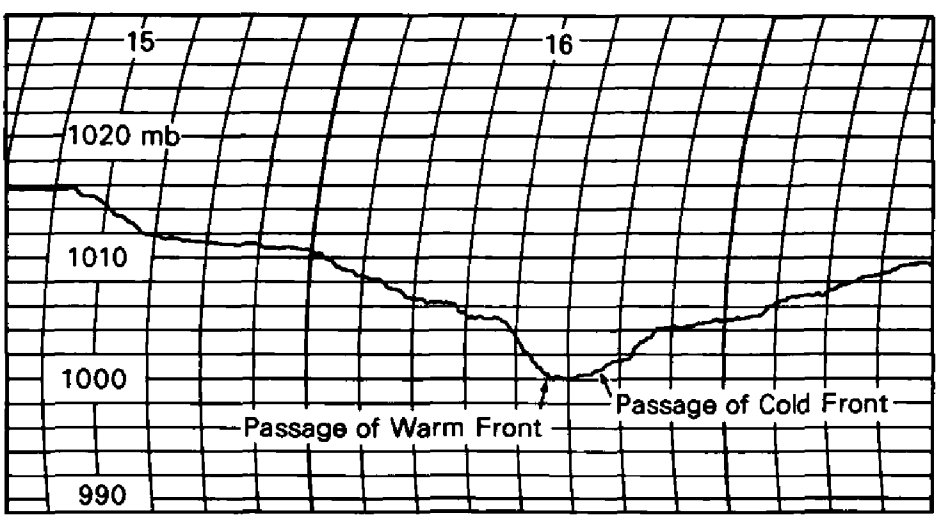
16th, 0000 GMT: dry bulb 14·8 °C, wet bulb 9·8, barometric pressure 1010·7 mb, wind 210°(T), 30 knots. Wind gusting to 38 knots, pressure falling, then falling more rapidly.

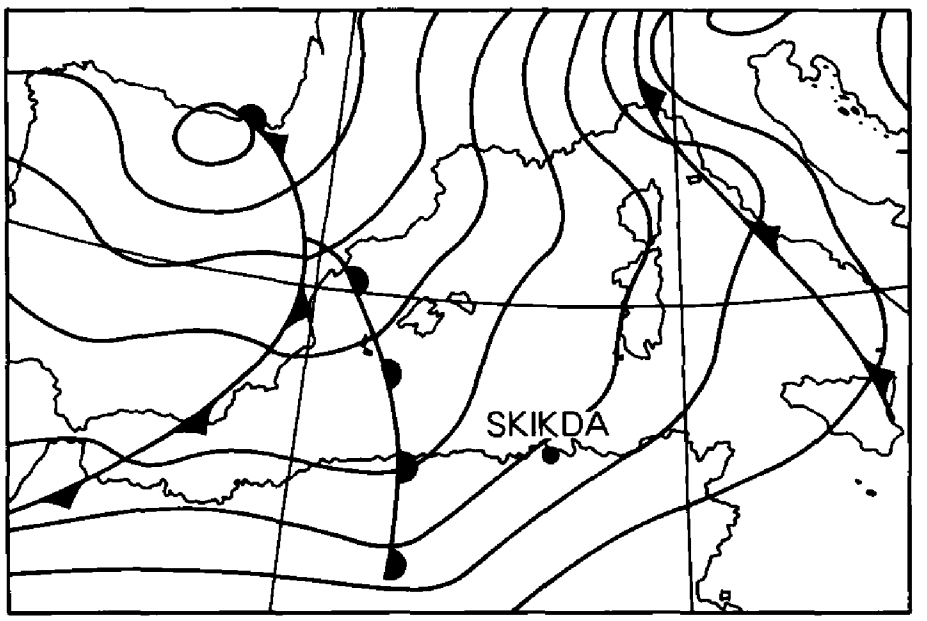
0600: Dry bulb 13·9 °C, wet bulb 8·7, barometric pressure 1007·4 mb, wind 210°(T), 30 knots. Lenticular altocumulus forming over coast to west, and cirrus, cirrostratus and altostratus developing to 3 oktas.

1200: Dry bulb 18·1 °C, wet bulb 11·0, barometric pressure 1001·8 mb, wind 210°(T), 33 knots.

1250: Passage of warm front.

1300: Dry bulb 18·6 °C, wet bulb 11·6, barometric pressure 1001·3 mb, wind 210°(T), 30 knots. Pressure now steady; sand being blown from ashore, reducing visibility.





16 December 1983, 0600 GMT

1345: Wind decreases to 25 knots and veers to 230°(T).

1500: Dry bulb 19·5 °C, wet bulb 11·8, barometric pressure 1002·4 mb, cloud base lowers to 5000 ft, thick altostratus, visibility reduced to 7 n. mile, pressure rising unsteadily.

1625: Passage of cold front.

1700: Wind increases in strength to 35 knots, pressure rising more quickly.

Position of ship: 36° 54′N, 06° 54′E.

WATERSPOUTS

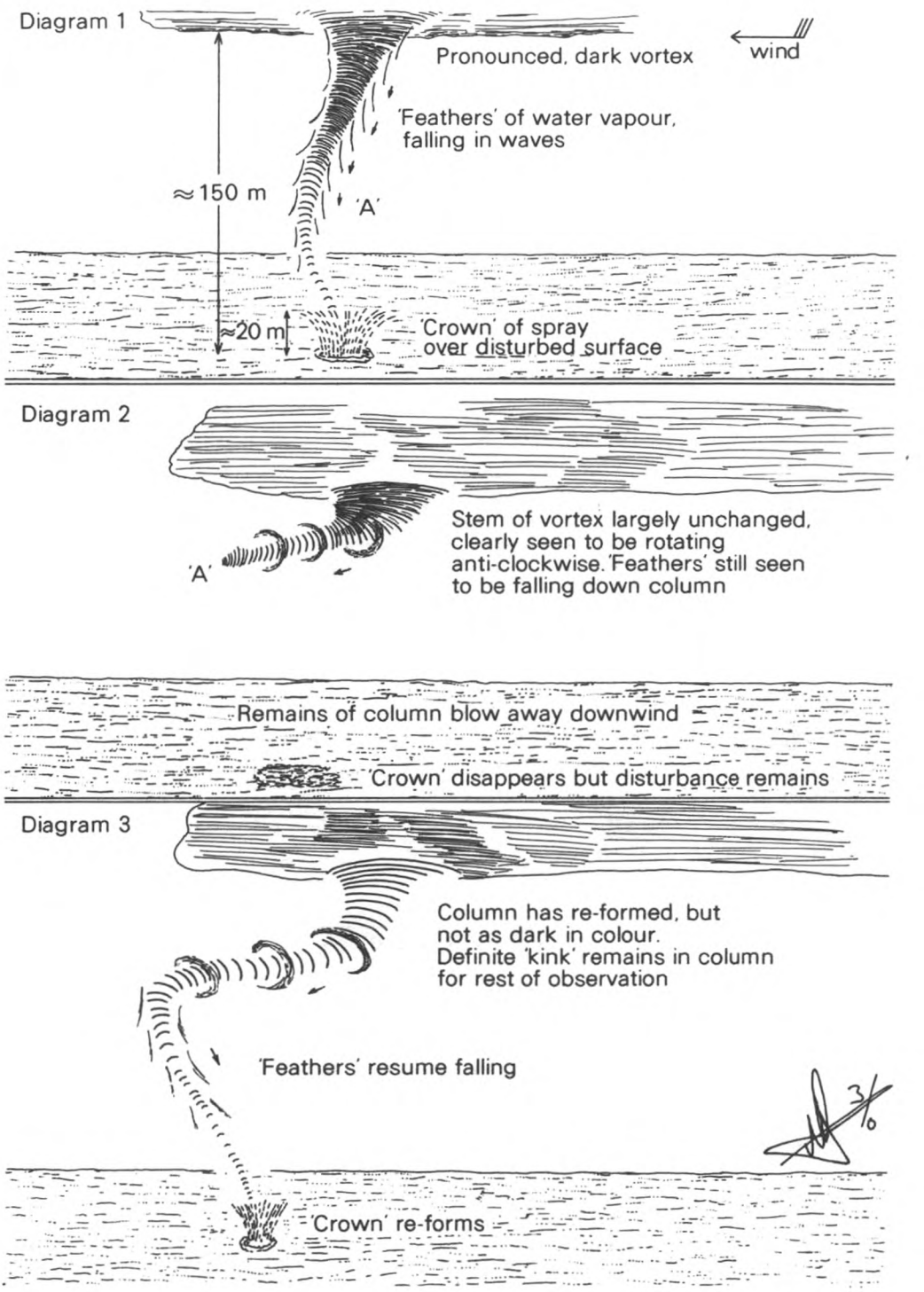
Malacca Strait

m.v. *Strathfife*. Captain C. B. Cooke. Singapore to Cochin. Observers: the Master, Mr C. B. Taylor, Chief Officer, Mr J. F. Hannath, 2nd Officer, Mr R. B. Johnson, 3rd Officer, and Mr J. H. Sinclair, Chief Engineer Officer.

22 November 1983. At 0400 GMT the vessel was transiting the Malacca Strait on a course of 305°(T) at a speed of 17 knots. Ahead of the vessel, at a distance of about 2 n. mile a waterspout was observed extending down from the base of a low, dark cumulus cloud. The spout was moving downwind at about 10 knots. The Master altered course towards the base of the spout for a closer look. The cloud base was estimated to be 150 metres, and the head of the spout was thick, dark and generally well developed. At the base of the column a crown of spray was seen to rise about 20 metres from a distinct area of disturbed water.

The spout took about five minutes to form completely, but after two more minutes the column started to 'neck' at point 'A' in the sketches. Shortly afterwards the column broke, but re-formed almost immediately, this time with a distinct kink in the column.

The vessel then passed within 1 n. mile of the base, and the column could clearly be seen to rotate anticlockwise at about 20 r.p.m. Distinct 'feathers' of water vapour were seen issuing from the column, and at the same time moving down it in waves. The column was seen to consist of dark water vapour rotating around a transparent 'core' which was clearly defined. The spout was generally lighter in colour and not as massive once it had broken and re-formed. It could still be seen astern some 20 minutes later, and other smaller waterspouts were seen at a distance.



Weather conditions: dry bulb 28·0 °C, wet bulb 24·5, sea temperature 29·0, barometric pressure 1011·4 mb, wind NW'ly, force 5, cloud 8/8 cumulus.

Position of ship: 04° 11′N, 99° 17′E.

Note. The *Strathfife* is a Hong Kong Selected Ship.

SEVERE ELECTRICAL STORM

North Atlantic Ocean

m.v. *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observers: Mr M. J. O'Keefe, 2nd Officer and Mr D. J. Horsfield, 3rd Officer.

18 November 1983. At 2000 GMT, with calm seas and clear skies, lightning was observed to the south-east. At first only white/blue sheet lightning was visible, accompanied by one or two isolated cumulonimbus clouds in the distance. However, at 2040 GMT with moderate cumulus cloud cover, intense reddish-white balls of lightning appeared like explosions above the clouds.

By 2200 cloud cover had dramatically increased and banks of cloud were seen to approach from the south-east. As the skies darkened, more sheet lightning was observed and the blinding balls of lightning would flash from SE to SSW in a chain reaction. These flashes were extremely intense and seemed to emanate from the middle of each cloud, completely illuminating the sky and sea for seconds at a time.

As the vessel entered the cloud, white sheet-lightning was visible all round the horizon and moderate rain began to fall. By 2310 forked lightning was seen to the south. The radar screen was now completely mottled, with large patches of cloud on the 24 n. mile range.

At 2330 GMT the rain ended and the first thunder was heard, with intense blinding flashes still lighting up the horizon.

By 0000 GMT on the 19th, with forked and sheet-lightning all around, the vessel experienced a heavy squall in which visibility was reduced to 1–2 n. mile with winds gusting to 18 knots from the SSE. At 0035 GMT precipitation ended and extensive forked lightning was observed over western and northern skies.

By 0120 GMT lightning was no longer evident. While it is difficult to relate the severity of the storm, it was a most spectacular sight and lasted for nearly six hours, retaining its strength throughout.

Weather conditions at 2200 GMT on 18 November: dry bulb 28·2 °C, wet bulb 25·3, barometric pressure 1014·2 mb, wind light airs.

Weather conditions at 0120 GMT on 19 November: dry bulb 23·5 °C, wet bulb 22·2, barometric pressure 1012·0 mb, wind variable, force 1–2.

Position of ship at 2200 GMT on 18 November: 07° 20′N, 14° 56′W.

HEAVY SWELL

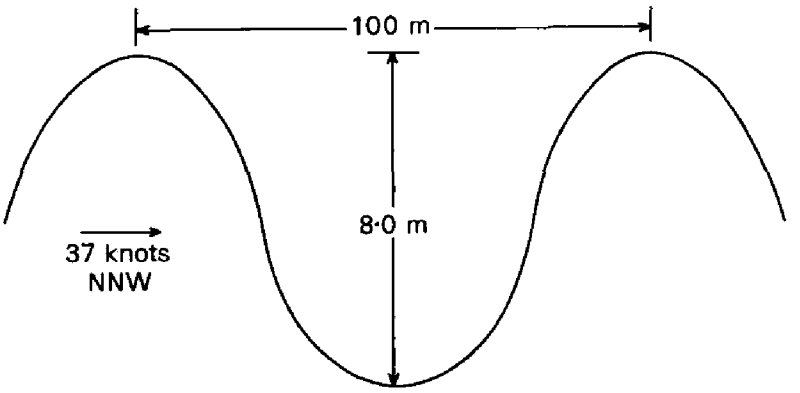
Southern Ocean

m.v. *Keren*. Captain R. Brownbill. At Ascension Island. Observers: Mr P. C. French, 2nd Officer and Bridge Watchkeepers.

27 December 1983. The vessel was in Clarence Bay, on the north-west coast of Ascension Island. During the period from 1200 to 1600 GMT a heavy swell from the NNW built up. The period of the swell was 12 seconds, length 100 m and height 8·0 m, at an approximate speed of 37 knots.

The swell was seen to break with considerable force on nearby shoals and beaches and even caused a local mooring buoy to be swept ashore. The air around the shore line was full of spray although the wind strength did not exceed force 2 from the NE. Temperatures were 27·5 °C dry bulb and 23·2 wet bulb and the barometric pressure was 1013·2 mb.

The observers were unable to determine the root cause of the swell, but its arrival seemed to come as no surprise to the local inhabitants, who took their small boats out of the water three days before the swell commenced. The swell



also coincided with the start of the turtle egg-laying season and some 25–30 large turtles with carapace exceeding 130 cm were able to swim very close to the beach, in the rollers, with no problems at all. It was assumed that the swell, sweeping right up and over the beaches, precluded any attempt at egg-laying.

Position of ship: 08° 00′S, 14° 15′W.

CETACEA

Eastern North Atlantic

m.v. *Lincolnbrook*. Captain R. Davis. Stanley to Las Palmas. Observer: Mr P. G. Powell, Chief Officer.

12–13 October 1983. At 1642 GMT on the 12th, when the vessel was sailing on a course of 019° (T) at a speed of 12 knots, a large school of approximately 100 dolphins was seen heading north, approximately 1½ n. mile west of the vessel. Although they were too far away to permit detailed observation, some of them were seen jumping very high in the air—possibly three times their own body length.

At 1228 GMT on the 13th, with course 017° (T) and speed 11 knots, a large school of dolphins (100+) was sighted ½ n. mile east of the vessel. They approached on the starboard side and played for about two minutes in the bow wave and wake. The dolphins were about 1·5 m long, with grey on their backs and white on their bellies, with no distinct pattern between the grey and white. They were also 'bottle-nosed'. Whilst playing near the ship they were observed to be surfing within the crests of both ship and wind waves and were also seen jumping in a rather clumsy manner on their sides, rather like doing cartwheels. They eventually fell astern of the vessel and did not appear to be heading in any specific direction.

Position of ship at 1642 GMT on 12 October: 26° 00′N, 00′W.

Position of ship at 1228 GMT on 13 October: 28° 17′N, 15° 19′W.

Note. Mr D. A. McBrearty, of the Department of Anatomy, University of Cambridge, comments as follows:

'12 October. High leaping in this fashion suggests *Stenella*, but without more detail I could not enlarge.

'13 October. Here again there is not enough detail on which to make any judgment as to species, but there are several which could fit the observer's description. If pushed I would probably settle for *Tursiops*.'

m.v. *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observers: the Master, Mr D. J. Horsfield, 3rd Officer, and Cadet D. A. Blood.

17 November 1983. At 0925 GMT, as the vessel proceeded south approximately 90 n. mile from the Mauritian coast, a school of 20 dolphins was momentarily sighted heading in a westerly direction. They were small, about 2 metres in length, and cigar-shaped, and leaped above the water in tight arcs. All the dolphins had dark backs and a small recurved fin. There did not appear to be any young ones within the group. Before more thorough examination could be made, they disappeared beneath the ship's bow. There was no evidence of their riding the bow wave.

Weather conditions: dry bulb 24·5 °C, wet bulb 22·3, barometric pressure 1017·8 mb, wind N'ly, force 3–4.

Approximate position of ship: 18° 48′N, 17° 42′W.

At 1810 GMT a school of perhaps 10 whales was sighted close by the ship. As the ship passed they remained submerged but surfaced quite shortly after. They appeared to be lolling lazily in the water and the only exposed parts were the backs and fins. It was difficult to estimate the size—they were probably 6 metres in length. As the sun was setting at the time it was not easy to perceive their colour but they were more than likely light brown/grey. Blows were sighted and one had white colouring on its back (possibly barnacles). The most definite aspect of the whales was an extremely recurved, small fin which appeared very low and dark in colour. The whales kept very close together although no young ones were sighted. They were possibly pilot whales.

Weather conditions: dry bulb 24·7 °C, wet bulb 23·3, barometric pressure 1013·4 mb, wind NNE, force 2.

Position of ship at 1810 GMT: 15° 44′N, 17° 43′W.

On the following day, 18 November, at 1025 GMT, when the vessel was approximately 70 n. mile from the coast of Guinea, a school of 20 common dolphins was observed on the port quarter. They had dark grey backs and flippers with the distinctive figure-of-eight pattern on their flanks. All had short beaks, slender and tapering bodies, and small, recurved fins. Some showed light cream-coloured bellies. They tended to travel in pairs and appeared to travel at great speed under water. They did not seem to be headed in any particular direction and were content to play in the ship's wake, leaping high into the air and belly-flopping, jumping as pairs in wide arcs, and chasing each other in circles. Some were observed to spin about their longitudinal axes, but they were not close enough to be confirmed as spinner dolphins. These appeared larger (about 3 metres in length) and darker in colour.

Weather conditions: 28·9 °C, wet bulb 26·0 wind NW, force 2.

Position of ship: 10° 23′N, 17° 12′W.

Note. Mr McBrearty comments as follows:

'17th, 0925 GMT. Not really enough information on which to try to determine the species; what there is suggests either *Stenella* or *Delphinus*.

'17th, 1810 GMT. It is possible that the observers are correct and that these were pilot whales. In this ocean area they would be the short-finned pilot whale *G. macrorhynchus*. This species often does have a light greyish 'blaze' on the dorsum just behind the fin.

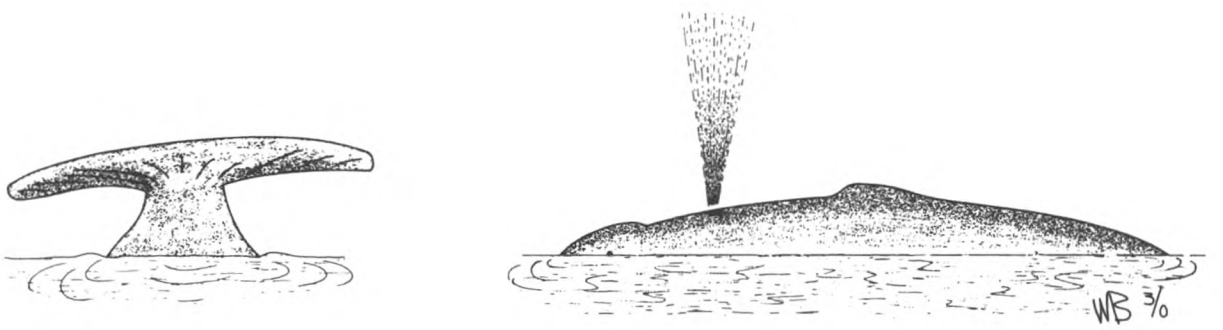
'18th, 1025 GMT. The figure-of-eight pattern is diagnostic of *Delphinus delphis*, the common dolphin. They are normally very fast swimmers and excellent jumpers, more than twice their own height being easily achieved although longer, flat jumps are the norm. The re-entry from a leap may be either in a smooth arc, flat on the side or on the back.'

Great Australian Bight

m.v. *Mahsuri*. Captain J. F. Rowe. Napier to Bandar Abbas. Observers: Mr M. Bray, 3rd Officer and Mr I. McEachem, Chief Engineer Officer.

14 October 1983. At 1400 ship's time a large splash was observed some 3 n. mile or so ahead of the vessel. This was caused by a whale floundering out of the water (it was thought later that this could have been a signal to the other whales, warning them of the presence of the ship).

On approaching, more and more whales became visible until at least 30 were counted in a radius of 3 n. mile from the ship. The whales were just breaking the surface and 'blowing' every 40 seconds or so. Some of the whales would let the ship get within 100 m and then they would dive, appearing several minutes later well astern of the vessel.



They were all of a grey/green colour, but the fact that they were semi-submerged made observation of pectoral fins and undersides difficult. Also clearly visible were the small rounded dorsal fin or hump and occasionally a tail as one of them dived. The average length was estimated by comparing the width of the wake with the length of the whales crossing it, and was found to be about 18 m. The school was moving slowly in a SE'ly direction and many of the whales were seen in pairs.

Air temperature 15·8 °C, sea temperature 15·3.

Position of ship: 37° 20′S, 130° 00′E.

Note. Mr McBrearty comments as follows:

'There seems little doubt that these are humpback whales (*M. novaeangliae*). The drawings show enough of the recognition characteristics (vertical blow from behind the front of the head, a squat dorsal fin and flukes raised clear of the water on a deep dive) to dispel any confusion with other species.'

SHARKS

Eastern North Atlantic

m.v. *Lincolnbrook*. Captain R. Davis. Stanley to Las Palmas. Observer: Mr P. G. Powell, Chief Officer.

11 October 1983, 1230 GMT. A large shark was seen moving southwards, with fins breaking surface. At 1520 GMT another large shark was seen moving southwards close to the ship's port side. The dorsal fin was tall but rounded on top, and the tail fin was pointed and was seen to twist about 20° on either side as the shark swam. The shark measured about 3 metres from dorsal to tail fin

and may have been following a trawler which was approximately 1½ n. mile ahead. At 1630 GMT a third shark was seen well astern of the ship as it crossed the wake.

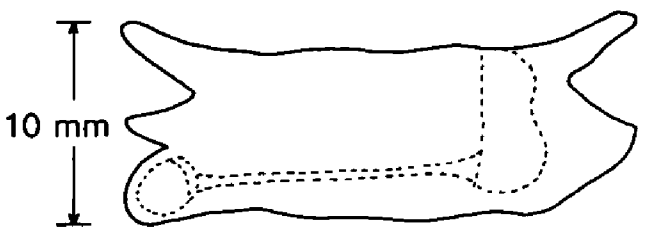
Position of ship at 1230 GMT: 20° 58′N, 18° 01′W.

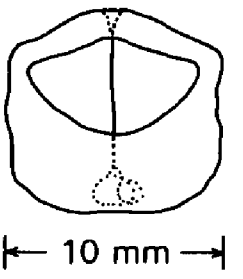
MARINE LIFE

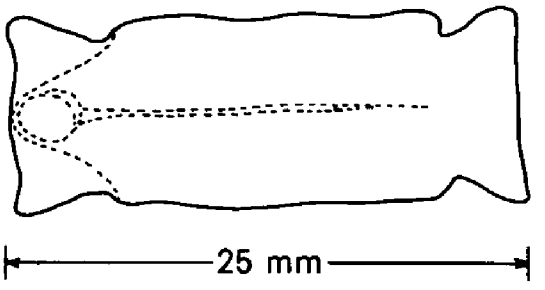
Arabian Gulf

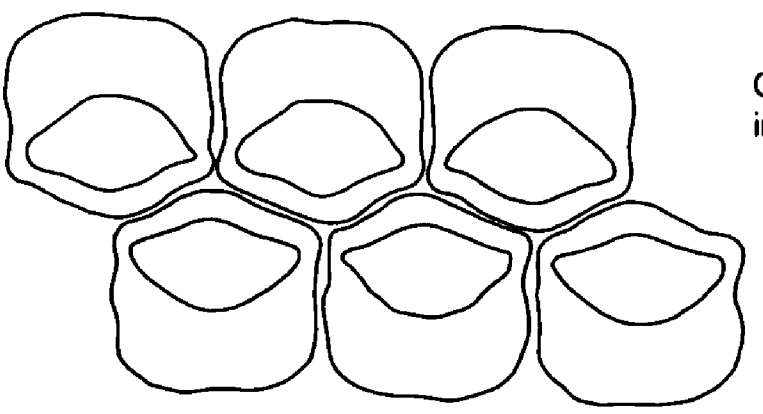
m.v. *British Kennet*. Captain P. Waller. At anchor off Lavan Island. Observers: Mr H. Gates, 2nd Officer and Mr K. Rudd, 3rd Officer.

21 December 1983. At 0900 GMT large numbers of submerged objects were sighted drifting past the vessel. In the previous couple of days there had been a fairly large swell of up to two-and-a-half metres from the west but this had died down to about a half-metre swell. The vessel was lying in a southerly direction at anchor off Lavan Island and the objects were drifting past in a northerly direction. A bucket was used to collect a sample which once brought on board was found to consist of small animals living in colonies, forming chains









Chains up to 3 m in length observed

of up to three metres in length. Each of the small transparent animals was connected to its neighbour in several places. They appeared to be filtering or pumping water through a hollow part of their bodies which ran along the top of them. There was a dark brown nucleus at one end and attached to this was a yellowish/brown segment. At the after end, internally there was a large 'B'-shaped segment which divided the hollow section into two. There was a central section which ran from the nucleus to the 'B'-shaped piece. The outer casing was soft and transparent, so the central parts could easily be seen.

Observed at the same time were small jellyfish, 10–13 cm long with dark brown upper parts and transparent under parts. It was thought that the small animals were the young of the jellyfish.

Sea temperature: 25·1 °C.

Position of ship: 26° 46′N, 53° 21′E.

Note. Dr F. Evans, of the Dove Marine Laboratory, University of Newcastle upon Tyne, comments as follows:

'The animals so carefully drawn and described were salps. They bear no relationship to the jellyfish seen at the same time, being much more complex in structure. There was a report of similar animals from the *Sivand* in March 1982. Salps have alternating generations, an asexual solitary generation which reproduces by budding and, as in this case, a sexual generation of individuals joined together in chains. Each chain has arisen from a single solitary parent. Salps grow and reproduce at a great rate in good conditions. It has been reported that swarms of them have at times become dense enough to clog the engine-room intakes.'

OWL SIGHTING

Eastern North Atlantic

m.v. *London Enterprise*. Captain R. J. C. Foale. Philadelphia to Escravos. Observers: Mr J. L. David, 2nd Officer, Mr G. Lazarus, Catering Officer and other members of the ship's company.

20 October 1983, 1200 GMT. The vessel was about 50 n. mile off the coast of Sierra Leone and proceeding in a SE'ly direction at the time of first sighting. The prevailing wind was NE'ly to E'ly, force 3 and it was assumed that the bird had been carried out from the land by this wind. Visibility was good, about 8 n. mile, despite a slight horizon haze along the skyline. It was a very hot day (29·2 °C) with almost blue, cloudless skies.

The owl was first sighted on the main deck, apparently exhausted, having just virtually collapsed where it had landed, in the middle of a tank area. After a while it was noted to have moved a short distance under the deck-cargo pipelines, seeking shade and shelter from the intense sun. However, as the ship's head altered and the sun's path changed, bringing that area back into the direct sun, the bird made no further effort to move back into the shade. It allowed a crew member to approach it and touch it, without any of the expected sudden reactions, apparently only dimly aware of his presence, and past caring anyway, such was its weakened condition.

Once it became clear that the bird was unable to protect itself from the sun, let alone fly away, the Catering Officer took it to the vessel's hospital to prevent it from dehydrating completely and to offer it some protection. The owl was carried, without a struggle, and remained, standing, where it was placed in the hospital. At no time during the three days that it was on board did the owl show any sign of alarm or try to escape.

The owl was, as one would have expected, short, squat and flat-faced, with a small black, hooked beak, 'spectacled', with furry leggings and wicked-looking talons, three in front and one at the back. Overall it was of a brown colour,

composed of two basic shades, one a dark mahogany brown and the other a lighter, honey-sable brown. These two colours covered the entire body, in different amounts and patterns and mixed combinations. Its legs were totally honey-brown, looking like long fur of very fine, soft down, extending from just above the 'ankle' right into the body feathers. Its entire underparts, especially the crop area, were predominantly the lighter sable-honey brown, mottled with the darker brown in spots on the again very soft underbelly feathers, becoming streaks towards and over the crop feathers.

From the tip of its tail to the crown of its head, including the tip of its wings, the feathers were almost entirely the dark brown shade, broken with flecks of the sable brown. As always with owls, it was the eyes that formed the most strikingly accentuated features with the 'owlish' goggles around them. In the bright sunlight on deck, they were a vivid deep sky-blue of piercing intensity. Once in the darker accommodation, however, they too appeared much darker, being virtually black. At all times the speed of response to the sudden stimuli of light on its pupils was incredible. Using a direct flash occasionally for photographs (which, in retrospect, may not have been the kindest thing) it was impossible to see the eye 'pinpoint' down and then the rapid expansion back to the 'normal' dim-light condition almost as fast, and only just detectable, both pupils moving open to the large, dark 'holes' simultaneously. The eyes were double-lidded, a thin water-opaque lid moving slowly, langorously up from the bottom of the eyes and a thicker, second whitish eyelid occasionally veiling downwards, starting from the top, inner corners of the eye and moving from the bridge of its nose (beak) diagonally down and across the eye towards the bottom part. This second lid was never seen to cover the entire eye at any time.

The owl's 'glasses' comprised a circle of tufts about 3 cm radius from the middle of each eye, accentuating the eyes themselves and its flat face. The tufts themselves were in a band about half a centimetre wide, perfectly aligned side-by-side in 'spoke' fashion (very much like the rubber ribbing on a bicycle tyre, where the knurled wheel of the dynamo runs) radiating about the eye's centre in a ring, as the frame of a pair of glasses. These rings were sandy sable brown and dotted with thousands of minute white specks. At the top of the beak, on the bridge of its nose, between the eyes, was a lighter sable tuft as if pinched up with fingers—à la Denis Healey's eyebrows. There were no visible signs of 'ear' tufts etc. at all.

Overall dimensions: 30 cm standing erect, 11 cm scrunched down 'sitting', 32 cm from crown to tail, 98 cm across wingtips, 10 cm wide body at the widest part, and no-one was brave enough to measure its talons.

For the entire time on board it was not seen to eat or drink anything at all, though the many obvious things were attempted, including water, chopped liver, nasty bits from the plastic bag in a chicken, even to the extent of diced rabbit rolled in feathers (which, apparently, is a splendid tab rab for an owl). All to no avail. The bird became neither stronger nor weaker and its crop seemed no different after three days on board. It was left outside in an open box at night and at various times during the day but it did not move at all. Attempts to cast it up into the air also failed; it just would not let go with its talons. Then on the morning of the fourth day, early just after breakfast, it took off from the hand and flew strongly towards the coastline of Escravos, Nigeria, some 15 n. mile away. (*See* photographs opposite page 185.)

Position of ship: 06° 19′N, 12° 17′W.

Note. Commander M. B. Casement, Chairman of the Royal Naval Birdwatching Society, commends the excellent description and considers that the bird was probably a West African Wood Owl (*Ciccaba Woodfordi*), which is widely distributed in Africa and lives in the forests of Senegal and Sierra Leone and the Central African Republic south to Gabon and Congo.

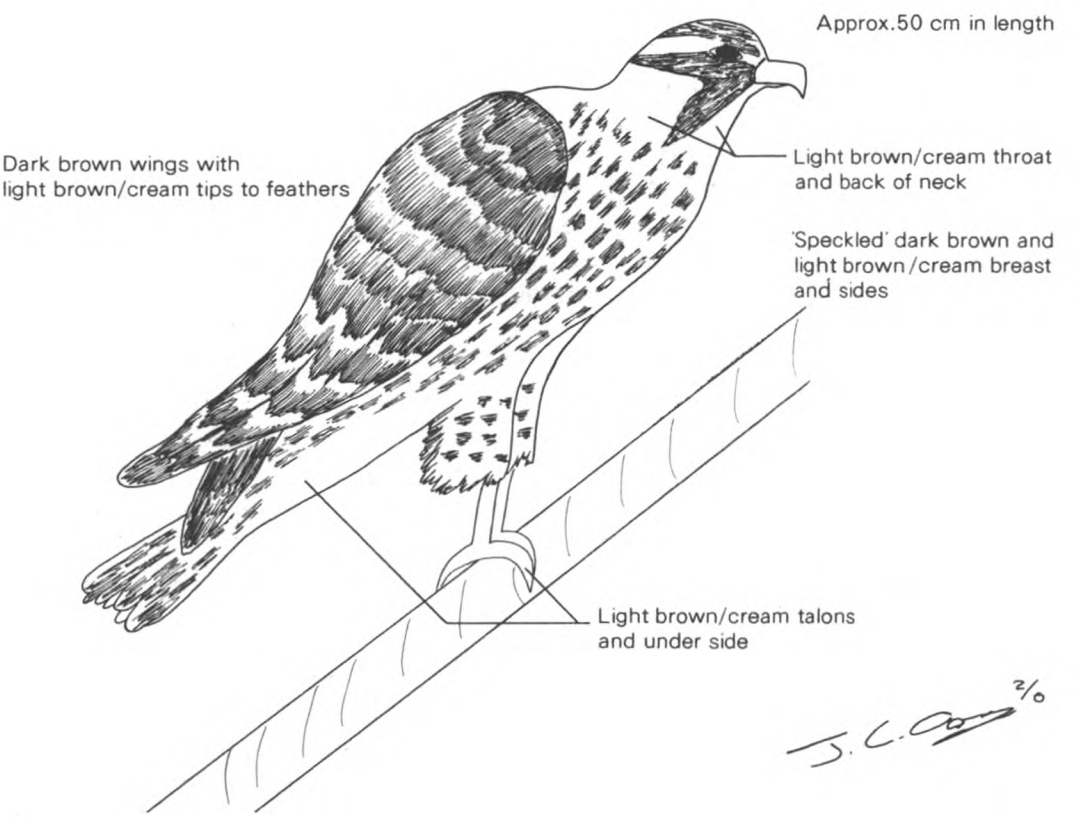
BIRDS

Western North Atlantic

m.v. *Roachbank*. Captain T. D. Scott. Cape Town to New Orleans. Observers: the Master, Mr J. C. Osman, 2nd Officer, Mrs Osman and other members of the ship's company.

31 October 1983. At 2200 GMT, when the vessel was approximately 27 n. mile NE of Punta Lucrecia, Cuba, the bird landed on a wire topping lift directly in front of the wheelhouse and proceeded to eat the small bird it carried in its talons. This was done by gripping the bird between its right talons and ripping the flesh off with its hooked beak.

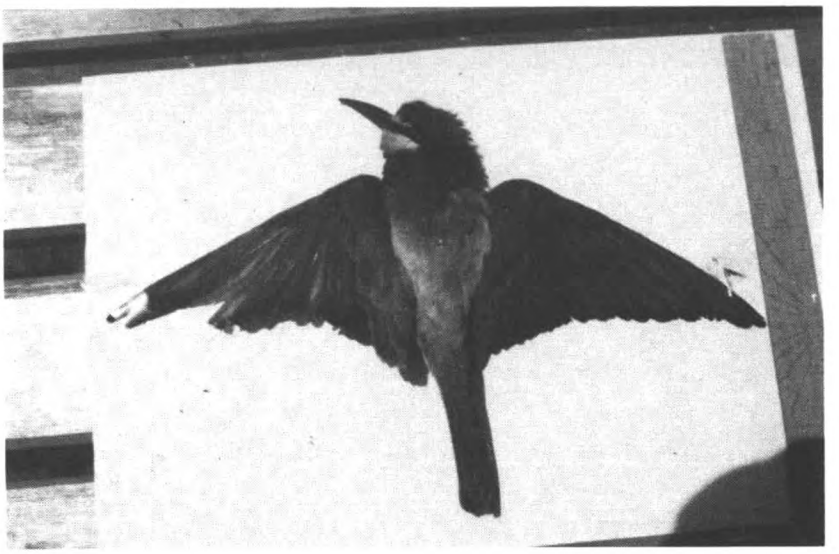
Distinctive features of the bird were its hooked light-grey beak, 'pantaloon-like' feathers reaching half-way down its legs, and the fact that when it was standing the wingtips were folded one over the other.

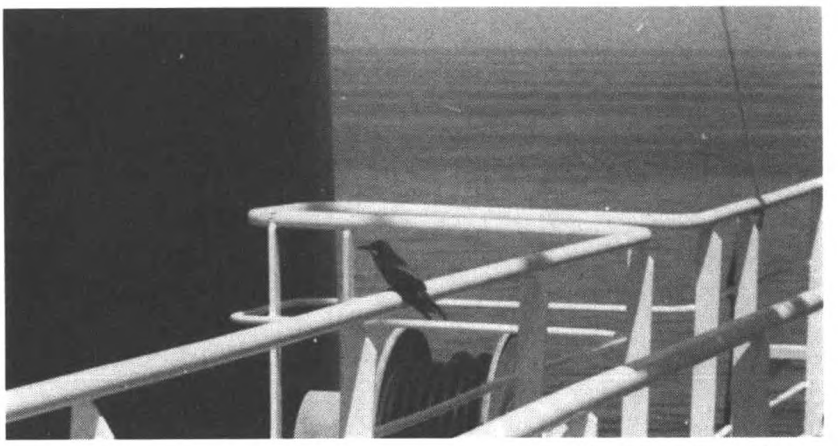


The bird's plumage consisted of dark brown flecks on a beige background, the wings being mostly dark brown with the tips of the feathers a cream colour. The top of the head was dark and the sides had a distinctive arrow shape and dark brown patch. The throat and back of the neck were a light brown/cream colour and the breast and sides of the body were flecked with dark brown. The leg feathers were also flecked with brown but in a triangular shape and there was a light brown/cream patch underneath behind the legs.

The bird remained in the same position overnight until the vessel had reached the northern end of the Old Bahama Channel. It was shortly after dawn at 1115 GMT when the bird took off, circled the ship, and headed off at wave-top level in a northerly direction towards the lower end of the Florida Keys. The observers believed it to have been a Peregrine Falcon.

Position of ship: 21° 17′N, 75° 13′W.





Photos by C. D. Mercer

Birds found aboard m.v. *Providence Bay* (*see* page 197).

Opposite page 197

Bird found aboard m.v. *Gandara* (*see* facing page).

Eastern North Atlantic

m.v. *Providence Bay*. Captain M. Lees. Port Said to London. Observer: Mr C. D. Mercer, L/S.

— October 1983. A bird was observed flying near the funnel. It disappeared, and it was thought to have gone down the funnel. Some time later its body was found in a stores box, stowed alongside the funnel. A photograph of the bird appears at the top of the art page opposite page 196.

Approximate position of ship: 40°N, 10°W.

Note. Captain A. S. Young, of the Royal Naval Birdwatching Society, comments as follows:

'This bird is a Sooty Tern (*Sterna fuscata*), a very common dark tern found in all tropical waters, very pelagic. It is a pity that this one came to grief; very good photo.'

Arabian Gulf

m.v. *Providence Bay*. Captain M. Lees. Suez to Suez via Mina Qaboos. Observer: Mr C. D. Mercer, L/S.

— October 1983. Two of the birds shown in the bottom two photographs opposite page 196 were observed. On the following day the dead body of one of them was found aft, beside a new type of container, designed to carry liquids. These containers appear to be empty but inside they have struts supporting a tank. Unlike the other containers for carrying liquids, these have closed-in sides, similar to those of normal containers, but are open at both ends. Perhaps the bird attempted to fly through the container, and hit one of the struts or the tank?

Approximate position of ship: 27°N, 50°E.

Arabian Sea

m.v. *Gandara*. Captain C. McKenzie. Suez to Taiwan via Singapore. Observers: the Master, Mr J. N. Balkwill, 2nd Officer, Mr J. B. Moulds, 3rd Officer and other members of the ship's company.

2 October 1983. During the morning as the vessel passed to the north of Socotra, a large heron-like bird was found on deck under the ship's manifold, peering at the crew chipping away nearby. As the land receded, the bird showed no sign of attempting to fly back whence it came, and it was decided to feed it and keep it alive in the hope that it would fly away when land was next sighted, in view of the fact that it was becoming noticeably weaker day by day. It soon became easy to catch and was force-fed with sardines at the rate of about two a day.Water was very successfully administered with a plant spray (*see* photograph on facing page). After a week had passed the bird still seemed rather feeble, so a vitamin tablet was crushed up and dissolved in its drinking water. The next day the bird had 'perked-up' considerably and showed much more interest in life. So much so, in fact, that just as it was about to be fed, it attacked the 3rd Officer. He narrowly missed having an eye stabbed, and retreated with a cut nose! From then on the 3rd Officer would have nothing further to do with the bird, so the job of feeding and watering it was left to the 2nd Officer. It was found that if a slice of sardine/tuna/mackerel was lined up in the bird's beak, it would lift its head up and swallow the fish quite happily without any force-feeding. It ate as much as a whole tin of sardines a day sometimes. During the time that the bird was on board, it was very unsteady on its feet, and when not walking around, would 'sit' in the way shown in the photograph, especially if the ship was rolling or pitching, or if there was any appreciable wind.

The vessel bunkered at Singapore LPG Anchorage on 11 October. Although the bird was encouraged to fly away off Singapore, it showed no interest in leaving the ship—indeed, it almost seemed as though it had forgotten how to fly. During the short stay at Singapore the bird still showed interest in food, but on the passage to Taiwan it became weaker again each day and eventually lost its appetite altogether.

On the morning of 15 October (two weeks after it joined) it was found lying on an exposed part of the deck, buffeted by the wind and in a most dejected state, so it was quickly put out of its misery.

Position of ship on 2 October: 11° 30′N, 55° 00′E.

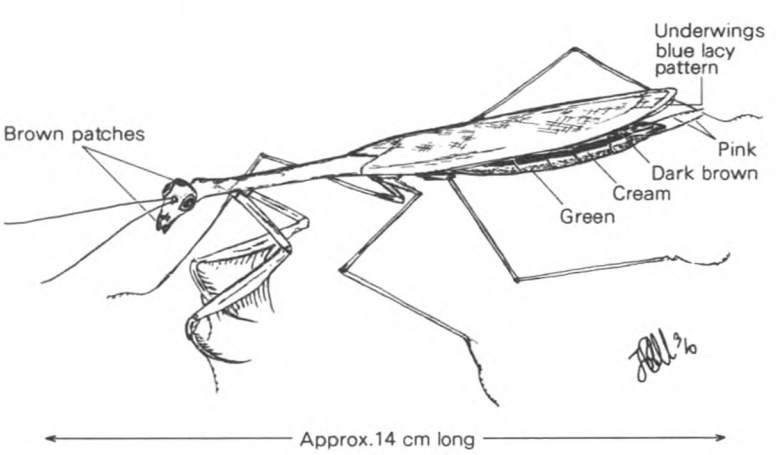
Note. Commander Casement has identified the bird as a Grey Heron (*Ardea cinerea*).

PRAYING MANTIS

Indonesian waters

m.v. *Gandara*. Captain G. Hepple. At Djakarta. Observers: the Master, Mr J. N. Balkwill, 2nd Officer, Mr J. B. Moulds, 3rd Officer, Mr D. J. Thurston, 3rd Officer and Mrs R. Thurston, Mr R. Boyle, Radio Officer, and other members of the ship's company and pilots.

29 October 1983. The vessel was berthed close to a fish market. A large number of insects alighted on board. These consisted mostly of crickets and flies but there was one large, green praying mantis which was found lurking under the port bridge-wing dodger. It remained there for several days, indeed until the ship sailed for Singapore, when it flew into the bridge.



It was at this stage that it was found possible to feed it by hand provided that the food offered was still alive and kicking. So during the morning several flies were stunned with a fly swat and the mantis would then strike at them as soon as they recovered enough to move around.

As it ate about six flies a day, the supply soon ran out, especially as some of the flies were 'stunned' just a little bit too vigorously and therefore rendered unable to move enough to entice the mantis to eat them. And so a new source of food was sought and it was soon discovered that the crickets that had been annoying the ship's company with their chirrupping were ideal, if not a little more difficult to stun. Daily consumption was up to four crickets, and watering was required every two days (achieved with a water pistol!)

By this time the *Gandara* had called at Singapore and Penang and was sailing west towards Yanbu (Saudi Arabia). On 5 November it was noticed that the mantis's abdomen had become rather heavy and swollen, and it was thought that it was perhaps being killed by overfeeding. On 7 November it refused food altogether. The next morning, however, for several hours it deflated, foaming at the rear. Soon a large pile had developed, stuck to the bridge front bulkhead. Originally white, this pile soon turned yellow, giving the appearance of lightly toasted meringue. After laying, the mantis (now assumed to be female) started to rub her rear over the mound and later regained her appetite. During her stay on board it may be noted that no male mantises were observed and no remains of one were found.

On 18 November, again in the early hours, another splodge identical to the first was deposited. It was now assumed that fertilization need not necessarily take place before egg-laying, and there was some doubt as to whether or not the mess should be wiped up.

On 29 November the mantis disappeared from the bridge while the vessel was berthed at Livorno (Italy). Foul play was suspected.

Position of ship on 29 October: 06° 09′S, 106° 50′E.

Note. Mrs J. Marshall, of the British Museum (Natural History), comments as follows:

'It is not necessary for fertilization to occur immediately before egg-laying in mantids—it is just possible that the female had already been mated, and that the eggs are fertile. All mantids lay a protective ootheca around the eggs; size and shape may vary with different species, harden after laying. This mantis is *Tenodera* sp., there are several similar species in this genus.'

BIOLUMINESCENCE

Western North Atlantic

m.v. *Overseas Argonaut.* Captain T. S. Nurcombe. Singapore to Trinidad via Cape of Good Hope. Observers: the Master and Mr K. Hewlett, 3rd Officer.

5–6 November 1983 (Guy Fawke's Night), 2330 to 0130 GMT. Between these times small patches of bioluminescence were observed and it was decided to use the Aldis lamp. Intense balls of light were seen, most of which tried to move out of the beam of light. The observer had to be behind or close to the Aldis to see these balls, which were about the size of a medium marble. Some were yellow, some white and some red. They appeared to be close to if not sometimes on the surface. They were very similar to those reported by the *Overseas Adventurer* from the Indian Ocean in November 1980. This time, though, there was very little associated bioluminescence. I know these have been explained as fishes' eyes, but why are they singular—and surely there cannot be so many one-eyed fish about. Also the intensity of the light was the same forward of the beam, on the beam and abaft the beam. Surely this would mean a fish looking at the beam while swimming away. No shapes were visible through the binoculars. The motion to get out of the way was a rapid, random motion. Sometimes only the person with the Aldis lamp could see them. Some were not as bright as others.

Course 297° (T), speed 13·5 knots, with favourable current.

Position of ship at 0100 GMT on 6 November: 02° 00′N, 43° 45′W.

7 November, about 0000 to 0330 GMT. Observers: the Master, Mr J. W. W. Peters, Chief Officer, Mr M. Blake, 2nd Officer and Mr K. Hewlett, 3rd Officer. The same phenomena were observed as on the previous night. No moon. Some of the balls tried to escape from the light beam and some stayed still. The bridge-wing searchlight was also used in a fixed position. The observers were

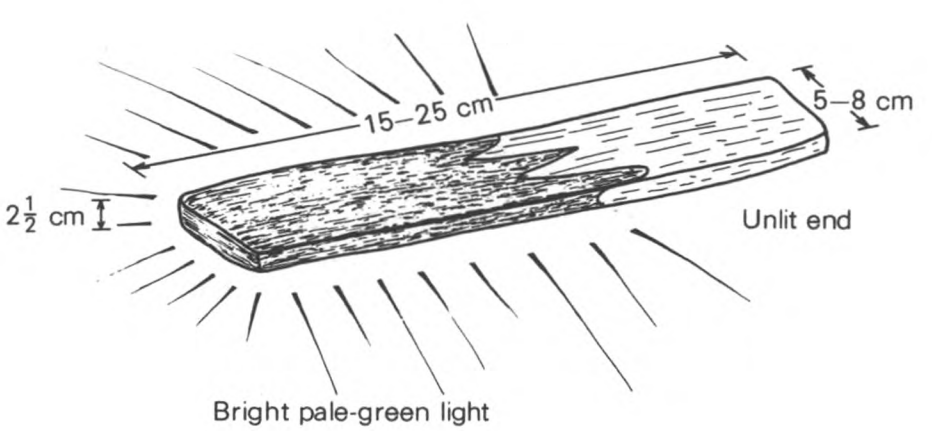
not able to see beyond about 90 metres away. There were occasional flashes of bioluminescence away from and also down the side of the hull. Very few were seen on the 12–4 and none on the morning 4–8 watches. The master went down to the main deck. With the Aldis being used from the bridge, no balls at all could be seen, though occasionally some were seen in the fixed beam of the searchlight. No shapes were visible, but it was found difficult to train the binoculars on them from the main deck. They seemed to be no deeper than about 30 centimetres.

Position of ship at 0036 GMT on 7 November: 09° 14′N, 57° 15′W.

Great Australian Bight

m.v. *Almeda Star*. Captain J. G. Reeve. Khor al Fakkan to Bluff (N.Z). Observers: Mr W. R. Wright, 3rd Officer and Mr K. Johnson, A/B.

1 December 1983, 1635 GMT. On this moonless night, with many of the stars blotted out, the observers saw, fine on the port bow, a lighter patch of water speckled with bright green spots of light. As the vessel passed this area at a distance of 20 metres it was noted (with the aid of the Aldis lamp) that the spots of light came from small objects in the water. They were about 5–8 cm wide, 2½ cm deep, and varied between 15 and 25 cm in length. They were on the whole rectangular in shape and did not appear to be moving in the water. After the vessel had passed this clump, isolated examples of this 'creature' continued to be seen scattered in the water for about the next 20 minutes. It was also noticed that some of them were lit, and others not, even when disturbed by the ship's wake. Another prominent feature was that not all of the 'creature' was illuminated. If they were not fully lit, then it appeared that one end or the other would be dark, never the centre section. After a period of about 20 minutes all the lights disappeared and no more were seen for the rest of the watch. The sketch shows them as seen from the bridge.



Course 110° (T). Speed 16·0 knots. Height of eye 18 m.

Weather conditions: dry bulb 13·0 °C, wet bulb 10·8, sea temperature 14·0, barometric pressure 1019·6 mb, wind ESE, force 3. Swell S′W, period 6 seconds, height 2 metres.

Position of ship at 1800 GMT: 34° 48′S, 128° 12′E.

Note. Dr P. J. Herring, of the Institution of Oceanographical Sciences, comments as follows:

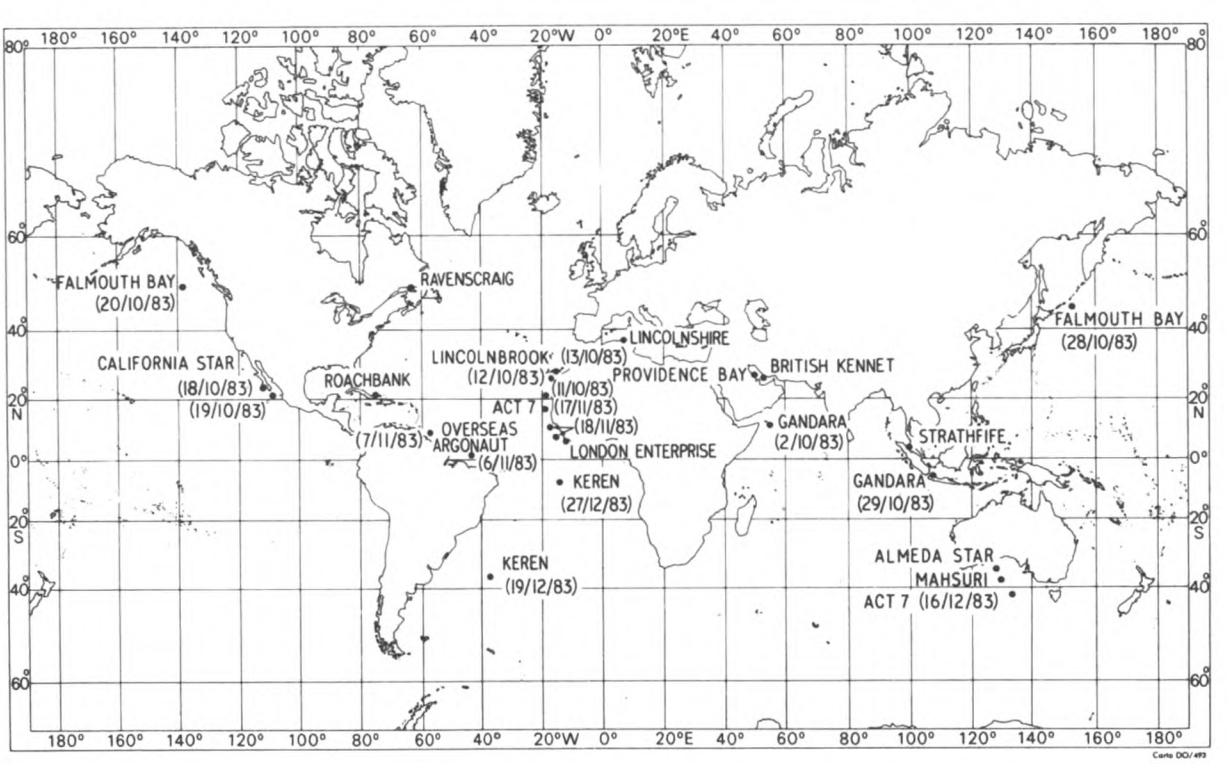
'This description of 'light sticks' in the water leaves no doubt that *Pyrosoma* were the cause. These are colonial sea-squirts, forming a cylindrical colony, usually from 8 to 30 cm in length and brightly luminous when disturbed. The luminescence is a long glow rather than a short flash and can occur at either end of the colony or over its whole length. They will respond to illumination by glowing themselves. Some species have been seen by divers in coastal Australia to reach almost 10 metres in length. Their name, *Pyrosoma,* comes from the Greek for 'fire-body'.

m.v. *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observer: Mr D. J. Horsfield, 3rd Officer.

6 December 1983. At 1235 GMT diffuse, milky-white patches in the form of circles appeared near the ship for a short period. These patches were very sparse but as the ship came closer myriads of brilliant white 'balls' of bioluminescence appeared in the bow wave. They were approximately 20 cm in diameter but it was impossible to describe their motion as they only appeared momentarily. More circular patches were observed all around the ship and these were about 8 metres in diameter. The phenomen passed quickly and by the time the Aldis lamp had been rigged they had disappeared. There was no evidence of 'cartwheel spokes' in the patches. One noticeable aspect was the fact that the sky had previously been very cloudy. When the bioluminescence appeared there was 8/8 cloud cover and when it had disappeared there were openings in the cloud. It was also noticed that waves broke over the organisms without disturbing them.

Weather conditions: dry bulb 10·8 °C, wet bulb 9·5, sea temperature 12·2, barometric pressure 1010·1 mb, wind W, force 5, fine and clear.

Position of ship: 42° 20′S, 133° 58′E.



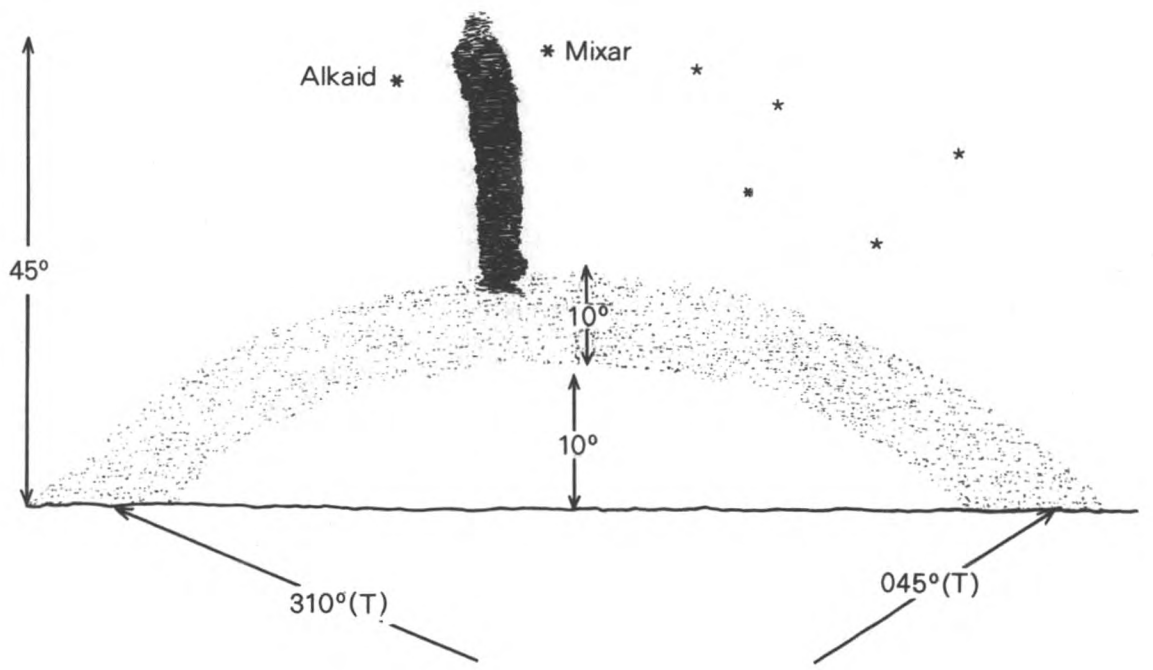
Position of ships whose reports appear in *The Marine Observers' Log.*

AURORA BOREALIS

Gulf of St Lawrence

m.v. *Ravenscraig*. Captain C. R. Bamford. Seven Islands to Hunterston (Clyde). Observer: Mr P. J. Hunter, 3rd Officer.

30 October 1983. At 0050 GMT a homogeneous arc of moderate brightness was sighted. Emanating from the arc, at the time of observation, was one bright shaft, which appeared between the stars Mixar and Alkaid of the Great Bear. This shaft extended to approximately 45° elevation. In the following 6 minutes this shaft appeared to move westwards 10°, gradually diminishing.



By 0058 GMT only the glow from the arc remained. This was a pale grey in colour and did not appear to move or diminish throughout the night. The weather was fine with a clear, starlit sky. A trace of cloud could be seen on the horizon, rising to an elevation of 5°.

Position of ship: 49° 56′N, 63° 00′W.

Note. The April 1984 edition of *The Marine Observer* included a report of the sighting of an 'unknown floating object' by m.v. *Benledi*. We are indebted to Mr B. A. L. Cranstone, Curator of the Pitt Rivers Museum, University of Oxford, for the following comments:

'The peculiar pagoda-roofed raft seen at sea by the officers of m.v. *Benledi* in the Bay of Bengal is almost certainly of Buddhist origin, from Burma, rather than Hindu.

'We have some old photographs, dating from about 1910, of a ceremony performed on Inle Lake, in the southern Shan States, in which such a raft was used to take images on a peregrination of the lake. Although of course details are different, the general form is similar: the pagoda-shaped roof, the use of umbrellas, the platform or altar on which the figures stood.

'I can only suggest that it drifted down a river, but how it survived so far out to sea is a mystery. I assume the weather had been very calm. The Irrawaddy delta is a long way to the north, but the coast of Tenasserim extends far to the south of the delta.'

551·594·5:59:92

Experts comment on the Experts

The *Marine Observers' Log* and letters to Masters of observing ships regularly include references to the various experts who identify and comment upon reports of marine life and other phenomena submitted by ships' staff. As a small sign of our continuing gratitude to them, we asked our four main contributors to describe themselves for readers of *The Marine Observer,* and their replies follow. They were also persuaded to send photographs of themselves, and these appear opposite page 204.

Dr Frank Evans, PhD, BSc (Dove Marine Laboratory, Cullercoats)

1942. Cadet at the School of Navigation, Southampton. (Are there any other survivors from South Stoneham House, that marine outpost of the Gulag Archipelago?)

1943. Apprentice with the Anglo-Saxon Petroleum Co. (now Shell Tankers). Among the ships I served on was the merchant aircraft carrier *Adula,* a cargo-carrying tanker fitted with a flight deck and flying Swordfish aircraft. She sailed regularly in the convoys from the Clyde to Halifax, N.S.

1946. Passed for temporary second mate. Signed on as fourth mate with the now-defunct passenger company, Bullard & King, trading to South Africa.

1949. Passed for first mate. Left the sea and enrolled at London University as a zoology student. During subsequent long vacations I served as second mate with a seedy tramp company called Court Line (remember the failed holiday firm of later years?) and with the RFA.

1952. Graduated BSc.

1952–55. Engaged on *Petula* business. This was a hare-brained scheme by which another biologist, a meteorologist and I cajoled the scientific world into buying us the 12-ton yacht *Petula* (built 1899) and funding us in a drifting voyage from Dakar to Barbados, towing a small raft. The principal purpose was the study of sea-surface life. The *Petula,* under my command, left Plymouth in August 1953 for Dakar. In November, with the raft in tow, we set out from there for the West Indies along the course of the North Equatorial Current. We reached Barbados 12 weeks later. Average speed through the water, 1 knot. From August 1953 to February 1954 the *Petula* was a Meteorological Office Selected Ship and you have our logbooks.

1955. Appointed zoologist, subsequently Lecturer in Zoology, at the Dove Marine Laboratory, University of Newcastle upon Tyne.

1958. PhD with a thesis entitled 'The crustacea of the *Petula* Transatlantic Expedition'. The *Petula*'s voyage produced a number of scientific papers including, in the present context, 'The *Petula*'s meteorological logbook', *Mar Obsr,* October 1956, and 'Vertical series of sea and air temperatures close to the surface, taken aboard the yacht *Petula* in the tropical Atlantic', *Q J R Met Soc,* October 1961.

With a couple of intermissions I have been at the Dove since 1955. In 1958 I went to Ghana for two years to lecture, and in 1966 I was seconded to the Royal University of Malta for two years as Director of Marine Biology.

Since becoming an academic I have specialized in plankton, at first of the tropical Atlantic, subsequently of the North Sea. My lab. owns a 50-ft stern trawler of which I am (inevitably) manager, and I spend time at sea throughout

the year collecting plankton. Here, we offer a degree in marine biology, for which I teach plankton ecology and physical oceanography and over the years I have supervised many candidates for higher degrees including, currently, Paul Horsman, the Marine Society's sea-going tutor who is collating merchant ship observations of sea-surface life in met. logbooks deposited with you at Bracknell.

In 1976 was founded a society for marine biological recording in the NE Atlantic and the North Sea called 'Porcupine'. 'Porcupine' is named after the naval ship which in 1869 first demonstrated the existence of life in the deep ocean bed. (She also found the Porcupine Bank, 120 n. mile west of Ireland.) The association is open to any interested person (£3 per annum). For the last three years I have been editor of the newsletter.

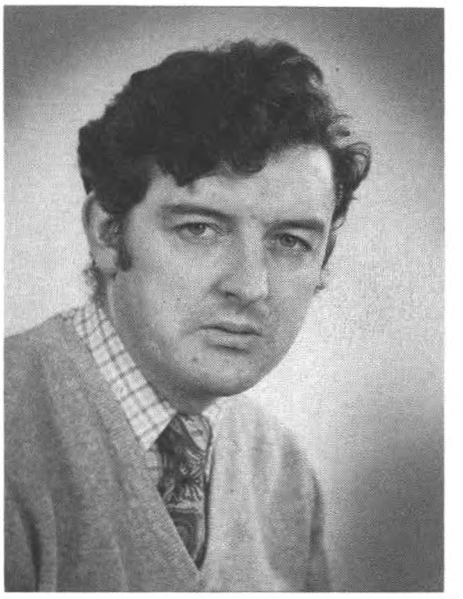
All of the above sounds a lot more solemn than it deserves. Outside the laboratory I have put my rusty knowledge of nautical astronomy to use in a small, not to say minute business, supplying wall sundials by post. In this connection I find such devices as A, B and C tables, haversines and logs to the base 10 to be redundant and that, for instance, azimuths may be more quickly and accurately worked out using the cosine formula for spherical triangles and a programmable pocket calculator. (You can even do longitudes by lunar distance on a calculator with ease—for the formula see Capt. C. H. Cotter's admirable book 'A History of Nautical Astronomy', one of the books I would choose to have on a desert island. It might be fun to revive the totally useless art of taking lunars; a lot like making sundials or hour-glasses.)

Dr Peter J. Herring (Institute of Oceanographical Sciences, Wormley)

I was born in 1940 and even as a small boy I can remember having a great enthusiasm for bugs and beetles and gradually this became channelled into a general interest in more formal biology. My enthusiasm for marine biology was first kindled while at Epsom College by Sir Alister Hardy's recently published (1956) New Naturalist volume 'The Open Sea; the World of Plankton'. In 1959 I went up to Cambridge to read Natural Sciences and found myself being taught marine biology by Richard Bainbridge, a colleague and former pupil of Sir Alister's, who later became my research supervisor. After taking a degree in zoology I spent three months of the summer of 1962 at the Woods Hole Oceanographic Institution during which time I participated in my first research cruise. Ten days in the Sargasso Sea in August probably gave me an unrealistically rosy view of scientific seagoing! Certainly it encouraged me enough to sign on as one of the scientific staff on RRS *Discovery* in 1963 for the duration of her involvement with the International Indian Ocean Expedition. The 15 months away included a short stay in Zanzibar at the East African Marine Fisheries Research Organization laboratory, where the arrival of the Woods Hole research vessel *Atlantis II* provided me with the opportunity of participating in her voyage to the Seychelles, Mauritius and Cape Town before returning to Zanzibar. My last few weeks there were particularly eventful, including both the independence celebrations and the bloody revolution which later merged Zanzibar into Tanzania. By the time I returned to England on the *Discovery* in 1964 I had become committed to oceanic biology. In 1966 I left Cambridge to join the Institute of Oceanographic Sciences (then the National Institute of Oceanography) where I have remained. My part in the Institute's programme has involved regular research cruises on both British and American oceanographic vessels, in areas ranging from Indonesia to the Gulf of Guinea and Antarctica, though much of my sea-time has been spent in the north-east Atlantic, usually on RRS *Discovery*. Indeed, I have worked at sea for some part of every year since that formative Sargasso Sea cruise 22 years ago. I am involved in the

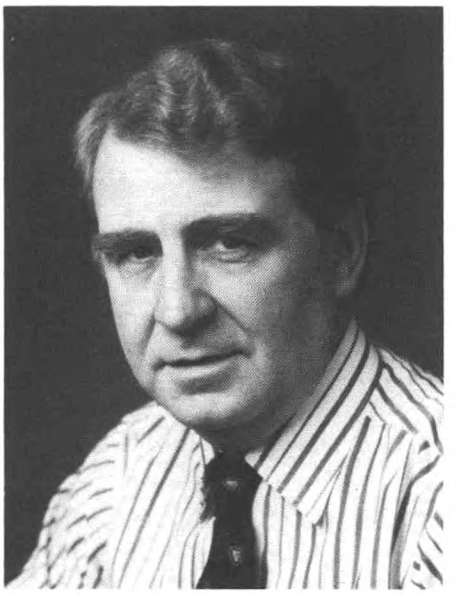
Opposite page 204

Dr Frank Evans



Dr Peter J. Herring

Mr Ronald James Livesey



Mr Denis Austin McBrearty

FOUR EXTERNAL EXPERTS (*see* page 203)

general field of deep-sea biology but have for some years now focused on the widespread but poorly understood phenomenon of bioluminescence in oceanic animals. This is a subject of great interest both to biologists and to the navies of the world and the observations of the Voluntary Observing Fleet provide fascinating information that could not be gained in any other way. I am most grateful for all the reports that are received—even those that I cannot explain.

I am married, with two teenage children, and live in Wormley, Surrey, and am a keen, but recently retired, rugby player and supporter. I have published about 60 scientific articles or books and came 4144th in the 1983 London Marathon!

Mr Ronald James Livesey, C Eng, FICE, FIWES, FRAS

(Babtie, Shaw & Morton, Glasgow)

Mr Livesey was born in 1929 at Kilmarnock in Scotland and was educated at Kilmarnock Academy. He received his technical education at the Royal Technical College, Glasgow. After commencing training as a mechanical engineer he qualified as a chartered civil engineer in 1957. With the exception of National Service with the Corps of Royal Engineers in Austria engaged on building construction supervision, his engineering career has been spent with Babtie, Shaw & Morton. There he specializes in hydroelectric schemes, water engineering and water purification processes in the United Kingdom, the Sudan and Nigeria. However, having nearly gone to sea at the end of the Second World War after 4½ years in the Sea Cadet Corps he retained his interest in marine works with involvement in the modernization of the Old Clyde Lighthouse Trust lighthouses and the Basses lighthouses off the south-east coast of Sri Lanka, Clydeside shipyard berths and finally the submarine and deck pipework systems for BP's Forth Tanker Berth.

Mr Livesey's interest in astronomy began as a schoolboy at the age of ten. He has for many years been a serious amateur observer, particularly in the fields of variable star photometry, lunar and planetary work and solar-terrestrial phenomena. He joined the British Astronomical Association (BAA) in 1958 and the Royal Astronomical Society in 1962. He was appointed Co-ordinator of Auroral Observing for the BAA in 1976 and Director of the re-formed Aurora Section in 1982, assisted by Dr David Gavine of Leith Nautical College. The section co-ordinates auroral and noctilucent cloud observations currently received from 9 countries and the Dutch and British marine weather services. Radio auroral effects and magnetic storm measurements are reported by British observers. Annual reports on activity are published in the BAA journal.

Mr Livesey is married, with a grown-up son and two daughters. Together with his wife Ena he enjoys his other interests in walking, sketching, foreign languages and the countryside in general. In the covering letter which accompanied this account he states that he enjoyed being marooned for several weeks on a rock lighthouse in the tropics while supervising construction work and enjoyed coastal navigation of the MFV when malaria struck the wardroom, and adds that during their careers most civil engineers enjoy a highly varied career and that the lucky ones like himself have a view of far corners of the world which is almost as good as being at sea.

Mr Denis Austin McBrearty, MA (Department of Anatomy, University of Cambridge)

I was born in Leeds in 1930. On leaving school I wanted to be an MN apprentice (my father and his two brothers had served in the MN pre-war), however, my father wouldn't allow it and in those days children took notice of parents! I therefore found myself serving an apprenticeship as a Dental Technician. On completion of the apprenticeship I was called up for National Service in November 1949. Again I was thwarted in my desire to go to sea. I asked to join the Royal Navy but almost as soon as my completed personal documents had been taken away for scrutiny, along with those of some 50 other young chaps who were in the Leeds intake of that day, up came an RAF Squadron Leader who called my name. 'You'll be pleased to know that you're coming into the Royal Air Force' he says. 'No, I'm not pleased', I said, 'I want to go into the Navy!'. 'Ah, but it says here', waving my documents at me, 'that you've spent the last three seasons playing on the wing for Headingley'. 'Only in the second team, not the first fifteen' I said. 'Never mind, we'll see you make the first fifteen in the Air Force, we need wing-threes and I've seen you first!' So there I was for two years in the RAF Dental Branch, and although I played for a Station fifteen, I never made either the full RAF or even a Command fifteen.

After National Service spent entirely in the UK, mainly at Halton and at Cranwell, I joined, as a Junior Technician, a vibrant team in the Department of Anatomy, London Hospital Medical College, Whitechapel, headed by R. J. Harrison. It wasn't the provision of 'parts' for the routine teaching of medical students that interested me, it was the opportunity of being involved in the various research programmes which was so fascinating. During my sojourn at the LHMC I worked with various teams on many aspects of mammalian reproduction, placentation, adult and foetal circulation and on dentition. We also had a little 'light relief' from time to time reconstructing forensic material from notable cases with Francis Camps and his unit who lived across the hall!

I finally left the LHMC in September 1968 as a Senior Technician after acquiring along the way the necessary technical qualifications and a State Registration and came to Cambridge in October 1968 as a Technical Officer and research assistant to the Head of the Department (the same R. J. Harrison, FRS with whom I'd worked at LHMC and who was now the new Professor).

In Cambridge I have worked on many different projects, mainly involving marine mammals. I have provided technical assistance with programme material for BBC, Yorkshire, Thames and Australian TV, for BBC Radio, BBC Highland Radio and Anglia Radio. I have provided assistance with the identification of animal and human skeletal remains for Northumberland Police and the Hertfordshire Coroners Office. Further assistance to Norfolk County Museums Service with identification, reconstruction, measurement and interpretation of dental characteristics of seventeenth century remains from an archaeological site. I have given technical assistance with numerous scientific papers and articles, many as a co-author. I have been involved in a sub-editorial capacity in the production of Vols 1, 2 and 3 of *Functional Anatomy of Marine Mammals,* Ed. R. J. Harrison, Academic Press; in Vols 1 and 2, *Handbook of Marine Mammals,* Eds Ridgway and Harrison, Academic Press; in *Whales,* by E. J. Sliper (Second Edition, Ed. R. J. Harrison), Hutchinson; and in Vols 1, 2 and 3 of *Recent Advances in Anatomy,* Eds R. J. Harrison, R. L. Holmes and V. Navaratnam, Cambridge University Press.

My chief interests are my continued involvement with marine mammals and cetaceans in particular. I am a member of Clare College and I was given my MA in 1975. For exercise I cycle and swim a bit, I enjoy watching (mostly) international rugby, cricket and tennis. I also enjoy foreign travel and since

being in Cambridge I have developed a reasonable interest in fine wines and vintage port!

Captain A. S. Young, of the Royal Naval Birdwatching Society, summed up his feelings about marine birdwatching in the July 1984 edition of *The Marine Observer* (pages 149–150), and repeats his invitation to anyone wishing to join the Society to write to him at his home address, Harwood, 24 Castle Road, Cottingham, North Humberside HU16 5NA.

We must not omit our appreciation of the interest shown by the many members of the permanent staffs of the Departments of Entomology and Zoology of the British Museum (Natural History), who supply so many interesting identifications of insects and certain species of marine life, including turtles by Dr E. J. Arnold.

The following summary of the work of the Department was kindly supplied by Mr David R. Ragge, Deputy Keeper of Entomology.

British Museum (Natural History)

Department of Entomology

The Department of Entomology was formed in 1913 as an offshoot from the Department of Zoology, and is now housed in a purpose-built six-floor building completed in 1952. The primary responsibilities of the Department are the curation and improvement of the national collection of insects, together with research on their taxonomy and related aspects of entomology. The Department also provides a scientific enquiry service relating to the insect collection and a simple advisory service for the general public.

The Department is directed by a Keeper, with two Deputy Keepers, and is organized into 16 sections, each responsible for a particular group of insects. The scientific staff number about 90, but in addition a further 20 employees of the Commonwealth Institute of Entomology and the Centre for Overseas Pest Research also work in the Department.

The national collection of insects is probably the most important in existence and contains specimens of all groups from all parts of the world. Begun in the eighteenth century, the collection has grown most rapidly during the last 50 years and now contains about 22 million specimens. About 450 000 species are represented, that is rather more than half the total number of named insect species known at present. Insects are often variable in structure and colour and, in order to reach reliable conclusions, modern taxonomic research on them needs to be based on large samples of each species; only in this way can individual variation be distinguished from the differences between species. This is why a large reference collection is an essential tool for the taxonomist, and why there is still a need for the Department to acquire more material of even relatively common species.

About 800 000 species of insect have so far been described and the total number existing in nature is believed to be at least double this figure. In the face of such overwhelming numbers it is clearly impossible for the Department to carry out research on all groups. The present policy is to concentrate the research effort on groups of particular importance to man, either through their significance in agriculture and medicine, or because of their use in other spheres of biological research, e.g. ecology, cytogenetics, physiology, behaviour.

The mere existence of such an important insect collection generates a large correspondence from professional taxonomists all over the world. This is the most time-consuming service that the Department provides, including as it does

the preparation and dispatch of over 700 loans of specimens each year, as well as the careful examination of specimens sent to the Department by other institutions for identification or further study. About 3000 routine enquiries from the general public are dealt with each year, mostly about common insects associated with dwelling houses, gardens or places where food is stored or processed.

Mr Allan Watson, of the Department of Entomology, is the son of a now deceased Engineering Officer (Merchant Navy) and RNVR Sub-Lieutenant who became Inspector of H.M. Dockyards at Rosyth, and father of Lt. Watson, a helicopter pilot on HMS *Invincible*. No doubt other members of the staff from whom we have not heard have similar connections with the sea or are would-have-been sailors.

To summarize, the following addendum by Dr Evans on the observation of sea surface life from shipboard, for the benefit of seafarers who generously contribute time and trouble to send in their reports, could probably apply equally well to the other disciplines. We believe that Dr Evans's pleas for more and improved descriptions, drawings, photographs and/or samples of their sightings may result in seafarers themselves enhancing their pleasure and benefit from such involvement in research into nature's wonders.

Observations of sea surface life from shipboard

Everyone is aware that some watchkeepers keep a better lookout than others. Some have better eyesight, some have a natural high level of attentiveness and some are less easily bored at watching the sea and sky separated by a straight line. Nevertheless the sharp-eyed spotting of marine animals and plants in the ocean is only the beginning of a useful observation. Those who first sight an organism may not necessarily make the best report.

Intellectual curiosity is needed. Intellectual curiosity can be increased by reading. I would suggest that anyone interested in sea life should possess a few books of identification. There are many good books for home waters, e.g. Wheeler's *Fishes of Northern Europe* (Warne) and Hardy's *World of Plankton* (Collins). But for other oceans it is best to search local port bookshops for sea anglers' guides and guides to marine life. You will find these more useful than the thickest tome for the wrong ocean. Back numbers of *The Marine Observer* contain many good descriptions and many good sketches, which may prove useful.

Try to draw what you have seen. An outline drawing, however simple, is very valuable. Observe carefully as you draw. If a fish, then how many fins, how disposed. If an invertebrate, draw it live in a bucket of water if possible. Then add notes: size, colour, behaviour. Photographs can be useful but should normally be additional to a line drawing. Best of all is the specimen itself, preserved in dilute formalin.

Finally, may I say that every observation is valued. If you see something living in the sea please note it. Sightings of such common creatures as Physalia (Portuguese man of war) or hammerhead sharks are as treasured as those of rare beasts. After all, it is the common animals that are most important, simply by being common.

And thank you for your time and trouble.

BAROGRAPH PRESENTATIONS TO SHIPMASTERS

Inscribed barographs awarded to four Masters of Selected Ships of the Voluntary Observing Fleet were presented by the Director-General of the Meteorological Office at Headquarters on 10 May 1984.

The Masters qualifying for these Special Long-service Awards were announced in the April edition as follows: Captain R. M. Bessant, MRIN, MNI, Cayzer, Irvine Shipping Ltd, Captain M. A. Hill, P. & O. Deep Sea Cargo Division, Captain J. S. Thorpe, MNI, Overseas Containers Ltd, and Captain P. H. Warne, OBE, MRIN, MNI, Natural Environment Research Council.

Three of the recipients were able to be present in person, each with his wife, but unfortunately Captain Bessant could not attend. His barograph was accepted on his behalf by Captain C. R. Kelso, Chief Marine Superintendent of Cayzer, Irvine, who was accompanied by Miss J. Foster, Public Relations Officer, to whom we are indebted for the historical material contained in the article in the April 1984 edition of *The Marine Observer* about the Union-Castle Line. We were delighted to receive also Mr J. T. Newton, Director of Overseas Containers, Captain M. Bond, Marine Superintendent of NERC, and Mr P. Ibbotson, Establishment Officer of the latter.

At the ceremony, the Director-General, Dr J. T. Houghton, CBE, D PHIL, FRS, outlined the origins of the annual awards in 1948 and congratulated the recipients on their continued and lengthy application in the interests of marine forecasting, which resulted in their being chosen to receive barographs, each having a minimum of 18 years in which a meteorological logbook was compiled.

Dr Houghton described briefly the methods by which useful meteorological data were acquired, including by satellites and other modern sophisticated equipment, but reaffirmed the need for ships' observations, whose importance went undiminished despite the availability of alternative methods.

The Masters had placed before them the first meteorological logbooks in which they had assisted in compiling observations, one of them dated as early as 1947. In looking at their records, Captains Hill and Thorpe, who know one another well, confirmed their common origins in the sea life, both having served as New Zealand Shipping Company Officers. A photograph commemorating the occasion appears opposite page 212.

After the presentations, the guests were entertained to luncheon by Dr Houghton and Senior Officers of the Meteorological Office in the instrument museum, followed by a short talk and guided tour of the more interesting sections of the Office.

J.F.T.H.

INDIAN EXCELLENT AWARDS

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

The Excellent Awards were distributed on the occasion of the National Maritime Day Celebration at Bombay on 5 April 1984. The following speech was delivered by the Director of the India Meteorological Department:

It gives me great pleasure to be present here this evening and to be associated with the 21st National Maritime Day celebrations. I am also happy to have this opportunity on behalf of the India Meteorological Department to present Awards to ships and their officers selected for their excellent work in recording and reporting weather observations from the high seas during the year 1982–83.

The valuable weather observations which are recorded and transmitted by the ships' officers have multifold applications. On a real-time basis they are utilized in the forecasting offices for day-to-day forecasting and on a non-real-time basis they are not only used for preparing climatological summaries of the ocean but also leave an unlimited scope for research aimed at unravelling the mysteries of the atmosphere and the sea.

As in the past, the Department has assessed the meteorological work performed by the ships during the year 1982–83 and 15 ships which have carried out meteorological work of high order have been selected to receive Excellent Awards in the form of books on general subjects. In addition 10 ships have been selected to receive Certificates of Merit, and three cash awards instituted by the Shipping Corporation of India for meritorious meteorological work are also announced here.

On behalf of the India Meteorological Department, I would like to thank ships' Captains and other officers and the owners of the ships of the Indian Voluntary Observing Fleet for valuable and commendable meteorological work done by them. I also wish to thank the National Maritime Day Celebration Committee for making it possible for the Meteorological Department to present the awards on this occasion.'

The names of the ships which received Excellent Awards are as follows:

Name of Ship	Owners
Nancowry	Shipping Corporation of India
Chidambaram	Shipping Corporation of India
State of Mysore	Shipping Corporation of India
Tulsidas	Shipping Corporation of India
Jalajaya	Scindia Steam Navigation Co.
Kanchenjunga	Shipping Corporation of India
Jalavallabh	Scindia Steam Navigation Co.
Jalabala	Scindia Steam Navigation Co.
Jalatapi	Scindia Steam Navigation Co.
Ramdas	Shipping Corporation of India
Satyamurti	Shipping Corporation of India
Vishva Kirti	Shipping Corporation of India
Jalamohan	Scindia Steam Navigation Co.
Vishva Parijat	Shipping Corporation of India

Certificates of Merit were awarded to the following ships:

Jalajyoti
Arunachal Pradesh
Vishva Pankaj
Vishva Parag
Jalakanta
Jalamudra
Vivekanand
State of Meghalaya
Vishva Vikram
Vishva Shobha

AURORA NOTES OCTOBER TO DECEMBER 1983

By R. J. Livesey
(Director of the Aurora Section of the British Astronomical Association)

In Table No. 1 are listed the observations made during the period which had been received up to the time of writing. In Table No. 2 are summarized the nights upon which three or more observers reported seeing significant auroral activity.

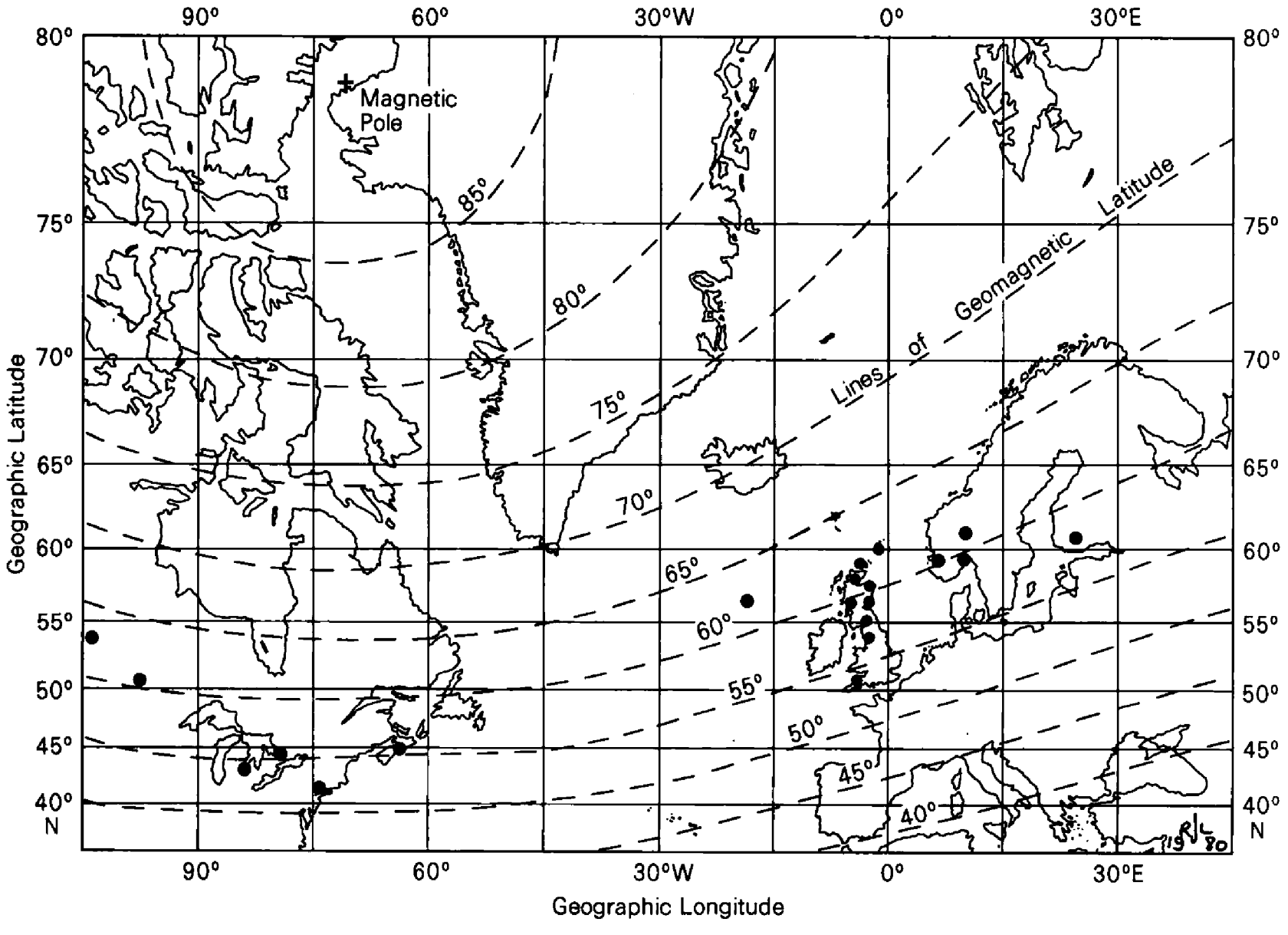
Table 1—Marine Aurora Observations October to December 1983

Date 1983	Ship	Geographical Position		Time (GMT)	Forms in Sequence
5 Oct. ..	*Ravenscraig* ..	67° 12′N,	12° 26′E	2250–2305	$p_3p_4R_1A$
7 ..	*Starella*	64° 48′N,	00° 45′E	2345–0245	qR_1A, qG
8 ..	*Starella*	61° 18′N,	02° 48′E	2345–0245	qhA, qG
14 ..	*Cumulus*	57° 00′N,	20° 00′W	0000–0230	p_2fR_2RA, qfhG
15 ..	*Cumulus*	57° 00′N,	19° 18′W	0015	qhG
31 ..	*Ravenscraig* ..	49° 56′N,	63° 00′W	0050–0058	qhA, RR, p_4R_1R, G
1 Nov. ..	*Starella*	57° 18′N,	20° 48′W	2100–0001	qhN
2 ..	*Starella*	57° 18′N,	20° 05′W	2200–2245	qN
8 ..	*Starella*	57° 10′N,	20° 10′W	0045–0130	qN
8 ..	*Starella*	57° 12′N,	20° 40′W	2240	qN
10 ..	*Starella*	57° 13′N,	19° 50′W	0445	qN
11 ..	*Starella*	56° 56′N,	19° 33′W	2245–0445	qN, qhR, qhA, qN, qR_2B, qhB, S, qN
11 ..	*Garbetta*	60° 45′N,	01° 18′W	2000–2400	qG, RA, hA, R_1R
16 ..	*Avondyke*	68° 46′N,	14° 12′E	2013–2230	hB, B+S, RA, p_1hA, $p_1m_2R_1A$
11 Dec. ..	*Starella*	57° 16′N,	20° 56′W	2344–2350	qN
27 ..	*Starella*	57° 13′N,	20° 17′W	2145–2150	qhB
31 ..	*Starella*	57° 01′N,	20° 55′W	2240–2350	qR_1A

KEY: A=arc, B=band, f=fragmentary, G=glow, h=homogeneous, N=unknown form, P=patch, p_1=pulsating, p_2=flaming, p_3=flickering, p_4=irregular horizontal movement, q=quiet, R=ray, R_1=small ray, R_2=medium ray, R_3=long ray, S=surface.

On the accompanying map prepared from information provided by the Geological Survey are shown the lines of geomagnetic latitude for the North Atlantic area. These are related geometrically to an imaginary magnetic axis passing through the centre of the Earth and joining the two magnetic poles. Mariners well know that the magnetic field is not symmetrical in form, and there are anomalies, one of which lies in Canadian territory and tends to force the auroral storms further to the south in America as compared to north-west Europe. For example, in 1983, from geomagnetic latitude 56 degrees there were 15 auroral reports southwards of that line in America but only 8 in Europe. Of these, 6 in America reported coronal or all-sky activity but only 1 in Europe. Similar variations are found in records of earlier years.

On the same map the large black dots indicate the locations of regular observers or groups of observers of the aurora including Weather Station 'Lima' manned alternately by the Dutch weather ship *Cumulus* and the British weather ship *Starella*. Mariners' reports form valuable information with which to close the gap between the continents.


90°
60°
30°W
0°
30°E
80°
75°
70°
65°
60°
55°
50°
45°
40°
N
Magnetic
Pole
85°
80°
75°
70°
65°
60°
55°
50°
45°
40°
Lines of Geomagnetic Latitude
Geographic Latitude
Geographic Longitude
19 R/L 80

Presentation of barographs on 10 May 1984 at Bracknell. Left to right: Captain J. S. Thorpe (O.C.L.) and Mrs Thorpe; Captain P. H. Warne (N.E.R.C.) and Mrs Warne; Dr J. T. Houghton; Captain M. A. Hill (P. & O.) and Mrs Hill; Miss J. Foster (C.I.); Captain C. R. Kelso (C.I.) on behalf of Captain R. M. Bessant. (*See* page 209.)

Opposite page 212

Opposite page 213

s.s. *Uganda* (*see* page 220).

Table 2—Auroral Nights in North Atlantic with three or more Observers

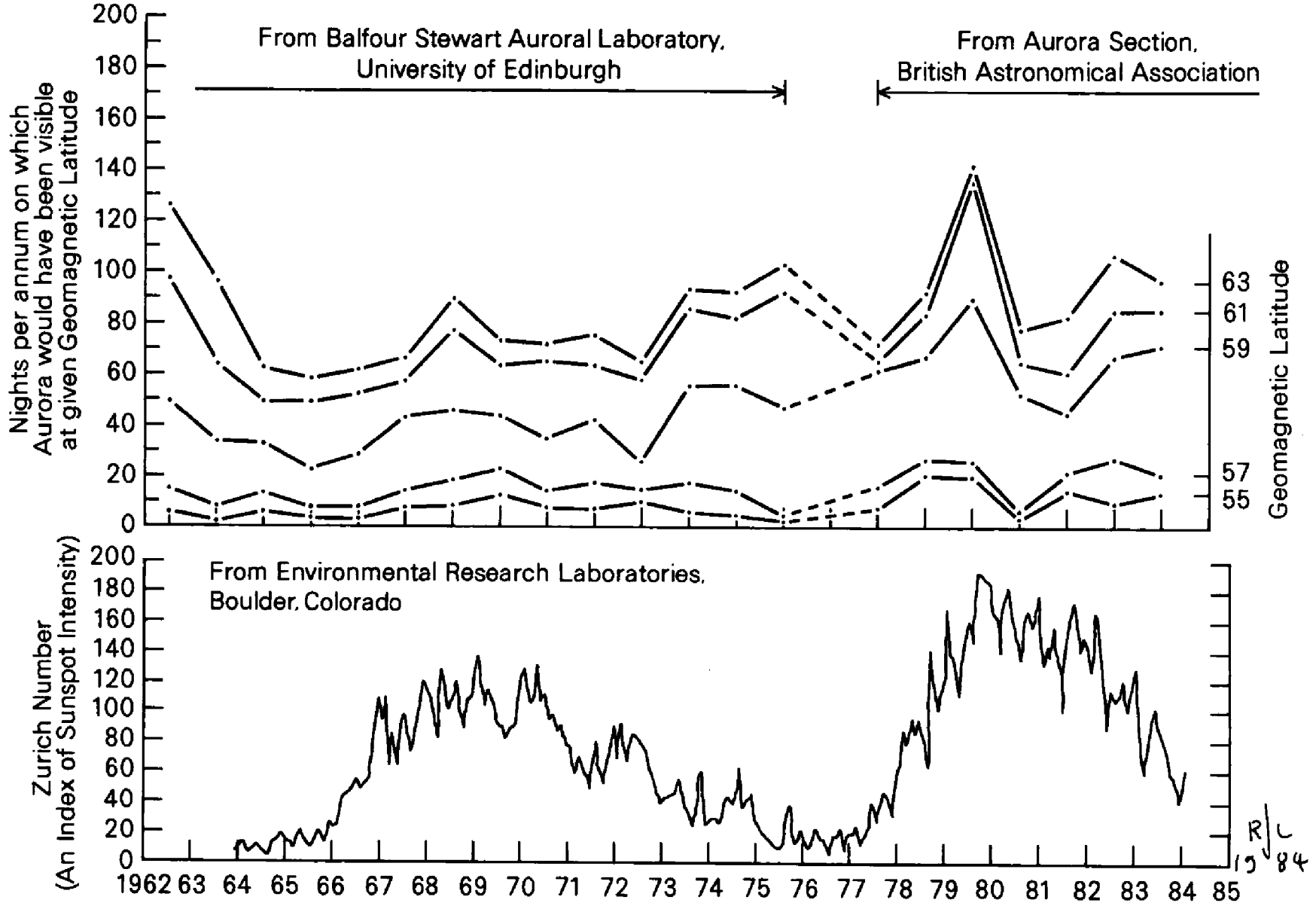
Night Commencing	No. of Obs'rs	Geomagnetic Latitude Min	Max	At Storm Peak	Storm Peak	Distribution of Observers
13 Oct. ..	3	59	66	63	5	Manitoba, 'Lima', N. Norway
28	8	58	60	60	4	Scotland, Norway
30	3	58	61	61	5	St Lawrence, Scotland, Norway
1 Nov. ..	5	58	63	60	4	Scotland, 'Lima', Norway
9	4	59	63	59	5	Manitoba, Scotland, Norway
11	5	57	63	57	4	Scotland, Norway, Finland
15	4	59	66	60	4	Scotland, Norway
16	3	59	67	67	5	Scotland, Norway
28	3	59	59	59	4	Scotland
5 Dec. ..	3	58	66	60	6	Scotland, Norway
6	4	60	66	64	5	Manitoba, Scotland, Norway
31	3	58	66	63	3	Scotland, 'Lima', N. Norway

Storm Peak code: 1=glow, 2=homogeneous arc, 3=rayed arc or band, 4=ray bundles, 5=active pulsating or flaming storm, 6=overhead coronal ray structures, 7=all sky storm.

The accompanying graph gives a comparison between sunspot activity and the calculated frequency with which auroral activity may be visible at the various geomagnetic latitudes, based upon reports received. Although only two solar cycles are reviewed, several interesting features may be noted. There is a peak of auroral activity at about sunspot maximum and a second peak as the sunspots decline to minimum. The relative sizes of the two peaks depends on the sunspot cycle. The cycle between 1964 and 1976 was a quiet one, hence the low frequency at solar maximum, when the aurora is generated principally by particle fallout from sunspot-associated solar flares. Towards sunspot minimum the aurora is generated partly by the flares of the declining sunspot activity plus recurrent activity derived from magnetic holes in the sun's upper atmosphere which allow streams of particles to escape from the sun, of a form and strength sufficient to trigger off auroral activity.

At present the decline of the sunspot transient type aurora and the greater frequency of the coronal hole type recurrent aurora, found when sunspots are minimal in number, are confirmed in the auroral and geomagnetic records. The recurrent aurorae are quieter in form, may appear for several nights on end and repeat after 27 days. They are usually found in the higher geomagnetic latitudes closer to latitude 67 degrees, the auroral zone where the aurora is observed with the highest frequency. It will be noted on the graph that during the second minima, low-latitude aurorae are declining as high-latitude aurorae are increasing, as in 1975 and 1982.

Once again we are very grateful for the time and effort taken by mariners to observe, record and report upon auroral activity seen. There is a long sea tradition of observing, stretching back to the Norse sagas and beyond. Good sailing and good viewing.


From Balfour Stewart Auroral Laboratory,
University of Edinburgh
From Aurora Section,
British Astronomical Association
Nights per annum on which
Aurora would have been visible
at given Geomagnetic Latitude
200
180
160
140
120
100
80
60
40
20
0
63
61
59
57
55
Geomagnetic Latitude
From Environmental Research Laboratories,
Boulder, Colorado
Zurich Number
(An Index of Sunspot Intensity)
200
180
160
140
120
100
80
60
40
20
0
1962 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85
R
C
84

ICE CONDITIONS IN AREAS ADJACENT TO THE NORTH ATLANTIC OCEAN FROM MARCH TO MAY 1984

The charts on pages 216 to 218 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: 1966–75 (Meteorological Office). Surface pressure: 1951–70 (Meteorological Office). Air temperature: 1951–60 (US Department of Commerce, 1965). Sea-surface temperature: area north of 68°N, 1854–1914 and 1920–50 (Meteorological Office 1966), area south of 68°N, 1854–1958 (US Navy, 1967).

March

Although pressure anomalies were weaker than throughout February (−4 to −8 mb instead of −12 to +20), the overall pressure pattern was similar, with lower pressure than normal near Greenland surrounded by centres of higher pressure than usual. Temperatures were, again, lower than usual west of Greenland and much higher than normal over north-west Russia. Over the Labrador Sea and east of Newfoundland, the continuing anomaly for north-westerly winds resulted in the ice edge remaining further east than usual. Off east Greenland the anomaly for south-westerly winds persisted and the marked deficits of ice during the previous few months continued. Over the Barents and Kara seas there was a change in wind anomaly from strong westerly to weak westerly, so that the previous deficits of ice in these areas were reduced. Ice conditions in the Baltic seas were near normal.

April

Pressure remained lower than normal near Greenland. Over north-west Russia pressure was below average and temperatures lower than normal. Off east Canada the anomaly for north-westerly winds, again, resulted in the ice edge remaining further east than usual. East of Greenland, winds continued to be more south-westerly than usual and there was little change in the previous deficits of ice. Over the Barents Sea, despite the change to colder weather, there was still a deficit of ice. However, over the Kara Sea, following the unusual breaks during February and early March, ice became more consolidated. By the end of the month ice conditions had reverted to near normal.

May

Pressure and temperature anomalies during May were similar to the pattern for March 1984, so that there was little change to the well-defined pattern of ice anomaly established during previous months. The feature of the 1984/85 ice season, so far, has been the persistence of lower pressure than normal near Greenland. Over the north-west Atlantic Ocean the anomaly for north-westerly winds has extended sea ice (and icebergs) much further south-east than usual, whilst over the Greenland and Barents seas the anomaly for south-westerly winds has resulted in a marked deficit of ice.

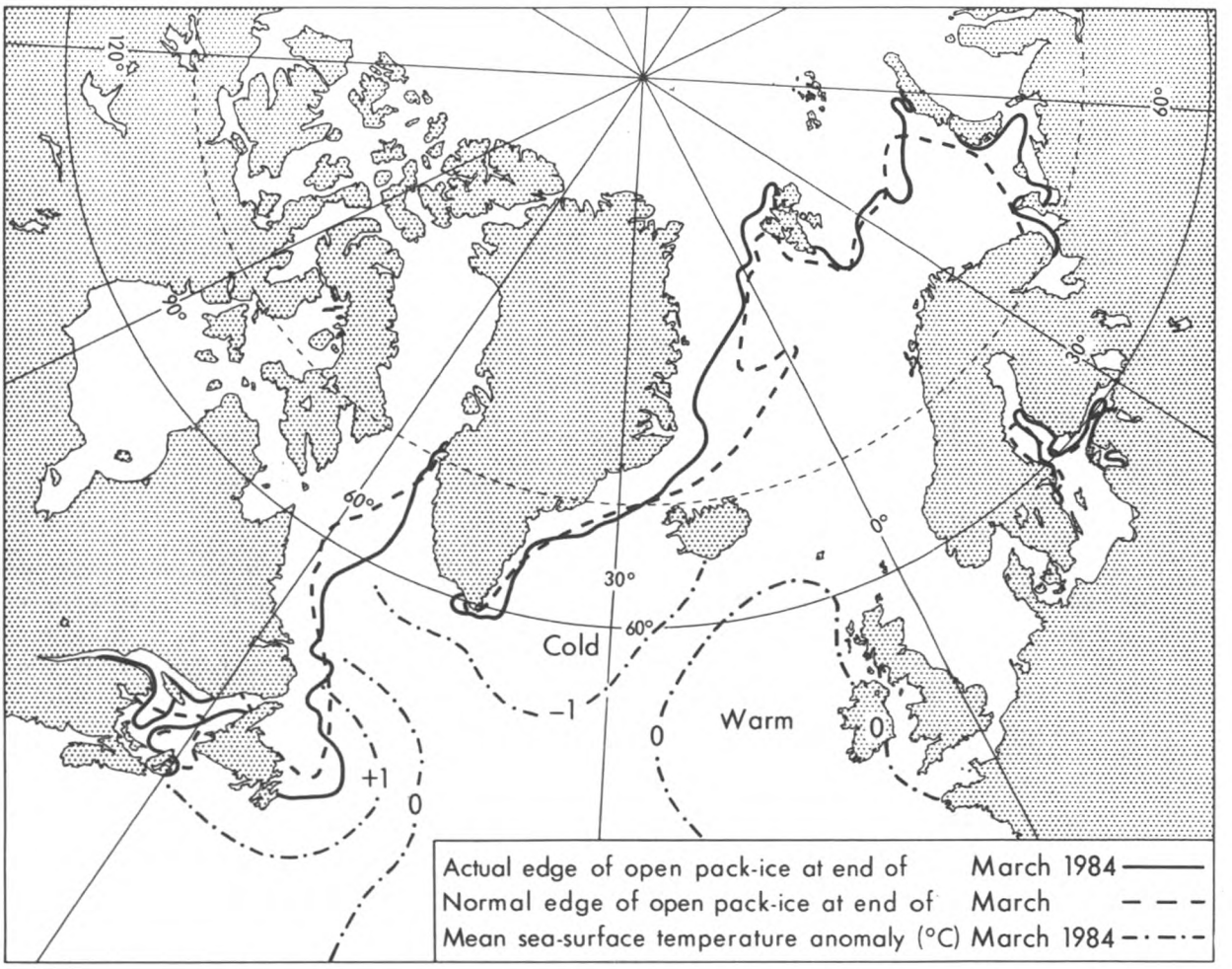
REFERENCES

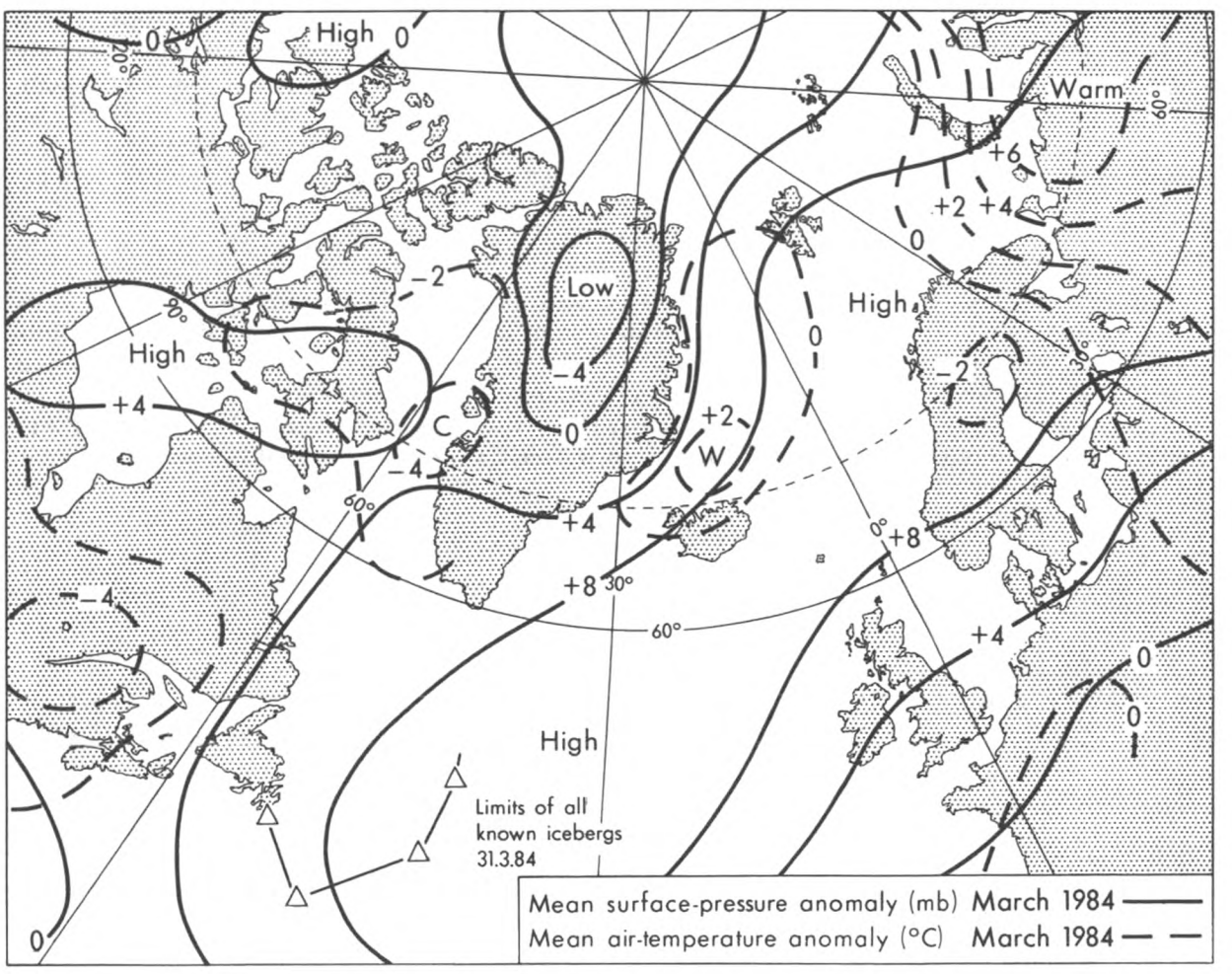
Meteorological Office, London — 1966 Monthly meteorological charts and sea surface current charts of the Greenland and Barents Seas.

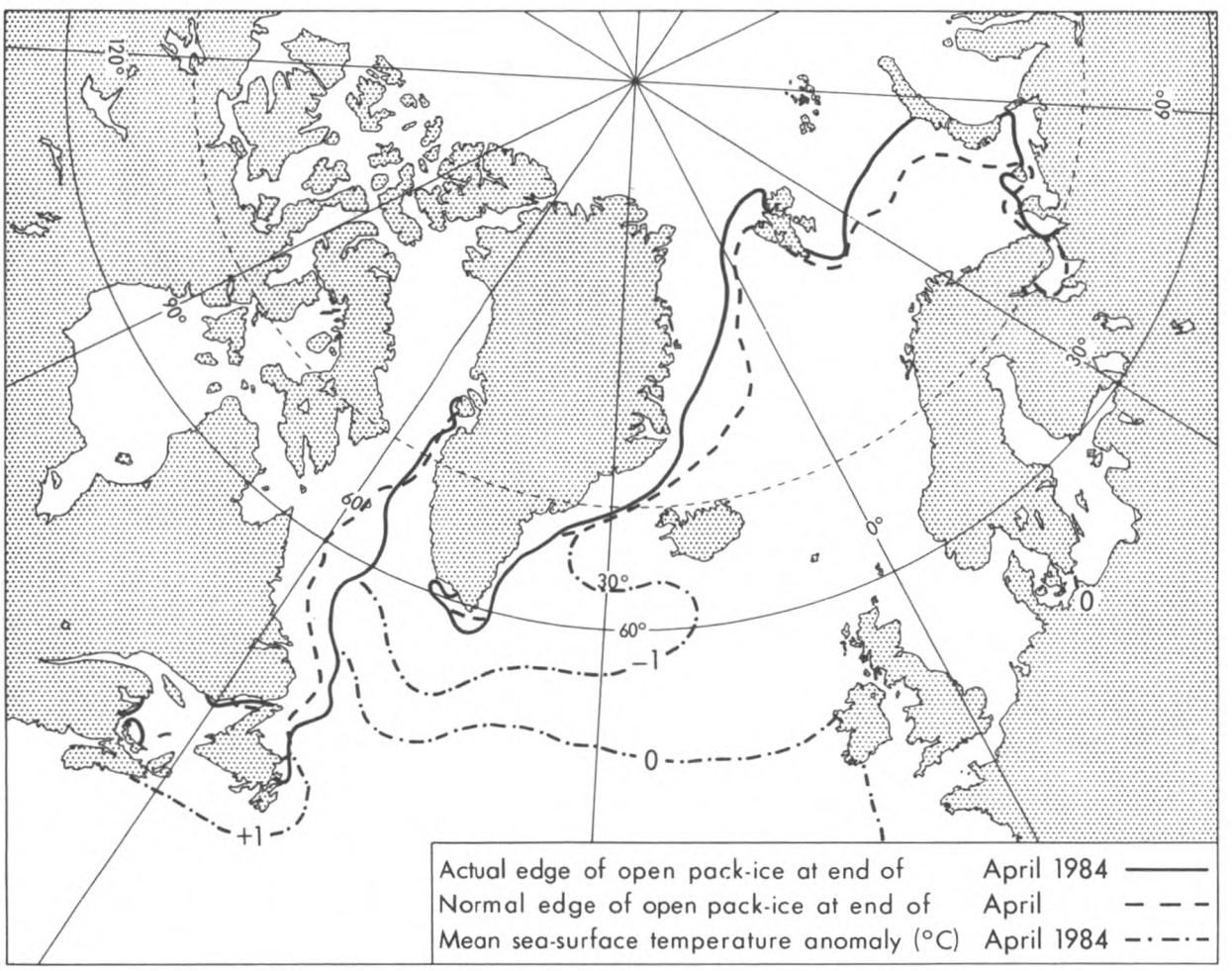
— — Sea ice normals (unpublished) and various publications.

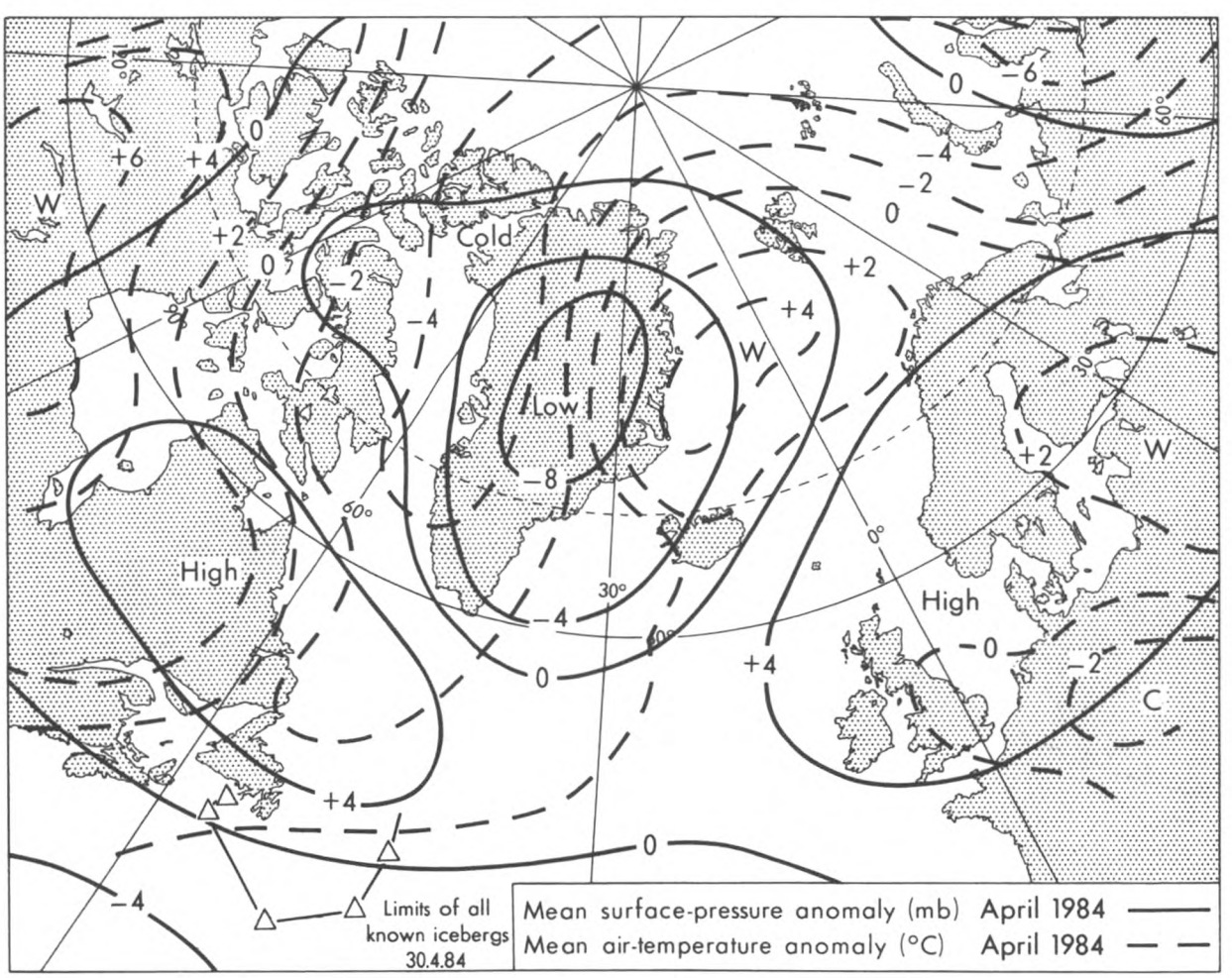
US Department of Commerce Weather Bureau, Washington, D.C. — 1965 World weather records, 1951–60. North America.

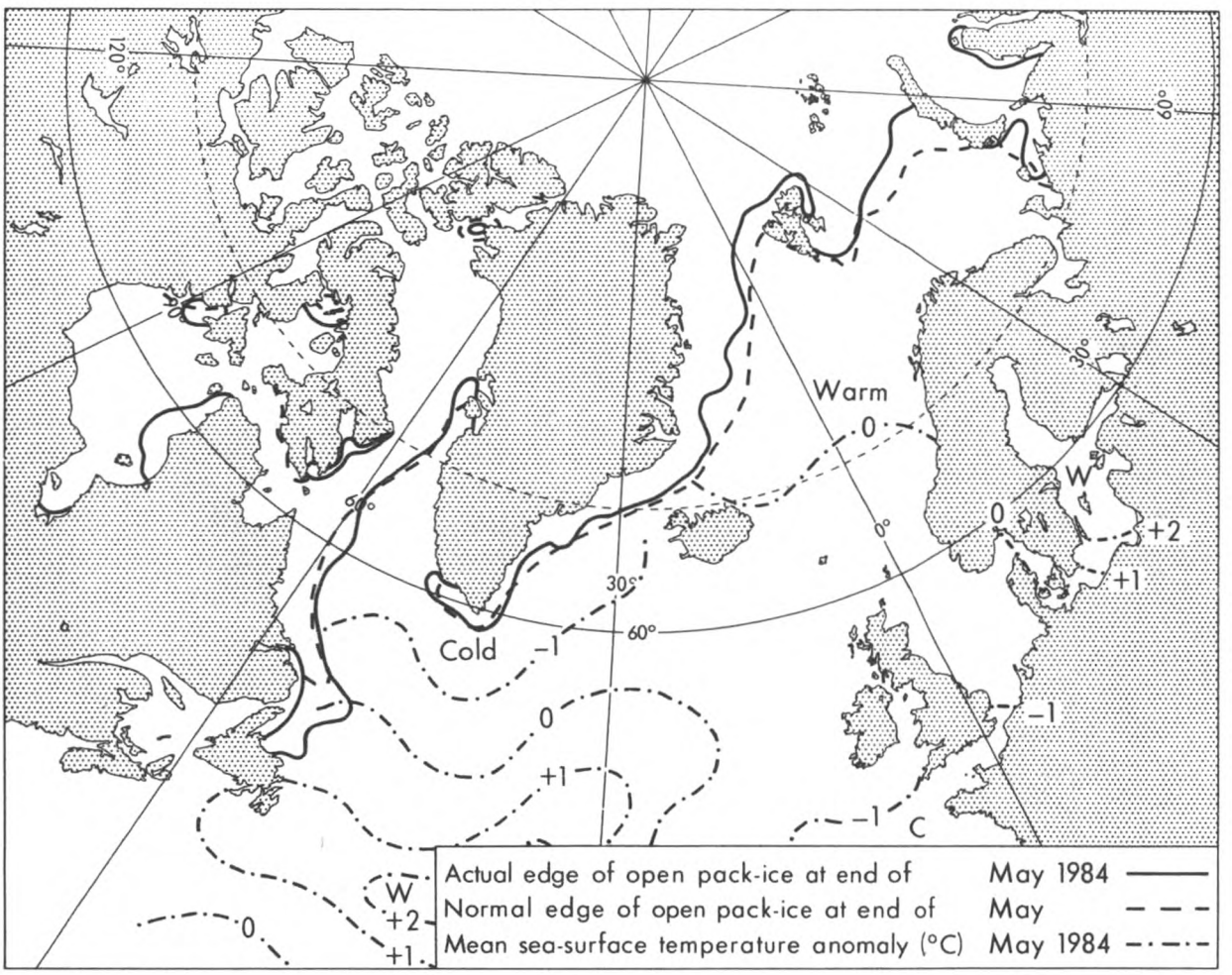
US Naval Oceanographic Office, Washington, D.C. — 1967 Oceanographic atlas of the North Atlantic Ocean, Section II: Physical properties.

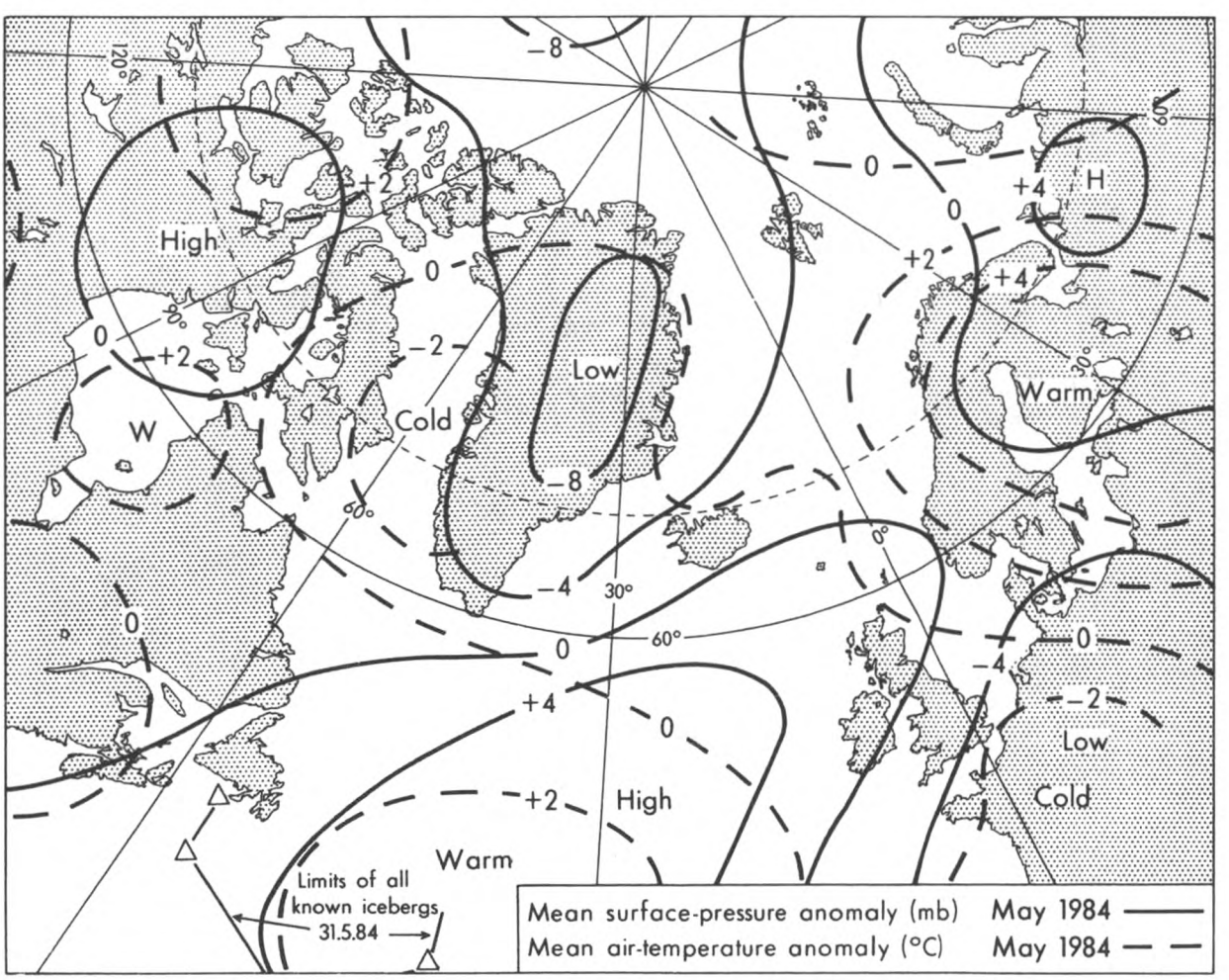

120°
60°
0°
30°
60°
Cold
Warm
−1
0
+1
0
0
Actual edge of open pack-ice at end of March 1984
Normal edge of open pack-ice at end of March
Mean sea-surface temperature anomaly (°C) March 1984


High
0
0
Warm
60°
+6
+2
+4
0
High
−2
Low
−4
0
+2
W
C
−4
+4
+8
30°
60°
0°
+8
+4
0
0
High
−4
0
Limits of all
known icebergs
31.3.84
Mean surface-pressure anomaly (mb) March 1984
Mean air-temperature anomaly (°C) March 1984


120°
60°
0°
30°
60°
30°
0
−1
0
+1
Actual edge of open pack-ice at end of April 1984
Normal edge of open pack-ice at end of April
Mean sea-surface temperature anomaly (°C) April 1984


W
+6
+4
0
+2
0
−2
−4
Cold
Low
−8
High
+4
0
−4
+4
0
−6
−4
−2
0
+2
+4
W
+2
W
High
−0
−2
C
Limits of all known icebergs 30.4.84
Mean surface-pressure anomaly (mb) April 1984
Mean air-temperature anomaly (°C) April 1984


120°
60°
30°
60°
Warm
0
W
0
+2
+1
Cold
−1
0
+1
−1
−1
C
W
+2
+1
0
Actual edge of open pack-ice at end of May 1984
Normal edge of open pack-ice at end of May
Mean sea-surface temperature anomaly (°C) May 1984


120°
60°
30°
60°
−8
0
+4
H
+2
+4
High
0
+2
0
−2
Low
Warm
W
Cold
−8
−4
0
0
+4
0
−4
−2
Low
+2
High
Cold
Warm
Limits of all known icebergs 31.5.84
Mean surface-pressure anomaly (mb) May 1984
Mean air-temperature anomaly (°C) May 1984

Baltic Ice Summary: March–May 1984

No ice was reported at the following stations during the period: Oxelösund, Visby, Kalmar, Göteborg, Emden, Bremerhaven, Hamburg (Elbe), Flensburg, Kiel, Lübeck, Rostock, Stralsund, Stettin, Gdansk, Aarhus, Copenhagen, Kristiansandsfjorden, Oslo.

Station	March									April								May							
	Length of Season		Ice Days			Navigation Conditions			Accumulated Degree Days	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	A	B	C	D	E	F	G	H	I
Luleå ..	1	31	31	31	0	0	31	0	1285	1	30	30	30	0	0	30	0	1302	1	16	16	11	5	0	11	0	1302
Skellefteå ..	1	31	31	29	2	0	31	0	—	1	27	27	27	0	0	27	0	—									
Bredskar (Vaktaren) ..	1	31	31	12	16	22	9	0	—	1	18	18	4	14	15	0	0	—									
Sundsvall ..	1	31	31	0	31	1	30	0	—	1	23	23	0	23	3	20	0	—									
Sandarne ..	1	31	31	31	0	0	31	0	—	1	20	20	18	2	5	15	0	—									
Stockholm ..	1	31	31	31	0	31	0	0	293	1	25	25	8	17	25	0	0	—									
Helsinki ..	1	31	31	31	0	0	31	0	472	1	18	18	9	6	2	16	0	—									
Turku ..	1	31	31	31	0	31	0	0	503	1	18	18	12	6	18	0	0	—									
Mariehamn	1	31	31	31	0	31	0	0	297	1	16	16	5	8	13	0	0	—									
Mäntyluoto	1	31	22	4	10	0	22	0	—	1	13	13	0	0	6	7	0	—									
Vaasa ..	1	31	31	31	0	0	31	0	797	1	23	23	18	0	0	23	0	—									
Norrskär ..	1	31	31	0	31	0	31	0	—	1	29	27	0	23	0	27	0	—									
Oulu ..	1	31	31	31	0	0	31	0	—	1	26	26	18	6	0	0	0	—									
Roytta ..	1	31	31	31	0	0	0	31	—	1	30	30	30	0	0	0	30	—	1	20	20	15	5	0	17	13	—
Leningrad ..	1	31	31	31	0	0	31	0	495	1	23	21	6	12	15	6	0	—									
Vyborg ..	1	31	31	31	0	0	31	0	—	1	27	27	25	2	2	25	0	—									
Tallin ..	1	31	31	0	31	12	19	0	—	1	15	15	0	2	8	2	0	—									
Riga ..	3	28	13	0	13	3	0	0	281																		
Pärnu ..	1	31	31	31	0	0	23	8	—	1	25	25	15	10	7	8	10	—									
Ventspils ..	20	26	7	0	7	0	0	0	—																		
Klaipeda ..	15	26	12	0	12	0	0	0	185																		

CODE

A First day ice reported.
B Last day ice reported.
C No. of days when 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.

The s.s. *Uganda* Society

The s.s. *Uganda* holds a special place in the hearts of hundreds of thousands of people who have known her during her 32 years—either as a passenger liner, an educational cruise ship or, most recently, as a hospital ship during the Falklands War. Currently still working in the South Atlantic, her future thereafter is unassured.

In keeping with the great volume of people and ports who have come to know her, the *Uganda* has provided the Meteorological Office with a virtually unbroken line of meteorological logbooks since observing was first undertaken in the ship in 1955. Altogether, we have received approximately 65 meteorological logbooks from her, many of which were assessed as Excellent, the highest classification possible.

The s.s. *Uganda* Society has been formed to ensure the ultimate preservation of this unique vessel upon her eventual withdrawal from commercial service. It is intended to keep her in working condition although steaming is likely to be rare, and plans are afoot to use the ship for Maritime Exhibition, Student Interest and Activity Centres.

Anyone interested in knowing more about the Society, or wishing to support the preservation of the *Uganda,* should write to the Chairman of the Society, Mr David Pollard, at Sandpipers, 72 Downs Road, Coulsdon, Surrey, CR3 1AF. (*See* photograph opposite page 213.)

Personalities

OBITUARY.—Captain S. N. Coe, Trinity House Pilot, has died at his home in Gravesend.

Stanley Coe, who was born in 1926, served his time with Furness Withy and Company, and remained with them until he joined the pilotage service with a restricted licence in May 1959. He gained his full licence from Trinity House in 1962, and continued to conduct the largest ships down the Thames Estuary until the day before his untimely death in early July 1984.

Between 1946 and 1954, Stan Coe was involved in the compilation of 13 meteorological logbooks, of which 7 were assessed as Excellent. He received an Excellent Award in 1948. He was a founder member of the Nautical Institute in 1971 and of its London Branch a year later; he had recently been elected to a second year's Chairmanship of the latter.

We offer our commiserations and sympathy to his children in their time of loss.

OBITUARY.—Captain A. R. Moore, retired Master of Bibby Bros, has regrettably died, aged 63. Adrian Ralph Moore first went to sea in 1937 as a Cadet with Chambers Company of Liverpool, and transferred to Bibby Line soon after the Second World War. He served in many ships of the latter company, the first of which was the *Herefordshire* from which he initially sent us a logbook in 1946. Two years later Captain Moore received an Excellent Award and went on to send us a total of 31 logbooks of which 10 were classed as Excellent, before his retirement in 1980.

OBITUARY.—Mr P. D. V. Fitzgerald, former Chief Officer of the *Lord Mount Stephen* (CP Ships), has died as the result of an accident on board.

Patrick Fitzgerald joined CP Ships in 1975 and sent us his first meteorological logbook from the *CP Trader.* Since then, we have received a further 15 logs containing his name as Principal Observing Officer. We offer our condolences to his wife and young daughter on their sad loss.

RETIREMENT.—CAPTAIN W. D. B. BOLER retired from the sea on 1 May 1984, having served 35 years with the Esso Petroleum Company.

Walter Douglas Brooks Boler was born in Urmston, Lancashire, in March 1933, educated at the William Hulme Grammar School, Manchester, and received pre-sea training at H.M.S. *Conway* in 1948. He joined his first ship in the Esso Transportation Company, the *Esso Purfleet,* in April 1949, obtained his Master's Certificate in 1959, and first took command in April 1966 when he became Master of the *Esso Durham.*

In 1979, Captain Boler was awarded the Lloyd's Bronze Medal for Saving Life, in recognition of his rescue of 27 survivors from s.s. *Aviles* in the Indian Ocean.

Although the first meteorological logbook bearing his name did not appear on record until December 1963, Captain Boler's meteorological efforts resulted in a total of 31 logs submitted, including 6 classed as Excellent. He received Excellent Awards in 1974 and 1979.

We wish him, his wife, three children and three grandchildren, continued health and happiness following his retirement from the sea at a comparatively early age.

RETIREMENT.—CAPTAIN R. TOWELL has retired from seafaring after serving 37 years in the tankers of BP Shipping company.

Raymond Towell was born in September 1930 and educated at the Ralph Gardner Comprehensive, and Marine Schools, in South Shields. He joined his first ship, *British Knight,* in September 1946, obtained his Master's Foreign Going Certificate ten years later and was promoted to command in 1968 aboard the *British Osprey.*

The first recorded receipt of a meteorological logbook was in 1962 when he was Chief Officer of the *British Merchant,* since when we have received a further 48 logs, 14 of which have been assessed as Excellent. He has received Excellent Awards in 7 separate years, including one for 1983 when he was in command of his final ship the *British Ranger* prior to his retirement on 6 January 1984.

Captain Towell tells us that the most interesting vessel he served on was probably *British Dragoon* when involved in lightening ULCCs in Lyme Bay from 1979 to 1982. Also, while drydocking *British Dragoon* in Lisbon in 1979, he was introduced to Princess Anne when she was visiting Lisnave Shipyard.

We wish Captain Towell a fruitful and long retirement, and enjoyable sailing in Falmouth on his *Westerly Centaur* yacht.

RETIREMENT.—MR H. M. O'GORMAN, Radio Officer, retired on 20 May 1984 after serving both at sea and ashore for 41 years.

Hugh Magee O'Gorman was born in Ballybofey, County Donegal, in September 1923, educated at the Christian Brothers Schools in Athy and Drogheda, and obtained his P.M.G. Radio certificate of Telegraphy with aircraft endorsement in 1943 at Dublin. On joining the Marconi Company in the same year he was appointed Radio Officer of Houlder Brothers' s.s. *Empire Buckler,* and served thereafter with many shipping companies, including British India, B.P., Ellermans, Shell and Shaw Savill & Albion.

From 1957 to 1962, Hugh O'Gorman was Senior Radio Officer of s.s. *Dunera,* B.I.S.N. Co., the last two years of which he describes as a particularly happy spell when *Dunera* became the first of the school ships, and he assumed the mantle of 'Uncle Hugh' to many hundreds of schoolchildren. He transferred to the British Antarctic Survey in 1962, and served with them until his retirement. His first 2½ years with B.A.S. were based ashore at Halley Bay and Faraday Base, the latter formerly known as Argentine Islands. On return from

the Antarctic, he resumed his sea-going career on board the B.A.S. ship *John Biscoe* in 1966, transferring to the new building Royal Research Ship m.v. *Bransfield* at Leith in 1970; he remained with the *Bransfield* until he retired.

The first of 52 meteorological logbooks was received from Mr O'Gorman in 1947 when he was Radio Officer of the *Silverlarch,* and out of this record number, no less than 37 were classed as Excellent. He was awarded a total of 16 Excellent Awards, of which the final 15 were in consecutive years with the British Antarctic Survey up to the present time. This is a truly fine achievement, and we will always be grateful for his consistent contribution to the causes of weather observing.

Hugh O'Gorman has many interesting memories of his long life at sea, and says:

'During my time, there has been a vast change in communications. On my first ship, changing the frequency bands often entailed withdrawing two tuning coils and plugging in coils for the new frequency, and the Emergency Transmitter was of the Quenched Spark Gap variety. These days on *Bransfield* we communicate with our Cambridge headquarters by Facsimile via Satellite, and our meteorological observations are transmitted directly to Bracknell by the Inmarsat Telex/Satellite link, using prefix 41+, via Goonhilly Coast Earth Station. A few years ago *Bransfield* was fitted for experimental purposes with a Data Collection Platform and our synoptic observations were transmitted via Meteosat to Darmstadt and onwards to Bracknell. All of my earlier ships were coal-burners and it was normal practice in port to shut down the generators in the evenings, so that all the cabins had to be fitted with oil lamps for illumination.

'It has been a pleasure to assist in the meteorological work on board ships, and your forecasts and analyses from Bracknell have been much appreciated, particularly in our recent Antarctic season when we received charts from your Office via Facsimile and satellite from B.A.S. headquarters at Cambridge.'

The Marine Division and all involved at the Meteorological Office are pleased to reciprocate Mr O'Gorman's appreciation, and wish him a long retirement of good health and happiness.

Notice to Marine Observers

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

Headquarters:

Captain G. V. Mackie, Marine Superintendent, Meteorological Office (Met.O.1a), Eastern Road, Bracknell, Berks. RG12 2UR. (Telephone: 0344 420242, Ext. 2456)
Captain R. C. Cameron, Deputy Marine Superintendent. (Telephone: 0344 420242, Ext. 2543)
Captain J. F. T. Houghton. (Telephone: 0344 420242, Ext. 2738)
Captain M. L. McN. Coombs. (Telephone: 0344 420242, Ext. 2461)
Captain A. Phillips, Ship Routeing Officer. (Telephone: 0344 420242, Ext. 2577)
Captain P. B. Hall, Ship Routeing Officer.
Captain C. A. S. Borthwick, Ship Routeing Officer.

Port Meteorological Officers:

North-west England.—Mr W. G. Cullen, Master Mariner, Port Meteorological Officer, Room 218, Royal Liver Building, Liverpool L3 1HU. (Telephone: 051 236 6565)

South-east England.—Captain C. R. Downes, Port Meteorological Officer, Daneholes House, Hogg Lane, Grays, Essex RM17 5QH. (Telephone: 0375 78369)

Bristol Channel.—Captain J. H. Jones, Port Meteorological Officer, Cardiff Weather Centre, Southgate House, Wood Street, Cardiff CF1 1EW. (Telephone: 0222 21423)

East England.—Captain J. Bentley, Port Meteorological Officer, c/o Department of Transport, Posterngate, Hull HU1 2LN. (Telephone: 0482 223066, Ext. 26)

Scotland and Northern Ireland.—Captain S. M. Norwell, Port Meteorological Officer, MOD(N) Room 200F, Navy Buildings, Eldon Street, Greenock, Strathclyde PA16 7SL. (Telephone: 0475 24700)

South-west England.—Captain D. R. McWhan, Port Meteorological Officer, Southampton Weather Centre, 160 High Street, Southampton SO1 0BT. (Telephone: 0703 20632)

North-east England.—Captain D. H. Rutherford, Port Meteorological Officer, Room D622, Corporation House, 73–75 Albert Road, Middlesbrough, Cleveland TS1 2RU. (Telephone: 0642 241144, Ext. 275)

Ocean Weather Ship Officer:

Captain A. Britain, The Meteorological Office, Dock Road, Wyre Dock, Fleetwood, Lancs. FY7 6PJ. (Telephone: 03917 6085/6909)

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Printed by HMSO, Edinburgh Press
Dd 0737134 C17 9/84 (218672)

ISBN 0 11 727202 7
ISSN 0025–3251