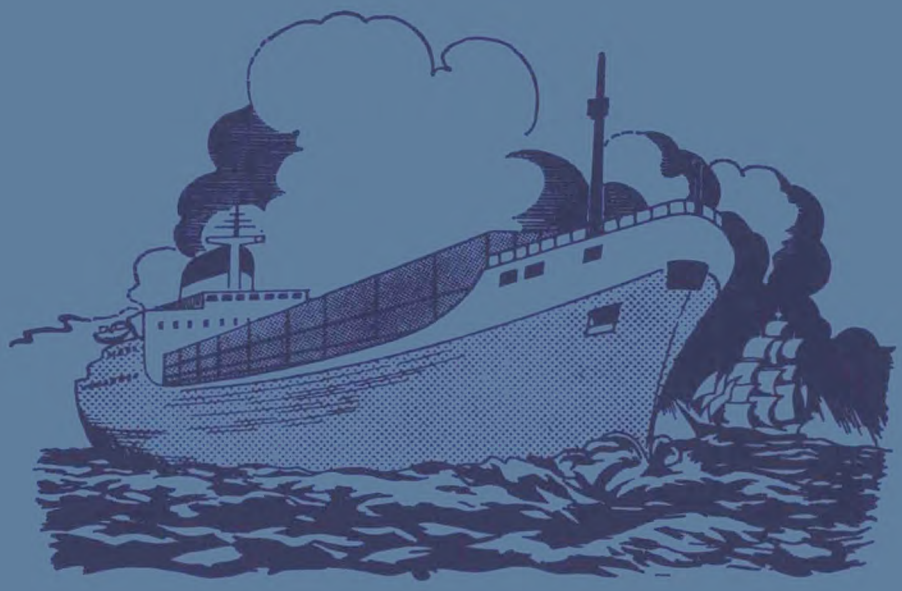
Met. O. 966

The Marine Observer

A quarterly journal of Maritime Meteorology



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THE MARINE OBSERVER

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

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CONTENTS

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Report of Work for 1984

(MARINE DIVISION OF THE METEOROLOGICAL OFFICE)

1. Voluntary Observing Fleet

At the end of 1984 the British Voluntary Observing Fleet was composed as follows:

(*a*) 435 Selected Ships, which are supplied on loan with a complete set of meteorological equipment and which make coded observations every 6 hours which are transmitted to the appropriate coastal station.

(*b*) 12 Supplementary Ships, including 1 trawler, which observe in less detail than Selected Ships and are supplied on loan with barometer, air thermometer and screen.

(*c*) 56 'Marid' vessels which are short sea traders making sea-surface temperature observations, mainly in UK coastal waters, transmitted by W/T or R/T. When in the North Sea, coasting ships include wind, weather and visibility data in their messages.

(*d*) 12 Light-vessels and 1 light-tower which make observations of wind, waves, visibility, air-temperature and sea-temperature, and send coded reports by R/T. Reports from *Channel, Dowsing* and *Varne* light-vessels as well as the *Royal Sovereign* light-tower are included in BBC weather bulletins for shipping.

(*e*) 3 Auxiliary Ships which make and transmit visual observations of wind, weather and visibility whilst the ships' own instruments are used to provide readings of air-temperature and pressure.

(*f*) 17 Semi-submersible Rigs operating in the North Sea, equipped with varying levels of instruments dependent upon their ability to make the necessary observations.

Despite the capabilities of satellite imagery to provide accurate data from surface measurements, the need remains for the voluntarily compiled surface observations provided by the masters and officers of merchant ships. In the UK, the Marine Division has been responsible for obtaining these observations since 1855, from the body which is collectively known as the Voluntary Observing Fleet, now composed of many types of ship and semi-submersible drilling rigs.

Numerically, the strength of the Voluntary Observing Fleet is once again increasing, though this is unfortunately not on account of a suddenly expanding British merchant navy. The number of ships has grown owing to the persistent efforts of the 7 Port Meteorological Officers in UK ports to recruit more diverse ship types and tonnages than hitherto. Together with the valuable liaison of several Commonwealth and foreign Port Meteorological Officers, without which much goodwill might have been lost, it has become prudent to consider ships of many flags for possible recruitment. The overseas fraternity continue to co-operate unstintingly in servicing UK Fleet ships in any way requested, and withdrawal of instruments and publications from British ships sold abroad regrettably occurs too often still.

With the continuing reduction in the age of ships and increasing rate of turns-round in port, the number of meteorological observations received in the year has again risen. The Table below shows the average daily number of reports received at the Bracknell Regional Telecommunications Hub (RTH) from marine weather stations during a typical 5-day period in June.

Starting in February 1984, the Meteorological Office introduced an automated data storage system for ships' observations called Meteorological Observation

Table I. Average daily number of reports received at Bracknell from ships and sea stations and geographical breakdown of total daily number of reports received by Bracknell direct and via the Global Telecommunications System (GTS)

	1983	1984
Direct reception from:		
British ships	169	175
Foreign ships	133	162
Rigs, platforms and buoys	87	92
Total	389	429

Total daily number of reports received by Bracknell direct and via GTS from:	1983	1984
Eastern North Atlantic	893	918
Western North Atlantic	541	653
Mediterranean	118	115
North Sea	312	329
Arctic Ocean	98	95
North Pacific	919	1055
All other waters	512	578
Total	3393	3743

System for Ships (MOSS). It has now been installed in 8 UK ships without difficulty and the success of the system has been very encouraging. The main feature of the MOSS system is the capability of transmitting all synoptic data in real time, particularly those of the midnight GMT observations in the North Atlantic, which are so often not transmitted until the Radio Officer's return to watch at 0800 ship's time. The midnight observations are the most important to the forecasters for modelling the daybreak weather forecasts, and efforts are being made to encourage ships to transmit the midnight observations more frequently.

2. Ocean Weather Ship Programme

Under the North Atlantic Ocean Station scheme (NAOS), the United Kingdom continued to operate an Ocean Weather Ship on station 'Lima' situated in position 57° 00′ N, 20° 00′ W. The UK ship, *Starella*, a converted trawler on charter to the Meteorological Office from J. Marr and Son, Hull, continued to man station 'Lima' alternately with the Netherlands Weather Ship *Cumulus*. Apart from a few days in November when *Starella* was delayed in port owing to extended engine repairs, the station was manned throughout the year.

The weather ship continued to make regular hourly surface and 6-hourly upper-air observations. Sea and swell records were obtained using a shipborne wave recorder for the Institute of Oceanographic Sciences, Taunton, and sea-water and salinity samples were taken for the Ministry of Agriculture, Fisheries and Food and other scientific bodies. Weekly deep thermal soundings with the Expendable Bathythermograph were made for the Admiralty. On her final voyage of the year, *Starella* undertook trials of the COSPAS–SARSAT free floating search-and-rescue beacon for the Admiralty Surface Weapons Establishment.

3. Ship Routeing

The Metroute service continued to be used extensively on North Atlantic passages, and weather routeing advice was also sought for vessels on North Pacific voyages, for oil rig and other tows, and for special contracts. One of the ships routed across the Atlantic was the cruise liner *Norway* of Norwegian Caribbean Line Ltd. Metroute also provides track forecasts up to 96 hours in advance, and one ship supplied with this service was P & O's new cruise liner *Royal Princess* on her maiden voyage with passengers from Southampton to Miami in November.

A voyage assessment service is also provided, from which shipowners and charterers may receive assistance to help them resolve claims for delay, deviation or slow steaming.

4. Services to Shipping

BBC and coastal radio stations of British Telecom International continued to broadcast weather synopses, forecasts for the shipping and fishing industries and, when necessary, warnings of gale force winds.

On 1 June, almost 125 years after the introduction of the visual storm warning system for shipping, the display by HM Coastguard around the UK coasts of gale warning cones and lights was discontinued, as almost all craft that intentionally put to sea are now equipped with radios.

From 1 August new shipping forecast areas for the North Sea came into force as a result of an agreement on common designation of forecast areas by all those nations bordering the North Sea. Boundary lines of many areas were re-drawn and two new areas created off the west coast of Norway, named North and South Utsire.

Rescheduling of the BBC Radio 4 programme also meant that from 29 September two of the broadcasts of shipping forecasts were retimed, the 0015 to 0033 and the 0625 to 0555 clock time.

Navtex coverage was extended to the whole of the waters surrounding the UK by the addition of Land's End to Cullercoats and Portpatrick as a transmitting station. Navtex is a service for shipping providing automatic print-out from a dedicated on-board telex receiver of urgent information on navigation and initial distress messages, as well as weather forecasts and warnings.

5. Marine Inquiries

A very high level of marine inquiries of many types was received. The inquiries came from solicitors, shipowners, charterers, insurance companies, motoring organizations and marine surveyors and consultants, by both letter and telex. The main requirements were for weather conditions, forecasts and synopses for some time in the past, but requests were also received for information on currents, tidal streams and abnormal wave heights. The various inquiries were received in connection with litigation, container and general cargo damage claims, collisions, ship losses, yachting accidents, ships' performance and injuries to crew members of fishing vessels.

6. Awards to Voluntary Observers

Inscribed barographs were presented to four shipmasters during the year in recognition of the long and productive voluntary service they had rendered to the Meteorological Office. Excellent Awards in the form of books were made to the many shipmasters, principal observing officers and radio officers who made up the 100 most highly assessed logbooks within the year. These awards include the masters and officers on short sea trades who make sea temperature

observations only. The books presented this year include *To the Ends of the Earth* by Sir Ranulph Fiennes, *Philip's University Atlas* and *Cassell's English Dictionary*.

7. Port Meteorological Officers' Conference

The first Port Meteorological Officers' conference to be held since 1978 took place at Bracknell Headquarters in September, and besides the 7 Port Meteorological Officers there were nine other members of the Marine Division staff present. The Marine Superintendent, Captain G. V. Mackie, presided, having called the meeting at that time in order to hear the views of the Port Meteorological Officers regarding topics to be raised at the forthcoming Commission for Marine Meteorology (*see* separate report on page 86), as well as to discuss other items of mutual interest. (*See* photograph of participants opposite page 80.)

Under the general heading of monitoring of marine meteorological services, various aspects affecting mariners were discussed, including facsimile chart scales and reception, weather bulletins, foreign coast radio stations and port meteorological services, wave observations and contemporary communication modes.

Reviews were also made of equipment inventories, the fitting of special Meteorological Office instruments to ships, various small equipment problems and future liaison with nautical colleges after the current programme of closures has been carried out.

A number of actions were implemented which it is hoped will assist the majority of our dedicated voluntary marine observers in the commission of their beneficial deeds.

Since meeting together at this conference, it is with great regret that we have to report the death from natural causes of Captain J. H. Jones, Port Meteorological Officer Bristol Channel (Cardiff) on 18 January 1985. A full obituary notice will appear in the July 1985 edition of *The Marine Observer*.

April, May, June

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 TYPHOON 'WINNIE'

East China Sea

m.v. *Albright Pioneer*. Captain J. H. Kitching. Port Kelang to Port Kinuura. Observers: the Master and Mr W. J. Hutchings, 2nd Officer.

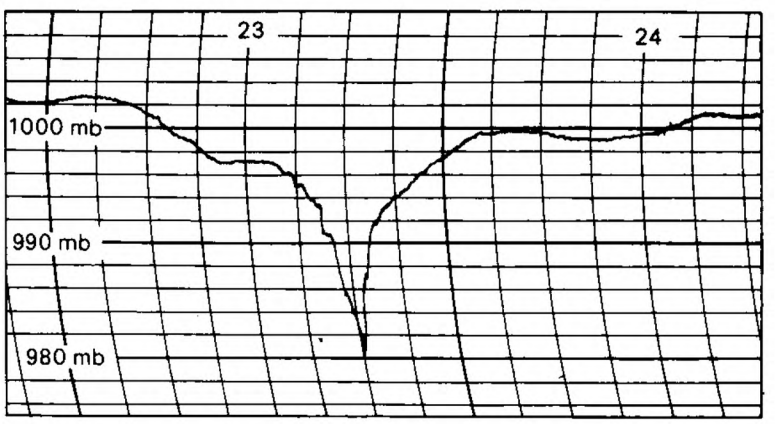
23 June 1984. As the vessel approached the typhoon, on a course of 042° and at a speed of 12 knots, thick stratus and stratus fractus cloud was forming and passing overhead, bringing rain squalls from the NW. At this point the visibility in the rain was restricted to 1 n. mile. The barometric pressure was dropping steadily from its previous value of 1000 mb, the temperature was falling steadily from 29·0 °C to 27·5, and the winds were backing from NW to SW and increasing to force 5–6.

By 1600 GMT it was estimated that the vessel was approaching the centre of the typhoon. The pressure was 986 mb, falling, and the winds were gusting from the SW, force 6–7. Heavy rain was experienced, causing restricted visibility.

At 1650 GMT it was estimated that the vessel was passing through the 'eye' of the typhoon, with winds backing from SW to S, force 9–10. Violent rainstorms were encountered on either side of the 'eye'.

At the predicted centre the wind dropped to force 2–3 and the barometer recorded its lowest pressure of 980 mb. There was no rain at this point and visibility was estimated as 4–5 n. mile. The air temperature was 26·5 °C. Within 2 n. mile of the centre the wind increased and was SE'ly, backing rapidly from S to SE, force 6–7. At this stage the pressure was beginning to rise sharply and heavy rainstorms were experienced with visibility less than 1 n. mile. The coastline of Taiwan was suppressed by rain clutter on the radar screen.

As the vessel moved further away from the centre the rain lightened and the temperature rose gradually from 26·5° to 27° within the 4 hours up to 1800 GMT. The strong winds from the SE, force 7–8, began to weaken, and the pressure rose sharply.



Weather conditions at 0000 GMT on the 24th: dry bulb 27·5 °C, barometric pressure 998 mb, wind E's, force 4–5. Two hours later the cloud formation was cumulus and stratocumulus with cumulonimbus visible in gaps and there were occasional rain showers. Visibility was good except in the showers, when it fell to 3–5 n. mile.

Position of ship at predicted centre of typhoon: 21° 42′N, 120° 54′E.

PASSAGE OF COLD FRONT AND SECONDARY DEPRESSION

North Sea

m.v. *British Beech*. Captain R. W. Blyth. Göteborg to Immingham via NW of Dogger Bank. Observer: Mr B. J. Wilson, 3rd Officer.

23 June 1984. Up to the synoptic hour of 0000 GMT on the 23rd the wind had veered continuously for the preceding 12 hours. This was expected, as the forecast received had read 'Low NE Malin 999 moving rather quickly east. Expected Skagerrak 986 midnight Saturday. Area forecast for Tyne, Dogger, Fisher and German Bight SW'ly veering NW'ly, 5 to 7 and locally gale 8. Rain then showers. Vis. moderate or good.'

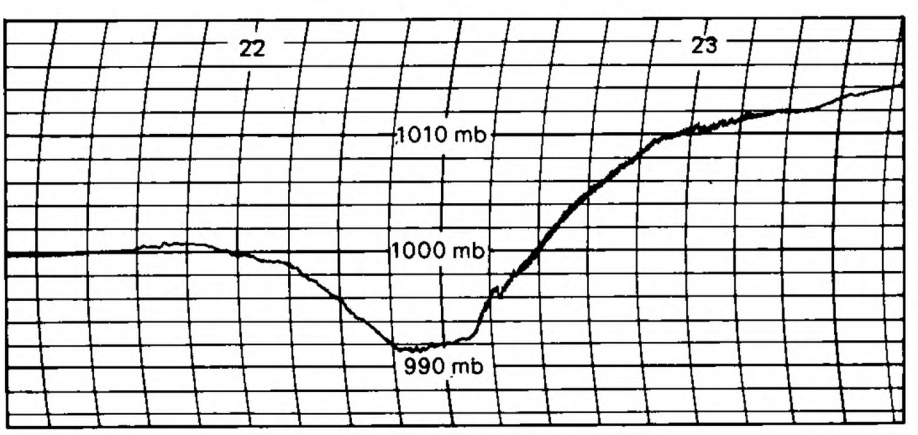
At 2300 GMT when the observer came on watch, the resigning Officer of the Watch informed him of the continuous veering of the wind throughout the watch, and also of the heavy rain that had occurred at about 2200 GMT on the 22nd. From this evidence it was concluded that the cold front of the depression had gone through; the wind was also dropping from force 7 to force 5 and the visibility had improved.

Just before midnight it was noticed that the wind strength had dropped considerably to about force 2. After the synoptic hour the wind picked up extremely fast from the west and now veered very fast, increasing to about force 9 at 0200 GMT. The observer was amazed how fast the sea was kicked up, as within 30 minutes of the wind speed initially rising the vessel was taking seas on deck, with waves 2–3 metres high. The swell was mainly confused but from a N'ly direction.

Shortly after 0215 GMT an extremely large wave was shipped, mainly over the aft part of the vessel; the bridge windows were totally covered in green water, and the Swimming Box on the Bridge Deck (height of eye 16 metres above sea level) was filled with 1·5 metres of sea water. Having been inside the bridge, but nevertheless managing to get soaked, the observer brought the vessel from a course of 230° to one of 150° to check for damage around the accommodation and deck. With the following sea, no seas came on deck even though the freeboard was only 2 metres.

On resuming course at 0300 GMT, the swell had decreased and again became confused, but mainly from the north. A course of 250° was set in order to pass to the north of the Dogger Bank.

From the barograph record, which showed a kink in the upward movement, and also the weather observed, it was assumed that a secondary depression had passed to the rear of the cold front.



The wind had continued to veer to the north and eventually blew itself out be 1900 GMT. A rise in pressure of some 20 mb was recorded. It was assumed that the exceptional wave which struck the vessel was possibly caused by the nature of the sea bed in this area, where the depth is 30–40 metres.

Approximate position of ship at time of encounter with wave: 55° 58′N, 04° 58′E.

TURBULENT DOWNDRAUGHTS

Inchmarnock Water

F.P.V. *Vigilant*. Captain D. L. Rattray. Greenock to northern and western Scottish waters. Observer: Mr J. Barkess, 1st Officer.

12 June 1984, 1200 GMT. During a period of s'ly wind, force 9, turbulent downdraughts were experienced in Inchmarnock Water between the mouth of North Glen Sannox and Cock of Arran. The area of greatest disturbance extended from ½ n. mile to 3 n. mile offshore. A rotating, swirling effect was imparted, throwing spray up to a height of at least 16 metres over an area of approximately 60 metres×30 metres and having the appearance of a waterspout. Each area of turbulence was separate from the others and between them the wind steadied. It was considered that a yacht experiencing one of these rotating downdraughts could have found herself in danger.

Position of ship: 55° 42′N, 05° 12′W.

WATERSPOUTS

Singapore Strait

m.v. *Gazana*. Captain S. Harwood. Yosu to Singapore Roads. Observers: the Master, Mr M. P. Chalk, Chief Officer and other members of the ship's company.

14–15 May 1984. At 2330 GMT on the 14th two waterspouts were seen moving in a direction of 070°. The spouts reached from sea to cloud-base at approximately 600 ft, and the course of the ship had to be altered in order to avoid them. The boiling action of the water was clearly observed close by as well as the violent rotation. (*See* photographs opposite page 65.)

Weather conditions at time of observation: dry bulb 27·9 °C, wet bulb 26·0, barometric pressure 1006·7 mb, wind light airs, visibility 5·5 n. mile.

Course 261°, speed 15·0 knots.

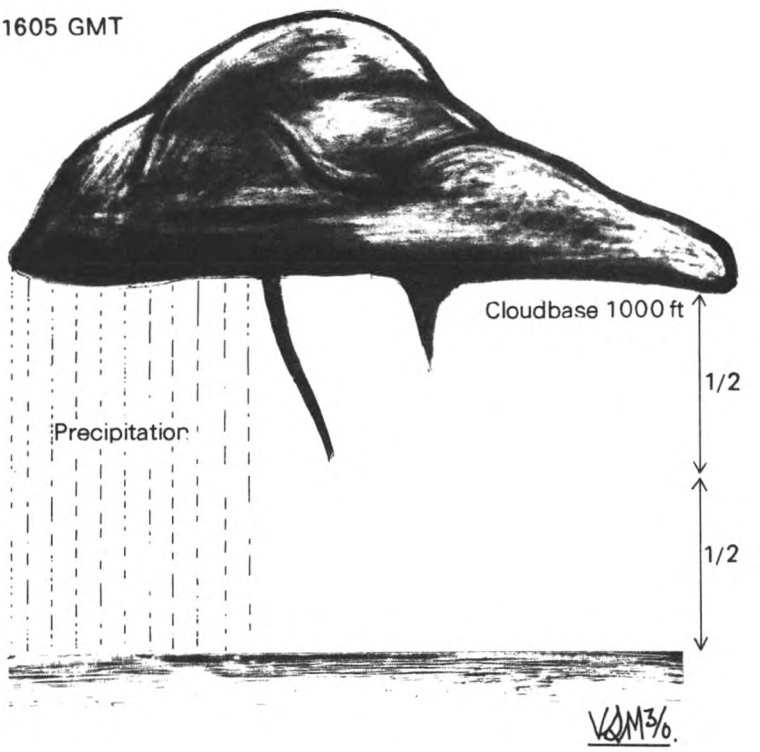
Position of ship: 01° 18′N, 104° 15′E.

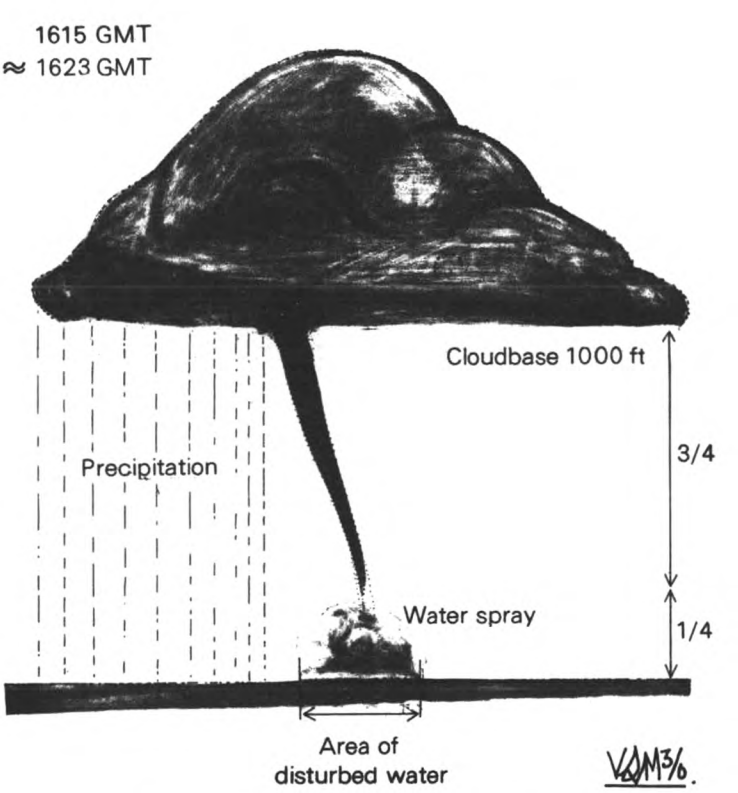
North Pacific Ocean

m.v. *Columbia Star*. Captain A. B. Chivers. Panama Canal (Balboa) to Lazaro Cardenas (Mexico). Observers: the Master, Mr M. Power, Chief Officer, Mr V. S. Moran, 3rd Officer and Mr A. Campbell, Extra 3rd Officer.

20 June 1984. At 1605 GMT two waterspouts were observed, extending from the base of the same cumulonimbus cloud, at a distance of 10 n. mile on the starboard bow. The lower of the two spouts extended from the base of the cloud till half-way between the cloud-base and sea level. The shorter of the two spouts extended a third of the distance between the cloud-base and sea level. The shorter spout appeared to be receding into the base of the cloud and by 1615 GMT was no longer visible. At this time the longer spout extended three-quarters of the distance from the cloud-base to the sea surface, and a disturbance was noted on the surface below the bending spout. The spout retained this appearance until 1623 GMT, when it became distorted, lost its dark outline, and appeared to recede into the base of the cloud. The direction of rotation of the spout could not be discerned. The height of the cloud-base was 1000 ft. Other weather conditions were: dry bulb 26·0 °C, wet bulb 23·4, sea temperature 28·8, barometric pressure 1013·1 mb, decreasing steadily, wind variable, force 3, cloudy with moderate rain showers, good visibility, slight sea, low swell.

Course 307°, speed 18 knots.





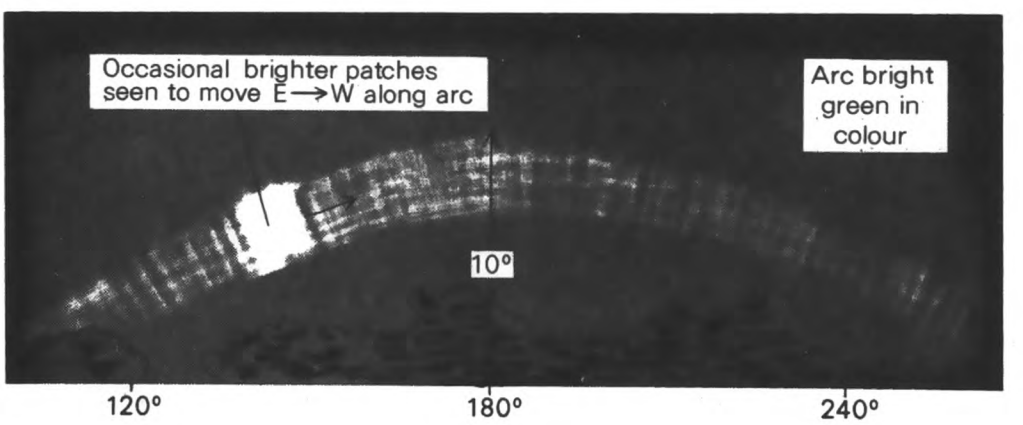
Position of ship: 17° 01′N, 100° 50′W.

AURORA AUSTRALIS

Indian Ocean

m.v. *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observers: Mr D. G. Robbie, 3rd Officer and Mr R. Nicol, Lookout.

9 May 1984, 2030 GMT. A bright arc was noticed on the southern horizon just above some low cloud. The arc had an altitude of approximately 10° and was about 4° in width. It was bright enough to dim out stars of magnitude 4 and below. No ray activity was observed but occasionally the arc was observed to brighten at one end (E) and then a bright patch would move along in a W'ly direction. The arc was kept under observation for about 20 minutes before being obscured by a sheet of cloud. Some sunspots had been observed that morning over the limb of the solar disc.



Weather conditions at time of observation: dry bulb 11·0 °C, wet bulb 9·5, barometric pressure 1019·9 mb, wind NW'ly, force 4, few clouds then overcast, slight following swell.

Position of ship: 45° 03′S, 81° 30′E.

DISCOLOURED WATER

Eastern North Atlantic

m.v. *Stability*. Captain M. Salsbury. IJmuiden to Ceuta. Observers; Mr C. Brown, 2nd Officer and Mr B. Haugh, 2nd Engineer Officer.

22 June 1984, 1200 GMT. Extensive patches of discoloured water were observed. They were orange/brown when viewed 'into the sun' and magenta/purple when viewed 'behind the sun'. The patches lay in bands about 200 metres long by 20 metres wide. In the vicinity of the patches an increase in marine life was noted, that is to say at least three species of dolphins or porpoises, suspected pilot whales and an assortment of birds.

The presence of the discoloured water coincided with an increase in sea temperature, i.e. from 16·2 °C at 1000 GMT to 17·6 °C at 1200. The wind was N'ly, force 6. Soundings were unavailable but depth from the appropriate chart indicated 500–600 fathoms.

Position of ship: 41° 00′N, 09° 28′W.

ICE IN ST CLAIR RIVER

Great Lakes

m.v. *Rubens*. Captain E. H. Dillen. Toledo to Burns Harbour. Observers: the Master, Mr D. S. Hibberd, 3rd Officer, and other members of the ship's company.

21–27 April 1984. At 1800 on the 21st, m.v. *Rubens* departed from Toledo, Ohio for an intended passage to Burns Harbour, Indiana. Prior to departure we were instructed by the 'Sarnia Traffic Centre' (a voluntary reporting station for Great Lakes traffic movement) that owing to severe ice conditions in the St Clair River we would be unable to transit from Lake Erie to Lake Huron immediately.

Rubens anchored, along with many other salt-water and lake vessels, at the western end of Lake Erie and awaited instructions. We remained at anchor for five days, during which time Canadian and American ice-breakers worked around the clock trying to clear ice from the river.

The major cause of the severe conditions, which were reported to be the worst around Port Huron since 1877, seems to be the unusually large number of depressions passing south of the area during February and March 1984.

These depressions caused the prevailing winds to be south-easterly, backing to north-easterly, which pushed ice, normally washed up on beaches in Georgian Bay, out into Lake Huron. In past years the majority of depressions have passed to the north, causing prevailing winds to blow from the west quadrant, thus keeping the gradually melting ice in Georgian Bay.

The ice then moved south with the currents and formed an ice-bridge across the southern end of Lake Huron. In early March the ice-bridge broke up, and the broken mass of ice travelled down river, meeting the natural ice cover in Lake St Clair. This formed a massive 'ice-jam' which was reported to have clogged the shipping channel to a depth of 4 metres in places.

We weighed anchor at 0329 on 27 April 1984 with orders to be at Beacon Number 2 of the St Clair Cut-off at 0900 the same morning. We were to be the fifth vessel in a convoy of six to be escorted through the river that day.

Our passage north through the Detroit River was uneventful and our first views of the ice were in Lake St Clair, about $3\frac{1}{2}$ n. mile south-west of the Cut-off Light. This was 'very close lake ice'. It was here that the visibility deteriorated to about 1 n. mile, owing to the rapid change in surface temperature. Further up river the visibility improved as the photographs opposite show.

We proceeded slowly up river in our convoy and although we didn't ever become stuck in the ice ourselves, several of the vessels ahead of us had problems. This caused us to make numerous engine movements ahead and astern so that *Rubens* was stopped for as little time as possible in what was mostly 'compact brash ice'.

We passed two vessels which had become ice-bound several days earlier and which, despite ice-breaker assistance, had been unable to break free.

Our total time to transit the 30 n. mile length of the river was approximately five-and-a-half hours. Normally we could have expected to be clear of Port Huron within four hours.

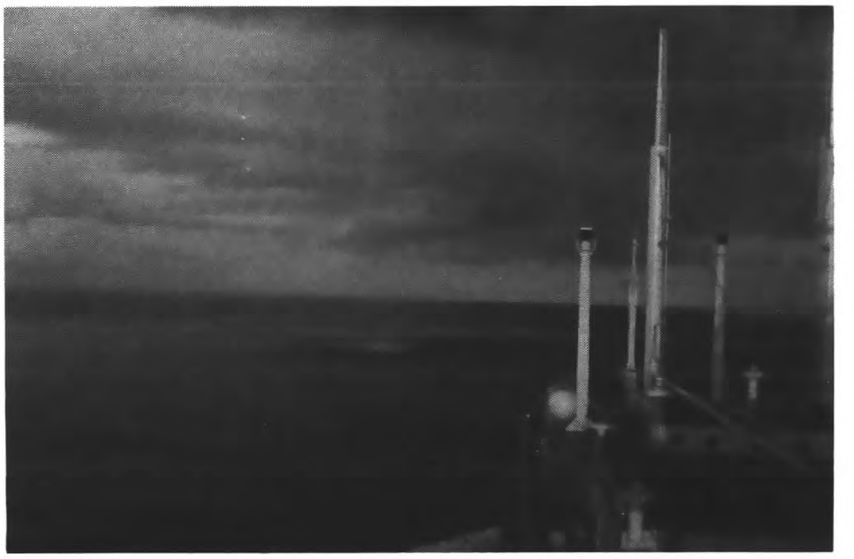
Once out into Lake Huron the ice cover dissipated rapidly, and we were in clear water by 1600, 8 n. mile north of the Blue Water Fixed Bridge at Port Huron.

During the whole period we were in the St Clair River the weather was calm, with the air temperature reaching a maximum of 16·0 °C at midday. The sky was cloudy throughout.

Position of ship on 27 April: 43° 06′N, 82° 27′W.

Ice in the St Clair River (*see* facing page).

Opposite page 65



Photos by S. Harwood

Waterspouts observed in Singapore Strait by m.v. *Gazana* (*see* page 61)

ABNORMAL RADAR RECEPTION AND RADAR DETECTION OF FISH SHOAL

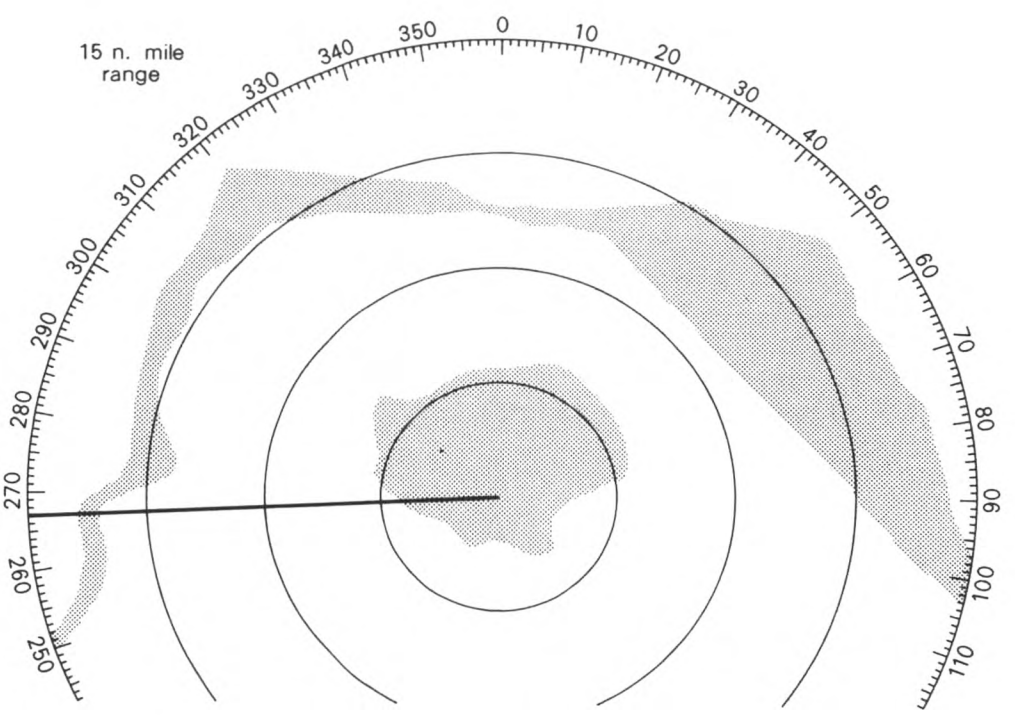
South African coastal waters

m.v. *Eastern Muse*. Captain I. H. Woolley. Durban to Los Angeles via Panama Canal. Observers: the Master, Mr A. Hodges, Chief Officer, Mr Tsang Kwong Lam, 2nd Officer and Mr S. Tompkins, 3rd Officer.

23–24 June 1984. From approximately 2200 GMT to 0400 GMT, whilst the vessel was off Port Elizabeth, an unusual radar picture was obtained, as illustrated in the sketch. It was initially considered to be a second-trace land echo, but this was later doubted as the echoes occasionally occurred in all directions. As there were definite striations in the echo towards the NE, that ran parallel to those produced by the heavy swell in the radar sea clutter, it was thought likely that this was a sea-surface phenomenon.

Although the disposition of the echo frequently varied, and occasionally the echo encircled the ship, the echo never actually reached the ship. In other words, the echo always maintained its distance and the ship never passed through the affected area.

The sketch was obtained at 2300 GMT, at which time the echo strength was slightly lower than that of the sea clutter. Unfortunately a sea temperature was unobtainable that day. At 2300 GMT the vessel's course was 267° and her speed 16·0 knots; Bird Island (33° 50′S, 26° 17′E) was 28 n. mile distant on a bearing of 353°.



It is considered possible that this effect was due to sea-surface temperature gradients or to refraction at water-mass 'fronts' (the vessel was in the area affected by the Agulhas Current). The radar (Kyoritsu Dempa Co. Ltd, Japan, Type ML–158–D, X–band, date built June 1971) had just been serviced in the last port of call and was performing very well. The dry-bulb temperature was 19·5 °C and the wet-bulb 17·9; the barometric pressure was 1021·6 mb, falling 1 mb in 3 hours, and the wind 009°, 17 knots (anemometer reading).

Later on 24 June, when the vessel was approaching Cape Agulhas from the east, a radar target was observed at about 10 n. mile on the port bow. At a distance of 5 n. mile the echo hardened and resembled a normal ship echo. No lights could be seen although the visibility was good. A radar plot had revealed that the target was stationary and likely to pass about 8 cables on the port beam. As the target reached a distance of about 2 n. mile, it expanded slightly and lost its solidity. The echo sounder was run and a fish shoal extending from 6 to 16 metres beneath the keel was detected, this being observed as phosphorescence as the ship passed close to the target. Also observed were patches of breaking water in the target area, the strong phosphorescence at the time making this clearly visible (a bottom at 75 metres was detected on the echo sounder). The vessel had left Durban two days previously and at that time there were large sardine runs occurring down the coast, so it is possible that we witnessed a similar occurrence.

Circumstances: time 2150 GMT, position 8·7 n. mile SSE of Cape Agulhas, course 261° and speed 14·0 knots; air temperature 15·6 °C, barometric pressure 1022·9 mb, light N'ly wind, heavy and long SW'ly swell, slight to moderate sea, light cloud, fine and clear.

Position of ship at 2300 GMT on 23 June: 34° 20′S, 26° 18′E.

Note. The *Eastern Muse* is a Hong Kong Selected Ship.

DOLPHINS

Tasman Sea

m.v *ACT 7*. Captain D. Newlin. Botany Bay to Auckland. Observers: Mr D. G. Robbie, 3rd Officer and Mr S. Meech, 2nd Engineer Officer.

31 May 1984. At 0245 GMT a large school of dolphins was sighted close to the vessel on the starboard side. There were approximately 50–60 animals, all of which appeared to be adults. When first sighted, approximately ¼ n. mile ahead of the vessel, the animals were moving in a SW'ly direction but when abeam they altered course to a southerly direction. All were moving at speed and none showed any interest in the vessel whatsoever. They were identified as common dolphins.

Weather conditions: dry bulb 13·7 °C, wet bulb 13·3, barometric pressure 1010·1 mb, wind N'ly, force 5.

Course 069° and speed 18·0 knots.

Position of ship: 34° 03′S, 152° 14′E.

WHALES AND BIRDS

South Atlantic Ocean

m.v. *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observers: Mr D.G. Robbie, 3rd Officer, Mr N. Smirk, Radio Officer and Mr R. Nicol, Lookout.

3 May 1984. At 1132 GMT a group of 12 whales was sighted close by the starboard side of the vessel.The whales were estimated to be about 6 metres in length and had light grey upper parts with darker underbellies. They had square-shaped heads which were white in colour, this being very distinctive. All the animals except two young had dorsal fins which were about 30 cm long and slightly recurved. The fins were greyish in colour, but darker than the grey backs of the animals. There were two young in the group which were always close to an adult. These were almost pure white in colour, although they also had the white forehead.

The group appeared to be playing, with young and adults riding the bow wave. The vessel was approximately 40 n. mile north of Cape Town at the time.

Several birds were also observed at the time, amongst which were numerous Cape Gannets and Southern Giant Petrels, one Blackbrowed Albatross and two smaller birds which were thought to be Cory's Shearwaters.

Weather conditions: dry bulb 16·0 C, wet bulb 15·3, sea temperature 17·0, barometric pressure 1016·7 mb, wind N'W, force 2–3, slight sea, low swell.

Course 142° and speed 19·5 knots.

Position of ship: 33° 34'S, 17° 48'E.

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

'There are several features of this report which I find somewhat confusing. The colour pattern is certainly most odd—light upper parts with dark bellies is the opposite of most known species. My first impression of the animals with a squarish, white forehead and dark, curved dorsal fin is that it is Risso's dolphin (*Grampus griseus*). This dolphin is quite robust, giving the impression of being large, but it does not generally exceed 4 metres. The largest cetacean that I know of which will regularly bowride is *Pseudorca* (about 6 metres); pilot whales will occasionally bowride, but not often, and both these animals are black above and on the flanks.

'I am intrigued by the two "young" in the group which had "white foreheads and no dorsal fin". In the cold waters of the Benguela Current such a description would fit the southern right whale dolphin (*Lissodelphis peroni*), a bowriding species about 2 metres in length and one which is known to associate with pilot whales. I suggest the observers take a look at the photograph opposite page 32 in *The Marine Observer*, No. 275, January 1982 to see if this was their young animal.'

BIRDS

North Atlantic Ocean

m.v. *London Enterprise*. Captain A. D. Gillie. Teesport to Freeport (Texas) and Dos Bocas (Mexico) to Trieste. Observers: Mr M. J. Webber and Mr K. Hewlett, 3rd Officers.

29 May 1984, 2230 GMT. At the above time five birds alighted on the maindeck from an easterly direction. They were white in colour and looked to be of the heron family. It was estimated that they were about one metre in length with a similar wingspan. They all had yellow beaks and a yellow/brown crest which continued as a light brown streak down the middle of the back. The length of this streak varied from bird to bird. The legs also differed in colour, one bird's being coloured the same as the beak, whilst the others were a charcoal grey. This group remained on the vessel for some 10 minutes but they were disturbed by the pounding feet of the vessel's jogger on his daily mini-marathon; as they took flight this group was joined by a further pair. Some three minutes later, after having circled the vessel, the enlarged group was joined by a further pair and the whole flock then flew off in a NW'ly direction. The observers were in two minds as to whether these birds were egrets or small herons. The winds at the time were variable, force 2–3.

28 June 1984. The birds sighted on 29 May were observed frequently again across the Gulf of Mexico and Florida Strait. Once the vessel entered the Atlantic beyond the Bahamas there were no further sightings of these birds except for one individual which remained with the vessel. At no time had it been seen feeding and it seemed reluctant to venture further than about ½ n. mile from the ship. It was expected to disappear when the vessel passed approximately

60 n. mile south of Bermuda, but this was not to be. General description as that of observations on 29 May, but no distinct brown flash down back (*see* sketch).

The last sighting of this bird was on the poop deck at 0630 GMT on 1 July; its fate is unknown, there having been no land or other vessels in the vicinity.

Weather conditions on 28 June: dry bulb 23·9 °C, wet bulb 23·6, barometric pressure 1025·0 mb, winds variable, force 2–3, sea slight.

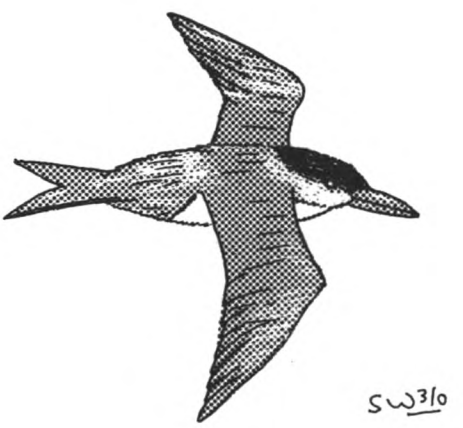
Position of ship on 29 May: 24° 45′N, 84° 37′W.

Position of ship on 28 June: 31° 30′N, 62° 07′W.

Western Mediterranean Sea

m.v. *Devonshire*. Captain J. A. Corcoran. Aviles (Spain) to Foça (Turkey). Observers: Mr S. L. J. Walker, 3rd Officer and Mr Cheng Kai Fan, G. P. Seaman.

28 May 1984, 0416–0435 GMT. The seabird shown in the sketch was observed.



Its length was approximately 50 cm and wingspan approximately 1 metre. The top of the wings and the tail were light grey in colour and the neck and stomach were white. The back and top of the head were dark black and the bill was black and thick. The sighting was thought to have been of a common tern.

Position of ship: 37° 12′N, 06° 21′E.

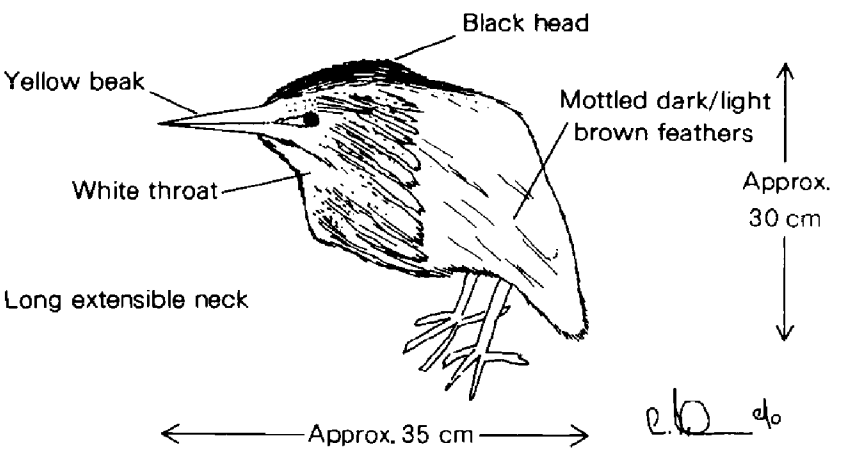
Note. Captain A. S. Young, of the Royal Naval Birdwatching Society, comments as follows:

'I think this tern is more likely to be Sandwich (*Sterna sandvicensis*) or Gull Billed (*Sterna nilotica*) in breeding plumage, both being larger and somewhat heavier than the common tern (*Sterna hirundo*). The Gull Billed has a distinctly heavy black Bill, as noted, and also a fairly shallow fork to the tail.'

North and South Pacific Oceans

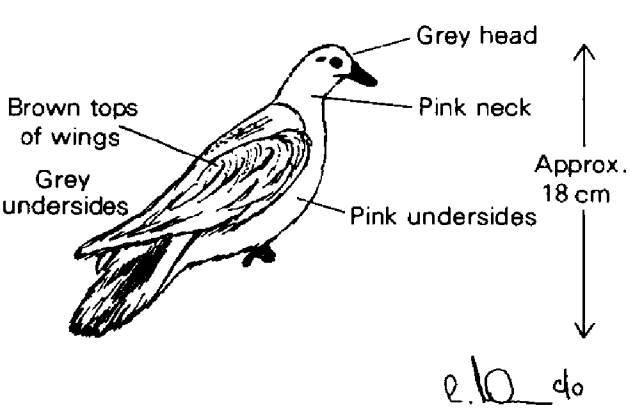
m.v. *E. W. Beatty*. Captain R. Headrick. Kaohsiung to Newcastle (N.S.W.) and Newcastle to South Korea. Observers: the Master, Mr C. J. Doodson, Chief Officer, Mr B. Martin, 2nd Officer, Mr A. B. Gee, 3rd Officer, and Mrs K. Gee.

17 May 1984. The vessel departed Kaohsiung at 0900 LMT and proceeded southwards along the coast of Taiwan before turning into the Bashi Channel and heading out into the Pacific. When in position 21° 35′N, 120° 15′E, about 25 n. mile south of the southern tip of Taiwan, the first visitor came on board.



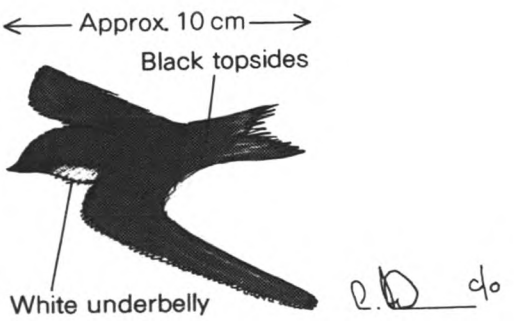
It was a largish bird with a long neck and plumage and coloration as indicated in the sketch. It was thought to be a Bittern. At the time the wind was light airs, course 118° and speed 14 knots.

18 May 1984. When in position 20° 25′N, 122° 05′E, about 75 n. mile east of Balintong Channel, Philippines, a turtle dove was found sitting on one of the

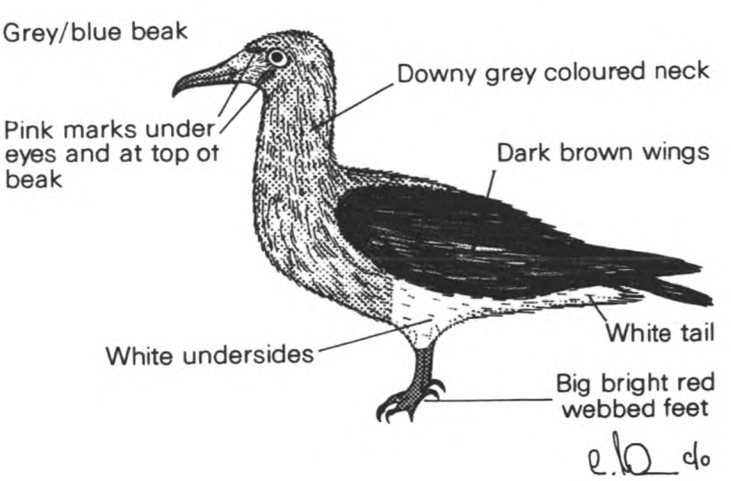


Samson Posts aft. The ship's course was now 128° and her speed 13·5 knots. Attempts were made to give the bird fresh water, but it appeared unconcerned and had gone by the next morning.

Later on the 18th, when in position 19° 37′N, 124° 12′E and approximately 130 n. mile east of the Philippines, a house martin was seen. The wind at the time was s'ly, force 3.



10 June 1984. The vessel was now on passage from Newcastle to South Korea and in position 16° 02′S, 154° 35′E. During the afternoon 4–8 watch the Master was taking his usual afternoon walk on the bridge wing when he was startled by a large bird flying just above his head and obviously confused by the ship's lights. This bird finally went to roost on the after stores derrick, where it was observed through binoculars. At about 0330 on the following morning the 2nd Officer was out on the starboard bridge wing with a weak torch taking the air temperature when he was even more startled by a large beak, frantic calls and flapping wings. A second bird, similar to the first, which was still roosting on the derrick, was sitting on the bridge wing. A sketch was made with the help of a light. The two birds were thought to have been young Red-footed Boobies.



Position of ship: as stated in narrative.

Note. The foregoing reports were referred to Commander M. B. Casement, Chairman of the Royal Naval Birdwatching Society with respect to the land birds, and to Captain A. S. Young, of the RNBWS, with respect to the seabirds. Commander Casement comments as follows:

'The "Bittern" was probably a Malayan Night Heron (*Gorsachius melanolophus*), whose range is India, South China and Taiwan. For the Turtle Dove I would suggest the Red Turtle Dove (*Streptopelia tranquebarica*). The absence of a white rump disallows the "House Martin" identification; this bird was perhaps a North Pacific Swallow (*Hirundo tahitica*).'

Captain Young comments as follows:

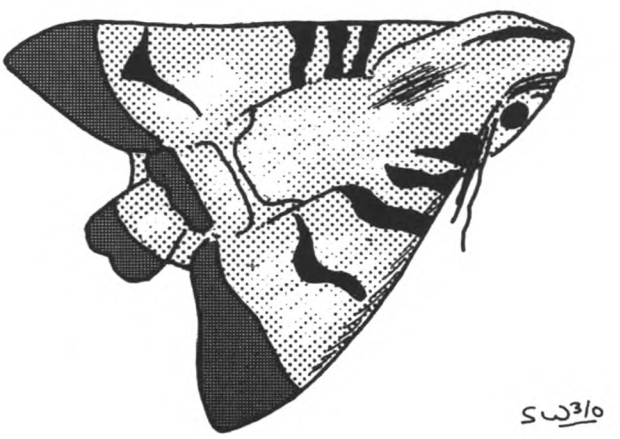
'A very good sketch. Red-footed Booby (*Sula sula*) and one of the several morphs (colour variations) which occur with this species, apart from the usual immature variations. Some sport more white while others are more fawnish with a different wing pattern; all this makes it a rather difficult bird to positively recognize amongst others, apart from the very diagnostic orange/red feet in the adult bird.'

INSECTS

Sea of Marmara

m.v. *Devonshire*. Captain J. A. Corcoran. Foça (Turkey) to Gemlik (Turkey). Observers: the Master, Mr S. L. J. Walker, 3rd Officer and Mr Tan Chung Leung, G. P. Seaman.

1 June 1984. At 1448 GMT the moth shown in the sketch was observed. Its length was approximately 3 cm and its colouring was mainly light grey/silver,



with dark grey tips to wings and abdomen. There were black and white markings on the head and upper side including a large grey 'eye' on the side of the head. The underside was white as far as it could be observed.

Position of ship: 40° 27′N, 28° 47′E.

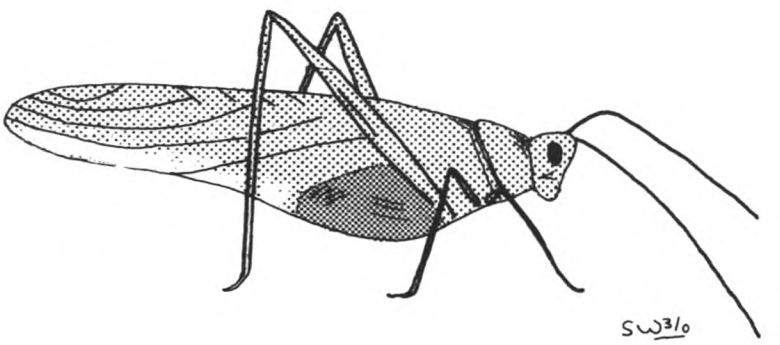
Note. Mr Allan Watson, of the British Museum (Natural History), has identified the moth as the Convolvulus Hawkmoth, a species of the Old World Tropics, but which occasionally reaches Britain as a migrant. He adds that it was almost certainly attracted by lights on board the vessel.

Eastern Mediterranean

m.v. *Devonshire*. Captain J. A. Corcoran. Gemlik (Turkey) to Port Said. Observers: Mr S. L. J. Walker, 3rd Officer and Mr J. S. Edgington, Cargo Engineer Officer.

4 June 1984. 0700–0715 GMT. A large grasshopper as shown in the sketch was observed. It was approximately 10 cm in length and its colour overall was light green with slightly darker bottom of abdomen and almost transparent bottom edge of wings.

Position of ship: 35° 01′N, 28° 27′E.



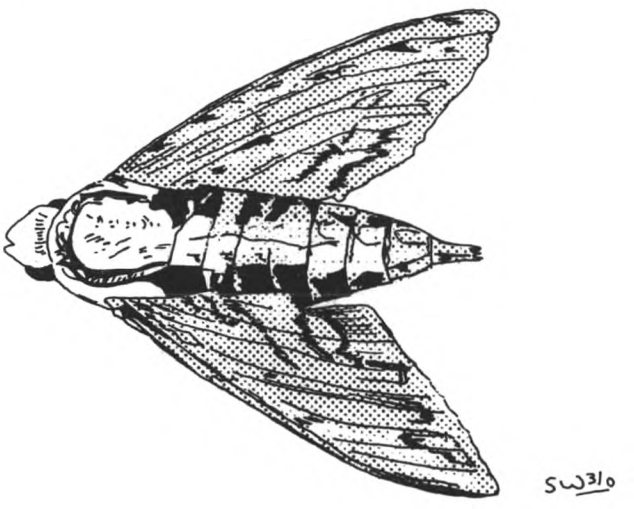
Note. Mrs J.Marshall, of the British Museum (Natural History), comments as follows:

'The "grasshopper" is more correctly called a bush-cricket—the long antennae being one of the distinguishing features of bush-crickets. This specimen is probably one of the Phaneropterinae, of which there are several possible genera; insufficient detail is shown for full identification.'

Gulf of Aden

m.v. *Devonshire*. Captain J. A. Corcoran. Drifting off Somali coast. Observers: Mr S. L. J. Walker, 3rd Officer and Senior Cadet A. Pailing.

17 June 1984, 0300 GMT. The moth shown in the sketch was observed. It was



5 cm in length and was mainly silver grey in colour, with black, white and red markings on the upper side of the thorax and abdomen. The underside was silver/white.

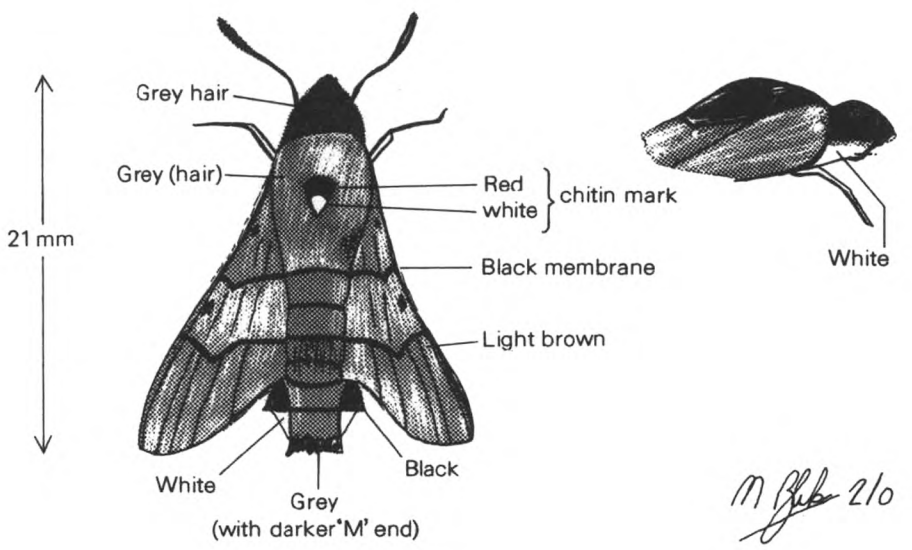
Position of ship: 12° 55′N, 49° 54′E.

Note. Mr Watson has identified the moth as a Hummingbird Hawkmoth, a species found from as far north as Britain, as a migrant, southwards to the Gambia, and states that it was almost certainly attracted by lights on board the vessel.

Western Mediterranean Sea

m.v. *London Victory*. Captain E. G. Kemp. Drifting 25 n. mile north of Arzew, Algeria. Observer: Mr M. C. Blake, 2nd Officer.

27 June 1984. At approximately 1600 GMT two of the moths shown in the sketch were found in the wheelhouse. The head was frog-like in appearance, grey on top and white underneath, with prominent yellow eyes. The thorax seemed to be composed of hair. Underneath the moth was off-white in colour with red patches near the thorax end of the wing. (It is difficult to describe the underside with complete accuracy because of the liveliness of the moths.)



On the thorax was a distinguishing red and white chitin patch. The abdomen was chitin, dark grey in colour, the end being hairy with dark and white flashes on the side. The wings were a light brown in colour with dark small patches and membranes. The antennae were often closed underneath the wings—sometimes just the right-hand one! When in flight the moth had the ability to hover, with its abdomen vertical, for several seconds.

It was thought that the moth might have been blown seawards earlier when the wind was from the SW, force 1–2. There were various other insects on board, including bees, flies, and other smaller species of moth.

Weather conditions at 1600 GMT: dry bulb 19·5 °C, wind calm, sea calm, overcast sky.

Position of ship: 36° 24′N, 00° 18′W.

Note. Mr Watson comments as follows:

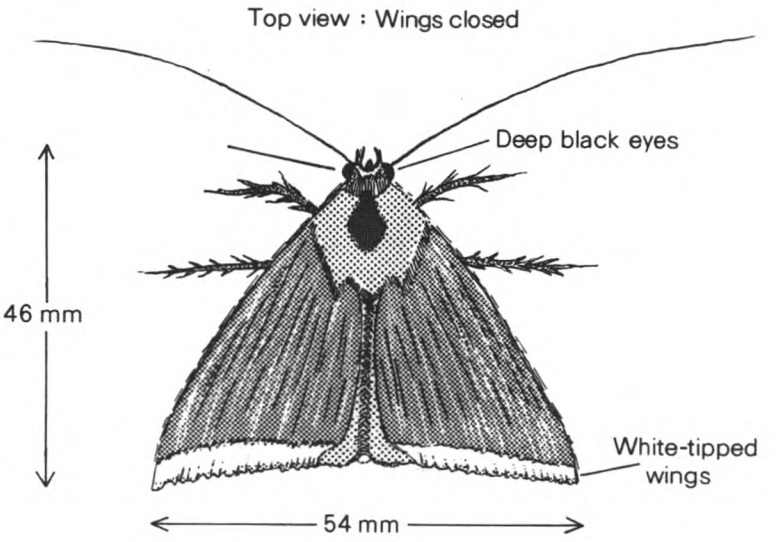
'The moth shown in the sketch is a Hummingbird Hawkmoth. This is a basically tropical African and Indian species whose breeding range includes parts of the Mediterranean region. It occasionally migrates northwards to Britian during the summer.'

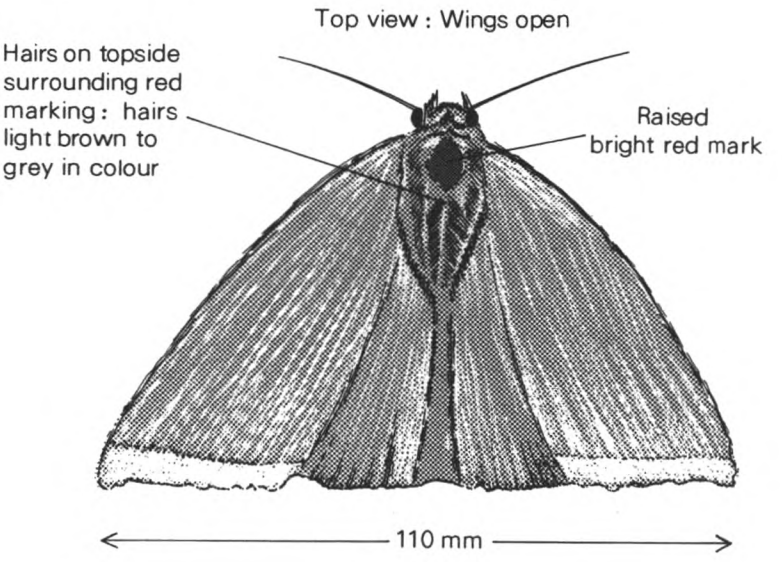
South China Sea

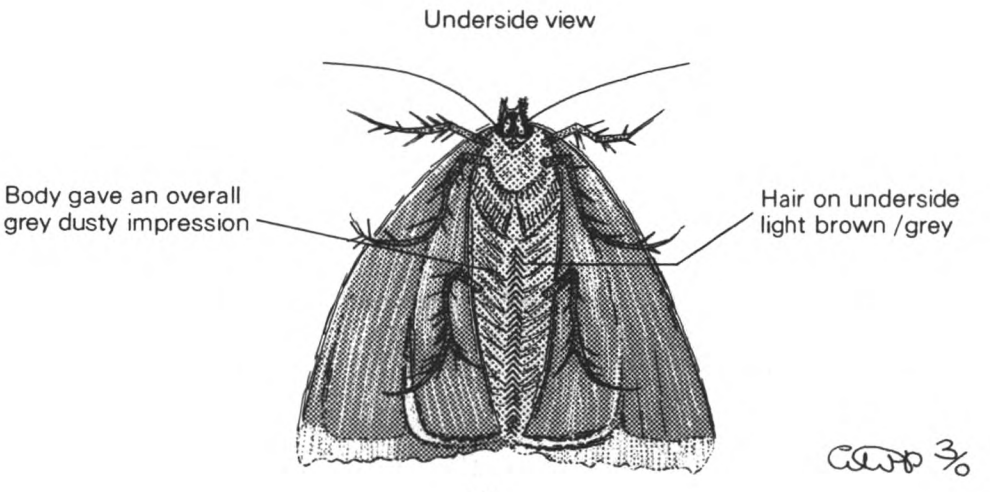
m.v. *Amastra*. Captain G. B. Porter. Singapore to Bangkok. Observers: Mr G. P. Donnelly, 2nd Officer and Mr G. W. Thomas, 3rd Officer.

27 May 1984, 1300 GMT. Some eight hours after the vessel had left Singapore, the insect shown in the sketch was observed on the bridge flying in close

proximity to the chart-table light. The most striking feature of the moth, apart from its size, was the bright red marking on the top of its back; other markings







were comparatively dull, being on the whole grey with a tinge of yellow, but the white wing tips were also striking.

As the vessel was some 30 n. mile from the mainland, and the Master had noticed our friend some hours earlier, attempting to eat its way through the wheelhouse curtains, it was presumed that it had joined the vessel while we were alongside in Singapore. After the sketch had been completed, the moth was released from the glass in which it had been imprisoned, and it was imagined to be off somewhere else around the ship, feasting itself on fresh linen etc.

Position of ship: 02° 50′N, 104° 22′E.

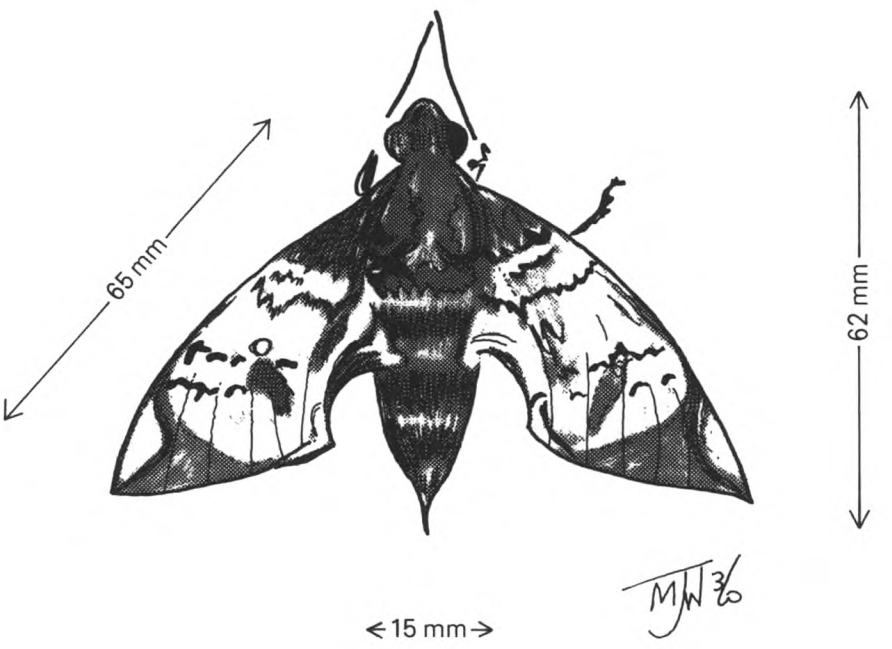
Note. Mr Watson comments as follows:

'This is probably a noctuid moth of the genus *Artena*, which is found in various parts of South-east Asia. This moth was almost certainly attracted by lights on board.'

Mexican coastal waters

m.v. *London Enterprise*. Captain A. D. Gillie. At anchor off Dos Bocas, Mexico. Observers: Mr M. J. Webber, 3rd Officer and Mr C. Stuart, Radio Officer.

14–15 June 1984, 2200 GMT. Whilst the vessel was at anchor 8 n. mile north of Pemex Dos Bocas SBM, a large moth was observed suspended from the wheelhouse deckhead. It was quite dormant and even when approached with a ruler for measuring it hardly moved. It was 62 mm in length with a body diameter of 15 mm. At no time during observation did it spread its wings, so no full wingspan measurement is available. Its general colouring was a brown/green rather like that of the fatigues worn by army personnel serving in the jungle. Markings were a much darker hue and almost pure brown; noticeable



exceptions were two off-white semicircles on either wingtip and two very white spots on either side of the body where the after part of the wings joined. There were no protuberances from the head (i.e. antennae) but an off-white flash under the head was noticeable. Its general appearance gave it the look of being well suited to heavily forested areas, as its general colouring would afford it good camouflage and from certain angles the wings looked like leaves.

At 0100 GMT on the following day the moth moved and to the observers' surprise revealed two antennae approximately 25 mm in length and coloured yellow on upper side and reddish-brown below; also during close inspection of the 'belly' it was found that this seemed to be covered with a sort of 'furry down'.

Weather conditions on 14 June: air temperature 27·2 °C, barometric pressure 1011·6 mb, wind ENE, force 4–5.

Position of ship: 19° 12′N, 93° 24′W.

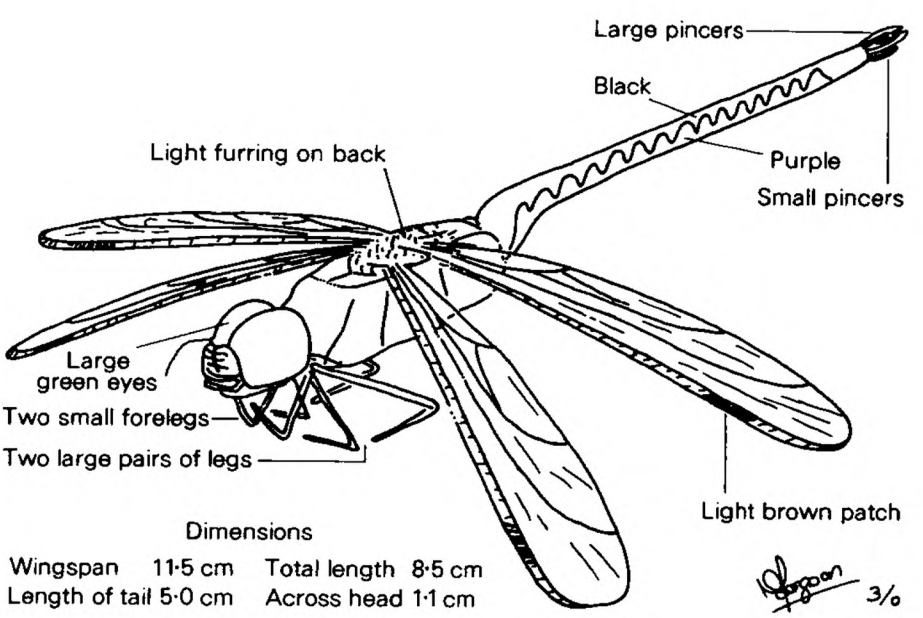
DRAGONFLIES

Indian Ocean

m.v. *Appleby*. Captain T. Armstrong. Richards Bay to Kakogawa. Observers: the Master and ship's company.

2 April 1984. At 1630 GMT the wind started increasing and backing to NE, force 5 as a large cumulus cloud approached. By 1640 there was heavy rain at the vessel, and when this ceased at 1655 a buzzing noise was heard from the bridge wing.

On investigation a number of large insects were found attempting to take off from their backs in puddles around the deck. There were approximately 30 seen altogether; the smaller ones (wingspans approximately 6 cm) were dark-brown bodied and the larger ones (*see* sketch) were a translucent green, with a purple and black tail with two pairs of pincers on it. Their eyes were also green and all had a light brown patch on the forepart of their four wings.



They were thought to have been carried in the upcurrents of the cloud, since the vessel was 310 n. mile from Christmas Island and 470 n. mile from the Java coast.

Position of ship: 13° 28′S, 101° 18′E.

Note. Mr Stephen Brooks, of the British Museum (Natural History), comments as follows:

'From the drawing I can see that it is an *Anax* belonging to the family Aeshnidae, although I cannot be sure of the species. *Anax* are strong fliers and often undergo long migratory flights, assisted by air currents, and in this way are able to colonize even remote islands. As they breed in water it is advantageous for them to arrive at a site just prior to heavy rains as this will ensure that temporary pools are filled.'

BIOLUMINESCENCE

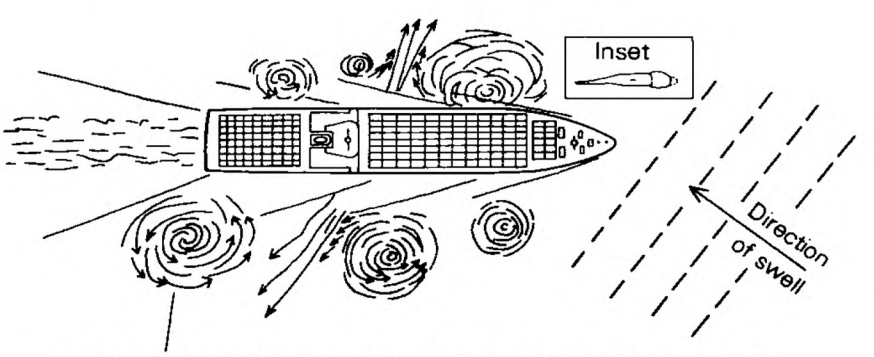
Eastern North Atlantic

m.v *ACT 7*. Captain D. Newlin. Rotterdam to Melbourne. Observers: Mr D. G. Robbie, 3rd Officer, and Mr R. Nicol, Lookout.

25 April 1984. At 0330 GMT the vessel was sailing on a course of 184° at a speed of 20 knots. Patches of bioluminescence had been encountered for 2–3 hours previously which had been in the form of isolated circular areas about 60 cm across; now, however, the sea took on an overall luminescent appearance with the crests of the waves taking a bright green colour which was visible at some distance from the vessel. The wake also showed up bright green for a distance estimated to be greater than 2 n. mile.

Individual fishes could be made out in large shoals which were observed swirling round as they passed down the side of the ship. It appeared that the shoals were chasing flying fish which could also be seen when they left the water, as they left a luminsecent trail across the surface.

At 0345 GMT a large patch of bioluminescence was observed to starboard. It was approximately ½ n. mile long and about 300 metres wide. The patch was seen to consist of thousands of medium-sized fish which appeared to have triangular heads and long tails (*see* Inset in sketch).



Large whirling spirals containing thousands of fish (luminescent)

⟶ Luminescent tracks left by flying fish which seemed to be the prey of the spirals of fish, as groups from the spirals would break off to chase the flying fish

Weather conditions: dry bulb 17·4 °C, wet bulb 16·5, sea temperature 19·6, barometric pressure 1012·5 mb, wind NE'N, force 5–6, moderate sea, low swell, few clouds, fine and clear.

Position of ship at 0330 GMT: 20° 14′N, 17° 35′W.

Note. Dr Peter J. Herring, of the Institute of Oceanographic Sciences, comments as follows:

'The initial appearance of green luminescence suggests that the vessel was entering an area with a surface bloom of dinoflagellates (small single-celled plants, often responsible for the so-called "red tides"). The trails left by flying fish indicate that there must have been a high concentration of the dinoflagellates very close to the surface. Such trails are not often reported and must have been spectacular. The behaviour of shoals of "fish" is particularly interesting. The large whirling spirals

could easily be mistaken for "phosphorescent wheels" but in this case both they and the large patch observed at 0345 were probably caused not by fish as the observers suggest but by squid. These animals feed enthusiastically on flying fish and I have often seen them (when hove-to at night) chasing flying fish in the ship's lights. They frequently occur in large shoals (though the numbers reported here are exceptional in my experience) and they have just the appearance described. The triangular "head" would have been the triangular tail fin of the squid and when jetting backwards they would have looked just like the drawing, the arms and tentacles apparently forming the tail. Such squid are particularly common in tropical and subtropical waters. Many are self-luminous but in this instance the luminescence was probably caused by their disturbance of the dinoflagellates.'

CHORDA FILUM WEED

Bay of Biscay

m.v. *Stability*. Captain M. Salsbury. IJmuiden to Ceuta. Observers: Mr M. Bean, Chief Officer and Mr C. Brown, 2nd Officer.

20–21 June 1984. Large and copious quantities of Chorda Filum weed were observed in the whole of the Bay of Biscay region. The weed, resembling spaghetti, is noteworthy owing to the quantities observed, which seem to be increasing from year to year. Each patch is 50 cm×50 cm, increasing in some instances to patches 10 m long.

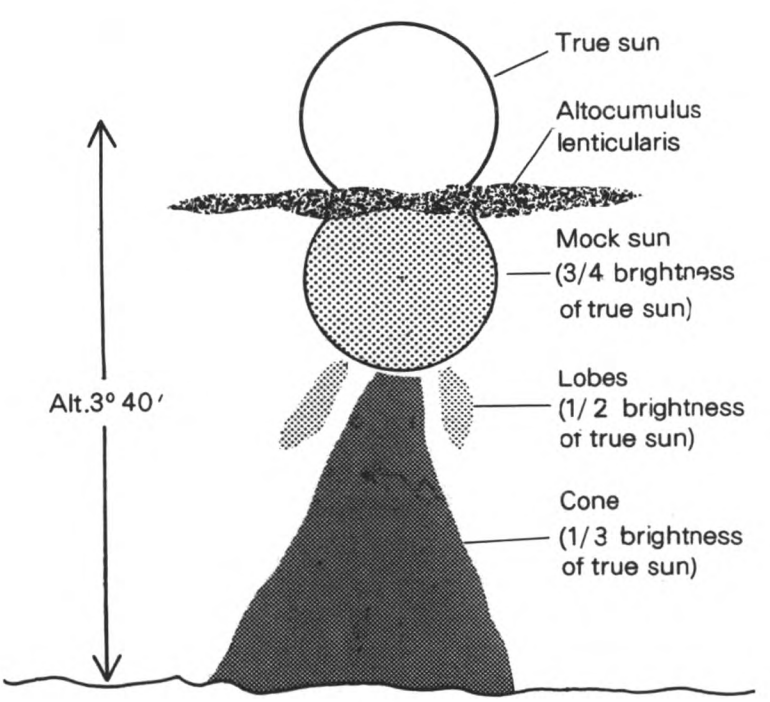
Position of ship at 0000 GMT on 21st: 46° 36′ N, 07° 00′ W.

MOCK SUN

Mediterranean Sea

m.v. *Stability*. Captain J. Twiselton. Piombino to Marina di Carrara. Observers: Mr C. Brown, 2nd Officer and Mr R. McGee, A.B.

30 April 1984, 1800 GMT. Shortly before sunset the phenomenon shown in the sketch was observed. The sun was bearing 285° at an altitude of 03° 40′.



The cloud cover was altocumulus lenticularis and thin cirrostratus. The visibility was very good. The dry-bulb temperature was 13·6 °C and the wet bulb 11·2. No halo phenomenon was observed.

Position of ship: 42° 57′N, 10° 28′E.

METEORITE

North Pacific Ocean

m.v. *Fort Providence*. Hibikinada, Japan to Newcastle, N.S.W. Observer: Mr R. O. Jolliffe, 3rd Officer.

4 June 1984. At 1310 GMT ±3 min, the vessel was (unbelievably) just missed by a very bright falling object. This dazzling white object appeared suddenly like a small sun and fell too fast for accurate description, landing in the sea an apparent ¼ n. mile or less from the ship. It appeared to have a trace of sparks or smoke which disappeared quickly. No simultaneous noise was heard but there was a low 'whoosh' about 30 seconds later which may or may not have been associated with it. Unfortunately the ship's structures blocked vision of the last part of its flight so that (from the opposite bridge-wing (port)) no splashes, etc. were seen, and the observer was the only witness.

Position of ship: 17° 45′N, 140° 55′E.

ATMOSPHERIC RE-ENTRY

South Atlantic Ocean

m.v. *Eastern Muse*. Captain I. H. Woolley. Durban to Los Angeles via Panama Canal. Observers: Mr S. M. Tompkins, 3rd Officer and Mr Lam Chuen, Quartermaster.

28 June 1984. At approximately 2112 GMT a bright light appeared in the constellation Leo, on a bearing of 300° and at an altitude of 18°. It initially appeared to be a falling star but it grew in size to reach a maximum size and brightness, similar to that of Mars. It was surrounded by a glow and possessed a tail. The colour was initially white and then changed to blue–green as the body reached its maximum size. As the body neared disintegration, the colour became orange–red.

The passage lasted about 2 minutes during which time the object traversed from dead ahead to low on the port beam, slowly accelerating as the bearing opened. As the object reached about 6 points on the port bow it disintegrated, each particle having its own trail. The colour of the particles and trails was orange–red. The bodies disappeared from view at about 2° altitude, on the port beam. After disintegration the brightness had progressively reduced, though this may have been due to cloud, etc. The velocity change suggested a SE–SSE'ly track.

Position of ship: 24° 42′S, 00° 10′W.

Note. The *Eastern Muse* is a Hong Kong Selected Ship.

UNIDENTIFIED FLASHING OBJECT

Equatorial Eastern Atlantic

m.v. *Festival*. Captain M. E. Guy. Tubarao to Dunkirk. Observers: the Master, Mr K. Hopkins, 3rd Officer and most of the ship's company.

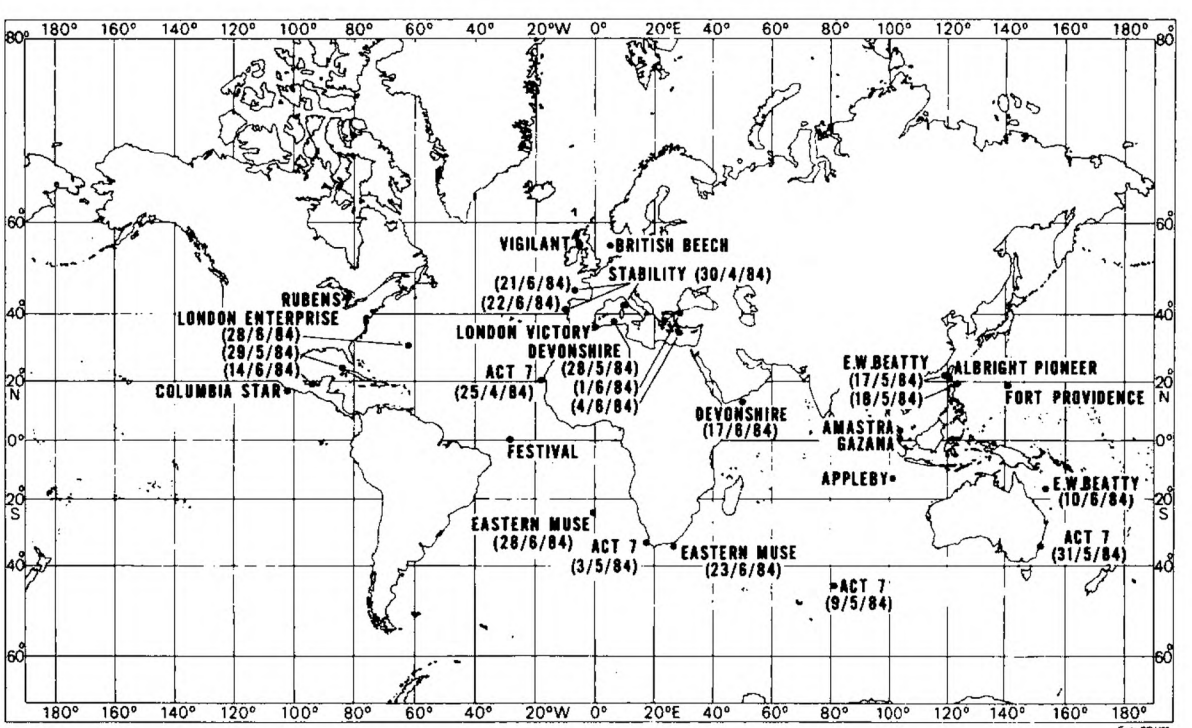
6 May 1984. Whilst the vessel was approaching the equator, on a course of 023° and at a speed of 10·3 knots, flashing white lights were observed. The sea was rippled, with a low, NW'ly swell and the wind light airs. The visibility was good, with the moon in its first quarter. At first it was thought that there were three lights, one being bright and the other two relatively dim, but as the vessel approached it was decided that there were only two, one bright and one dim.

The radar, a 10-cm S-band Decca, was switched on and a single echo was detected initially at a range of 5 n. mile. By this time the lights had already been observed for half-an-hour, so it was estimated that they had first been observed when they were 10 n. mile distant. The time of first sighting was 2220 GMT. The target, once detected, gave a very strong echo and gave the impression of being a large target. It was plotted and found to be stationary. The initial course of 023° was altered to 028° in order to enable the vessel to close the passing distance.

Throughout the observations neither light followed any set characteristic. Instead they just flashed at random, but never together. The intensity of the bright light would have put many a lighthouse to shame. As the lights came on the beam they both seemed to be on one and the same object—perhaps at each end of a light float was one possibility suggested. As the lights came on the beam at a distance of 1·3 n. mile the Aldis lamp was shone in their direction but with no success in identifying them. The time at which the lights were abeam was 2320 GMT and the position then logged was accurate, a satellite navigator fix having been obtained 10 minutes previously. After passing abeam the course of 023° was resumed and the radar lost the target at 5·7 n. mile. The final visual observation of the bright light was at 0023 GMT on the 7th.

The two previous voyages had been to Brazil and France and the lights were observed on every occasion near the equator; they were identical in every way, but in the previous encounters the lights, both dim and bright, were more numerous.

Position of ship when lights were abeam: 00° 04′N, 28° 12′W.



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

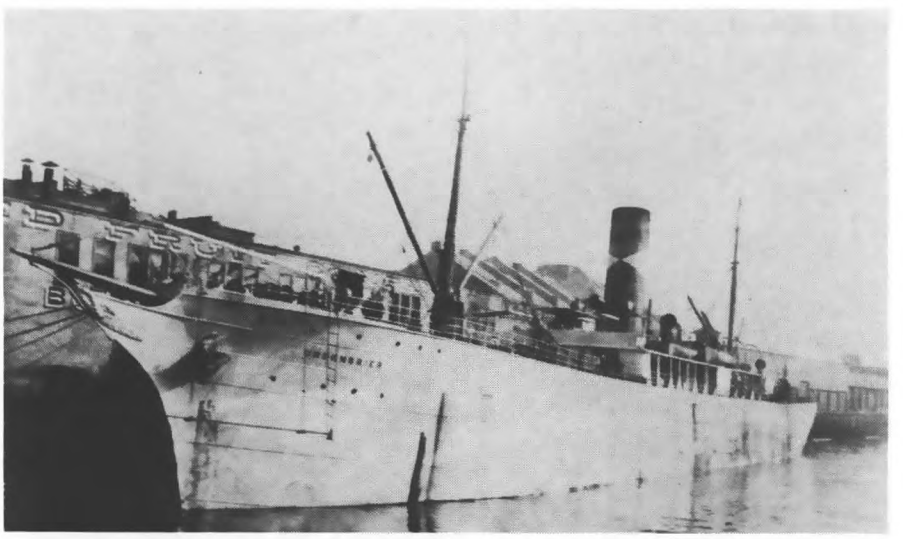
Staff of the Marine Division of the Meteorological Office attending the Port Meteorological Officers' conference at Bracknell Headquarters, 14 September 1984.

Left to right, standing: Captain A. Phillips (Ship Routeing); Captain C. A. S. Borthwick (Ship Routeing); Captain C. R. Downes (SE England); Captain D. R. McWhan (SW England); Captain J. Bentley (E England); Captain D. H. Rutherford (NE England); Captain J. H. Jones (Bristol Channel); Mr W. G. Cullen (NW England); Captain S. M. Norwell (Scotland and Northern Ireland); Captain M. L. McN. Coombs (Headquarters); Captain J. F. T. Houghton (Headquarters). Seated: Miss J. G. Caudrelier (Scientific Officer, Instruments); Captain G. V. Mackie (Marine Superintendent); Captain R. C. Cameron (Deputy Marine Superintendent); Mr J. T. Tunstall (Marine Inquiries); Mr J. D. Lankester (Ocean Currents). Absent: Captain A. Britain (Ocean Weather Ship Officer).

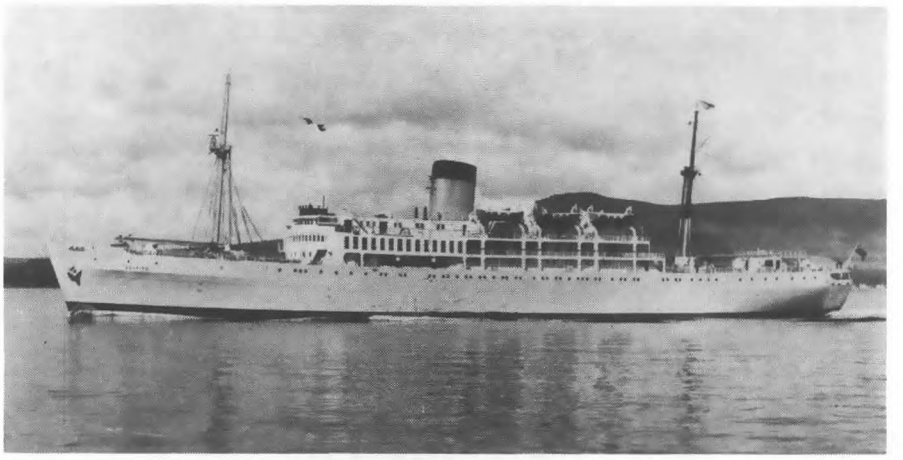
(*See* page 57.)

Opposite page 80

Opposite page 81



s.s. *Greenbrier* (1893).



s.s. *Golfito* (1949).

Photo by Colin Momber

m.v. Magdalena (1973).

VESSELS OF ELDERS AND FYFFES LIMITED (*see* facing page).

LONG ASSOCIATION WITH SHIPOWNERS—ELDERS AND FYFFES LIMITED

The 'Blue Label' brand mark of Fyffe's bananas is well known throughout the United Kingdom, but the story of the firm of Elders and Fyffes Limited, whose ships have carried the fruit to home shores for more than 80 years, is perhaps less familiar. Our annual historical account this year puts on record the history of the firm and of its specially designed banana carriers, handsome ships which over the years have been a feature of several British ports.

The history of the Fyffes Group is a history of the banana in Europe. It is the story of how a rather unusual tropical fruit, first imported into the British Isles as a delicacy more than 150 years ago, became a part of our ordinary diet and is now shipped to Europe by the million. It is also the story of two stout-hearted men, almost classical examples of the Victorian entrepreneur, who, through sheer dogged perseverance and faith in what they were doing, created the fresh fruit import trade in Europe and laid the foundation of the Fyffes group as it is today—a great merchant company with a multi-million-pound turnover and a fleet of managed ships that trades all over the world.

Of all the fruits of this earth, the banana ranks amongst the most benign. It is available all the year round and it is always clean, protected when the outer skin is unbroken: it is also delicately and sweetly flavoured and surpasses most other fruits in its nutritive value.

Man has taken the banana as his staple food for thousands of years, for, without doubt, it was one of the first fruits to be grown by the most primitive agricultural peoples. Mention of it can be seen in the earliest classical histories and it can be found depicted on ancient ruins and described in ancient manuscripts dealing with herbal and botanical matters. The earliest home of the banana was probably in the near tropic regions of southern Asia where it gained the name of *Musa Sapientum*—'fruit of the wise man'. Long before the beginning of Christian times it was discovered that the roots of the plant could be carried for very long distances and would still grow well given the right conditions. The resulting migration of the banana stock in the wake of the early Arab traders took it to the east coast of Africa and then westwards to the Caribbean by way of the Guinea coast and the Canary Islands.

In 1786, one Henry Fyffe opened a grocer's shop at number 313 High Holborn, two doors or so from Chancery Lane, then one of London's busiest thoroughfares. Henry Fyffe's speciality was dealing in high quality teas which he obtained from the East India Company, and by 1820, having passed through two generations of Fyffes, his company had ceased being a general grocer and confined itself to tea, retail, wholesale and export business. Little is then known of the Fyffe family, until in about 1876, Thomas Fyffe arrived in Las Palmas at a time when the traditional products of wine and cochineal were in decline and the islanders were compelled to seek a change of livelihood, which they found in the shape of the growing of sugar cane, tomatoes, potatoes, onions . . . and bananas. Thus Messrs Fyffe, Hudson came to ship their first consignment of bananas on deck to London, on a ship which had called at Las Palmas solely for coaling, but which was pleased to pick up an unexpected cargo in passing. Fyffe's partner Hudson was the London fruit dealer whose Canary Islands connections led to the visit in the first place.

By 1897 the Hudson and Fyffe banana business had grown from being a small ripening depot in a Long Acre cellar to extensive premises in Covent Garden, but the venture was by no means without competition. The largest competitor was the giant shipping firm of Elder Dempster and Company which, though long-established in the Canary Islands as coaling agents and produce merchants, had only been inspired into entering the banana trade following Fyffe's example. The partners of Elder Dempster in 1888 were William J. Davey and Alfred

Lewis Jones, and it would be no exaggeration to say that it was Alfred Jones who led the company at this time.

Jones was a remarkable man and his many talents, which may be conveniently grouped under the headings of imperialist, trader, entrepreneur and philanthropist, were painstakingly acquired by thoroughly acquainting himself with each branch of the work Elder Dempster was engaged in during his formative years. In May 1888, Alfred Jones met Arthur H. Stockley who he knew to be a man of some ability and much energy. He asked him if it was true that he was going to South Africa and whether he had any definite position to take up. Jones went on to offer Stockley 'some very interesting work in the Canary Islands' and as a result of the chance meeting, Stockley eventually became manager of the London ripening rooms and appointed as chief salesman Alfred R. Ackerley, an old friend from his Liverpool days.

Having seen a demand for the banana created in England, Jones, Stockley and Ackerley capitalized on this demand, arranged for ships already building to be fitted with mechanical cooling systems, and in March 1901 Elder Dempster's first ships to carry bananas from Jamaica to Avonmouth, *Port Morant* and *Port Maria*, arrived with the highly experimental cargo in a mainly good condition after a voyage lasting 13 days. The first steamers on the service were shortly joined by three others, *Port Antonio*, *Port Royal* and *Port Henderson* and the fortnightly service was put into operation. In those days the ships carried, in addition to the main cargo of bananas, a variety of other items. These included mangoes (another Fyffes first), oranges, pines, grapefruit, honey, wax, coconuts, cocoa, coffee, sugar, ginger, limejuice, lance-wood, pimentos, mahogany, rum, cigars, fustic, logwood and lignum vitae among others.

The incorporation of Elders and Fyffes Ltd came about because of the need to establish a separate company to deal exclusively in bananas, and a merger for this purpose between Elder Dempster and Fyffe, Hudson Ltd. The company was formed in May 1901, and the first three ships were luckily obtained from Furness Line with half the purchase price of £40 000 per ship on mortgage. The ships, all named after American localities, were the *Appomattox*, *Chickahominy* and *Greenbrier*, all clipper-bowed ships built in 1893, each one of gross tonnage 2875 and each eminently suitable for carrying bananas (*see* first photograph opposite page 81). This signified the beginning of Fyffes Line. Less than a year later a fourth ship was bought from the Furness Line; this was the *Carlisle City*, which was renamed *Oracabessa* after a small port on the north coast of Jamaica. All four ships were fitted with a refrigeration system and put into service in 1902/3.

The *Chickahominy* was the first of the Elders and Fyffes ships to become a weather observer, with her first meteorological logbook being received in March 1904. This log covered a voyage between Manchester, Jamaica and Port Limon (Costa Rica) and return over the period 22 November 1903 and 1 March 1904. In those days observations were made every four hours at the change of watch, wind direction was recorded to within two points of the compass and air temperature was given to the nearest $\frac{1}{4}$°F. The proportion of sky clouded over was observed from 0 to 10 and 'the dry and damp bulbs are in the case supplied for them, abaft the Wheelhouse on the Bridge in the open air but well screened'. One month after *Chickahominy* commenced observations, the *Oracabessa* also joined the Corps of Marine Observers.

In 1904 there came into operation for Fyffes Line the first three ships especially built for carriage of bananas, named *Manistee*, *Matina* and *Miami*, with the first two names being perpetuated through three other ships each, over the years, up to 1984 when the fourth *Manistee* became the *Fleet Wave* on her sale but retention of the management by Fyffes. The first two 'Ms' were built at Swan Hunter's yard at Wallsend and the third came from Barclay Curle's at Glasgow. These ships became the prototypes for another series of steamers and

this policy of building a number of sister ships over an extended period continued up to the time the last Fyffes ships were built in 1973. They were fitted with triple-expansion engines giving a service speed of about 13 knots, a good speed for the period. Accommodation for 12 passengers was also provided and as the islands' prosperity increased the way was opened to create regular services for 100-passenger ships in later years. From 1905 to 1909 a further seven ships were constructed to a similar plan though their builders were divided between Alexander Stephen and Workman Clark, Belfast. With a fleet of 10 ships built for the trade it was possible to dispose of the four ex-Furness ships in 1910. Of the series, the *Barranca* lasted in service for 30 years before being broken up in Holland.

From then until the outbreak of war a further six ships were added to the fleet and these marked an obvious improvement from those before. As a result of demand from potential passengers, the 50-passenger ship *Chagres* was built in 1912 at Linthouse, having first class accommodation and immediately becoming very popular with the travelling public. She had twin screws and the engines gave a speed of 14 knots. In 1913 a further three passenger ships entered service, the *Bayano*, *Patuca* and *Patia*. The former became an armed merchant cruiser and was torpedoed and sunk in 1915.

At this time, Elders and Fyffes ships berthed at Avonmouth, Manchester and Liverpool, with arrivals varying between weekly and fortnightly in frequency. Bananas were transhipped to many parts of Europe, including Russia and Poland.

The second *Bayano*, built in 1917, made 160 voyages to the Caribbean between the wars, and deserved the reputation of being a 'lucky' ship, having survived the second world war with little damage. Refitted for the banana trade in 1946, she resumed West Indies sailings the following year and continued on them until her last voyage which ended on 28 December 1955. Altogether she achieved the unequalled feat of completing 280 voyages on the company's account and brought nearly three thousand million bananas to Britain.

Names of Elders and Fyffes ships have come from rivers, and sometimes towns, in Central America, and most of them are of Spanish origin. In 1920 was delivered the first of a new class of ship, from Workman's yard in Belfast. She was the *Chirripo*, the prototype of an eventual series of 19 sister ships. These, in company with the 'A' class, carried the fortunes of the company up to and through the Second World War. Of 400 foot length and 51 foot beam, they were coal burners with a designed speed of 14 knots.

The outbreak of the war in 1939 saw the Fyffes fleet numbering 21 of which five were passenger vessels. Only seven survived but were joined by the second *Chirripo* which had been interned. During the conflict, Fyffes ran eight ships for the Ministry of Transport, mainly 'Empires' which were a standard type operated mainly on the North Atlantic route. In 1949 the passenger ship *Golfito* came from the Linthouse yard, a twin-screw ship of 17½ knots (*see* second photo opposite page 81). Named after a banana port on the Pacific coast of Costa Rica, she was a great success on her maiden voyage to that port, receiving the freedom of the town, a commemorative scroll and the national flag to hang, with distinction, in the main entrance foyer. Excellent accommodation was provided for passengers, and she became a popular ship on the Trinidad/Jamaica run. The *Golfito* became a Selected weather ship in 1950 and maintained an uninterrupted period of observing for the Meteorological Office on 112 voyages until sold to breakers in December 1971. Another passenger ship, built in 1956, was the *Camito* which also had a passenger capacity of 100 and operated a regular fortnightly service to Jamaica for many years and was broken up in 1973.

There were many other Fyffes ships in the 'M', 'C' and 'S' classes in the best of the post-war years, including *Changuinola*, *Matina* and *Sulaco*. These were also some of the ships in which the Marine Superintendent of the Meteorological

Office, Captain G. V. Mackie, served when he was an Officer with Elders and Fyffes between 1957 and 1962. Most were observing ships, providing the Meteorological Office with much valuable data over an extended period.

In 1965, the Company found that it no longer needed to maintain staff offices in three different ports, owing to a contraction of the banana trade, and accordingly discontinued operations at the port of Liverpool. Two years later the last Fyffes ship sailed from Avonmouth after an association of 66 years with that port. Southampton was chosen as the Company's base mainly because of its lack of tidal problems and because of the quick turns-round achieved.

In 1965 the Group was employing 2243 people, operated 18 ships with 940 sea staff and had 18 wholesale market outlets, as well as 40 distribution centres situated in the United Kingdom, France and Belgium.

Through acquisitions and mergers, Elders and Fyffes became a very large organization and in 1969 the company's name was changed to Fyffes Group Ltd; it then comprised many firms involved in a wide range of produce and transport facilities.

The last ships to be purpose built for the Fyffes Group entered service in 1972 and 1973, and were named *Manistee*, *Mazatec*, *Manzanares* and *Magdalena* (*see* third photograph opposite page 81). They were all built in Kobe, Japan, by Kawasaki Heavy Industries and were of 6513 gross tons. These four ships were sold in 1984 but the management was retained by Elders and Fyffes and the ships were renamed *Fleet Wave*, *Sky Clipper*, *Barrydale* and *Bluestream* respectively. The first and last named still undertake voluntary weather observing on behalf of the Meteorological Office, thus perpetuating the mutually beneficial association which has endured for more than 80 years. Together with several other ships, the four named above are part of today's 14-strong fleet, now wholly managed from the Fyffes Group offices at 15 Stratton Street, Piccadilly, London.

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SPECIAL LONG-SERVICE AWARDS

We have pleasure in announcing that four shipmasters have again been selected to receive inscribed barographs for meritorious voluntary observing service, and as usual the period under consideration is the 12 months up to the end of the year in question, i.e. 1983.

The Director General of the Meteorological Office is pleased to select the following:

1. Captain M. J. CHARLESWORTH, Rowbotham Tankships Ltd, who has supplied us with 31 meteorological logbooks during his 21 years of observing, the first of which he sent from the *Norfolk* (Federal Steam Navigation Company) in 1953.
2. Captain A. DORKINS, P. & O. Deep Sea Cargo Division, whose first logbook came to us from the *Comliebank* (Andrew Weir and Company), and who has subsequently been instrumental in sending a total of 48 books in 23 observational years.
3. Captain K. LEHEPUU, MRIN, MNI, Furness Withy (Shipping) Ltd, who first sent a meteorological logbook to this office from the *Manchester Merchant* in 1955, followed by a further 52 logs spread over 25 years of weather observing, all in 'Manchester' ships of the former Manchester Liner Company, now part of Furness Withy.
4. Captain R. A. G. SIMMONS, Cayzer, Irvine Shipping Ltd, who has undertaken weather observations in 24 of his seagoing years, submitted 40 logbooks and first sent us records bearing his name from the *Perthshire* (Scottish Shire Line) in 1953.

Though the presentation ceremony proves the most time-consuming to arrange, with the difficulty of bringing together all four serving shipmasters at one time at Bracknell, the selection process itself doubtless appears long-winded.

As the necessary qualifications for selection are a minimum of 17 years observing and the compilation of at least one meteorological logbook during the year in question, the process of listing eligible officers does not begin until the following May after assessment of all the previous year's logs is completed. Grading of records and length of observing service are then taken into consideration by the Director-General to decide upon the recipients of long-service barographs; this system was instituted in 1948 and has since been implemented annually.

J.F.T.H.

Commission for Marine Meteorology

Permanent representatives of member states of the World Meteorological Organization (WMO) represented on the Commission for Marine Meteorology attended the ninth session (CMM-9) at the International Conference Centre in Geneva from 1 to 12 October 1984.

The United Kingdom was represented at CMM-9 by Captain G. V. Mackie, Marine Superintendent of the Meteorological Office, Mr R. J. Shearman, Head of the Marine Climatology Branch and Captain J. Marsh, RN, Head of the Department of Naval Oceanography and Meteorology.

As a general guide to the wide range of subjects discussed at the session, the agenda is reproduced in full, followed by notes on some of the pertinent items on the agenda.

Agenda item no.

1.	**Opening of the session**
2.	**Organization of the session**
2.1	Consideration of the report on credentials
2.2	Adoption of the agenda
2.3	Establishment of committees
2.4	Other organizational matters
3.	**Report by the president of the Commission**
4.	**Reports by the chairmen of working groups and by rapporteurs**
5.	**Marine meteorological services**
5.1	Services for the high seas
5.2	Services for coastal and offshore areas
5.3	Services for main ports and harbour areas
5.4	Regional projects related to marine meteorological services
5.5	Requirements for basic WWW facilities and products
5.6	Distribution of marine meteorological information
6.	**Systems and techniques for marine observation and data collection**
6.1	Marine observing methods and instrumentation
6.2	WMO Wave Programme
6.3	Observational data requirements
6.4	Requirements for reporting codes
6.5	Marine telecommunication arrangements for data transmission and collection
7.	**Marine climatology**
7.1	Contribution of CMM to the World Climate Programme
7.2	Marine Climatological Summaries Scheme
7.3	Marine climatological data banks
7.4	Marine section of the World Climatological Atlas
8.	**Sea ice**
9.	**Review of Technical Regulations of interest to CMM**
10.	**Guides and other technical publications**
11.	**Education and training in the field of CMM**
12.	**Relationship with joint WMO/IOC programmes and projects**

13. **WMO Long-term Plan**
14. **Scientific lectures**
15. **Establishment of working groups and nomination of rapporteurs**
16. **Review of previous resolutions and recommendations of the Commission and of relevant resolutions of the Executive Council**
17. **Election of officers**
18. **Date and place of the tenth session**
19. **Closure of the session**

Marine Meteorological Services

After a short introductory report given by Professor K. P. Vasiliev, President of the Commission, discussion items commenced with a report on Marine Meteorological Services. As a result of the discourse, it was revealed that the Commission strongly recommended the organization of regional seminars on marine meteorological services. There was also discussion of the document Marine Services Programme to the Year 2000 which was described in *The Marine Observer*, No. 280, April 1983, page 91. Other items covered were a standard format for weather services for offshore platforms, a document submitted by the International Federation of Ship Masters Associations and a discussion concerning the uniform classification of tropical depressions, tropical storms and tropical cyclones.

Systems and Techniques for Marine Observations and Data Collection

There was much discussion of the proposed WMO wave programme and it was decided that the relevant Working Group should provide guidance on the development of this programme. The Commission commended Dr P. E. Francis of the Meteorological Office for his very valuable contribution in formulating the original proposal for such a wave programme, and strongly urged all members concerned to respond positively to actions undertaken in respect of this programme. It was also proposed that wave hindcast studies could be of value to many users and it was suggested and accepted that action in this regard should be added to the programme. It was felt that publication of a guide to wave analysis and forecasting should be undertaken as a matter of urgency. It was stated that very good co-operation already existed between WMO and the Intergovernmental Oceanographic Commission (IOC) in the implementation of this programme.

A report by the Rapporteur on forecast techniques for ice accretion was discussed. The recommendations made fall into three categories:

1. Suggestions for rectifying the serious shortage of reliable ice accretion data for small ships and other types of marine structures.
2. Areas where more basic research is required on the physics of ice accretion.
3. Suggestions for improvements in the numerical assimilation of ice accretion processes.

It was felt that if these recommendations were to be successful action was necessary to:

1. Call upon members affected by the problem of marine ice accretion to initiate training programmes for selected crew members on suitable ships.

2. To convene an international meeting in co-operation with IOC for the purpose of setting and reviewing standards for the acquisition and archiving of marine ice accretion data.

A survey of wind measurement techniques at sea indicated that there is little uniformity with regard to the instrument and platform height, averaging time or height corrections. Because of its continuing importance, the problem is to be kept under review and surveys of members are to continue at appropriate intervals.

There was discussion on the report on inter-calibration of directly measured and remotely sensed marine observations. The Commission believed that ocean observations from conventional platforms and instrumentation were most important and would continue to be so both as a general data source and as 'ground truth' for inter-calibration purposes. All members were asked to further develop the use of ocean sets which combine both conventional and remotely sensed data. The question of precipitation measurements at sea was considered yet again and although there was an expression that precipitation data over the ocean were very important there had been a poor response to a survey carried out by the Secretariat and an apparent lack of activity, with some notable exceptions.

In considering future activities, the working group on technical problems was asked to give particular attention to the utilization of the enormous quantities of satellite derived marine data which will become available in the period up to the year 2000. The working group was also asked, in view of increasing requirements in coastal and near shore regions, to summarize and document techniques which could be used for the provision of forecast services for coastal winds. The working group was also asked to carry out a revision of the existing marine cloud album to be completed in one year.

On the retirement of Professor Vasiliev, M. F. Gérard of France was elected President of CMM and Mr R. J. Shearman elected Vice President.

After the normal cordial and polite exchanges between delegates, the meeting closed on 12 October with a commitment for certain members to return to Geneva in December 1984 to discuss with the President the future work programme of the Commission.

AURORA NOTES APRIL TO JUNE 1984

By R. J. Livesey

(Director of the Aurora Section of the British Astronomical Association)

In Table No. 1 are listed the observations received from ships during the period. In Table No. 2 are given the dates of significant land and marine observations made during the period for the northern hemisphere, when the aurora has expanded southwards from the auroral zone. It should be noted that measurements of auroral activity can be highly subjective and dependent upon the availability of observers and upon weather conditions. Only artificial earth satellites see the true picture but that should not prevent observers from enjoying the aurora when they see it. One of the Association's young observers is at Fort McMurray in northern Canada and regularly sends in coded aurora reports, drawings and photographs of magnificent displays close to the auroral zone. It would be more significant were he not to be seeing aurorae at his geomagnetic latitude.

Table 1—Marine Aurora Observations April to June 1984

Date 1984	Ship	Geographic Position		Time (GMT)	Forms in Sequence
4 Apr. ..	*Resolution Bay* ..	45° 00'S,	79° 12'E	1830–2100	RA, pm_2, hA+hB, hA, CRB, phB
4 ..	*Starella*	57° 00'N,	20° 00'W	2250–0445	qmRB, N
5 ..	*Starella*	57° 00'N,	20° 00'W	2150–0445	amRB, qN, qmhB
11 ..	*Starella*	57° 00'N,	20° 00'W	0445	qN
26 ..	*Falmouth Bay* ..	48° 10'N,	123° 10'W	0700	mRR
26 ..	*Sir Alexander Glen*	49° 40'N,	65° 38'W	0200–1900	qC, aRA, ahA, aRA, qhA, qG, pmP, qG
27 ..	*Falmouth Bay* ..	51° 10'N,	134° 24'W	0730–0750	mRR, RA, qG, RA
15 June ..	*Canadian Explorer*	50° 30'N,	58° 30'W	0246–0315	N, phA, pm_2hA, phA

KEY: q=quiet, a=active, p=pulsating, h=homogeneous, m=multiple, m_2=two off, A=arc, B=band, RA=rayed arc, RB=rayed band, C=corona structure, N=unspecified form, G=glow, RR=rays.

Table 2—Summary of significant reports received from the northern hemisphere, April to June 1984

Date (Night)	Location of Observers	Number of Observers	Range of Activity*	Time (GMT)
1/2 Apr.	Scotland, Norway	3	1–4	2200–0115
2/3	Canada, Scotland	7	1–5	2200–0305
4/5	'Lima', Scotland	4	1–4	2047–2340
25/26	Canada, Scotland, Norway	14	1–6	2130–0700
26/27	Canada, Norway	3	2–6	2000–0750
1/2 May	Winnipeg	1	5	0310–0323
11/12	Winnipeg	1	5	0503
22/23	Winnipeg	1	5	0334–0418
3/4	Winnipeg	1	6	0348–0405
15/16	Canada	2	5	0246–0430
19/20	Winnipeg	1	5	0443–0452
23/24	Winnipeg	1	2	0429
29/30	Winnipeg	1	5	0446–0506

* Range of activity code: 1=Quiet glows, 2=Quiet homogeneous arcs, 3=Quiet rayed arcs, 4=Ray bundles, 5=Active moving or pulsating storm, 6=Coronal structures, 7=All sky storm.

It was interesting to receive the report from m.v. *Resolution Bay* noting considerable activity and coronal structures to be followed by sightings at a later time in Scotland and by O.W.S. *Starella* at 'Lima' as the earth rotated under the active northern and southern auroral ovals. The event of 25/26 April was noted progressively in Norway through to the western seaboard of Canada as the earth rotated.

The general pattern of observations shows the annual decrease in auroral sightings in the summer of the northern hemisphere. Because the aurora, owing to the skewness of the magnetic field relative to geographic latitude, is thrown further south into darker skies in America, we continue to receive auroral reports from Canadian observers in this period, when British observers are contending with the summer twilight.

At present sunspot activity is receding towards minimum and there are many days now when small telescopes reveal nothing on the sun's surface. Consequently the transient type of strong magnetic storm and associated auroral display caused by activity associated with sunspots has declined and magnetic disturbances are now associated with the stream particles sent out from areas of the sun's upper atmosphere called coronal holes. The hole consists of a region of reduced magnetic intensity in the sun's magnetic field through which particles may escape from the sun into outer space. When the earth encounters one of the streams a magnetic storm of low intensity may form together with relatively quiet aurorae. As the sun rotates once in about 27 days the earth is blasted by these particles every time the hole returns to the same position relative to that of the earth. As the particles follow a curved path in space owing to the form of the interplanetary magnetic field the hole need not be face on to the earth when the particles arrive at the earth.

If the dates of coronal hole type of activity are noted, it is then possible to predict dates of future activity, assuming that the hole remains in being and does not dissipate, as it will do in time. For example there have been aurorae, radio aurorae and magnetic activities associated with the following dates:

20 May, 16 June, 13 July, 9 August, and 5 September 1984.

The writer has recently carried out an investigation into the effects of cloud on the detection of aurora, originally to determine if there was any major difference between the eastern and western seaboards of the Atlantic. This was because the aurora appears to reach lower magnetic latitudes more often in America than as observed in the United Kingdom.

Using charts published by the United States Air Force, the probabilities of finding cloud-free lines of sight were calculated for the period 0000 to 0200 local time at 10, 30 and 90 degrees to the horizon. The region of 10 to 30 degrees is of most interest to aurora observers scanning for auroral light, and data for a selection of places of interest to mariners are given in Table No. 3 for comparison. In view of the fact that seasons vary, there may be considerable deviations from year to year.

Table 3—Percentage of nights per month on which it is probable that a cloud-free sight-line may be obtained at given altitude from the horizontal in the period 0000–0200 Local Time*

Altitude	January		April		July		October	
	10°	30°	10°	30°	10°	30°	10°	30°
	Percentage of cloud-free sight-lines							
Southampton	32	38	45	52	47	55	45	50
Newcastle	35	45	34	43	32	45	40	49
Glasgow	31	39	40	48	29	38	35	42
Aberdeen	28	37	31	43	25	35	35	46
Lerwick	26	37	28	38	18	27	26	38
'Lima'	30	39	30	40	18	26	29	39
Stavanger	31	40	45	53	34	41	40	44
Helsinki	25	30	50	55	46	56	30	36
Halifax N.S.	31	40	41	45	40	48	50	54
New York	46	50	46	50	50	55	55	61
Toronto	30	35	45	50	60	65	51	58
Detroit	31	35	44	49	62	68	60	60

*From calculations based on *Atlas of cloud-free line of sight probabilities, Part 3 (USA) and Part 4 (Europe)*, United States Air Force Systems Command, Meteorology Division.

Averaging over a number of years the writer calculated that south of Glasgow, 60 per cent of all nights were cloud covered, 20 per cent were part covered but sufficiently clear to use an astronomical telescope, while the remaining 20 per cent were not suitable for telescopic work but nevertheless adequate for detecting the presence of auroral light. This average compares favourably with cloud statistics from the Meteorological Office, which, when averaged over 9 stations for the years 1957–76, gave respectively 57 per cent, 22 per cent and 21 per cent. It was noted, however, that relatively clear nights (0–2 oktas) varied on the average from 13·7 at Lerwick to 28·5 at Boscombe Down. Thus any observer setting out to look for the aurora has a less than even chance of being able to see the sky, let alone auroral light!

523.64

Halley's Comet

By R. J. Livesey
(British Astronomical Association)

The big astronomical event in 1985–86 will be the return of Halley's Comet, which orbits the sun once every 76 years or so. Although the behaviour of comets tends to be unpredictable in terms of visual interest, Halley's Comet is expected to become visible to the naked eye sometime in December 1985 as a round, hazy patch without a tail. Towards the end of January 1986 it may begin to grow a tail visible with the aid of binoculars. By February, when the comet comes closest to the sun, the head may be moderately bright, with a tail, visible to the naked eye, which should grow longer in March. In April 1986 Halley's Comet is expected to become a spectacular sight for observers in the southern hemisphere and will then start to fade in May. The comet will follow a path in a westerly direction from Aries to Aquarius in December and then pass slowly via Capricornus and on to Crater by May.

A comet consists of a tiny star-like nucleus thought to consist of material resembling a dirty snowball. This is surrounded by a cloudy coma. When relatively close to the sun the comet may develop a tail, or more than one tail, facing away from the sun. The dust tail is featureless and generally curves away from the coma because each particle of dust is following its own orbit around the sun, the orbital speed being lower the further away from the sun. The ion tail consisting of electrified particles is generally straight but contains a structure of clouds, rays and other features which sometimes resembles auroral rays. The ion tail may be seen to bend or fracture, breaking away from the coma of the comet while a new ion tail forms in its place. A few comets exhibit a tail facing in the opposite direction to that of the principal tails. This may be due to the effects of perspective brought about by the relative positions of the sun, earth and comet, but on occasion may be due to illuminated dust lying along the orbit of the comet.

Many features of the comets are not visible to the naked eye or with the aid of binoculars and may only be detected by time-lapse photography. Observers should neither expect too much nor be disappointed if a comet appears weak or featureless. However, when a bright comet is visible, observations made with the aid of a pair of binoculars and accompanied by descriptions, sketches, notes on sky conditions, date and time are always of interest.

As a comet orbits the sun it is subjected to the effects of solar heat, light and the solar wind comprising electrified particles and the associated magnetic fields. Dust and gas are evaporated from the comet and these are guided by the various solar radiations to form the respective dust and ion tails. It was Biermann's

studies of comets in 1951 that first suggested the existence of the solar wind, which in plain language means that the sun's atmosphere is simply boiling off into outer space.

Oort's theory of cometary formation supposes that a vast cloud of material formed millions of condensations in interstellar space surrounding the solar system. On occasion some of these condensations are perturbed by gravitational attraction to move into the solar system and approach the sun. Some of these become trapped and remain within the system owing to the gravitational pulls of the sun and planets and are thereby induced to orbit the sun. These are called periodic comets, as is Halley's Comet. In due course the material forming a comet is dispersed and forms a trail of debris along the path of the comet's former orbit. When the earth crosses such a path a shower of meteors is seen. The Eta Aquarid and the Orionid meteor showers seen in May and late October respectively are thought to consist of debris already dispersed from Halley's Comet.

LETTERS TO THE EDITOR

From Mr P. G. Powell, Chief Officer, m.v. *Leicesterbrook*, F. T. Everard and Sons Ltd. 'This voyage we have been very impressed by Captain G. S. Tuck's book *A Field Guide to the Seabirds of Britain and the World,* which the Master, Captain I. Anderson, has kindly provided. This book has proved to be an excellent reference book, cultivating our interests in this field and improving our knowledge of the environment in which we work. I believe that many of the ship's Officers who sail in the Voluntary Observing Fleet would find this book, and any other existing reference works on marine life, of great value. However, as observers at sea we are very much "jacks of all trades" and the various reference books available are as much a mystery as some of the phenomena we observe.

I therefore have three suggestions which I hope you will consider:

(1) A few selected reference books of marine life and phenomena to be reviewed by *The Marine Observer.*

(2) A reference and guide to observations of marine life similar to the *Marine Observer's Handbook* to be produced: I am sure that the various organizations to whom our additional remarks are sent would be willing to produce sections in their respective fields.

(3) Reference books, of the type described in (1) above, be considered as Excellent Awards, particularly books that we as individuals may find it difficult to obtain. I have discussed this many times with other Officers who have received awards and I am sure this idea would be well received.'

Reviews in The Marine Observer *of suitable marine life reference books will continue to be sought, and if Mr Powell or any observing officer would like to draw our attention to suitable titles, also supplying names of author and publisher, we would try and obtain a copy for review. The fact that such books are rarely seen on board may be a reflection of the paucity of suitable material on the bookshelves, with the exception of the bird books mentioned.*

Mr Powell's second suggestion merits careful attention on account of his obvious acute interest, supported by his many excellent bird sketches that he has included in his well-kept meteorological logbooks sent to this office. Some of these drawings were reproduced in The Marine Observer, *July 1984 as well as on the Meteorological Office stand at the Shipcare & Safety at Sea Exhibition in March 1984. The notion of a comprehensive watcher's guide for marine observers bears consideration, and will be researched. Compilation of a reference book covering the whole range of species of marine fauna and flora produced at a sensible cost and in suitable size would doubtless take a long period of time and involve a large number of other experts.*

In choosing the special book for annual awards, most marine life reference books available are normally considered, but we attempt to select titles with a fairly wide appeal. With 100 recipients of the book to satisfy, we try not to choose works that are too specific, but whenever possible a pertinent volume will be sought.—Editor.

Personalities

OBITUARY.—Mr M. Jenkerson-Kenshole, Trinity House, Southampton Pilot, has died at the age of 56.

Michael Jenkerson-Kenshole received his training as a Cadet in H.M.S. *Worcester*, served as a Midshipman R.N.R. in H.M.S. *Cleveland* and was attached to Force J at the time of the Normandy invasion. He later joined Alfred Holt & Company as a Midshipman, but in 1945 he was loaned as a Second Officer to the Straits Steamship Company Ltd during the Indonesian uprisings of 1945–46. He later joined the Union-Castle Line and was Second Officer when he left in 1951 to rejoin Alfred Holt & Company; he gained his Master's Certificate in 1953.

Whilst serving aboard Union-Castle's *Arundel Castle* in 1947 he sent us his first meteorological logbook, one of a total of 9 logs spread over 7 years of which 2 were Excellent books. The last of these came from the *Nestor* in June 1954.

In 1967 he left the sea to join the Southampton and Isle of Wight Pilotage Service. He was a keen yachtsman and was a member of the Island Sailing Club, Cowes, from 1944 and the Royal London Yacht Club from 1978. In 1974 he founded the Old Worcesters Yacht Club, members of which were former *Worcester* cadets. He was a member of the Honourable Company of Master Mariners, a founder member of the Royal Institute of Navigation and a member of the Nautical Institute Solent Branch.

RETIREMENT.—Captain A. J. Braund retired as Operations Manager to Blue Star Ship Management Ltd on 20 December 1984.

Anthony John Braund was born at Brixham on 4 February 1920 and educated at the King Edward VI Grammar School, Totnes. When he joined the Commonwealth and Dominion Line in February 1936, he was probably the last Apprentice to sign indentures with that company before it became Port Line. The following March he joined the *Port Wyndham* and sailed from London in his first ship. He remained with Port Line up to the time he came ashore in January 1961.

Tony Braund saw action in all the main theatres of the war at sea between 1939 and 1945. During the early period of the war he was serving as a junior Officer in the *Port Townsville* when the ship was attacked and sunk by Heinkel III bombers in Saint George's Channel.

He obtained his Master's Certificate in July 1946 and was appointed to command the *Port Fremantle* in August 1958.

On leaving the *Port Macquarie* in 1961, Captain Braund took up an appointment as Assistant Marine Superintendent with Port Line and worked in both the King George V Dock and Leadenhall Street offices in London. When Blue Star Port Line (Management) Company was formed in March 1968 he became Port Operations Superintendent at the Blue Star Line Dock Office in Liverpool: in 1974 he helped form Blue Star Ship Management and remained with that company as Operations Manager at both Liverpool and London when the move was made in January 1984, up to the day of his retirement.

During his sea time, the Meteorological Office had the benefit of observations from 12 logbooks compiled by Captain Braund, all but one of them being assessed as Excellent. The first of these was from the *Port Hobart* in 1947 and the final log was from the *Port Macquarie* in January 1961. During his many years in shore appointments, he has provided invaluable co-operation and assistance in ensuring efficient movement of meteorological supplies to and from his ships, thus helping considerably the cause of marine observing. He says that his company's serving Masters are aware that meteorology remains one of his favourite subjects and that he is a keen supporter of the continued voluntary contributions to the Meteorological Office.

Captain Braund looks back with pleasure on his past association with our Officers and colleagues and offers thanks for all the good wishes we now send him for a happy and prosperous retirement.

RETIREMENT.—Captain D. A. G. Dickens, Elder Brother and Member of the Board of Trinity House, retired on 31 October 1984.

Captain Dickens was born in 1924 and received his pre-sea training at the Nautical College, Pangbourne, between 1938 and 1941; in August 1941 he joined the New Zealand Shipping Company as an apprentice and attained command in 1953. During the Second World War, he was a survivor from operation Pedestal, his ship *Dorset* being the last merchant vessel sunk when only 70 miles from reaching Malta; he was picked up by H.M.S. *Bramham*, which with H.M.S. *Penn* carried out the immortal towage of the tanker *Ohio* into the beleaguered island.

Captain Dickens first sent us a meteorological logbook bearing his name from the *Rimutaka* in May 1947, followed by a further 18 logbooks of which 15 were marked as Excellent. He received Excellent Awards in 1948, 1956, 1958, 1960 and 1962, during which year we received his final log from the *Huntingdon* before he left the New Zealand Shipping Company on his appointment as an Elder Brother and Member of the Board. In 1972 he was elected a Warden of the Corporation.

As a Member of the Board, he was also called upon from time to time to serve as a Nautical Assessor at hearings of Marine Cause in the Queen's Bench (Admiralty) Division of the Royal Courts of Justice. Captain Dickens was also a member of the Medway Ports Authority for about 14 years, as well as member of many Technical Committees and other august bodies.

We wish Captain Dickens, who is married, has three sons and a daughter and lives in Limpsfield, Surrey, good fortune and pleasant days of retirement.

RETIREMENT.—Mr W. Kay has retired from the sea after 28 years as a Radio Officer.

William Kay was born on 14 May 1931 and educated at South Shields; it was from the Marine College there that he set forth with his PMG 2nd Class Certificate to join the Marconi Company in January 1955. His first ship as Radio Officer was Ellerman's *City of Paris*. After obtaining his 1st Class Certificate in April 1957 he joined the New Zealand Company, and in 1970 transferred to Overseas Containers Limited with whom he remained until his retirement on 1 September 1983.

Mr Kay took two ships out on their maiden voyages, *Somerset* of N.Z.S. Co. and *Moreton Bay* of O.C.L. He was caught in the same typhoon as was presumed to have caused the ill-fated *Derbyshire* to be lost.

The first meteorological logbook to be received containing his radio records was from s.s. *Hertford* in June 1960. A total of 40 logbooks have contained his name, of which 28 were assessed as Excellent, a most enviable achievement. Mr Kay was justly rewarded for his consistent efforts by the receipt of Excellent Awards in 1961, 1969, 1973, 1974, 1980, 1981, 1982 and 1983.

He says he hopes to find a little niche in which to take suitable employment for a few years yet, and we therefore wish him success in his ventures after his long and prolific co-operation with us.

Notice to Marine Observers

APPOINTMENT TO THE NAUTICAL STAFF OF THE MARINE DIVISION AT BRACKNELL

Captain A. F. Ashton has been appointed to the Marine Division of the Meteorological Office and posted to the Ship Routeing Service at Headquarters in Bracknell, where he will be mostly engaged on sea ice matters.

Archie Ashton obtained his pre-sea training at H.M.S. *Conway* in 1950 and 1951 and joined the Canadian Pacific Steamship Company as a Cadet in 1952. He transferred to the Bristol City Line as a Deck Officer in 1955 and remained with that company for 17 years having been promoted to Master in 1967. He also commanded ships of Bibby Line and the Island Navigation Company of Hong Kong until coming ashore in 1978 to become a Nautical Surveyor at the Department of Transport.

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