Met.O. 1025

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THE MARINE OBSERVER

A QUARTERLY JOURNAL OF MARITIME METEOROLOGY PREPARED BY THE OBSERVATIONS VOLUNTARY (MARINE) BRANCH OF THE MET. OFFICE

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CONTENTS

COVER PHOTOGRAPH: Deep gloom surrounding the *Merchant Premier* on 28 January 1997 photographed by Captain C.W. Harvey whilst the vessel was at the entrance to the Mississippi River. (See page 5.)

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LONDON: THE STATIONERY OFFICE

Editorial

We know so much about what happens around us, and why it happens, and how — we can also look into deep space, towards the beginning of time, select a star and view it through giant telescopes and computer enhanced imagery; or nearer to home, we can select a planet and send an instrument-packed orbiting craft to it to survey the surface and transmit detailed analyses back to Earth across millions of miles of space.

Even nearer, archaeologists spend hours, days and weeks locating, uncovering and deciphering the remains of earlier societies which can lie only inches below the surface of our everyday world; while in laboratories scientists can show us plate-sized pictures of a structure the minuteness of which almost defies comprehension.

But when it comes to forecasting tomorrow's weather, all of man's direct control of events seems to go out of the window!

Instead, he has to replace that control by using his ingenuity to design sophisticated computers capable of carrying out millions of calculations in the blink of an eyelid, to help him attempt to predict the state of the atmosphere at several levels for a specific time. The computer product, or model of the atmosphere's behaviour, when coupled with the skilled forecaster's interpretation of it and his/her experience, lead to what is known to the rest of us as a weather forecast.

Of course, in order to predict a future state of anything, there must be a set of initial conditions on which to base that prediction, and the description of those conditions has to be as accurate as possible. The business of weather is based on nothing less than a never ending supply of observations made on land, at sea or in the air by manual or automatic means; these continuously 'describe' what is happening at the surface or aloft. The quality of these observations is all important, for while computers can model atmospheric conditions until the cows come home, if they are fed inexact information, then the resulting model will not be as accurate as it should be; that is why quality control procedures are employed on all incoming data to ensure that doubtful elements are excluded from the calculations, and why accurate manual observations are used to assist in monitoring the performance of automatic or remote reporting systems.

Alongside the quality of observations sits the no less important aspect of their quantity. Over the oceans, where there is sparse coverage compared with weather observation sites on land, plentiful and accurate ships' observations at regular intervals (the synoptic hours), are vital to complete the picture of 'real time' surface conditions and help provide the building blocks on which to base the next forecast.

Below the surface of the oceans there is a continuous movement of water just as there is continuous movement of air currents in the atmosphere. Deep ocean currents move around the globe in a way and on a time scale that is only just starting to be understood, while the vagaries of the weather seem to be echoed in the behaviour of Pacific currents which give rise to the El Niño phenomenon which, in turn, has its marked effect on weather systems over land masses. Trying to unravel these interactions and deal with their sometimes drastic consequences will be keeping mankind occupied far into the future, it appears

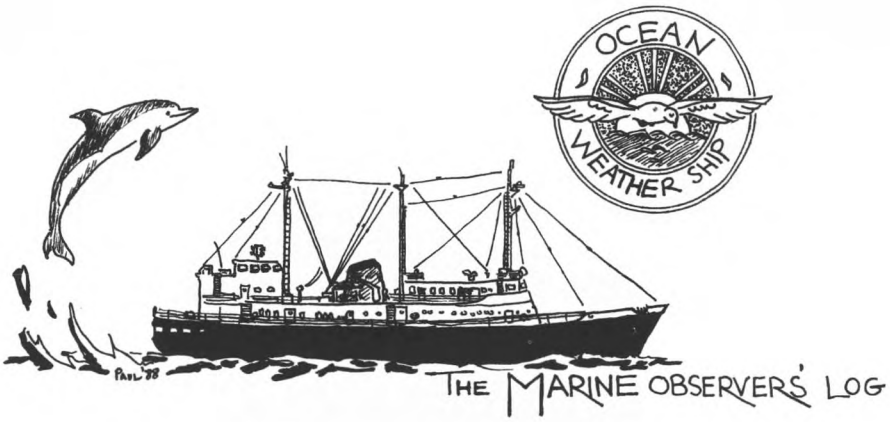
It has often been said that the oceans are the final frontiers of exploration on this planet. Occasionally, tantalizing glimpses of life forms inhabiting the depths are

discovered, such as the colonies of specialized organsims living around the 'black smoker' chimneys on the ocean floor, or giant squid caught in nets off New Zealand, or the rare sightings of the Oarfish, which may be the source of 'sea serpent' legends. Among sightings reported to us stands one of a clearly seen eel-like creature watched from the bow of a ship — it would not be that unusual but for the fact that its length was estimated to be 10–12 metres long, its diameter was about 60 cm and the speed of the vessel was 18.5 knots.

The observers of the VOF, while undertaking their valuable weather observation work, are best placed to spot the unusual, the fantastic or the 'one-off' sighting, and record the event however odd, so that the report can be forwarded to the appropriate authority. Let us know about your sightings of the peculiar, for 'the truth is down there'.

As this Editorial is being written, the warm early autumn sunshine has given way to frost and fog, but the New Year seems distant and, for the UK at least, the depths of winter are several weeks away. However, as this edition reaches publication, 1998 will indeed have arrived, and this journal will be finding its way to marine observers world wide.

To observers, whether working in UK coastal waters, offshore installations or on deep-sea passages further afield, the Chief Executive of The Met. Office, and Captain Stuart Norwell and his staff in the Observations Voluntary (Marine) branch thank everyone for their voluntary work in 1997 and wish you calm waters for the year ahead.



January, February, March

The Marine Observers' Log is a quarterly selection of observations of interest and value compiled from the meteorological logbooks of the UK Voluntary Observing Fleet and from individual observers' contributions. Responsibility for each observation rests with the contributor. All temperatures are Celsius unless otherwise stated. The standard international unit for barometric pressure is the hectopascal (hPa) which is numerically equivalent to the millibar (mb).

CYCLONE 'DRENA'

South Pacific Ocean

m.v. *British Spirit*. Captain M.C. Roberts. At anchor off Whangarei. Observers: the Master, Mr A. Shearer, Cadet and ship's company.

7–11 January 1997. The vessel was at anchor awaiting berthing instructions when the first report of cyclone Drena was issued for the locality. At this time it was moving across New Caledonia and heading towards New Zealand; on board the situation was monitored and plotted. On the 9th the vessel berthed at Marsden Point Refinery, Whangarei, and throughout the day Drena's movements were further monitored.

The pressure was already falling and winds of up to 80 knots were forecast, so the Master decided to sail, steering 050° for approximately 90 n mile. As the ship left the berth the wind was already NE'ly, force 6 which made the sea conditions rough. Throughout the 10th, the wind speed increased to force 9 with gusts to 50 knots; the sea was very rough with a swell building to a height of 6 m, or greater at times. The storm's forecast position for 1100 UTC was 36° 30′ S, 171° 18′ E with a central pressure of 986 mb. The sky was overcast and the precipitation was virtually continuous drizzle with periods of heavier rain. At the height of the storm, the vessel was moving heavily and steamed into the weather at Half Ahead. Until early on the 10th the wind direction remained NE'ly but then started to back, becoming NNE'ly and then N'ly; however, the pressure was still falling.

At 1500 on the 10th the cloud cover started to break and the pressure steadied and it was at this point that the ship turned and started heading back to Whangarei. The wind continued at force 9 and became NW'ly during the forenoon watch before starting to ease.

All weather reports received indicated that Drena had passed about 200 n mile west of the vessel and was continuing south, predicted to pass through Cook Strait. The vessel berthed on the afternoon of the 11th, the wind speed easing throughout.

Position of ship at 1500 UTC on the 10th: 35° 37′ S, 175° 04′ E.

PASSAGE OF FRONT

Gulf of Mexico

m.v. *Merchant Premier*. Captain C.W. Harvey. Mississippi River entrance. Observers: the Master, Mr I. Banerji and members of ship's company.

28 January 1997. At 1242 UTC the vessel had just picked up the inward pilot at SW Pass, and the visibility was less than 5 cables. On entering the river, the visibility was reduced to zero in fog and pilot advised the Master that there was a front passing through which should result in an improvement. At 1300 the wind increased from calm to force 5 with heavy cloud cover approaching from the north while the pressure dropped 4 mb in the space of about an hour. The fog disappeared instantly to be replaced by heavy rain which then turned to drizzle. The remainder of the passage took place in good visibility with passing showers.

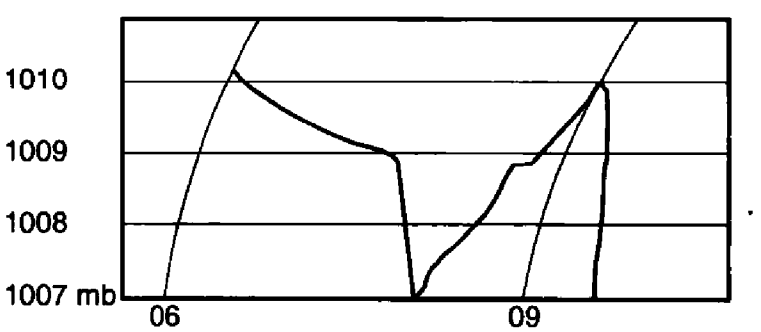
The photograph [see front cover of this journal] shows the front to the south of the vessel; the extent of darkness owing to the cloud cover caused the reflective tape on the lifeboats to become highly visible.

Position of ship: approximately 28° 55′ N, 89° 25′ W.

m.v. *Ravenscraig*. Dry Tortugas to Mobile. Captain B.F. Middleton. Observers: Mr J. Parkin, 2nd Officer and Mr S. Wasanthe, ABS.

14 March 1997. At 0630 UTC whilst on a heading of 322° at 15 knots the vessel encountered very heavy rain with squally winds in gusts to 35 knots while the sea became rough. The visibility was reduced to less than 1.5 n mile and the vessel's speed dropped from 16 knots to 14.5 knots. Lightning was visible all around and was frequent, occasionally violent!

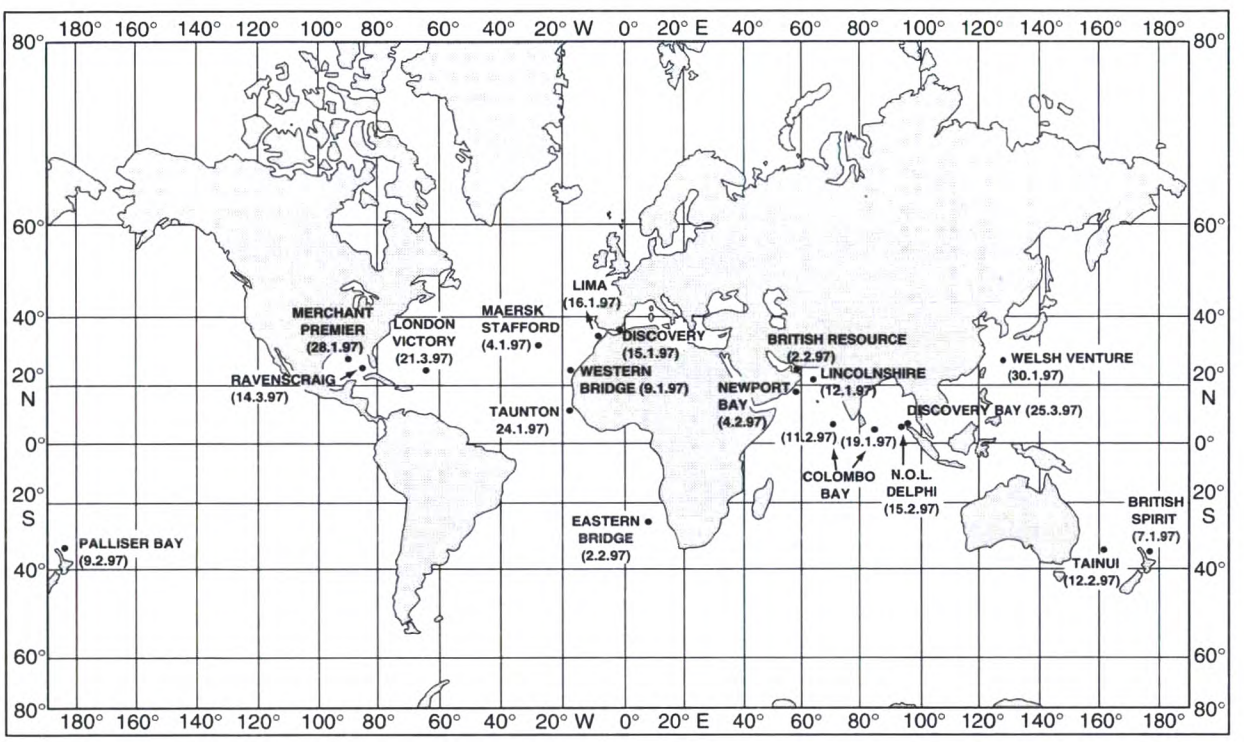
The most notable moments in the passing of this front were the strange movements of the barograph trace and the distinctive 'bands' of rain clearly observed on the radar. The diagram indicates the pressure changes (the times shown are local).



The most severe rain occurred during the first steep 'depression' on the trace; the second dip did not bring a repeat of this very heavy rain. The rain arrived in

very distinct bands from the south-west; they were about 3 n mile wide and 8 n mile long with spaces between them of about 3 n mile. Although the rain moderated between each band it did not reduce significantly until after the passing of the front.

Position of ship: 27° 40′ N, 85° 50′ W.



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

SQUALLS

East China Sea

m.v. *Welsh Venture*. Captain M. Etherington. Observers: Mr P.M. Thompson, 2nd Officer and Mr R. Latabe, Lookout.

30 January 1997. At 1734 UTC whilst on a heading of 025° at 14.2 knots the vessel encountered a series of four line squalls lying roughly parallel with the ship's track but running across it to the east-south-east. Each squall lasted approximately three minutes and there was a lull of about two minutes between them; within the squalls the visibility was reduced from in excess of 10 n mile to 3–4 n mile.

The following details compare the weather conditions before the squalls with those encountered during the passage of the final one at 1755.

Time	Temperature			Pressure	Wind	
	Air	Wet bulb	Sea		Direction	Speed (knots)
1734	17.7	16.5	16.7	1014.3	300	18
1755	15.6	15.5	16.4	1012.2	310	32

On passing the final squall, the visibility increased immediately to more than 10 n mile and the weather obs for 1800 was recorded. The weather prior to the squalls was overcast with cumulus fractus and stratus fractus, and lightning was being noted in the direction from which the squalls came. The vessel's speed was reduced to 13.4 knots when passing through the squalls.

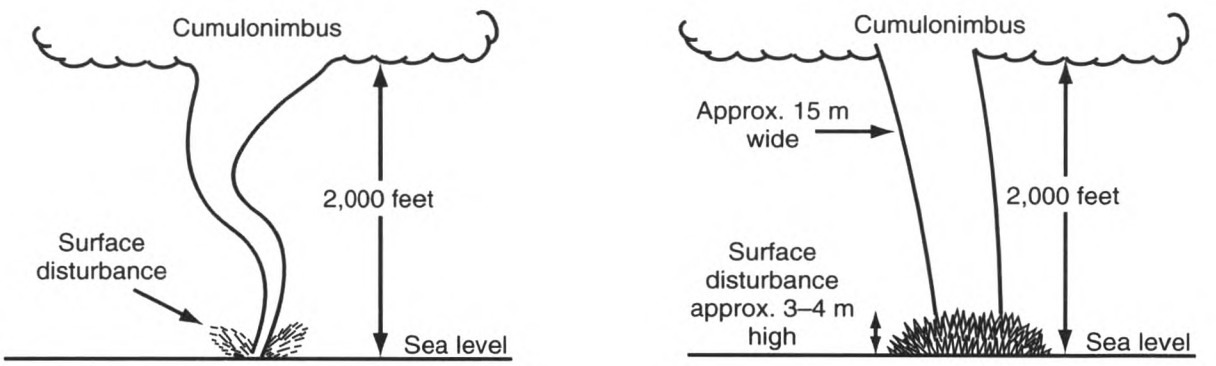
Position of ship: 27° 56.1′ N, 125° 06.5′ E.

WATERSPOUT

Indian Ocean

m.v. *N.O.L. Delphi*. Captain D. Tracey. Jeddah to Port Klang. Observers: the Master, Mr M. Hill, 3rd Officer and Mr N.I. Lloyd, Cadet.

15 February 1997. At 1140 UTC a waterspout was observed on the starboard side of the vessel at a distance of approximately 2 n mile. It was extending down from a cumulonimbus cloud with a base height of roughly 2,000 feet. Initially it appeared to be snaking down to the sea and moving around very rapidly, see first



sketch. After about five minutes, during which time it appeared to be gaining energy from the sea, it became a vertical spout about 15 m wide extending from cloud base to sea level and a large disturbance was caused on the sea at the base of the spout, rising to 3–4 m as shown in the second sketch.

The waterspout appeared to be moving rapidly away from the vessel and eventually dissipated 17 minutes later at a distance of about 8 n mile astern, finally disappearing within the space of only a few seconds, giving very little indication that it was coming to an end.

At the time of the observation the weather conditions were: air temperature 28.1°, wet bulb 25.5°, pressure 1007.8 mb, wind ENE'ly, force 4.

Position of ship: 05° 57′N, 92° 55′ E.

DUST

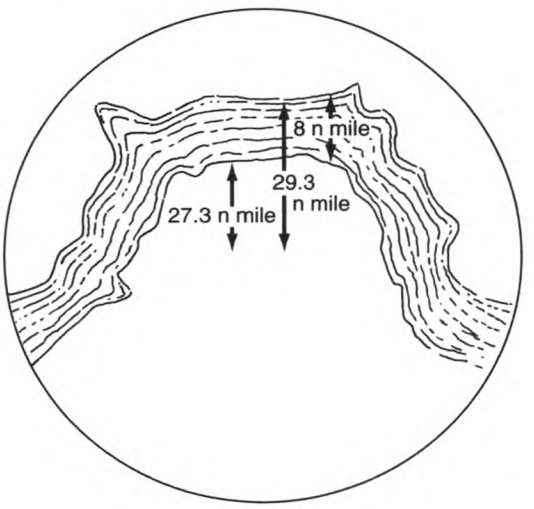
North Atlantic Ocean

m.v. *Taunton*. Captain J.E. Sinnott. Tanjung Bara to Rotterdam. Observers: the Master, Mr M.S. Noronha, Chief Officer, Mr J. Khare, 2nd Officer, and Mr S. Gupta, 2nd Officer.

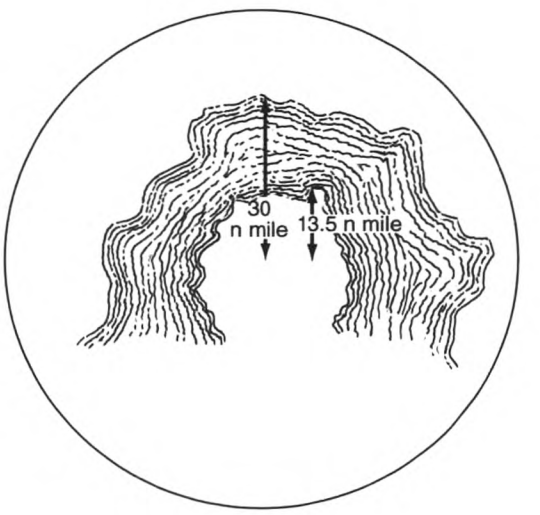
24/25 January 1997. From 2115 UTC on the 24th, when the ship was 90 n mile off Senegal on a heading of 360° at 11.2 knots, unusual echoes were observed on

the 3-cm radar, see first sketch. The echoes were in a band having a width of about 8 n mile, the inner edge of the echo being 27.3 n mile from the ship while the outer edge was 29.3 n mile away.

As the ship moved ahead the band of echoes came closer until, at 0000 on the 25th, the inner edge was 13.5 n mile away while the outer edge was at a distance of 30 n mile, see second sketch.



2115 UTC
48-n mile range



0000 UTC
48-n mile range

The echoes looked like tide rips and were spreading across the radar screen with time. At 0500 the echoes spread out and disappeared so it was assumed that they were caused by dust haze in the atmosphere. At the time of the first sighting the wind was NNE'ly, force 4.

Position of ship at 2115 UTC on the 24th: 11° 30.2′ N, 17° 55.5′ W.

WEATHER OBSERVED WHILE DRIFTING

North Atlantic Ocean

m.v. *Lima*. Captain A.F. DeVanney. Drifting awaiting orders. Observer: Mr S. Ashton, Cadet.

16–17 January 1997. The vessel was drifting off the west coast of Morocco awaiting orders having exited the Strait of Gibraltar.

The sky was cloudy with a covering of 6–8 oktas and the weather was fair with occasional rain showers. Although short in duration, the rainfall during the showers was moderate to heavy. The visibility was in excess of 10 n mile but was reduced to about 5 n mile in the showers.

The wind was force 4 throughout the period from 1545 UTC to 2200 UTC on the 16th; from 1600–1800 the wind came from a direction of 110° until it began veering at about 1745, settling at SE'ly at 1830. During the showers, gusts of wind to 27 knots were noted; the sea state was generally unchanged during the period, occasional 'white horses' showed but no spray. In the showers, the sea became choppy but calmed again with the dispersion of the rain. In the space of six hours the vessel drifted approximately 9.5 n mile with the drift quickening towards 2200 when the decision was made to steam due south to avoid the entrance to the Traffic Separation Zone.

On the 17th, after steaming south, the vessel began drifting once more. It was noticed that the wind had veered again so that it was W'ly, still at force 4; it veered slowly but continuously between 0300 and 0400 reaching NNW'ly but began to back until settling at E×N'ly at 0800. While veering, the wind speed reached force 5 but steadily reduced during backing to become force 3.

The weather was broadly the same as for the 16th although the showers died out at about 0200. As the wind speed started to increase, the cloud began to dissipate and at 0600 there was just a trace of low cumulus. Visibility was very good and the dry-bulb temperature was 16°.

When the wind backed shortly after this time, the cloud began to form again until the coverage was about 4 oktas; there were many different varieties with cloud at all levels but mainly cumulus and stratocumulus at different levels, lenticular clouds to landward and also cirrocumulus. The visibility was moderate to good, hampered by morning sea smoke to landward which dissipated throughout the morning. During the period 0300–1000 the vessel drifted approximately 5 n mile.

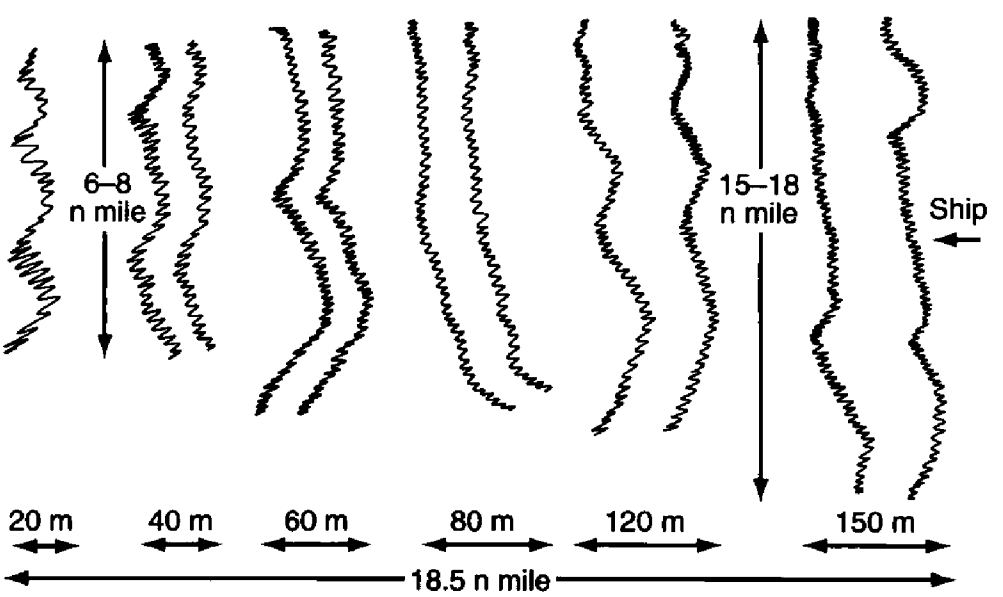
Position of ship at 1615 UTC on the 16th: 35° 31′ N, 06° 27′ W.

CURRENTS

Indian Ocean

m.v. *Discovery Bay*. Captain T.G. Whittaker. Singapore to Colombo. Observers: the Master and Mr S.J. Young, 3rd Officer.

25 March 1997. At 0130 UTC whilst the vessel was off the northern tip of Sumatera on a heading of 268° at 19.5 knots, two lines of disturbed water were detected by sight and radar at a distance of 8 n mile. As the ship approached the lines they seemed to be formed from two currents meeting, which produced rough seas in the current lines with slight seas before and after them. As shown in the sketch, the width of the disturbance was 15–18 n mile at the beginning, and the first band was 150 m wide while the second one was 120 m wide.



Their orientation was from north-by-east to south-by-west, and the vessel experienced set from 055° at 1.4–1.7 knots before crossing them.

After passing through the first two lines, four smaller ones in parallel with them were crossed, appearing to decrease in length and width, being 6–8 n mile at the end of the disturbance. The duration of the crossing of all the lines was an hour, covering a distance of approximately 18.5 n mile.

Position of ship: 06° 12′ N, 94° 58.5′ E.

CETACEA

Mediterranean Sea

R.R.S. *Discovery*. Captain K.O. Avery. Off Cartagena. Observers: Mr T. Morse, 2nd Officer, Mr R. Atkinson, 2nd Officer, and Mr B. Walker, 3rd Engineer Officer.

15 January 1997. At 1045 UTC whilst the ship was on a heading of 011°, a white cetacean was sighted about 180 m off the starboard bow; it then swam towards and underneath the vessel. It was approximately 3.5 m long, primarily white in colour with a light-grey dappled pattern on its back, and had a white belly. The dorsal fin was sharp while the nose was rounded and blunt, similar to that of a pilot whale.

When swimming, the creature did not breach the surface but remained mainly submerged. Generally, it was dolphin-like in appearance but did not behave in a dolphin-like manner. At the time of observation the sea temperature was 16.3° and the wind was E'ly, light airs.

Position of ship: 36° 06′ N, 01° 36′ W.

Note. Dr P. J. Herring, of the Southampton Oceanography Centre, was on board the vessel and commented:

"We were fortunate to have on board a copy of the CD-ROM *Marine Mammals of the World*. Comparison with the images and detail in this excellent guide showed that this was a Risso's Dolphin, a very widely distributed species with a characteristic blunt head and very pale, mottled appearance."

North Atlantic Ocean

m.v. *London Victory*. Captain R. Fullagar. St Croix to New York. Observers: Mr R.J.A. Brearley, Chief Officer, Mr A. Finney, Chief Steward and Mr M. Kapade, QM.

21 March 1997. At 1110 UTC a large whale was observed to pass approximately 2 cables from the vessel. On the initial sighting, just forward of the starboard beam, the whale was seen to be surfacing and blowing every 20–30 seconds; it was also raising its tail high out of the water and then slapping it down into the sea.

Shortly afterwards, when the whale was abaft the beam, it appeared to remain on the surface and it began to raise both its forelimbs clear of the water before slapping them down into the sea. This was repeated several times, and it looked almost like a bird flapping its wings. Approximately five minutes after the initial sighting the whale disappeared from view while moving in a northerly direction.

The whale's dorsal fin was very small and at a shallow angle to its back, while the forelimbs were estimated to be about 2 m long. The observers guessed that they were watching a Humpback Whale.

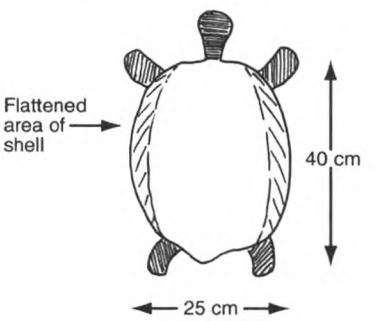
Position of ship: 23° 19.3′ N, 67° 17′ W.

TURTLES

Gulf of Oman

m.v. *British Resource*. Captain A. MacLeod. At Fujayrah Bravo anchorage. Observers: Mr R. Hancock, Chief Officer and Mr R. Hodgson, Cadet.

2 February 1997. As the vessel was brought up to 10 shackles at 0700 UTC a turtle with a shell about 40 cm in length and 25 cm wide swam past just below the surface, against a slow-flowing current. Shown in the sketch, the turtle seemed to have a yellow tinge to its brown shell, the sides of which seemed to be flattened.



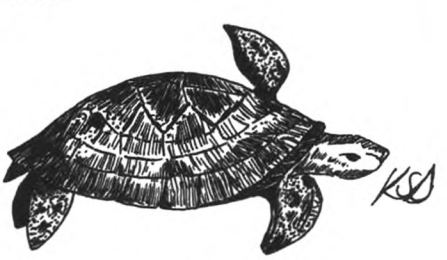
At about 1630 another turtle was observed on the port side, swimming towards the vessel on a course of approximately 270°; on reaching the vessel's side it stopped and seemed reluctant to dive under the keel, the draught being 19 m and the depth of water 115 m. The turtle then swam off along the ship's side.

Position of ship: 25° 14′ N, 56° 31′ E.

Arabian Sea

m.v. *Newport Bay*. Captain J.A. Oscroft. Jeddah to Jebel Ali. Observers: the Master, Mr K.S. Dowden, 3rd Officer and ship's company.

4 February 1997. At 0730 UTC whilst passing about 10 n mile off the coast of Oman numerous marine turtles were sighted in the glassy seas. On first inspection they looked like floating coconut shells or debris and were huddled together in groups of four or five adults. As shown in the sketch, the turtles had a smooth shell aproximately 1 m long with mottled darker markings and blotches of dark-brown, with a whitish underside.



They remained close to the surface of the water, carried along by the ocean currents. Thought to be green turtles, they were seen throughout the morning watch. The vessel's course was 034° at 23.5 knots and the sea temperature was 25.0°.

Position of ship: 19° 40′ N, 58° 35′ E.

Note. Mr Neil Fletcher, English Nature's European Marine Sites Project Manager for Morecambe Bay, comments:

"The turtles in the first report were probably immature Green Turtles, the species having important nesting and feeding sites in this area. Adult green sea turtles normally grow to between 70 cm and 110 cm long and animals which manage to reach this size are the lucky ones which have survived a formidable list of predators waiting for them at every stage of their lives.

"The turtle's life begins when the female lays the eggs into her specially dug nest site on the beach. She then laboriously covers the egg site with sand and then hauls herself back into the sea, leaving her brood to fend for themselves. Many of these eggs will never even get the chance to hatch as they are immediately uncovered and eaten by birds, mammals and other reptiles. Nine weeks later the surviving eggs are fully incubated and the turtles are ready to begin chipping their way out of their bulging homes. They emerge en masse ready to start the headlong dash into the ocean, but getting to the water is no easy task and means running the gauntlet of hungry predators which are waiting for them. These can range from wild dogs, birds, monitor lizards and even jaguars in some parts of the turtle's range.

"The surviving turtles which manage to make it into the sea then have to endure a precarious life avoiding every passing fish which tries to eat them. With size comes safety and, as the turtles grow larger, they become too big to be eaten by smaller fish. Fully grown adults only have to worry about being caught in fishing nets or being eaten by sharks which are particularly fond of turtle meat."

"The description of the animals in the second report indicates that they were also Green Turtles. They have important nesting sites along the coast of Oman, and are commonly seen in large migrating 'fleets' in this area en route between feeding and nesting grounds. As adults they feed on sea grasses and macroalgae and, from tagged individuals, it has been discovered that they travel as far afield as the Red Sea and the coast of India to feed. Their name comes from their distinctive green fatty tissue and not the shell colour and, unfortunately for them, they are also the species most commonly entering the cooking pot to make turtle soup."

FISH

Indian Ocean

m.v. *Colombo Bay*. Captain B.V. Chipperfield. Colombo to Suez. Observer: Mr L. Rigby, 2nd Officer.

11 February 1997. At 0800 UTC whilst the vessel was on a heading of 281° at 23 knots a large fish was observed leaping out of the water not far from the starboard bow. It was estimated to be about 2 m long with a large beak or 'sword' about 1 m long. The body of the fish was very thin and mainly a dark-grey colour with a bright silvery underside. There did not appear to be any distinct dorsal fin which is usually associated with a marlin or sailfish.

The fish continued to leap from the water and splash down on its side as the vessel passed its 'play area' until it was finally lost from view.

Position of ship: 08° 34′ N, 69° 59.9′ E.

Note. Dr F. Evans, of the Dove Marine Laboratory, Cullercoats, North Shields, comments:

"There can be little doubt that this was one of the fish with swords — swordfish, sailfish or marlin. It can be very difficult to distinguish between them in the field, the cross-section shape of the sword or bill and the presence or absence of pelvic fins being indicative. Dorsal fins can, of course, be stowed as this one was. I have yet to see a convincing reason for fish of this type leaping out of the water, yet in common with whales they frequently do, apparently in play. The suggestion that they are ridding themselves of sea lice seems to me insufficient."

Arabian Sea

m.v. *Lincolnshire*. Captain C.O. Thomas. Kaohsiung to Al Jubail. Observer: Mr P. Fenwick, 3rd Officer.

12 January 1997. At 1715 UTC whilst on lookout duty on a clear night, the moon having just set, Mr Fenwick heard from the bridge numerous splashes on the port side. The bridge-wing light was switched on for a better look and revealed thousands of what were assumed to be fish jumping on the sea surface. The splashes could be seen as far as the search-light beam could reach.

The fish seemed to be in various sizes between 5 cm and 25 cm and they were silver in colour, moving in all directions. At 1730, after 4 n mile, the splashing died out as suddenly as it had started.

Position of ship: 21° 47.4′ N, 62° 20.4′ E.

BIRD

Tasman Sea

m.v. *Palliser Bay*. Captain D.K. MacCorquodale. Brisbane to Auckland. Observers: the Master, Mr J.T.F. Broughton, 2nd Officer, Mr N.P. Mayers, 3rd Officer and members of ship's company.

9 February 1997. At 1900 UTC as the 8–12 morning watch was starting, an unknown seabird was seen aft of the bridge, sheltering by the entrance to the funnel. The bird was of medium size, approximately 45 cm in length with two red tail streamers of similar length.

Upon consulting *A Field Guide to the Seabirds of Britain and the World* the unknown bird was identified as a Red-tailed Tropicbird; from the description, it was thought to be a fully grown adult although the reason for it being aboard was not known.

Approximately two hours after the bird was first sighted, it was observed extending its wings as if getting ready for flight; during this the Third Officer noted the wings and determined that the bird was merely resting and that its wings were not damaged.

Later that morning, one of the seamen approached the bird for a closer examination, he was able to get within 60 cm of it but its only reaction was to squawk and call out. After the examination the bird was offered some water and then left alone to rest. In the afternoon, about eight hours after it was first sighted, the Second Officer reported that the bird, suitably rested, left the ship of its own accord. From the information in the guide the opinion on board was that the bird had joined the ship at Norfolk Island which had been passed earlier in the morning.

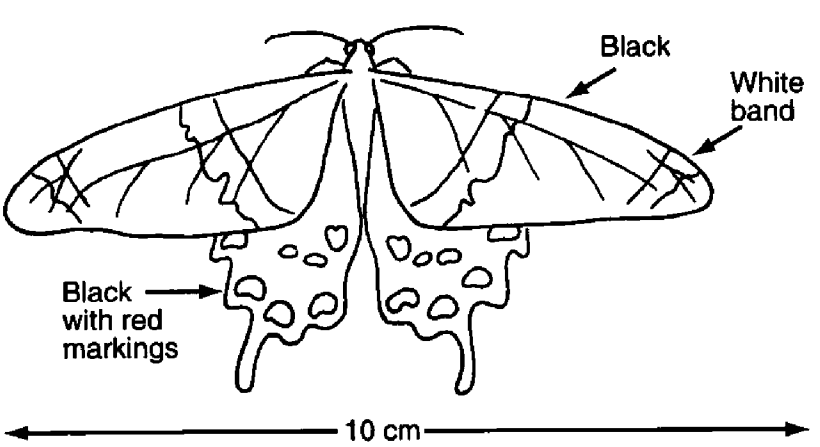
Position of ship: 33° 59′ S, 172° 16′ E.

INSECT

Indian Ocean

m.v. *Colombo Bay*. Captain B.V. Chipperfield. Suez to Singapore. Observers: Mr L. Rigby, 2nd Officer, Mr C. Robins, 3rd Officer and Mr S. Burgess, Senior Seaman.

19 January 1997. At about 0800 UTC the butterfly shown in the sketch was found on deck; it was dead but must have just died because it was in perfect condition.



The body was 3 cm long, coloured deep-red on the underside and black on the top; it had large silver eyes, long antennae and a long curled proboscis.

Its wing-span was 10 cm and the upper wings were black with two white bands on both sides; the second set of wings were black with a 'swallow-tail' and were covered in almost heart-shaped red markings. It was believed that the butterfly was blown from Sri Lanka.

Position of ship at 0800 UTC: 05° 45′ N, 83° 56′ E.

Editor's note. From the identification sources available in our offices, we believe the butterfly was a species of the Papilionidae family (swallowtails) and bears a resemblance to the Common Rose Swallowtail although we would not presume this conclusion to be correct.

BIOLUMINESCENCE

Indian Ocean

m.v. *Tainui.* Captain J.M. Murray. Melbourne to Auckland. Observers: Mr M.R. Falconer, Chief Officer and Mr K. Skynner, IR.

12 February 1997. At 1730 UTC a distinct white line was observed ahead of the vessel, distance approximately 2 n mile. Initially it appeared to be a line of breakers, although this was impossible with the vessel's position. Ten minutes later the vessel passed through a spectacular line of bioluminescence lighting up the whole ship and surrounding sea. This line of bioluminescence stretched from horizon to horizon in a north/south direction and was 20 m wide. The sea around the vessel was lit up by large bright blue-green organisms.

The passage through the line only lasted for a brief time but small amounts of the bioluminescence were observed for another 10 minutes; the distinct line astern was also observed for another 15 minutes. The light generated from the organisms was extremely bright and did not appear to alter with the passage of the vessel through them.

Conditions at the time were: air temperature 18.1°, wet bulb 16.0°, sea 20.0°, pressure 1020.6 mb, wind SE'ly, force 2. The sky was overcast and there was a low swell from the south-south-east.

Position of ship: 36° 32.2′ S, 161° 12.3′ E.

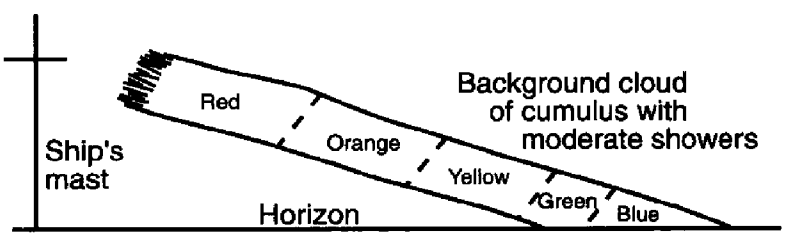
Editor's note. The *Tainui* is a Selected Ship observing for the New Zealand VOF.

RAINBOW

North Atlantic Ocean

m.v. *Maersk Stafford.* Captain R. Banton. Tarragona to Houston. Observer: Mr M. McShane, 3rd Officer.

4 January 1997. At 0945 UTC a very unusual rainbow appeared ahead of the vessel against a background of cumulus cloud with moderate showers. Its end bearings were 260° and 268° and it rose about 4° above the horizon. As indicated in the sketch, the unusual part was that this 'rainbow' was not actually bowed or



arced in any way but was very straight, and the colours displayed were shown as blocks of colours rather than layered bows. The outline and the colour borders were all very well defined.

Even its disappearance was unusual; it was as if it was being 'pushed' into the horizon, the lower colours slowly disappearing, with red being the last to fade, at 0949.

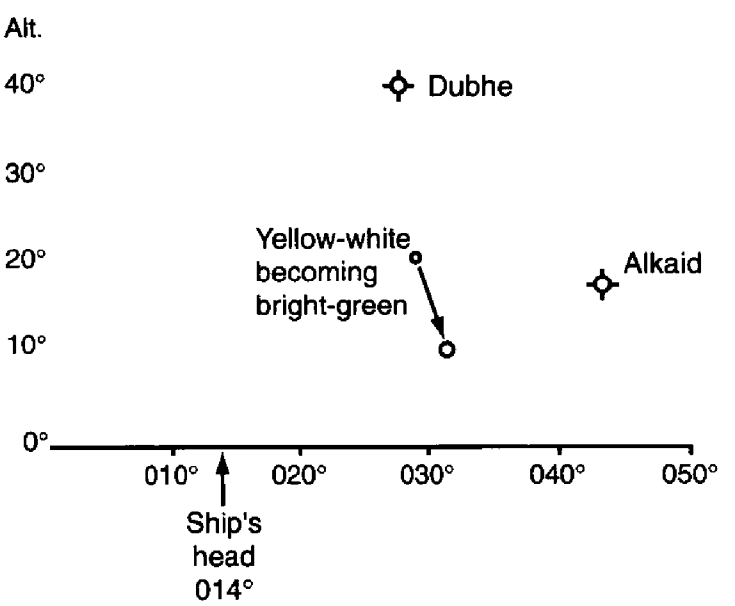
Position of ship: 32° 59′ N, 28° 07.8′ W.

METEOR

Eastern North Atlantic

m.v. *Western Bridge*. Captain I.C. Gravatt. Nouadhibou to Port Talbot. Observers: Mr T. Ryan, 2nd Officer and Mr R. Karundasa, AB.

9 January 1997. At 0147 UTC whilst the vessel was on a course of 014° a small yellowish-white object was seen descending from the sky. As it continued to fall it became larger in size and changed colour to bright-green.



As shown in the sketch, it first appeared bearing 029° at an altitude of 21°, and disappeared bearing 031° at an altitude of 12°. The whole sighting lasted 2.5 seconds and was assumed to be a meteor. At the time of the observation the sky was clear and the wind was N'ly, force 6.

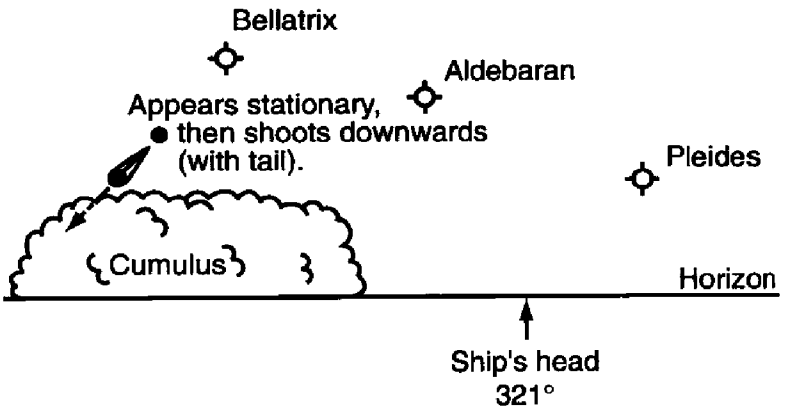
Position of ship: 23° 37.3′ N, 17° 11.8′ W.

UNIDENTIFIED LIGHT

South Atlantic Ocean

m.v. *Eastern Bridge*. Captain C.R. Bamford. Saldanha Bay to Port Talbot. Observers: Mr K.C. Taylor, 3rd Officer and Mr S.H. Sriyananda, AB.

2 February 1997. At 2220 UTC whilst the vessel was on a heading of 321° an orange 'ball' (without a tail) was observed at about 4 points on the port side, having an altitude of 20°. Its size was a little larger than Sirius and also brighter. At this point the object appeared to be stationary for about one second but then shot downwards, now with a tail, and disappeared behind a cloud. See sketch.



The total duration of the sighting was about 3 seconds; no sound was heard and the outcome was not seen owing to the cloud.

Position of ship: 22° 21.9′ S, 08° 06.2′ E.

MISCELLANY ...

An additional mélange of maritime sightings

Auckland Star. 2 February 1997. Whilst in the Caribbean Sea in position 18° 51.7′ N, 78° 00.2′ W, cruising *en route* to Waterford Island, a waterspout was sighted at 1335 UTC at a distance of 1.3 n mile to starboard. It was a funnel-shaped column, oblique or bent as it rose from the surface, and in rapid rotation. The sea condition was slight to moderate.

BT Navigator. 7 March 1997. At approximately 1320 UTC two whales were spotted by Additional Second Officer I.B. Pinto. The whales surfaced very briefly about 150 m away from the ship, and the only thing that Mr Pinto managed to note was that they were black. No further sightings were made although vigilance was maintained out of personal interest. The ship was north of Isla de Margarita on passage from Cartagena to Luanda.

CGM Magellan. 20 March 1997. At 0910 UTC in position 39° 22′ N, 39° 12′ W the vessel passed through a possible rip tide. Third Officer M. Clarey noted that the rip was made easily visible because sparsely situated 'white horses' developed in the slight sea. The phenomenon caused the ship to veer slightly off course while a slight shuddering effect was felt on board; the rip was setting south-east and its effects lasted for about 90 seconds.

Challenger. 20 March 1997. Whilst the vessel was engaged in towing sound-emitting apparatus south-east of Funchal, Madeira, a group of four white-nosed dolphins were seen on the ship's port beam and bow, breaking the surface in short 'hops'.

Durrington. 29 March 1997. The vessel was about 50 n mile west of Vigo when it was visited by a grey pigeon which alighted on the starboard bridge wing deck. It was obviously tired and thirsty because it drank continuously from a dripping window-washing pipe. Whilst the pigeon was drinking, Chief Officer D.M. Shaw

was able to note the details of its leg rings: on the right leg was a clear plastic ring showing '5556723 Portugal 95' while a plain orange plastic or PVC ring was on the left leg. The pigeon was not frightened and remained on the starboard wing of the bridge, resting in a 'puffed up' state for two or three hours before departing.

Eagle. 24 March 1997. A partial lunar eclipse was watched by Captain M.A. Sellars and Third Officer C. Scothern between 0500 UTC and 0600 UTC whilst *en route* from St Eustatius to Zafiro, in position 06° 34.5′ N, 22° 04.5′ W. The illuminated areas of the moon were a bright silver-white colour while craters in these parts were clearly defined and showed dark shadows.

Endeavor. 18 January 1997. A lunar rainbow was observed by Second Officer N. Sumpton and SG1 W. Octavio at 0240 UTC in position 44° 32′ N, 18° 00′ W.

Kotuku. 4 January 1997. Whilst drifting off Timaru in the vicinity of 44° 30′ S, 171° 20′ E Captain M. Webb and Chief Officer H.K.H. Taylor noted large quantities of krill forming a dark-red mass for the ship's length on the lee side. On berthing, numerous krill were found to have been washed on board; they resembled small crayfish measuring 15–20 mm long.

(*Editor's note.* The *Kotuku* is a Selected Ship observing for the New Zealand VOF.)

Magnolia. 6 March 1997. Whilst on passage from Chiba to Ras Tanurah the ship passed through extremely widespread bioluminescence in position 04° 57.1′ N, 106° 46.8′ E. Captain J. Birchenough and Third Officer C. Caldwell watched as the bioluminescence manifested itself as dull pulsating waves originating at the ship's sides and radiating outward, being neither as intense nor as localized as that usually seen in the vessel's wake or bow wave. The phenomenon lasted about 45 minutes before slowly fading.

Maersk Somerset. 21 March 1997. At 0207 UTC whilst on passage from the Suez Canal to Singapore in position 07° 38.5′ N, 73° 55′ E, Captain S. Cresswell and members of the ship's company watched a large cumulonimbus cloud and thunderstorm ahead, and a large vigorous waterspout was sighted about 5 n mile east of the vessel. It lasted for about 5 minutes, and two smaller spouts were seen to the south before the vessel entered rain at 0222. The cloud area (by radar) was 6 n mile long and 2 n mile wide; as the vessel cleared it an area of disturbed water, possibly a developing waterspout was seen ahead but it 'fizzled out'. Another big spout was seen at 0245 on the eastern edge of the cloud.

Maersk Stafford. 30 March 1997. Four Sperm Whales were sighted heading east in position 11° 07′ N, 57° 48′ E. Captain R. Banton and Third Officer M. McShane noted two adults and two juveniles.

Moreton Bay. 14 January 1997. As the vessel left Port Phillip a bird of prey was sighted on the focscle by Captain C.J.A. Hughes, Chief Officer A.N. Murray and Miss M.C. Cram, Cadet. Later, after further observations, the *Field Guide to the birds of Australia* was consulted and the bird was identified as a Brown Falcon.

Pegasus Bay. 5 March 1997. At 0635 UTC in position 41° 58′ S, 138° 44′ E Chief Officer B.P. Murphy spotted a "lone seal passing close to the vessel — quite happily floating on its back observing a huge box invading its space. No other seals sighted, this one was 240 n mile from nearest land (Cape Nelson, Victoria, Australia)."

Resolution Bay. 17 February 1997. Between 2015 UTC and 2130 UTC whilst in the South Atlantic Ocean on a heading of 036° Captain A.M. Tweedie and Chief Officer D.J. Hinson spotted a pod of 30 or more Common Dolphins, two large whales identified as possible Fin Whales and three large Sperm Whales nearly 20 m long, which swam together while occasionally leaping up and crashing back into the water. The ship's position at the first sighting was 43° 40′ S, 48° 42′ W.

St Helena. 12 February 1997. A large whale was seen at noon on the surface about 100 m from the ship. Watched by Second Officer N. Mogg, Third Officer P. Welsh and Cadet B. Bennet, it had a broad dark back, a tall vertical blow and a curved dorsal fin which was not seen with the blow. It had a very long dark-coloured back with the fin apparently well aft but the tail was not seen. It was thought to have been a Blue Whale. The ship's position was 36° 06′ N, 01° 30′ W.

Scirocco Universal. 12 March 1997. At 1400 UTC whilst the vessel was at the outer anchorage of Paranagua, a roll cloud was observed moving towards the coast, parallel to it and in a continuous formation the ends of which lay to the east-north-east and west-north-west. Captain I. Cuthbertson, Chief Officer R. Elikewela, Second Officer W.U.C. Mendis and ETO R. Walker noted that the cloud was unbroken and its base was at about 1,600 feet. At the time the sky was overcast with a continuous layer of altostratus and the roll cloud was preceded by light drizzle.

Sedco 707. 6–8 January 1997. During the period CRO P. Thomas and other members of staff watched a variety of wildlife around this North Sea installation, including a school of 20 dolphins which swam to within 50 m of the installation, three Grey Seals which seemed to spend most of their time chasing gulls, and two fish identified as Lumpsuckers swimming just below the surface.

Shenzhen Bay. 9 March 1997. At 0218 UTC whilst watching a particular formation of low cumulonimbus cloud, Third Officer C.G. Puttak noticed a slight disturbance on the water, like smoke rising from sea level. Through binoculars it was seen to be a miniature waterspout revolving anticlockwise. With the vessel about 2 n mile away, the spout was estimated to be about 2 m high and was a similar diameter at its 'mouth' (the top). A semi-circular area of confused sea was centred on the spout and had a diameter of about 50 m. The ship was on passage from Singapore to Jebel Ali, in position 08° 29′ W, 76° 27′ E.

Shetland Service. 6 February 1997. A herring that had been washed on board during the night was found on the fore part of the main deck by Chief Officer D.E. Grief. It was 28 cm long and in good condition with plenty of scales still in place. The fish was very slim, in the trade called a 'spent', meaning that it had spawned. The wind at the time was SSW'ly, force 7 and there was a heavy swell.

(*Note.* This report was forwarded to Dr Frank Evans, of the Dove Marine Laboratory at Cullercoats, and he commented that, "since no position was given it is not possible to make a definitive comment. Winter spawning herring are found in the Channel in a fishery which once spread as far as Cap d'Antifer on the French coast. However, it is far more likely that this spent herring was taken in the northern extremes of the North Sea or further north, and was an early spring spawner from the Norwegian-Icelandic herring complex. Its length of 28 cm fits this proposal. North Sea herring tend to be smaller than Atlantic herring.")

Welsh Venture. 5 January 1997. At 1700 UTC whilst 51 n mile south-west of Hondeklip Bay, South Africa, a whale's blow was seen 4 points to port at a range of 0.6 n mile by Captain M. Etherington and Second Officer P.M. Thompson. Through binoculars at 0.4 n mile, it was noted that the bulk of the whale's body was a dark dull-brown colour and that during diving the dorsal fin was quite small compared with the body mass and length; also, the flukes were not raised during the latter part of the dive. There was a period of 38 seconds between dives. After clarification of their information, the observers concluded that they had caught sight of a Fin Whale.

'Red tides', water discolouration and bioluminescence in the Gulf of Oman and Strait of Hormuz

By Dr P.J. Herring

(Southampton Oceanography Centre, Empress Dock, Southampton)

The shallow (<60 m) Arabian Gulf opens eastwards through the Strait of Hormuz into the Gulf of Oman, where the water depth rapidly increases until it merges with the abyssal regions (>3,000 m) of the northern Indian Ocean. This region has a high density of shipping and these vessels contribute numerous reports of bioluminescence and water discolouration to The Met. Office through the [UK] Voluntary Observing Fleet. I am often called upon to interpret these reports, so it gives me particular pleasure to contribute observations from the first half of cruise 104 of R.R.S. *Charles Darwin*, a research vessel of some 69 m overall and 1,936 tonnes gross, operated by the UK Natural Environment Research Council. The ship was engaged on a detailed hydrographic and biological survey of the area in February 1997, working between Muscat and Abu Dhabi.

For much of the first few weeks the wind conditions were no more than Beaufort force 1 or 2 (<6 knots), and the sea surface was often glassy calm. There was always an extensive pattern of surface slicks, often running as far as the eye could see and interwoven with each other without obvious relation to earlier wind direction (mainly from the north-east during this monsoon). In these conditions a number of the water discolourations commonly referred to as 'red tides' were encountered between 22 February and 9 March, at the positions shown in Figure 1. Four or five additional reports from the same area were made during the second half of the cruise, from mid-March to mid-April. At their most extreme, these red tides took the form of scummy patches or swirls of deep-red or orange colour, usually less than 100 square metres in area, right on the surface. The red tides invariably occurred within the surface slicks and were composed of such a density

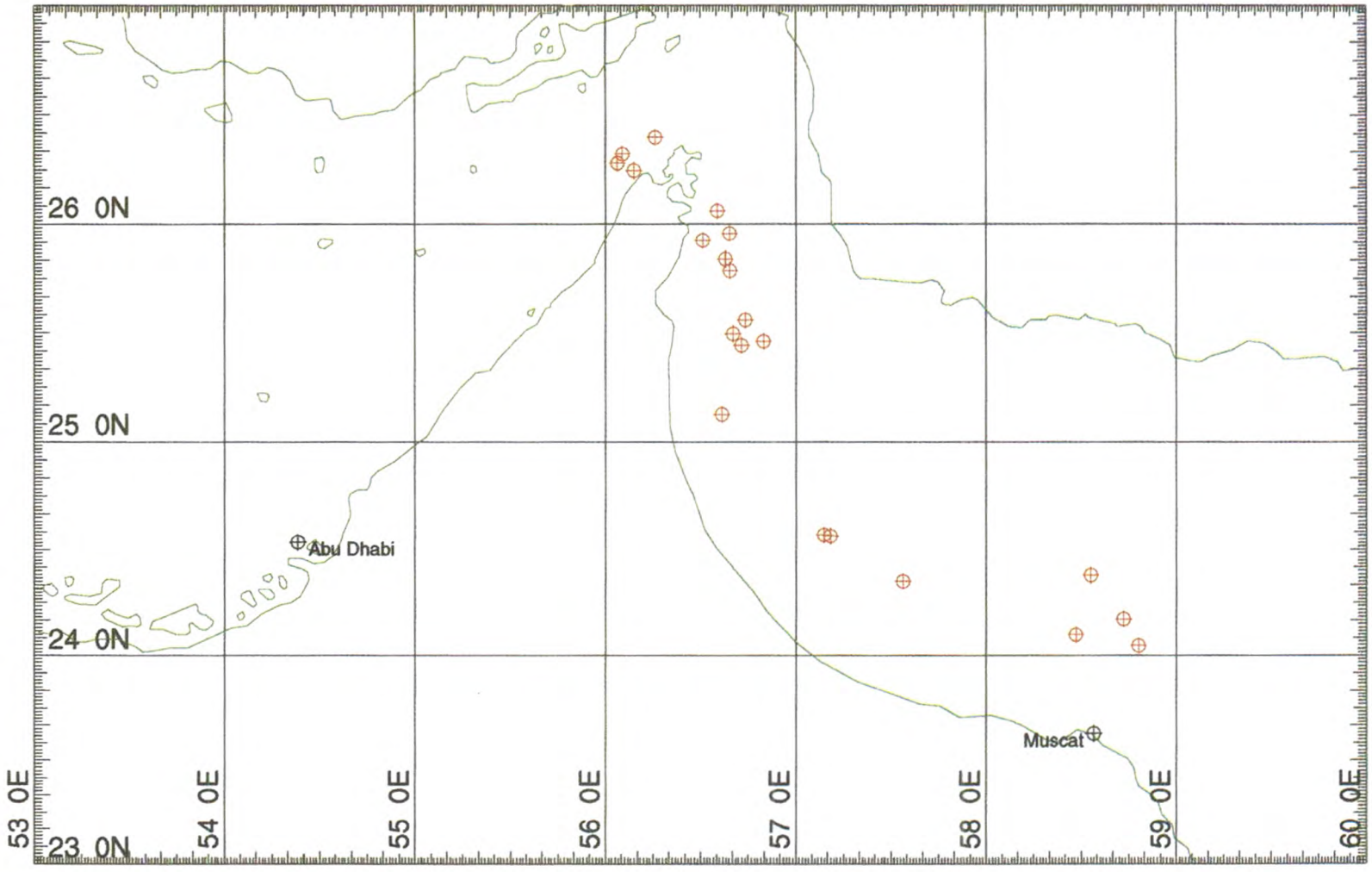


Figure 1. Position of red tides observed between 22 February and 9 March 1997.

of particles that the sea surface had the characteristics of dilute semolina and the colour of tomato soup (Figures 2 and 3). The particles producing the red tides were

Figure 2. Red tide patch seen from R.R.S. *Charles Darwin*.

Figure 3. Bow wave crossing a red tide patch (at about 8 knots).

single-celled organisms known as dinoflagellates, and in all these cases the species was *Noctiluca scintillans*. This is a very large, almost spherical dinoflagellate, up to 1 mm in diameter, and has a trace of an orange or pink colour (Figure 4). Samples taken from the deck with a bucket came up well-mixed and looking like a concentrated suspension of pink fish eggs (Figures 5 and 6). If allowed to stand for a few minutes the 'fish eggs' all floated to the surface to reform the red tide scum (Figure 7). The apparent colour of the scum depended on its thickness, and ranged from a pinkish-brown (in very thin layers) through orange to brick-red. The organisms were quite sticky and readily adhered to the sides of a container. The huge concentrations in the sea had the same effect on the bow wave as does oil on the water, so that the wave crests were very heavily damped.

When seen from the deck, less dense concentrations took the form of a light reddish-brown dusting on the water, often streaked in the wind direction (Figure 8), and sometimes extending for several kilometres, with local aggregations in the slicks. At other times there were no surface accumulations but

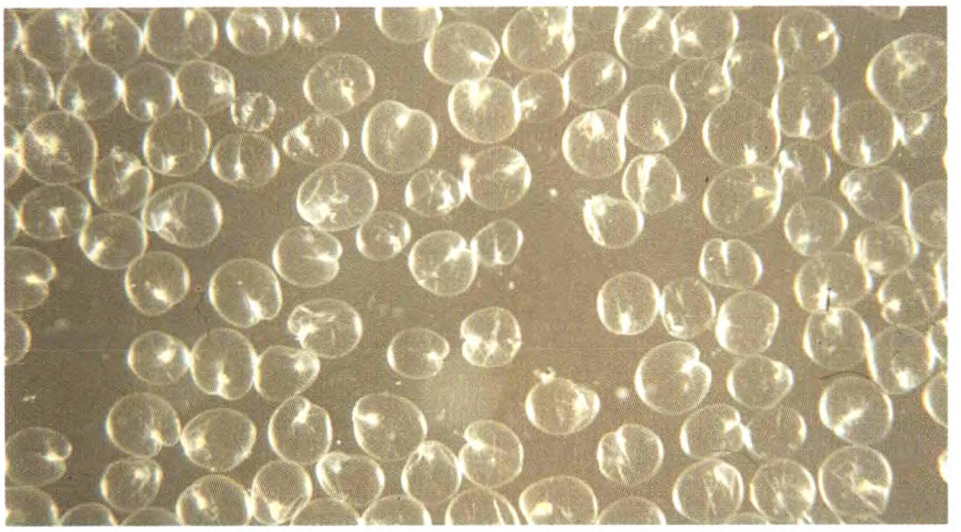


Figure 4. Red tide dinoflagellates (*Noctiluca*) seen under the microscope (each one is about 1 mm in diameter).

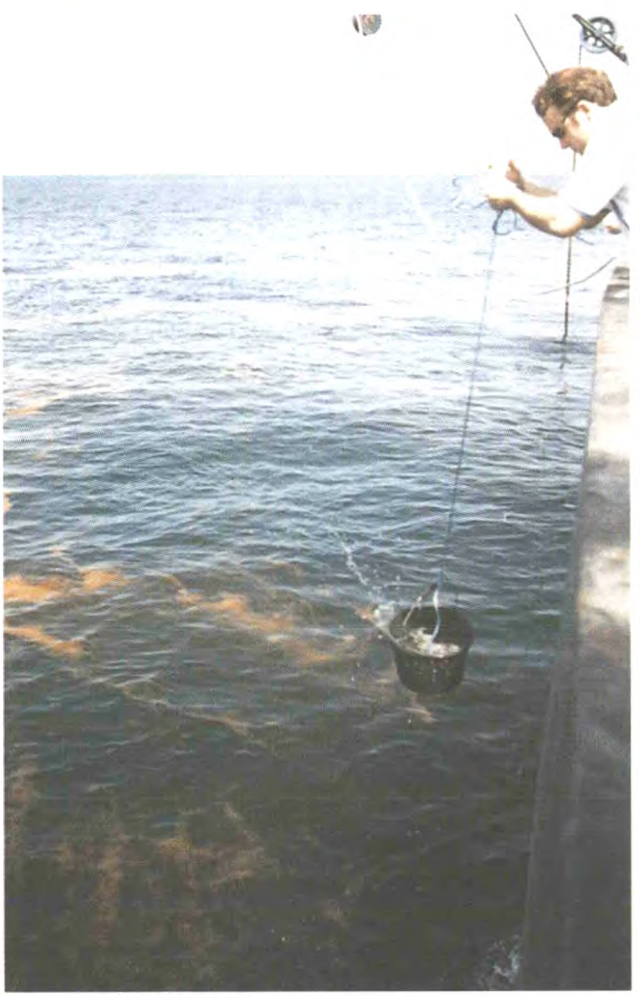


Figure 5. Sampling a red tide from on deck.

Figure 6. A bucket sample of a red tide in a washing-up bowl.

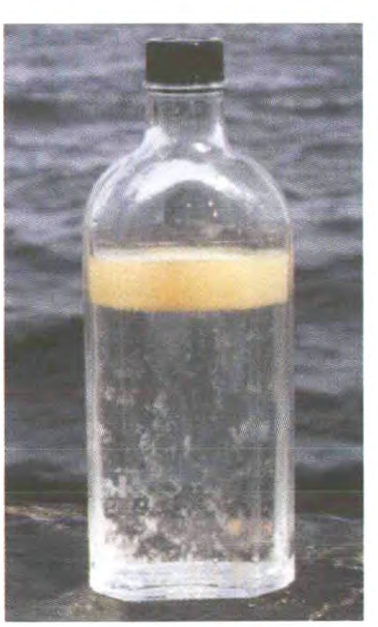


Figure 7. A red tide sample in a bottle, showing how the organisms rapidly float up to the surface to form a scum.

the water was full of reddish-brown aggregates extending as deep as the eye could see. Again bucket samples confirmed that these aggregates were clumps of the same organisms. When *Noctiluca* is very healthy it is also very buoyant, and collects on the surface in calm weather, but ageing 'blooms' aggregate and gradually sink in this way. Samples kept on board ship and maintained in fresh seawater did exactly the same after about a week.

Figure 8. Red tide in the form of wind-blown streaks.

Many dinoflagellates can produce a flash of light when mechanically stimulated (e.g. by the turbulence of a wave crest). *Noctiluca* is one of the brightest of all such flashers (its very name means 'scintillating night light') and the appearance of these patches at night was very spectacular. The bow wave, and the secondary waves behind it, were all marked by a brilliant electric-blue light at their leading edges (Figures 9 and 10), and were so damped by the red tide that the light

Figure 9 (Left). The starboard side luminous bow wave in a red tide at night, photographed from above by its own light and showing some reflection off the black bow plates. Figure 10 (Right). A vial of red tide organisms (*Noctiluca*) stimulated to luminesce and photographed in their own light.

appeared mainly as a pencil-thin line marking the wave curl (at our speed of 7–8 knots). The brightness was sufficient to reflect off the lifeboats and illuminate the dark sides of the ship (Figure 9). We were towing several instruments, to both port and starboard, and the towing cables of each of these were equally intensely illuminated to a depth of 2–3 m by the effects of the cavitation behind them. The Second Mate, Sid Sykes, told me that the luminescence from the bow waves of passing large tankers was visible in the moonless part of the night at ranges of 10–12 kilometres.

Red tide patches approached at night were often visible well ahead of the vessel because they had an intrinsic level of small flashes throughout their area. This was produced by the activities amongst the dinoflagellates of other animals, whose movement caused local flashing. On one occasion, when hove to working a scientific station, a patch of dinoflagellates gradually collected against the lee side of the hull. Small fish and squid were attracted to our lights and, as they broke surface through the dinoflagellate scum, they produced the extraordinary effect of a luminous 'smoke ring' expanding to some 20 cm, or so, in diameter. The same effect could be produced on board by dropping any small small object into an undisturbed bucket sample in which the *Noctiluca* had aggregated as a surface layer, e.g. Figure 6. Throwing the bucketful over the side into the scum resulted in an explosive blue flash.

It was easy to make out the tracks of individual fish close to the surface and, when on station, even the luminous trails of two or three sea snakes. Flying-fish left particularly characteristic luminous take-off and landing patterns. The Third Mate, Richard Warner called me to the bridge one night to see another luminous phenomenon, an expanding patch, which he graphically described as "like an atomic mushroom cloud hitting a glass window". Small luminous patches could be seen in the water ahead and, as the ship approached, they seemed to come to the surface and expand rapidly outwards. When the patch was close alongside and could be seen from above (i.e. from the bridge wing) the expansion looked like an explosion from the centre of the patch with a series of individual lines spreading outwards to form a ragged-edged roughly circular area. What we were seeing was a tight shoal of fish, first producing a small luminous patch by their movements and then, in alarm at the ship's approach, coming to the surface and scattering in all directions, giving the impression of an expanding patch. Similar reports of expanding patches have come from other regions of the world's oceans, but rarely can the cause have been so clearly visible.

In the flat calm conditions three or four different kinds of jellyfish were also visible by day close to the surface. At least two of these were also brightly luminous, producing a single pulse of light (lasting a second or two) when stimulated by the pressure wave a few metres ahead of the bow. The commonest of these jellyfish, which during the day looks like a translucent milky-white doughnut up to 10 cm across, produces a bright-green light. At night, the colour difference between the green light from the jellyfish and the bluer light from the dinoflagellates in the bow wave just behind, was easily distinguishable, especially when the jellyfish were right at the surface. The human eye is very good at seeing low-intensity lights but cannot distinguish colours when the light is dim. It is an indication of how bright these luminescent phenomena were that the colours were so clearly recognizable. A third kind of luminous organism was also encountered, namely a little ostracod crustacean called *Cypridina*. These tiny (2–3 mm) animals

squirt copious amounts of a blue luminescent secretion when they are disturbed, and in parts of the northern Indian Ocean they occasionally swarm in their billions, producing spectacular displays of sea surface bioluminescence.

'Red tide' is a generic name given to many surface discolourations caused by micro-organisms. Often these are dinoflagellates but only a minority of them are luminous. At a few localities, luminous ones occur in large numbers for weeks at a time, giving rise to place names such as Baia Fosforescente in Puerto Rico. Some dinoflagellates produce potent toxins and, when they occur in densities sufficient to appear as red tides, the toxins may cause massive fish kills and accumulate in shellfish to a dangerous level. Even spray from such 'blooms' can be poisonous. Cases of serious or even fatal illness in dogs or people walking along the shore next to a red tide occasionally occur in the USA. In UK waters dinoflagellates are particularly common in the late summer and can accumulate as red tides. Some of these are toxic (though not to the degree of those in the USA) and others are luminescent. The same species of dinoflagellate, *Noctiluca scintillans*, is often responsible for quite impressive luminescent displays in late summer, but they are never, as far as I am aware, of the spectacular quality as the ones we were fortunate enough to witness on this cruise.

Acknowledgements

I am most grateful to the Master, Captain Robin Plomley, the Chief Scientist Howard Hoe, and the officers, crew and scientists of R.R.S. *Charles Darwin* for their help in keeping a lookout for the red tides and recording their occurrence. Rob Bonner, Alex Mustard and Nick Crisp provided some of the pictures.

Drifting buoy observations — their impact in a numerical forecast

By J.R. Grant, R.J. Graham and M.J. Bader

(Observation Evaluation Group, Numerical Weather Prediction Division, The Met. Office)

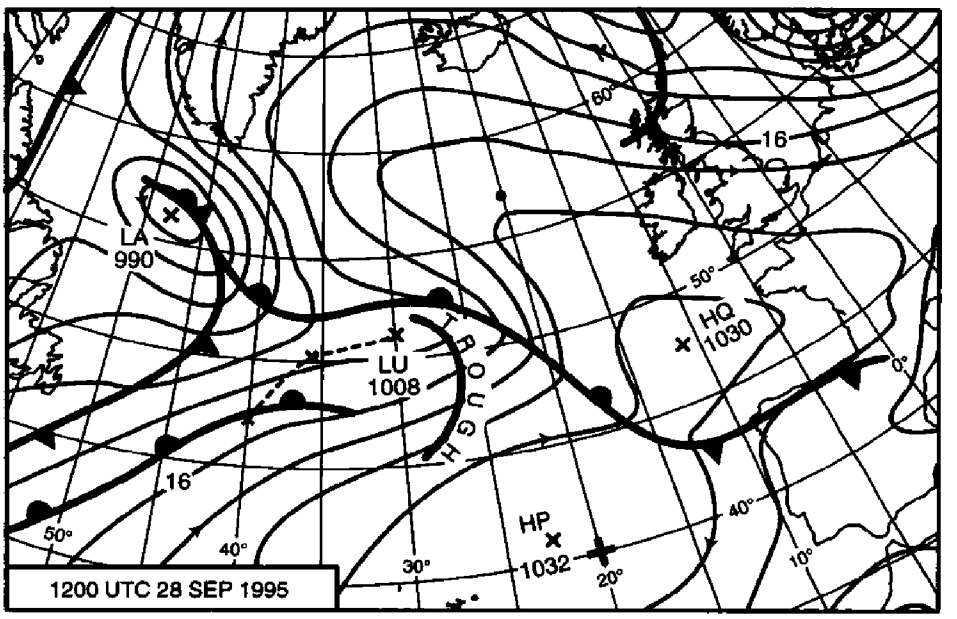
Introduction

The UK Met. Office computer model of the atmosphere is continually adjusted to resemble the real atmosphere by making use of meteorological observations. All observations are scrutinized for accuracy before being used. Four times each day the model produces a forecast covering the North Atlantic area. Generally speaking, the better the observation coverage and quality the more accurate the forecast produced. Particularly important are reliable observations that show the model has diverged from the 'truth' and hence where large adjustments have to be made to correct the model fields. For example, if the observed pressure is higher than expected by the model, the model pressure field will need to be raised. Such a change will often improve the forecast.

This study describes a case when observations from drifting buoys made a significant improvement to the rainfall forecast over the UK and thereby highlights the importance of marine data in general.

Synoptic situation and operational forecasts

The synoptic situation for 1200 UTC on 28 September 1995 is shown in Figure 1. The small depression, Low U, in mid-Atlantic was then moving east-north-east. By 1200 UTC on 29 September, Low U was off south-west Ireland and moving south-east, taking its accompanying rain into France (Figure 2).



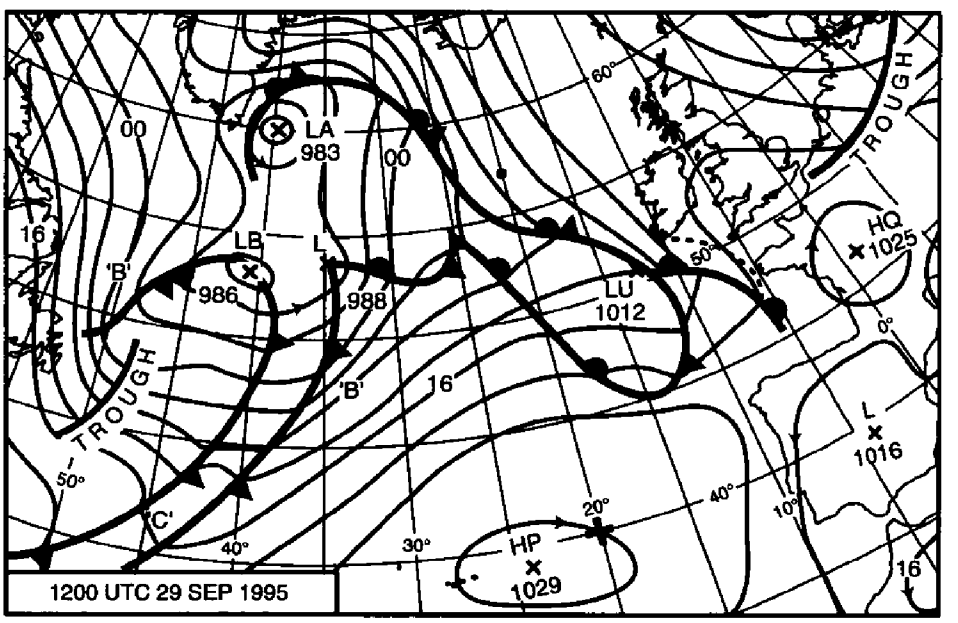


Figure 1 and Figure 2. MSLP hand analyses for 1200 UTC on 28 and 29 September 1995.

In Figure 1, x-x-x shows the track of Low U over the past 24 hours.
In Figure 2. - - - shows the leading edge of the rain at 1200 UTC on 29 September deduced from weather radar.

The 24-hour forecast from a data time of 0600 on 28 September (Figure 3a) showed an area of rain moving east across Ireland and late over southern England, whereas the forecast from 1200 correctly kept the rain further to the west over the sea.

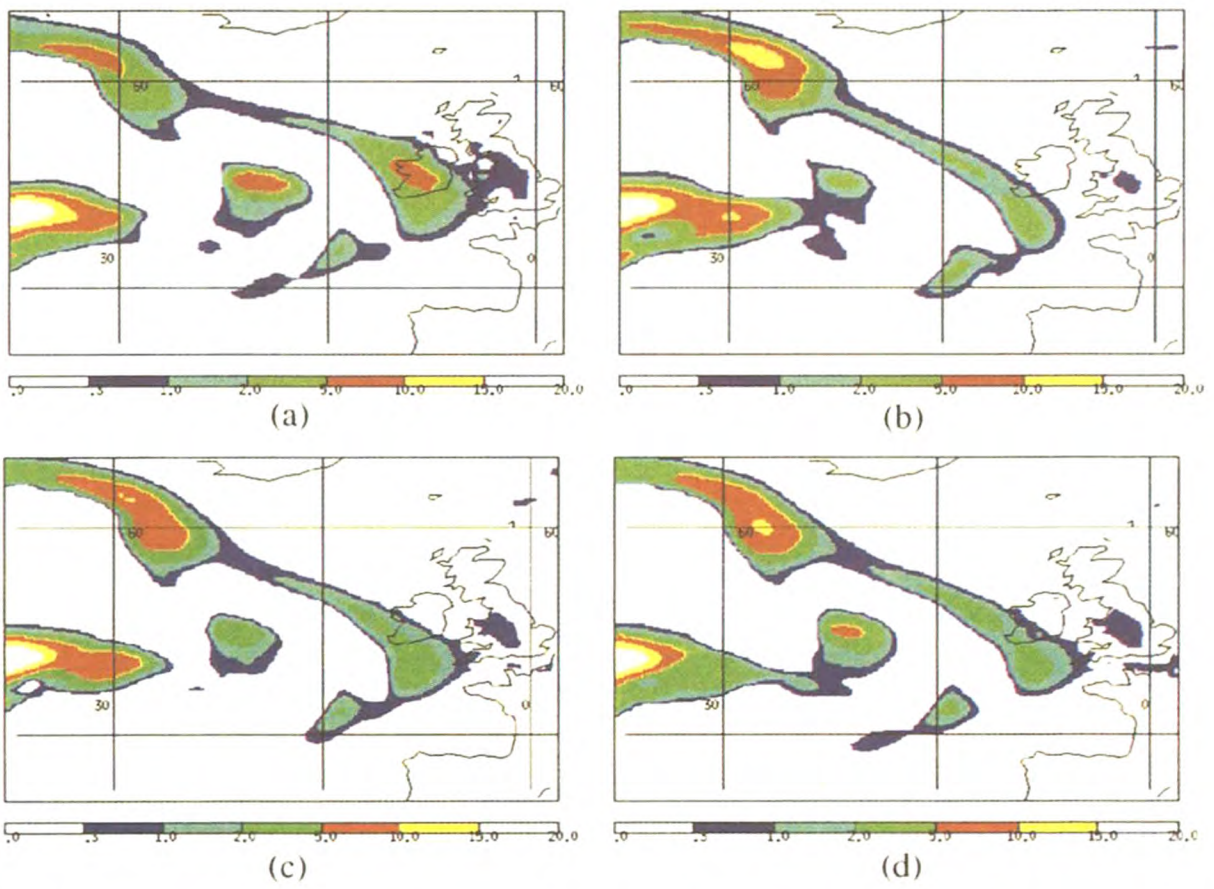


Figure 3. Forecast rainfall accumulations in mm for the period 0600 to 1200 UTC on 29 September 1995. (3a) 0600 run; (3b) 1200 run; (3c) run with surface observations only; (3d) run with drifting buoy observations only.

In the later run, there were improvements in the rainfall of up to 6 mm in six hours over Ireland and also improvements of 9 hPa in mean sea level pressure in the same area. Compare Figure 3a (the poor rainfall forecast) with Figure 3b (the good rainfall forecast). Evidently, the extra observations received after the 0600 run, but available for the 1200 run, had made a beneficial impact.

Investigation and results

Extra model runs were made to see which observation type, e.g. aircraft reports, radiosonde temperatures, satellite winds, had the most impact on the forecast. Most observation types made only small differences. However, surface observations had a relatively large impact over Ireland, accounting for nearly all the difference between the 0600 and 1200 runs (compare Figure 3c with Figure 3b). A more detailed examination showed that the major surface contribution came from drifting buoys, some of which were near Low U in mid-Atlantic (Figure 4). Their observations corrected the pressure around Low U in the model by 2 or 3 hPa. The resulting rainfall accumulations near the UK (Figure 3d) captured the majority of the improvement given by all the surface observations (Figure 3c), which was in turn close to the solution using all the observations (Figure 3b).

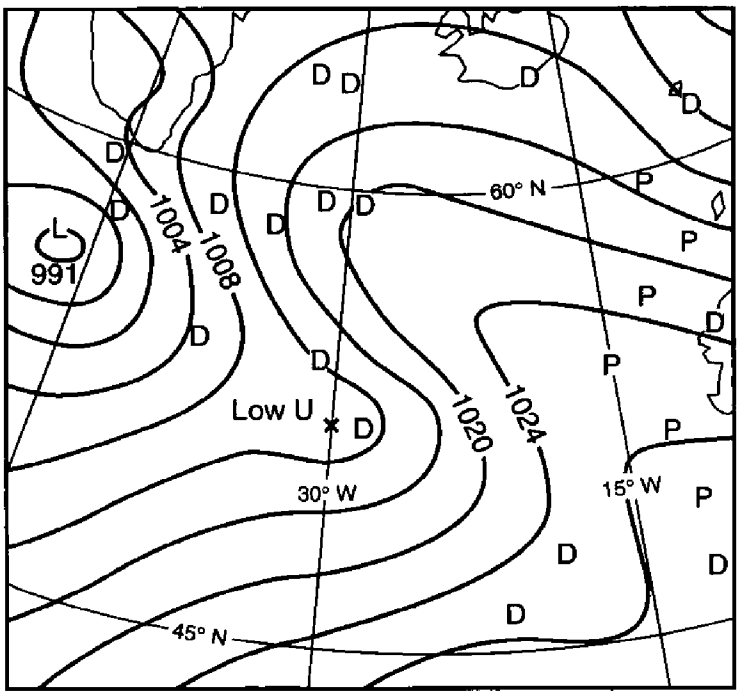


Figure 4. Model analysis 1200 UTC on 28 September with positions of drifting buoys (D) and moored buoys or platforms (P).

Reports from drifting buoys are sent via satellite to Bracknell and are assimilated each hour. It is most likely that, in this case, the favourable placement and the hourly frequency of the buoy data near Low U resulted in the beneficial impact.

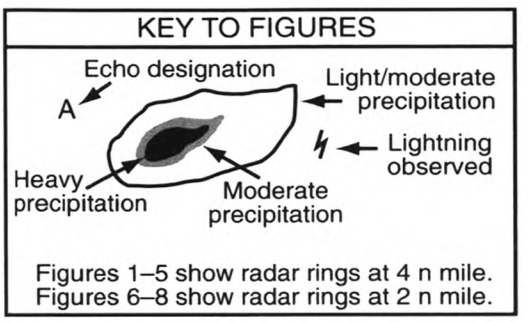
Conclusions

Accurate observations are necessary to keep the numerical model fields correct but, in any one forecast, some will have more impact than others. This case is just one example of the beneficial impact of marine data on the forecast.

Evidently, in the case described, the drifting buoys were situated in a particularly sensitive area where small differences in the analysis produced significant differences in the model evolution. Research is continuing on how to identify these sensitive areas. Some insights into this question will undoubtedly come from the Fronts and Storm Tracks Experiment (FASTEX) being carried out in early 1997 in the mid-North Atlantic.

Radar observation of cumulonimbus storm cells observed from the *British Ranger*

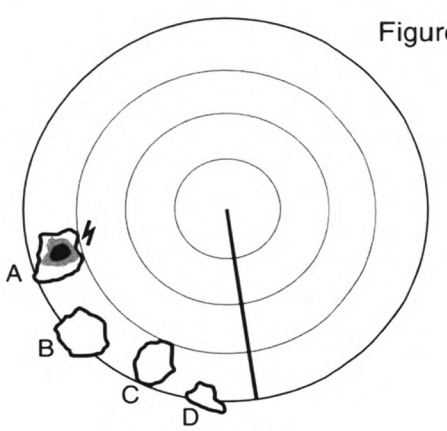
Whilst in position 03° 55′ S, 08° 44′ E, on passage from Qua Iboe to Vadinar on 12 February 1997, Third Officer Mr M.A. Cumpstey and members of the ship's company had the opportunity, during a period of about an hour and a half, to watch the development of Cb cells, some of which would later affect the ship. When compiling the 0000 UTC weather report for 12 February the sky was clear and there was no precipitation evident on the radar; however, by 0040 it was noted by radar that three areas of precipitation were developing approximately 16 n mile to the south-west, the ship's course being 170° at 14 knots. The following key, figures and notes describe the activity of these and other areas.



At 0048 the three areas of rain (Figure 1: A, B and C) continued to intensify; each was roughly circular in shape and 4 n mile in diameter. Lightning could be seen within A. Additionally, a smaller shower (D) began to develop to the south-east of C. All showers were orientated in a line from north-west to south-east and extended over a distance of approximately 16 n mile. At this time the air temperature was 27.0°, wet bulb 25.0° pressure steady at 1013.0 mb, wind 220° at 2 knots.

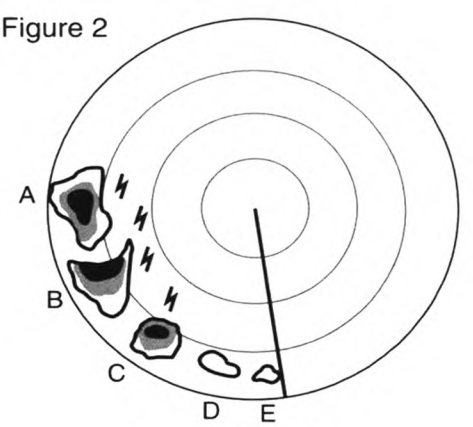
By 0100, the cells A, B and C had intensified further (Figure 2) and there was frequent lightning from within all three which were clearly identified by eye as having well-defined towers although no anvil formations could be seen. Cell D remained the same size with no further development apparent but a new cell, E, had formed to the south-east of D.

Figure 1



0048 UTC
24-n mile range

Figure 2



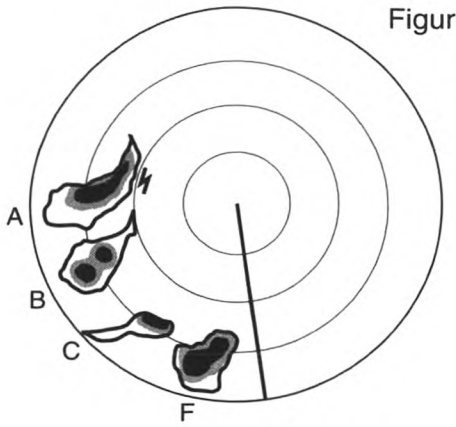
0100 UTC
24-n mile range

At 0112 (Figure 3) cells A,B and C were weakening as the lightning activity became less frequent and was restricted to A. Cells D and E merged to form F and intensified in the process.

By 0124 cells A and B were continuing to weaken, showing no further lightning activity while C was also weakening but to a lesser extent. Cell F was continuing to intensify and had formed two distinct 'hooked' shapes of heavy precipitation. (Figure 4.) By 0136, cell A had weakened further while B had dissipated but C reintensified and formed a distinct comma-shaped mass. Cell F had split into three distinct elements F_1-F_3, (Figure 5) and it was noted that there was a marked increase in the wind speed to 25 knots resulting in a decrease of 1.3° in the dry-bulb temperature and a fall of 0.5 mb in the pressure.

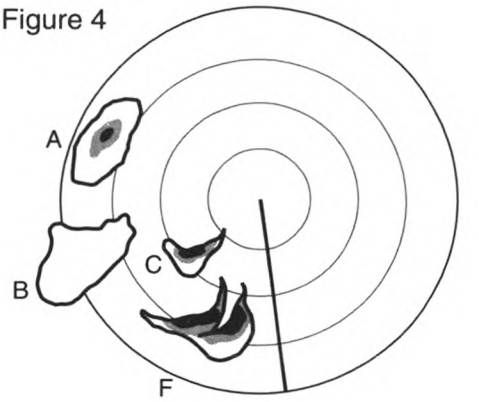
Cell A had dissipated by 0148 (Figure 6) while C had weakened considerably. The vessel was passing through cell F_1 and had experienced heavy precipitation on the leading edge, followed by lighter rain; the elements F_2 and F_3 began to merge, and all three developed a 'hook' formation of heavier rain.

Figure 3



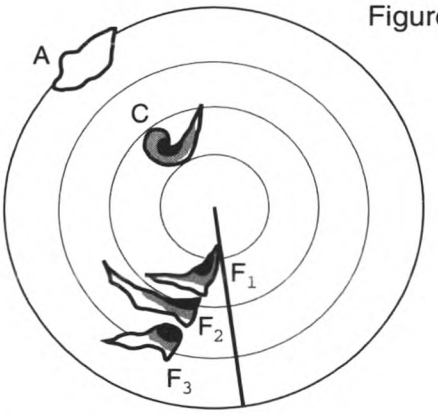
0112 UTC
24-n mile range

Figure 4



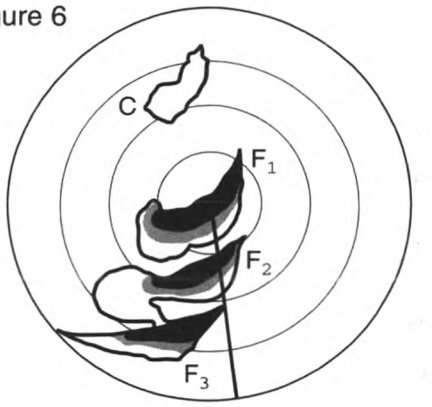
0124 UTC
24-n mile range

Figure 5



0136 UTC
24-n mile range

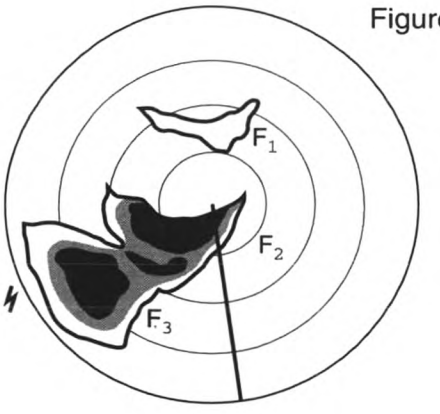
Figure 6



0148 UTC
12-n mile range

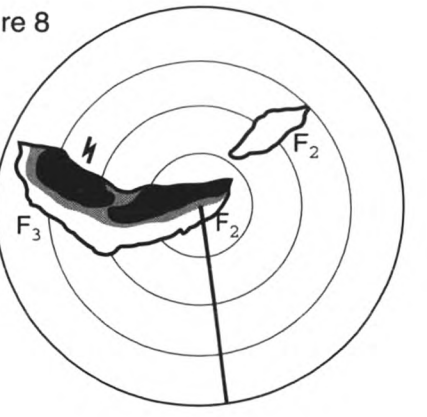
At 0200 (Figure 7), cell C had dissipated and the vessel was passing through heavy precipitation at the leading edge of F_2 which had merged with F_3. A further area of heavy rain developed between the stronger echoes within the two centres, and there was lightning accompanied by thunder from within F_3. By 0212 (Figure 8) F_1 had dissipated. On clearing the heavier rain of F_2 there was a period of lighter precipitation; the eastern extremity of F_2 became detached and was weakening as the more intense precipitation became associated with F_3 which continued to produce occasional lightning flashes and rumbles of thunder.

Figure 7



0200 UTC
12-n mile range

Figure 8



0212 UTC
12-n mile range

At 0224 the merged elements of cell F had weakened and no longer produced strong returns while the separated element of cell F had disappeared. By 0240 the wind had moderated to about 7 knots, there were no longer any rain echoes on the radar screen and the sky had cleared.

Comet Hale-Bopp

Although comet Hale-Bopp faded from view several months ago, reports of sightings continue to arrive with completed logbooks sent in from UK VOF ships, and so the memory of it lingers on. To date, a variety of reports have been received and we are pleased to acknowledge contributions from observers on *Arctic Ranger, Aya II, Berlin Express, Beryl Bravo, Bransfield, British Resource, CGM Magellan, Chiquita Schweiz, City of Capetown, Colombo Bay, Corystes, Cotswold, Durrington, Elk, Jean, Jervis Bay, Kumasi, Lackenby, Lincolnshire, Norna, Northia, Oriental Venture, Pacific Teal, Providence Bay, Putford Aries, Resolution Bay, Scott Guardian, Seki Cedar, Summer Flower, Sun Suma, Taunton, Teignbank, Trade Apollo* and *Zetland.* These reports have all been forwarded to the British Astronomical Association and will, it is hoped, add to the pool of observations detailing the event.

The comet was discovered on 23 July 1995 and was named after the two American 'comet hunters' who first identified it, Alan Hale and Tom Bopp (its name was not 'Hail Bob', as some would have it!). However, it was not until early 1997 that its orbit brought it close enough to Earth for viewing by the naked eye or with the aid of everyday telescopes and binoculars.

The earliest sighting mentioned to date in a VOF logbook came from the *Northia* on the night of 6/7 February when the ship was in the English Channel and at a time when the comet was still nearly two months away from being at its brightest. The latest report (again to date) came from the *Seki Cedar* on 7 May when SCOT (the '*Seki Cedar* Observational Team') saw it from the Bay of Biscay, 7° above the horizon to the west-north-west, head down and with its tail of length 3° raised to an angle of 45°.

Unlike comet Hyakutake in 1996, where sightings of it occurred mainly in the Mediterranean Sea and North Atlantic Ocean, reports of comet Hale-Bopp were received from these areas and also from ships in the Indian Ocean and the Pacific, including a small number of observations from the Southern Hemisphere. Reports of the comet's appearance low in the north-west sky at dusk (in the Northern Hemisphere) made note of its hazy aspect while also remarked upon was the nature of its tail which showed two elements now known to be a dust tail and the less easily seen gaseous or ion tail. Later reports, many of which were made over a succession of nights, tracked both the increasing altitude and brightness of the comet followed by its decline and subsequent fading. Although the dust tail was the brighter element, at least for the first few degrees of its length, the ion tail was the longer one and stretched for approximately 20 degrees although its full length was probably only visible under the darkest skies.

Labelled the 'Great Comet of 1997' by those who are astronomically-inclined, comet Hale-Bopp was a wholly more spectacular event than its predecessor of 1996 comet Hyakutake, as many observers who saw both would agree, and offered many opportunities for repeated observations while it was passing by Earth's insignificant little nook of the universe, but if you did miss it, there will be another chance when it comes this way again — in 4,000 years time.

Appointment of the new Chief Executive of The Met. Office

Professor Julian Hunt MA, PhD, FIMA, FRMetS, FRS, having completed his tenure as Chief Executive of The Met. Office, has been succeeded by Mr Peter Ewins (pictured).

Peter Ewins took up his appointment as Chief Executive on 1 August 1997, having been Chief Scientist at the Ministry of Defence for the past three years. He is a graduate of Imperial College, London, and gained his Masters degree at Cranfield Institute of Technology. He is a Fellow of the Royal Academy of Engineering and a Fellow of the Royal Aeronautical Society.

He spent the first 10 years of his career as a research scientist at the Royal Aircraft Establishment, Farnborough, and since then has held a range of posts in the Ministry of Defence (MoD) and on secondment to the Cabinet Office. In 1988, he was appointed Director of the Admiralty Research Establishment which brought together all the MoD's maritime research laboratories into a single organization. The establishment employed over 3,000 staff, and covered research on ships, submarines, anti-submarine and anti-surface warfare, materials, structures and hydrodynamics. More recently he has helped take the MoD research establishments into an Agency, and was Managing Director at the Defence Research Agency.

Mr Ewins is married and has three grown-up children. He lives in Farnham, Surrey. His hobbies are horticulture, walking and, more recently, bee-keeping. He is also an active member of the Garrison Methodist Church in North Camp, Farnborough.

Mr Ewins says, "I am greatly looking forward to working at The Met. Office, which rightly enjoys an international reputation for excellence. My aims for the next few years are twofold: first, to ensure that we provide our customers with the range of quality services they need, in the most efficient manner and at a price they can afford; and second, to make the Office a source of pride to its staff, owner and the public. The Office has made a good start with its successful transition to an Agency and Trading Fund; we now have to build on that success and ensure our future."

Presentation of barographs

The 49th annual presentation of barographs to acknowledge long service in voluntary weather observing at sea took place in the reading room of the National Meteorological Archive, at Bracknell on 8 October 1997.

Of the four recipients whose names were first announced in July last year, three were able to attend the occasion; Commodore A.J. Leslie (formerly with P&O Nedlloyd) accompanied by his wife, Captain C.C. Woodward (P&O Nedlloyd) with his companion Caroline Gilbertson, and Captain T.C. Black (Blue Star Ship Management Ltd) were first greeted by the Head of the Observations Voluntary (Marine) branch Captain Stuart Norwell before meeting the Chief Executive of The Met. Office, Mr Peter Ewins and the Director of Observations, Dr S.J. Caughey together with Miss M.J. Atkins (Head of Observations Plans and Requirements) and Dr W.A. McIlveen (Head of IT Operations). Company officials also welcomed were Mr R. James (Fleet Personnel, P&O Nedlloyd) and Captain W.R. Houghton-Boreham (Operations Manager, Blue Star Ship Management Ltd). The fourth recipient, Captain D.R. Llewellyn (OOCL Ltd), was sadly unable to attend owing to the demands of his sailing schedule but arrangements will be made for him to receive his award at a future convenient date.

In a short address Mr Ewins said the UK VOF had been in existence for a long time and noted how the word 'excellence' regularly occurred in association with it; he was delighted to acknowledge the excellence of both quality of work and length of service of the shipmasters present, and offered each his heartfelt congratulations and grateful thanks for their contributions.

Upper left: Captain T.C. Black receives his long-service award from the Chief Executive.
Below (Left) Commodore A.J. Leslie and (Right) Captain C.C. Woodward receive their awards from the Chief Executive.

Crown Copyright

Presentation of barographs at The Met. Office, Bracknell, on 8 October 1997. Standing left to right: Captain S.M. Norwell (Head of Observations Voluntary (Marine), The Met. Office); Mr R. James (Fleet Personnel, P&O Nedlloyd); Captain W.R. Houghton-Boreham (Operations Manager, Blue Star Ship Management Ltd); Mrs Leslie, Commodore A.J. Leslie, Mr Peter Ewins (Chief Executive of The Met. Office); Captain C.C. Woodward (P&O Nedlloyd) with his companion Mrs C. Gilbertson; Dr W.A. McIlveen (Head of IT Operations, The Met. Office); Captain T.C. Black (Blue Star Ship Management Ltd)); Miss M.J. Atkins (Head of Observations Plans and Requirements, The Met. Office) and Dr S.J. Caughey (Director of the Observations Division, The Met. Office).

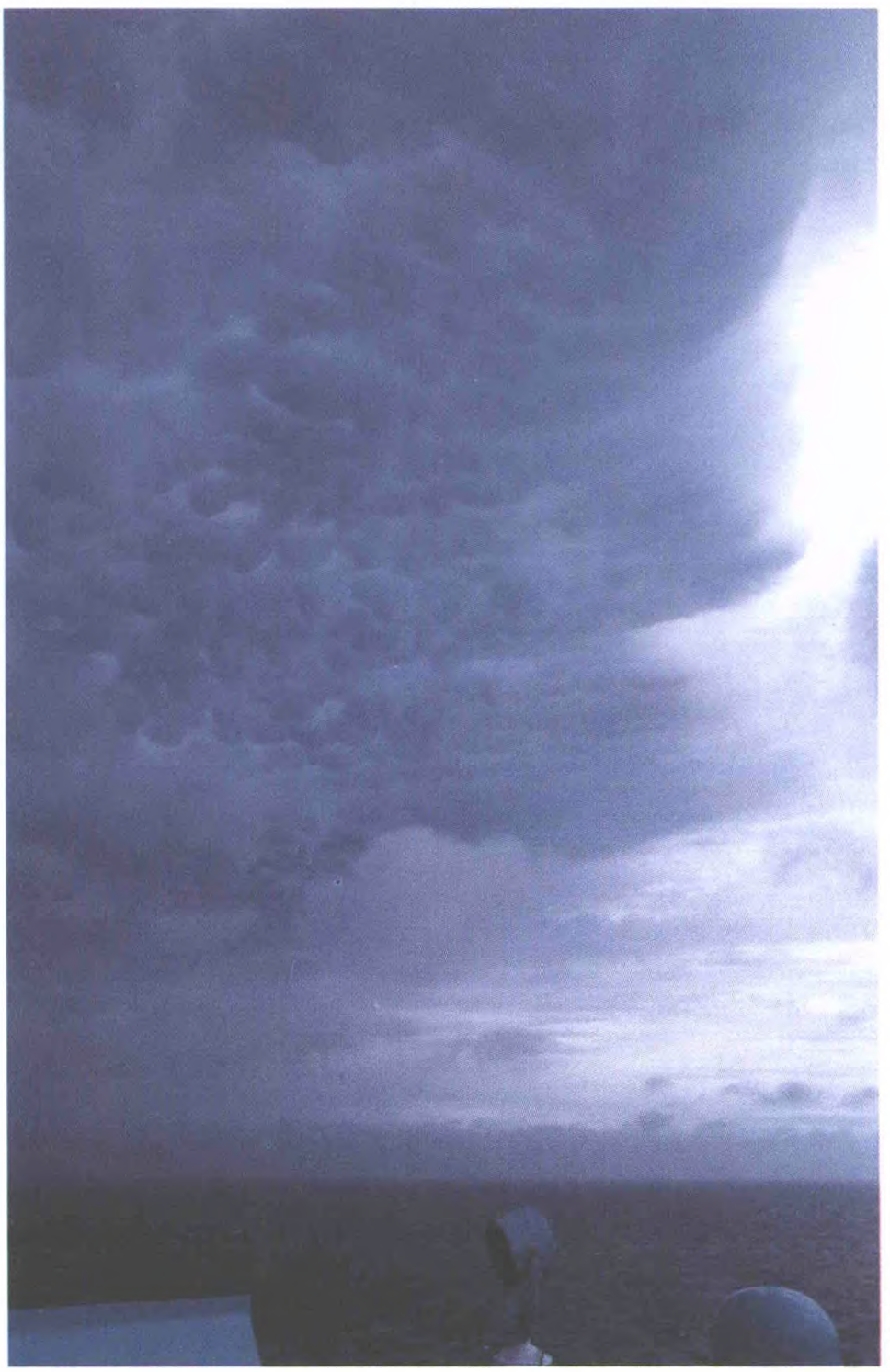
Captain Norwell then briefly described how, in 1948, Sir Nelson Johnson (the Director of the day) introduced marine barographs to mark long service to the VOF, and how today the criteria for identifying qualifying recipients remain broadly unchanged such that the minimum requirement is 18 years' observing experience and the submission of at least one logbook during the year in question, in this event 1995. He then invited the Chief Executive to make the presentations.

Captain Black has been involved with weather observing since 1965 when the first of 60 logbooks was received by The Met. Office. His first observing ship was the *Brazil Star*, operated by the then Blue Star Line Ltd, and he has remained with the same company throughout his observing career, contributing to logbooks in all but two years up until 1995 (the year concerned). He has received an Excellent Award on four occasions between 1986 and 1993.

Now retired from the sea, Commodore Leslie's observing career began in 1970 with the arrival in Bracknell of his first logbook, from the *Obuasi*, operated by Ocean Fleets Ltd. A further 55 logbooks were received to the end of 1995, of which 28 were assessed as Excellent, and he too received four Excellent Awards between 1986 and 1993.

Captain Woodward has spent his observing career to date with P&O Nedlloyd (formerly P&O Containers Ltd) and sent his first logbook to the Office in 1979 when he was Second Officer on the *Jervis Bay*. Logbooks bearing his name have been received every year since then, his tally being 58 up to the end of 1995; of these, 32 were assessed as Excellent and he received three Excellent Awards between 1974 and 1994. Upon accepting his award, Captain Woodward recalled his early observing days and readily volunteered praise for all his officers past and present who had worked so hard, thereby contributing to the award, and who still continue their efforts for the VOF. His comments were echoed by all present.

SCENE AT SEA

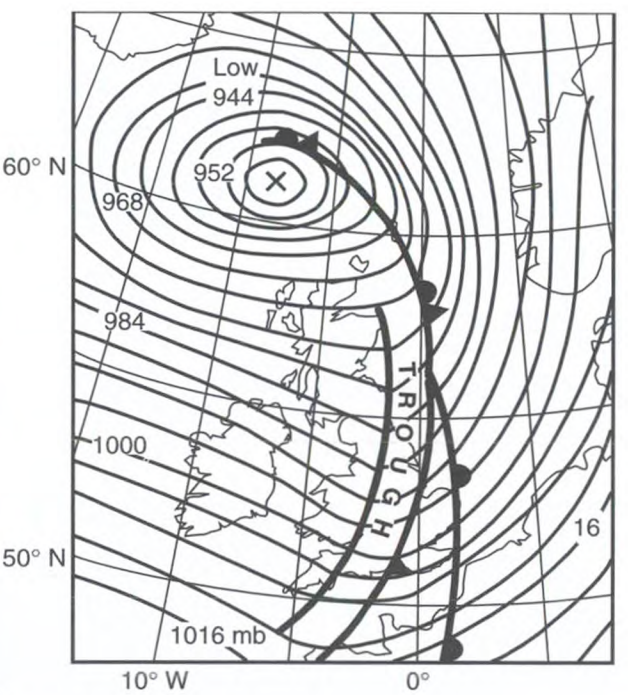


A. Shearer

Mamma cloud photographed from the *British Spirit* at 0600 UTC on 21 January 1997 when the vessel was in position 09° 58′ S, 133° 33′ E. At the time the air temperature was 26.0°, the wet bulb was 25.0° and the sea temperature was 29.6°. The pressure had fallen 3 mb in three hours to 1004.1 mb and the wind had increased from variable, force 2 to W'ly, force 5 with moderate seas. It was thought that a tropical depression was approaching. The cloud was observed by Captain M.C. Roberts, Mr A. Shearer, 3rd Officer and the ship's company.

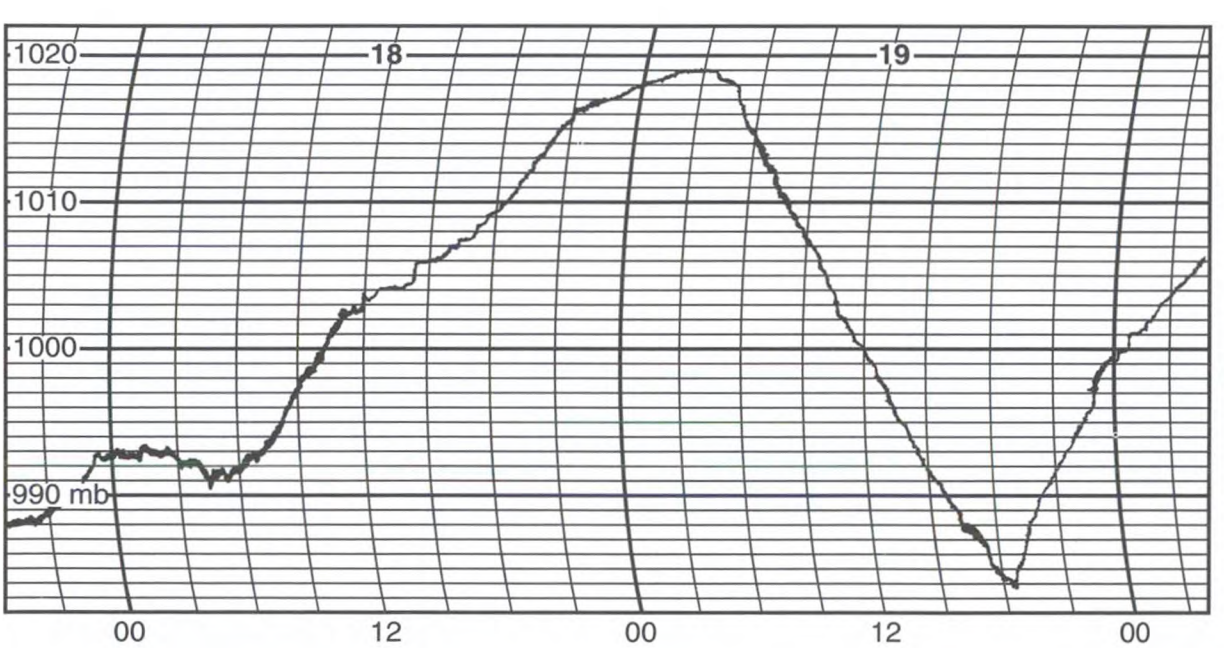
SCENE AT SEA (*contd*)

P.B. Fewster



Above left: Rough seas experienced by the *Cableman* on 19 February 1997. The vessel was working a UK coastal passage from Milford Haven to Liverpool at this time and was given a very rough and uncomfortable ride during a stormy period from the 18th to the 20th, according to Second Officer Peter Fewster. Above right: the synoptic situation at 1800 UTC on 19 February 1997.

Below: the barograph trace from the *Cableman* for 18 and 19 February 1997.



Aurora notes January to March 1997

By R.J. Livesey

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

Up until mid-September 1997 no observational reports relating to the period under review have been received from mariners. This is the first time I have had a blank sheet of paper since I began processing marine auroral observations, in 1976.

This is not an adverse reflection upon marine observers. Statistics show that a casual observer is unlikely to respond to auroral activity until the auroral light has developed to a level that makes it interesting to watch. To illustrate the point, the annual Scottish Astronomy Weekend in 1997 was held at Dundee University, upon which occasion the senior Scottish aurora observers were present. On both evenings there was a glow very low down on the northern horizon which would have escaped notice by the non-specialists present. There was some debate among the experts as to whether or not the glows were auroral but were deemed to be so by majority verdict. Unfortunately, none of the observers had brought their respective interference filters with them to the conference that would have positively identified the auroral green emission line in the spectrum of light.

Auroral activity has been very low in mid-latitudes in the period under review although active in polar auroral zones. Our most favourably placed mid-latitude observer, Jay Brausch in North Dakota, who logged 141 aurora event nights in 1991, complained about lack of activity and recorded aurorae only on the nights of 1/2 February, 16/17 and 29/30 March in 1997.

In Table 1 I have noted the aurorae observed by British land-based observers with respect to maximum activity, maximum altitude above the horizon, and the sea area with the lowest geographic latitude at which aurora was recorded. There will have been other nights when tropospheric cloud prevented detection of auroral light.

Table 1 — Aurorae reported from British waters by land observers

Date	Maximum Activity and Altitude		Minimum Latitude Seen
27/28 January	HA	10°	Moray
2/3 February	aRA	5°	Forth
9/10	RA	20°	Moray
10/11	m_3HA	20°	Moray
11/12	aRA	30°	Moray
25/26	G	?	Orkney
27/28	RA	50°	Tay
7/8 March	HA	12°	Moray
8/9	HA	10°	Clyde
9/10	HA	10°	Clyde
28/29	mRR	25°	Tweed

KEY: a = active; m = multiple forms; G = glow; HA = homogeneous arc; RA = rayed arc; RR = ray bundles.

By the time this article is read, the new phase of auroral activity relating to the presently developing sunspot cycle will be well under way. As I write, there has been a marked increase in the number and complexity of sunspot groups in

September 1997. On the night of 3/4 September there was an aurora in UK waters noted by many land observers. It comprised a homogeneous arc punctuated with periods of rays, pulsating activity and patches. The event was reported from as far south as the River Shannon and was clearly visible from the Forth and Moray coastlines. Hopefully this is an indication of things to come, and I look forward to receiving more marine observations of the aurora. Good sailing and clear skies.

Letters to the Editor

'Sea pigeon'

Saturday 22 February 1997. Western Mediterranean Sea bound from Fos to Khawr Fakkan. The *Lima* had passed Ibiza during the afternoon 12–4 watch and, at 1515 UTC, the crew were being exercised at the weekly 'Board of Trade Sports' when there was a flutter of wings and a pigeon arrived on the bridge wing to see what all the noise and fuss was about. After numerous unsuccessful attempts to gain entry to the wheelhouse, pigeon eventually picked a time when all hands were engaged in navigating, writing or answering the VHF to slip through the 'cordon'. A few half-hearted attempts were made to eject it but this just resulted in the poor bird trying to fly out through one or other of the windows, stunning itself in the process and, on one occasion, ending up in the bridge sink. As darkness drew in, other things became priority and pigeon was forgotten about. To be perfectly honest, everyone thought it would fly off as we transitted the Strait of Gibraltar during the following morning 8–12. We duly passed Gibraltar and continued on into the Atlantic, with little thought given to our passenger, and it was only when a fluttering was heard and it suddenly landed on the chart table, that we realised it was still with us and did not seem to want to leave. Maybe our plush wheelhouse carpet had something to do with its reluctance to depart. Even after a few sorties onto the bridge wing it would wait until the 'coast' was clear before returning to the wheelhouse.

After two or three days and on OPL stop 3 miles off Las Palmas for personnel, it was still with us and had 'laid claim' to a section of the chartroom area just above the stairway where it could peer between the railings to see who was coming up the stairs. To reduce its mess, a chart was laid down and it was not too long before it became 'bridge-trained'. A diet of water and Ryvita, with the occasional digestive biscuit thrown in, seemed to be well received, though the mess it could make with the crumbs would shame any high-chair bound child.

As it became more used to us watchkeepers, it would happily walk between our feet and stand on a foot, quite unconcerned and seeming to realise that we were not going to do it any harm. It even liked to pose for its picture. After it had been with us for a while, we were able to have a look at its leg rings; there was a yellow one on the left and a grey on the right. The number was 538722.

During the next fortnight, it seemed to be perfectly happy with its lot and hardly flew at all. The only exception being when someone new arrived on the bridge who would possibly make a quick movement and cause it to take wing and usually end up flying into a window in its hurry to get away from the 'intruder'.

The rest of the time it would strut its stuff around the wheelhouse and then around the bridge wing, finding a warm spot to hunch down on its haunches for an hour or two before returning to its chart for a bit more to eat.

It was a few days before it felt comfortable enough to sleep and, after a few days more, it started to coo to itself while it nodded off. As each watch changed, it would wake, strut around, look over the stairway and then settle down again. It slowly got a little bolder and decided to venture down the stairs to see what was down there, so everybody had to be doubly careful coming through the fire doors and, after pigeon had been given a few frights, it decided maybe this was not such a very clever idea after all.

We arrived off Cape Town at 0330 on Wednesday 12 March for an OPL and, as it got light, pigeon decided to come out and see what was causing all the commotion; I don't know what it made of the helicopter that was coming and going for the next 2½ hours. On one of the gaps between 'helo' sorties, pigeon was out in the middle of the bridge wing area and I clapped my hands which caused it to launch itself into the air and fly very quickly upwards then aft, turning round to fly back over the bridge wing before swooping down and executing a slow 180° turn and flying off into the increasing daylight until the small speck that was pigeon suddenly could be seen no more.

Captain A.F. DeVanney, Master of the *Lima* (Shell International Trading & Shipping Co. Ltd), and most of the ship's company.

Giant squid?

Regarding marine observations of creatures, some years ago I was on a livestock carrier which stopped to do maintenance whilst washing manure off the decks in the Arabian Sea at night, and we were visited by a large school of giant squid — I think.

They just rose out of the deep to look at us, about 200 of them. There were babies about the size of a bucket, and adults, the biggest having bodies 3–4 m long with the two long tentacles about another 6 m long. We lowered the forward loading ramp to get a good look, and the Captain's grand-daughter took photographs — which probably did not come out because of the very bright lights and the creatures being in shadow.

The eyes were very large, bigger than a dinner plate but the most remarkable thing was the colour. The top of the body was red, like a Ferrari, and the tentacles were white covered with red spots which made them look pink. Where the red back joined the white area around the eyes, there was a pattern of interlocking spots.

The crew tried to catch the babies but once hooked they broke free, and that individual could not be hooked again, which was interesting. They stayed for about an hour and a half, and then slowly sank from view. I mention this because I have heard on several occasions that 'no-one has ever seen the Giant Squid' but I do not think this can be so. I think there is a sketch of one (but speckled, not red, I think) in Russell and Yonge *The Seas* — presumably the artist did not draw the creature entirely from his imagination. Not as bright as life, though. Has anyone else seen these creatures? It was interesting also because it is an area where there are female Sperm Whales.

Captain C.A. McDowall, Master. *Glen Roy*. (MOL Tankship Management Ltd)

Book Review

Sealife, A Complete Guide to the Marine Environment edited by Geoffrey Waller, principal contributors Marc Dando and Michael Burchett.145 mm x 248 mm, 504 pp. including appendices and index, *illus*. ISBN 90 74345 12 3. Pica Press (an Imprint of Helm Information Ltd) The Banks Mountfield Nr Robertsbridge East Sussex TN32 5JY. Price: £30.00.

While it is impossible to encompass the subject of sea life in a single volume this is a splendid attempt. Its claim to describe for the first time in a single text the astonishing diversity of life in the oceans is bold indeed, but may have validity since earlier works, while covering much of the same ground, tended to omit, for instance, seabirds.

The book is not merely an identification source. Its weightiest part is, rather, concerned with biological functions. We are told how animals are structured, how they live, and how they evolved. The authors are expert zoologists, who have not set out to do more than glance at physical oceanography or at the photosynthetic marine organisms, largely the planktonic unicellular plants and marine bacteria (which, by the way, are quite as important ecologically as terrestrial forests, although they are rarely mentioned ashore). For the animal kingdom, a reader who had totally digested this book would possess a fair zoological framework for a degree in marine biology.

Technical words abound (on random pages 'epitoke', 'sarcopterygian', 'endothermy', 'alula' and so on, endlessly), but it is my experience that seamen, given reasonable definitions, will not be deterred by them. And within the constraints demanded by a complex subject the text is lucid and readable. Moreover the illustrations are excellent; the line drawings are well done (although the practice of popping in computer-generated grey backgrounds was perhaps unneccessary), while the coloured plates are grand indeed. But here we must enquire about the most likely first use the book will be put to by the sailor who possesses it, namely the identification of sea creatures seen from shipboard. For this the illustrations and accompanying text will be keenly tested. The results prove to be uneven. Most of the seabirds are there, as are the whales, but separate volumes covering these groups are freely available. And it is handy to have the seals and sea cows and even polar bears within the book's covers.

But when it comes to fish and invertebrates the position is less satisfactory. As an example, the cod family is represented by a single species, namely the cod. Faced with identifying haddock, whiting, pollack, saithe, ling, all cod family, the book is silent. Similarly with squid, where several hundred species are lumped together. Swimming crabs, commonly reported by Selected Ships, are not mentioned, nor are insects, although from a ship stopped in calm tropical waters one may spot *Halobates*, the oceanic water-strider, busily imitating its pond-confined cousin.

Inevitably a comparison will be made with Paul Horsman's book *The Seafarer's Guide to Marine Life*, published in 1985. Horsman's book is only half the length of this one but it emphasises more strongly, perhaps, those creatures likely to be seen from the deck of a ship, passing lightly over such bottom dwellers as sponges, sea anemones and starfish. So that while you may learn less about a surface animal's life history, ethology, physiology or evolutionary position from Horsman, you are more likley to find its name

The cruel truth is that no single book can cover all identificatory needs. The twenty ichthyology books on my shelves are still inadequate to cover the world's fishes. Meanwhile *Sealife* is a book to enjoy for itself, for its scope, for its interest and for its quality and accuracy. For these it is thoroughly recommended. Oh, and meanwhile don't throw away your Horsman.

Dr Frank Evans

Personalities

RETIREMENT — COMMODORE ALISTAIR J. LESLIE retired in April 1997 after 43 years at sea.

He says, "I joined my first ship in April 1954, as cadet of the Park class Victory Ship *Cottrell* belonging to Elder Dempster Lines, and trading to west Africa. Coming directly to sea from Carlisle Grammar School, I recall that my only previous seagoing experience was a trip across the Channel, when I felt distinctly sea sick.

"Service with Elder Dempsters continued until 1966, by which time I had my Masters Certificate and was sailing as Chief Officer. Ships during this time included the West African Mail boats *Accra* and *Aureol* and also the *Fourah Bay* a cadet ship, where I served as Training Officer.

"In 1966, Elders and Alfred Holts amalgamated, and this opened up further horizons, with voyages to the Far East on ships such as the *Hector, Glenfalloch,* and *Idomeneus.* I well remember on the *Glenfalloch* hitting one of the rogue waves off the south-east coast of Africa, fortunately with only superficial damage. That and reporting passing typhoons in the north-west Pacific, were probably the most serious reports to have been sent to The Met. Office during my reporting years.

"I remained on various Elder Dempster, Blue Funnel, Glen Line and Paddy Henderson ships (all part of the Ocean Group) until joining *Liverpool Bay*, my first container ship, in 1974. I continued in container ships for the rest of my career, as OCL and then P&OCL took over the running of them. I was promoted Master in 1983 and Commodore of the P&O Container fleet in 1994.

"I enjoyed giving various talks to both the Port Met. Officers' Conference and to the World Meteorological Organization, on weather forecasting from the user's point of view, and it was satisfying to learn that the forecasters were so eager to know how their forecasts were received by the people who actually use them. I was also impressed by the world-wide network of meteorology, and recall sending a report to Bracknell of a tropical disturbance in the South China Sea, only to receive, half an hour later, a Japanese weather fax with the disturbance marked.

"I am proud to have served my entire career under the Red Ensign, a claim which I feel now will be almost impossible to achieve.

"I now take rather perverse pleasure in listening to the Shipping Forecast and not having to worry when I hear 'Biscay, Finisterre. Backing SW and increasing storm force 10', and I hope to have plenty of good weather to continue fell-walking in the Lakes and Scotland, and trying to improve my watercolour painting technique."

We thank Commodore Leslie for all the valuable observing work he has done and extend our best wishes to him for the future.

RETIREMENT — CAPTAIN D.L. RATTRAY, OBE, retired on 1 October 1997 after a sea-going career of almost 41 years.

David Rattray was born in Campbeltown, Argyll in September 1937. After pre-sea training at the James Watt College, Greenock, he first went to sea as a Cadet with the Anchor Line in December 1953. On obtaining his Second Mates Certificate in May 1958, he joined Ellerman Lines as Third Officer, remaining with that company until he gained his Masters Certificate in February 1963. He then joined the Scottish Fisheries Department as Second Officer, and was promoted to command of the Fishery Research Ship *Explorer*, in May 1973. After three years, he returned to the protection fleet, where he served for the rest of his career. He was awarded the OBE in the 1997 New Year's Honours List.

Captain Rattray was Fourth Officer on the Anchor liner *Elysia* when he sent in the first of his logbooks, in October 1957; he has since submitted a total of 69 logs, and received Excellent Awards on 12 occasions. In addition, he was presented with a long-service award in 1995.

In his 34½ years service with the Scottish Fishery Protection fleet, he has experienced enormous changes, from patrolling the old 3-mile limit to enforcing the present 200-mile limit which extends beyond Rockall. In 1988, he was in command of *Vigilant* when that vessel undertook a six-week patrol to Canada to investigate the fishing activity by EC vessels on the Grand Banks.

He says he greatly appreciated the service provided by The Met. Office, in particular the 48- and 72-hour surface analyses which he studied closely when planning his patrols, especially during the winter months.

We would like to take this opportunity to thank Captain Rattray again for the contributions he has made towards weather observing, and wish him a long and happy retirement.

RETIREMENT — CAPTAIN J.M. RONALD retired in May 1997 after a seagoing career spanning 42 years.

James Matthew Ronald was born in Murree, India on 16 September 1937 and was educated at Campbell College, Belfast. He joined G. Heyn & Sons Ltd, Belfast (The Ulster Steamship Company) as an Indentured Apprentice in September 1955, his first ship being the *Rathlin Head*, and his observing career commenced with a logbook from the *Roonagh Head* which was received by The Met. Office in April 1959 when he was Third Officer. He obtained his Second Mates Certificate in 1960 and remained with Heyn's until 1962 when he obtained his First Mates Certificate and then moved to Elders & Fyffes Ltd. A break in our records seems to indicate that a period of service on non-observing ships then followed. However, in 1968 he returned to his original company having been promoted Second Officer in 1965, and the following year his observing career resumed with contributions from the *Torr Head* followed by *Inishowen Head*.

In 1970, with his Masters Certificate in hand, he joined the BP Tanker Company (now BP Shipping Ltd) as Second Officer, embarking on a long association with that company. Gaining promotion to Chief Officer in September 1971, he was promoted in August 1982 and made his first voyage in command as Master of the *British Vine* that year.

Between 1977 and 1997 The Met. Office received a further 83 logbooks bearing Captain Ronald's name, including 34 from *Forties Kiwi* with further contributions from *Goltair*, *British Respect* and her sister ships *British Success*, *Vine*, *Tenacity*,

Spirit and *Ranger*, and BP Shipping's *BP Advocate*, *Architect* and *Admiral*. In 1994 Captain Ronald moved to *British Tamar* and then to *British Esk*, his final command, the following year.

For his efforts in the cause of voluntary weather observing, Captain Ronald received Excellent Awards for 1979, 1980 and 1984 and we extend our thanks to him on this occasion for all his contributions over the years.

Known and respected by his colleagues as 'Gentleman Jim', we understand from those remaining with *British Esk* that Captain Ronald has taken part-time employment with BP Shipping Ltd as the Deck Cadet Training Officer and we wish him well in his new position.

Notices to Marine Observers

New Port Met. Officer for South-west England

Captain James Roe has been appointed as Port Met. Officer for south-west England, based at Southampton. The latest 'recruit' to the UK VOF was born in 1947, in Moorslede, Flanders and, after his education, which was "steady rather than inspired", he left school with three A-levels and joined Shell Tankers Ltd in 1965 as a Navigating Cadet.

He progressed to Mates (Foreign Going) by 1971 and then joined the Royal Fleet Auxiliary Service, obtaining his Masters (Foreign Going) in 1974, after studying at the Marine College, UWIST. Captain Roe's career with the RFA carried him world wide; he says, "I don't think I missed many of the world's trouble spots — Belize, Beira, the Gulf, Falkland Islands, etc." and his first command was in 1985.

He came ashore in 1993, joining H.M. Prison Service from where he now returns to matters maritime, having in his own words, "too much salt in the blood."

Excellent Awards 1996

More than half of the 300 nominees for Excellent Awards listed in the October 1997 edition of *The Marine Observer* have now claimed their awards and we look forward to despatching more books to claimants over the coming weeks. However, we are at present unable to contact the following nominees whose letters of notification have been returned to our offices:

Master: Captain A.J. Clarke, Captain M. Light, Captain K. Nayyar, Captain K.E. Peacock and Captain D.J. Pointon.

Observing Officer: L. Attri, T. Catchpole, D.E. Greif, J.S. Hallam, J. Knight, V. Koothur, G. Mallick, B. Nalam, T. Nyunt and W.M. Terry.

We would ask these officers, together with anyone named in the October issue's listings who has not yet received a letter of notification, to contact us giving his/her Discharge Book number and an address to which the award should be sent; we will then gladly send the awards on their way.

Claims should be sent to: The Met. Office OV(M) Scott Building Eastern Road Bracknell Berkshire RG12 2PW United Kingdom.

Fleet Lists

UNITED KINGDOM

Updated information regarding the list published in the July 1997 edition of *The Marine Observer*. Radio Officers, where carried, are indicated by bold type. Amendments for this list are required by 15 September.

Selected and Supplementary ships

NAME OF VESSEL	LATEST RECEIPT	MASTER	OBSERVING OFFICERS and **RADIO OFFICERS**	OWNER/ MANAGER
Bow Tribute	-.5.97	-	-	Thome Ship Management Pte Ltd
Chrismir	8.9.97	J.M. Bullard	R. Elliot, J.H. Isaaac, M.J. Samus	Souter Shipping Ltd
Chuqui	2.7.97	R.A. Tellis	U.P. Rao, S. Patterson, P. Chakraborty	K Line (Europe) Ltd
Karoo	24.4.97	S. Venner	L. Rillera, J. Ramiro, B.G. Lim	Safmarine Ship Management
Knock Stocks	29.6.97	J. Masny	B. Nilsen, D. Jessie, J. Jeppesen, **A. Lipski**	Red Band AS
Leopardi	28.4.97	F.S. Romana	J.B. Diaz, G.C. De Sopena, J.B. Martin	Souter Shipping Ltd
Matilde	5.4.97	K. McLeod	H. James, G. Taylor, C. Shaw	Souter Shipping Ltd
Mineral Century	30.4.97	R. Raghavan	R.M. Vanmugilan, P.N. Swamy, M.K. Alam	Anglo Eastern Ship Management Ltd
Mineral Columbia	10.8.97	S.S. Srivastava	A.K. Sen, V. Khama, A.K. Verna	Anglo-Eastern Ship Management Ltd
Northern Light	2.5.97	J. Urquiza	I. Albizua, A Robles, M. Sanchez, **G. Arango**	Souter Shipping Ltd
Pharos	22.8.97	D.J. Davidson	C. Wheatley, M. Dinnan, A. Provan	Northern Lighthouse Board
Primo	13.6.97	J. Azcorra	J. Ruiz, M. Aurteneche V. De Vicente, **J.L. Villacorta**	Souter Shipping Ltd
Pudahuel	16.7.97	S.S. Saraon	S. Rudra, U. Aung Kyang, S. Ramanathan	Dockendale Shipping Company
Searcher	6.7.97	I. Ferguson	S. Buchan, M. Rainey	Tidewater (Marine) UK Ltd
Trade Eternity	18.8.97	R. Fletcher	T. Ullah, H. Rashid, V.M. Yoganathan, **S. Jayawickrame**	Wah Tung Shipping Agency Co.Ltd
Yeoman Brook	24.4.97	H. Demke	H. Tenoso, M.J. Keijzerwaard, T. Bock	Egon Oldendorff

The following ships have been withdrawn:

Assurity, CSO Constructor, Clinton-K, Dragon Nias, Greenpeace, Hyundai Vancouver, John Laing, Med Singapore, Oakby, OOCL Assurance, Putford Puffin, Pytchley, Regent Park, Repulse Bay, Stena Felicity, Toisa Gryphon, Viking Supporter.

British Commonwealth

The following Selected and Supplementary Ships have been recruited to or withdrawn from the list published in the July 1997 edition of this journal.

INDIA

Recruited (Sel.): *Major Dansinghe Thapa PVC, State of Nagaland, Vishnu Sagar.*

Recruited (Supp.): *Jagat Swamini/Priyamvada*
Withdrawn (Supp.): *Lok Preeti, Major Dansinghe Thapa PVC, Vishva Karuna, Vishva Pallav, Vishwesharayya.*

NEW ZEALAND

Withdrawn (Sel.): *Capitaine Tasman, Rangitoto, Socofl Stream, Sydney Star.*

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