The Marine Observer

Met Office

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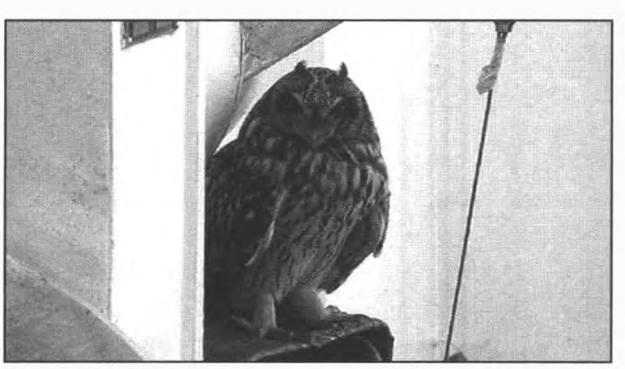

Cover photo: *Short-eared owl on the* Cable Innovator *on 3 November 2000. Photographed by R. Wilkinson.*

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LONDON: THE STATIONERY OFFICE

Observations—Voluntary (Marine)* Annual Report for 2000

1 — Voluntary Observing Fleet (VOF)

At the end of 2000 the numbers of voluntary observing ships and rigs reporting in the Ship's International Meteorological Code was as follows:

- **454 'Selected' ships** which transmit weather messages using the full code and are equipped with complete sets of meteorological instruments and stationery. These vessels are currently operating in all ocean regions;
- **39 'MARID' ships** which transmit information on sea-water temperature together with non-instrumental weather observations, and which operate in UK coastal or near continental areas;
- **24 'Auxiliary' ships** which are requested to transmit limited observations. Such ships will normally be equipped with their own instruments and generally operate in areas where observation data is in short supply;
- **35 Offshore units** comprising 17 fixed and 16 mobile installations, and two FPSOs. These units operate in the North Sea oil fields as well as other areas of exploration on the UK continental shelf.

2 — Ships

The UK voluntary fleet continues to make an important contribution to the WMO Voluntary Observing Ships scheme, which comprises approximately 6,900 of the world's merchant ships.

In terms of numbers of observations received the UK fleet of observing ships currently contribute between 10,000 and 10,500 observations each month.

Ships recruited to work in the 'Selected' category carry a precision aneroid barometer, a marine barograph and a marine screen containing dry- and wet-bulb thermometers. For recording sea-water temperature they also carry a sea-water bucket with thermometer, or are fitted with distant reading equipment. 'MARID' ships are equipped with the necessary tested thermometers and their contribution is vital for the prediction of fog and, in appropriate meteorological conditions, icing.

Anemometers are not used for observations made by the UK VOF, the surface wind speed and direction being estimated from the sea state.

In the course of the year 45 'Selected' ships were recruited and 41 withdrawn; 3 'MARID' ships recruited and 4 withdrawn; and 9 'Auxiliary' ships recruited.

3 — Offshore oil and gas installations

At the close of 2000 the number of offshore installations contributing to the VOF was 51. In addition to the aforementioned 35 offshore units reporting in ship code, a further 16 platforms are host to automatic weather stations which provide data every 10 minutes to the forecasters in Aberdeen.

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* With effect from April 2001 the Observations—Voluntary (Marine) section will be integrated withing a new Observations—Supply branch (see page 100)

The number of observations received from offshore installations that have been made using TurboWin has increased every year since its introduction. In 1999 the Met Office received 17,160 observations. By the end of 2000 this annual figure had grown to 20417.

4 — PMO Network

Voluntary observing ships are currently serviced by a team of six Port Met. Officers (PMOs) and one Port Met. Assistant based at principal ports around the country. The offshore units are co-ordinated by the Offshore Adviser, based in Aberdeen.

In the course of the last year there have been marked changes in the UK PMO structure both in terms of staffing and in office locations; farewells have been said to three support staff (at Hull, Southampton, and Cardiff) and the offices at Hull and Liverpool have relocated to new premises. In addition, following an extensive review of our PMO requirements we said goodbye to our Middlesbrough PMO. The Middlesbrough office will therefore be closed and observing ships trading to this area of the east coast will in future be handled from our new Hull office.

The PMOs and the Offshore Adviser regularly visit ships and installations to offer advice and to check instruments. The PMOs also liaise with their counterparts around the world through the Manager, Marine Observations, so strengthening international co-operation and encouraging more ships to become involved with observing. PMOs also visit ships of other countries' fleets, if required, to assist observing personnel. During the course of the past year each port office was provided with a new desktops computer allowing access to the Met Office computer network.

In total, during the year the Port Met. Officers performed 797 UK VOS ship inspections and 302 visits to UK VOS.

5 — Logbooks

The number of ship's meteorological logbooks received during 2000 was 573 compared to last year's total of 648, a continued reduction owed, in part, to the increased use of TurboWin computer programs for coding up ship observations. The logbook data undergo a series of computer quality control checks before they are stored forever, being used in such areas as marine climatology and climate research, while the logbooks themselves are destined to become permanent public records held in the National Meteorological Archive, at Bracknell.

Observations noted on the 'Additional Observations' pages of ships' met. logbooks (or alternatively sent direct to our group e-mail box [1]) continue to be welcomed and as many as possible are published in *The Marine Observer*. All reports are copied to relevant consulting experts who voluntarily give their time and knowledge to comment upon sightings made at sea.

6 — TurboWin

The observers on platforms and rigs pioneered the introduction of the Royal Dutch Meteorological Institute (KNMI) Turbo programs in the UK and, at the end of 2000, there were 29 installations using TurboWin software to code their observations. The number of Selected ships currently equipped with 'notebook' computers loaded with TurboWin numbers 40 whilst a further 15 ships had access to TurboWin, or the earlier Turbo1 version of this software, through their own ship computers.

[1] Group e-mail address: obsmar@metoffice.com

The continued improvement of TurboWin relies on feedback from the users. The latest version (v1.7) already takes into account input provided by UK observers and from Observations (Voluntary)–Marine staff, and further suggestions are being considered by KNMI for the next issue.

With its built-in quality control checks, TurboWin automatically codes each observation from the data entered by observers. The observation can then be downloaded to floppy disks for subsequent transmission ashore to Bracknell via Inmarsat-C and the Global Telecommunication System. The computerised logs of coded observations are routinely downloaded by the visiting PMOs so that the information may be utilised for climatological purposes.

7 — MOSS

The number of ships fitted with Meteorological Observing System for Ships (MOSS) has been allowed to decline still further and at the end of year 2000 there were only six ships remaining with MOSS fitted on board, of which only two were continuing to submit observations via this method of transmission. (It is anticipated that the use of MOSS equipment will be further reduced and, eventually, removed altogether).

8 — Automatic Weather Stations

The first Automatic Weather Station to be installed on a UK voluntary observing ship was fitted on board the *OOCL Belgium* in November. Preliminary results show that the system is functioning satisfactorily. [2]

9 — Inmarsat Sat–C

A further dedicated Inmarsat Sat-C system was installed on the ferry *Baltic Tern* bringing the total number now installed to five (the other ships equipped with dedicated Sat-C terminals are the *European Pathfinder, European Envoy,* the *Elk* and the *CanMar Pride*). The system, which is linked to a dedicated TurboWin notebook computer, provides one of the solutions to the problem of transmitting observations from ships that are not required, owing to their service areas, to be fitted with their own Inmarsat terminals.

10 — ASAP

The UK Automated Shipboard Aerological Programme (ASAP) is installed on the container ship *CanMar Pride* which operates on the North Atlantic (Thamesport–Antwerp–Le Havre–Montreal) route. It comprises a dedicated 10-ft container housing the radiosonde balloon launcher whilst the necessary equipment for processing and transmitting the sounding in TEMP code is installed on the bridge. [3]

A training voyage was undertaken in January 2000 to train the ship's staff in the operation of the system. Shortly thereafter the system was fully operational with sondes being launched at 12-hourly intervals throughout the North Atlantic phase of the passage. In the course of the year a total of 168 sondes had been successfully launched reaching an average terminal sounding height of 23,834 km.

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[2] See 'Autornet' — pressure and temperature sensor unit' on page 89 of this issue.

[3] See 'ASAP — past, present and future' in *The Marine Observer,* July 2000, 108–113

11 — International activities

Throughout the course of the year the office was closely involved in a wide range of international matters related to marine observations.

From 27–29 September the Met Office hosted the Twelfth Session of the Automated Shipboard Aerological Programme Panel (ASAPP) which was attended by representatives of all the national met services involved in ASAP operations. It was the first meeting of the panel held under the auspices of the new Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM). One of the main initiatives arising was the proposal for a new World-wide Recurring ASAP Project (WRAP). A feasibility study was put in hand to progress this system, which will be installed on a UK container ship operating on the round-the-world service.[4]

The Met Office was also actively involved in the second planning meeting for the VOS Climate Project, which was held at the National Climate Data Center in Asheville, North Carolina. A comprehensive programme of actions was established at the meeting with a view to commencing initial ship recruitment in Spring 2001. The UK undertook to recruit approximately 30 UK voluntary ships for the project. [5]

In June discussions took place with Henri Savina (Météo-France) on proposals to amend some of the sea area boundaries used in the Shipping Forecast issued through the BBC, the Coastguard and via Navtex. These proposals are primarily intended to align the boundaries between Metareas I and II.

During the course of the year the office was also visited by Dr Klaus Hedegaard, the project Manager of the Eumetnet ASAP programme (E-ASAP).

12 — National activities

A number of briefing meetings were attended in Southampton at the offices of the Maritime and Coastguard Agency (MCA). These assisted in developing UK positions for discussions within the International Maritime Organisation (IMO) Sub-Committees overseeing marine radio-communications and navigational issues.

Discussions also took place with the MCA and the Hydrographic Office on a number of initiatives concerning the broadcast of marine forecast products. In particular, following a research project to examine possible future changes to the NAVTEX system, the MCA commissioned the Met Office to provide an Extended Outlook highlighting expected hazards for a further two or three days. This bulletin is broadcast from the three UK NAVTEX transmitters (Niton, Cullercoats and Portpatrick).

Following the recent implementation of NAVTEX broadcasts from the Irish stations at Malin Head and Valentia, arrangements were also put in hand to rationalise the provision of Maritime Safety Information from both the UK and Irish transmitters. This will, in due course, result in some changes to the sea area coverage for each station, and will avoid transmissions over-running the allocated time slots. [6]

Met Office representatives were also closely involved in discussions to restructure the Inshore Waters Forecast disseminated by HM Coastguard and to increase the coverage provided to 16 inshore areas.

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[4] See 'ASAP Panel meeting' in *The Marine Observer*, January 2001, 40-41

[5] See 'The VOS Climate Project' on page 76 of this issue

[6] See 'Inshore Waters Forecast and Navtex update' on page 72 of this issue

13 — Branch activities

Throughout the year staff continued to field a variety of enquiries from the general public and shipping company representatives. The volume of such enquiries has increased since the introduction of the section's group e-mail box which is now also routinely used for communicating with observing ships.

In January a meeting took place between representatives from The Stationery Office Ltd and the Met Office to discuss the publishing arrangements for *The Marine Observer* and a number of other marine titles.

Visitors to the office included the BBC who, together with the Met Office Broadcast Manager, Helen Young, were filming a programme about the Newfoundland storms of autumn 1991. On another occasion we also welcomed Michael Everard of F.T. Everard & Sons Ltd on a private visit.

The millennium also brought a number of new Met Office initiatives that had an impact on the work undertaken by the section. These included the introduction of the new Met Office brand and logo; a strategy to review and improve our business processes, which is intended to lead to ISO 9000 standard accreditation and, of course, the decision to relocate the Met Office to Exeter.

14 —Marine Publications

Following the meeting with The Stationery Office in January it was decided to revise existing publishing and printing arrangements for marine publications. As a consequence it was decided to put the contract for publishing future editions of *The Marine Observer* out to tender. The Stationery Office subsequently made the most competitive tender and a new enabling agreement was established with them for the next 12 months' publishing arrangements.

Early in the year a number of changes to the style and presentation of *The Marine Observer* were made, and these appear to have had a positive reception. Additional changes were subsequently made to reflect the new Met Office corporate style.

In the course of the year new editions of the *Dew Point Tables* and the *Ships' Meteorological Logbook* were issued. A revised edition of the *State of Sea booklet* was also completed and the finishing touches made to a revised edition of the *Ship's Code Card*; both of which will be available in early 2001.

Unfortunately, the revised edition of the brochure *Weather Services for Shipping* was further deferred although branch representatives did assist with the reprint of the similar publication entitled *Marine Weather Services* produced by the Commercial Division of the Met Office.

15 — Awards

Owing to logistic constraints it proved necessary to postpone the presentation of Special Long-service Awards for senior shipmasters. The date for the next presentation (for 1998) has still to be arranged. Following normal practice concerning those with shorter observing careers, 300 nominations for Excellent Awards for 1999 were drawn from the names of Masters, Principal Observing Officers and Radio Officers contributing to meteorological logbooks received in that year, the contents of which were assessed as being of the highest quality. Letters of notification were sent during August and September, with the despatch of book awards commencing as nominees responded. The titles selected for this round of awards were *Philips Concise World Atlas, 10th, Edition and ORIGINS: the evolution of continents, oceans and life* supplemented by unclaimed titles carried over from the

previous award year (1998). At the end of 2000 almost two-thirds of the awards had been processed while responses were still awaited from the remainder of the nominees. [7]

In addition to the book awards made to shipborne observers, 15 observers working on offshore installations also received book awards this year in recognition of their contributions.

During the year an initial review of the current awards scheme was undertaken with a view to increasing the emphasis given to rewarding the timeliness and quality of the observations, and at the same time reducing the level of administration involved in operating the scheme. This work is ongoing and will require additional software programs to ensure continuity with the existing scheme whilst at the same time ensuring that those officers and Masters most deserving continue to be rewarded for their efforts.

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[7] See 'Unclaimed Excellent Awards for 1999' on page 95 of this issue

The Marine Observers' Log

This section of *The Marine Observer* comprises reports of interest and scientific value contributed by individual observers or as part of a ship's meteorological logbook. All reports are welcome and, wherever possible, they are forwarded to relevant sources of expertise for comment and analysis.

Responsibility for the content of any item offered for publication rests with the contributor, although texts may be subject to amendment at the discretion of the Editor.

All temperatures in this publication are given in degrees Celsius unless otherwise stated, and the barometric pressure is given in millibars (mb) although the standard international unit is the hectopascal (hPa) which is the numerical equivalent. Where mentioned, 'mile' and 'miles' are to be taken as the nautical mile.

Lightning strike

North Atlantic

16/17 April 2000

- **m.v. *Arunbank***
- **Singapore to Antwerp**
- **Captain E.M. Pallister**
- **Observers: Captain Pallister, S.J. Wallace (3rd Officer), D. Potublev (Chief Officer) and I. Pisarenko (2nd Officer)**

Shortly after 2000 UTC on the 16th, when the vessel was on a heading of 323° at 16 knots in position 02° 35.7′ N, 11° 00.1′ W, the Third Officer observed a lightning storm on the horizon although at this time the flashes were within the clouds; at the same time it was raining heavily at the vessel, this continuing until 2020.

From approximately 2040 for about 20 minutes there was very little lightning and no rain, but at 2200 lightning was again visible, only much closer. Until midnight lightning was clearly visible striking the surface of the sea at intervals of between 5 seconds and 30 seconds. At this point the watch was changed.

At 0500 on the 17th it was reported that the lightning storm had intensified and, by 0600, it was all around the vessel; there were continuous flashes with thunder and very heavy rain. At 0730 there was one very bright flash accompanied by an instantaneous very loud bang that was heard throughout the vessel. This, as it turned out, was a lightning strike to the vessel's MF/HF telex receiver aerial (a 5-m fibreglass whip aerial) which was completely destroyed from about half-way up.

In turn, the strike, which hit the aerial on the port side of the vessel's monkey island, also sent a shock down the Master's personal short-wave radio aerial (which was a piece of electrical wire) and totally destroyed the radio. The storm began to weaken and, by 0810, both the lightning and rain had stopped and the sky was beginning to clear.

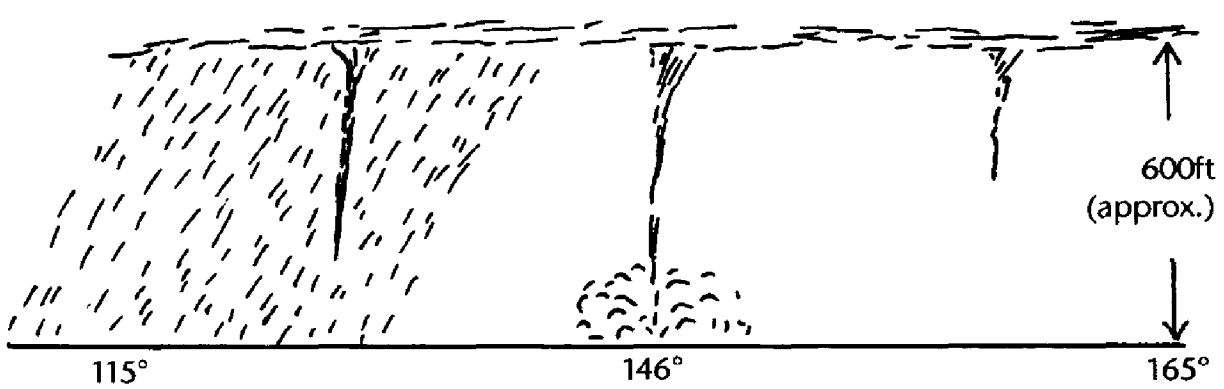
Of the two aerials affected, the destruction of the latter appeared to cause the greater commotion as there did not appear to be a spare on board — a replacement radio was eventually found, however, to some relief!

Waterspout
North Atlantic
1 May 2000

- **m.v. *Lord Nelson***
- **El Ferrol to Cadiz**
- **Captain J. Etheridge**
- **Observers: Captain Etheridge, C. Cupples (Mate), R. Lamoureax (2nd Officer), L. Woodhall (Bosun) and ship's company**

A distinct waterspout was seen forming at 0745 UTC 3.4 miles on the port bow, under a particularly dark cumulonimbus cloud, on its right-hand side. Precipitation was seen to be reaching the horizon to the east of it, and the spout continued to form, bearing 146°, until it reached the surface in a cloud of spray [see sketch].

Two other partial spouts were also seen forming on either side of the main one, which, lasted approximately 5 minutes. Later, the ship experienced heavy rain with thunder and lightning.



At the time of the observation the ship's position was 38° 24′ N, 09° 48′ W, and the weather conditions were: air temperature 15.3°, wet bulb 14.9°, pressure 1015.5 mb, wind W'ly force 2.

Editor's note. This report was passed to Mike Rowe, of the Tornado and Storm Research Organisation (TORRO), who said:

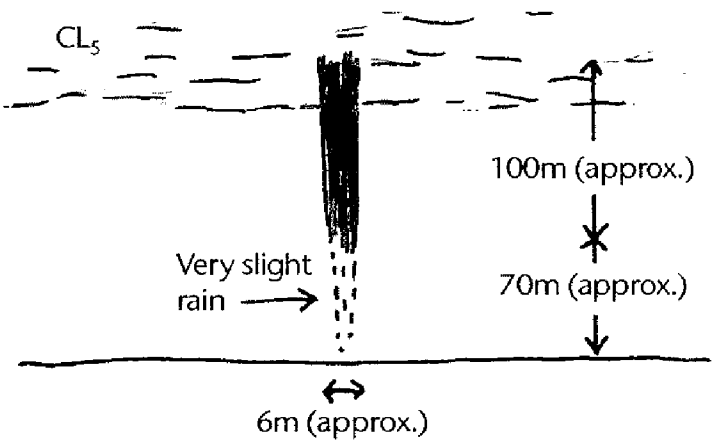
"This is a good description of a classic waterspout sighting. The sketch gives an excellent impression of what was seen. The two partial spouts were funnel clouds rather than waterspouts, as they did not reach the sea surface. Sighting of more than one vortex at the same time is more common with waterspouts than tornadoes."

Waterspout
Bay of Bengal
16 April 2000

- **m.v. *P&O Nedlloyd Southampton***
- **Singapore to Suez**
- **Captain B.V. Chipperfield**
- **Observers: M.K. Hill (3rd Officer) and D.J. Vickery (1st Officer)**

At 0246 UTC, whilst heading west across the Bay of Bengal towards Dondra Head at speed of 25 knots, a waterspout was observed on the starboard bow at about 2.5 miles.

The waterspout was a very pronounced and narrow dark-grey column against the light-grey backdrop of the stratocumulus clouds, and appeared to be fairly stationary as the vessel approached. Only a very slight disturbance could be seen beneath the spout, which extended from the cloud base of approximately 100 m but stopped about 70 m above the surface, as shown in the sketch.



At 0252 the vessel passed the waterspout; it was now on the starboard beam of the vessel at a distance of about 0.4 miles. Light rain could be seen on the surface directly under the spout, covering an area only about 5–6 m in diameter. The spout disappeared from sight astern, so its total duration was not known

The following readings were taken: air temperature 29.4°, wet bulb 27°, sea 29 °, pressure 1010.6 mb, wind variable, force 1. Conditions were generally fine with good visibility although the sky was overcast with stratocumulus; the sea was calm with a low swell.

Editor's note. Mike Rowe, of TORRO, said:

"This is at first sight a fairly standard observation of a waterspout but there are interesting features. The cloud type (stratocumulus) is unusual — generally waterspouts descend from cumulonimbus, though sometimes from cumulus. Secondly, although the observers state that the visible funnel did not reach down to the surface, the 'light rain' rain on the surface beneath the funnel was probably disturbance of the sea surface by the rotating vortex."

Whales
Tasman Sea
16 June 2000

- **m.v. *P&O Nedlloyd Lyttelton***
- **Port Botany to Brisbane**
- **Captain L.M. Colam**
- **Observers: Captain Colam and O. Ong (3rd Officer)**

At 2345 UTC whilst on passage between South Solitary Island and North Solitary Island the observers noted whales blowing a little distance off the port bow. The whales, at least two in number, were heading north. As the vessel approached them they started leaping out of the water, at times part of or nearly all their bodies cleared the water. This breaching [shown in the sketch] seemed almost synchronised, with one leading and the other following one or two seconds behind. The whales breached such that they turned whilst clear of the sea surface and landed on their backs.

Ten minutes later more tuna, together with more seabirds, were spotted feeding very close to a band of 'red tide', and a strong 'fishy' smell was also noticed at this time. Weather conditions at the time were: air temperature 31.6°, wet bulb 26.8°, sea 30.8°, pressure 1006.4 mb, light and variable winds.

Whales
North Atlantic
24 June 2000

- **m.v. *British Harrier***
- **Huelva to Sullom Voe**
- **Captain R. Lines**
- **Observers: Captain Lines and P. Anderson (3rd Officer)**

Whilst the vessel was on a northerly course passing up the west coast of Portugal, three distinct plumes of water were spotted at a distance of about one mile on the port beam at 1900 UTC. On closer observation it was determined that these were the blows from a group of three Humpback whales.

They each had a low stubby-shaped dorsal fin with a pronounced hump ahead of it. The whales continued leisurely submerging and surfacing, with several more blows visible every 20 seconds or so, but after two or three minutes they dived. They arched their bodies more this time, with the hump becoming more visible, and then the flukes were raised. Following their dive they were not seen again. At the time of the sighting, the ship's position was 39° 55′ N, 10° 16′ W.

In brief: On 21 May 2000, when the *Arunbank* was entering the Mona Passage, 30 pilot whales were sighted heading north-east into the North Atlantic. The exact species of whale was not known.

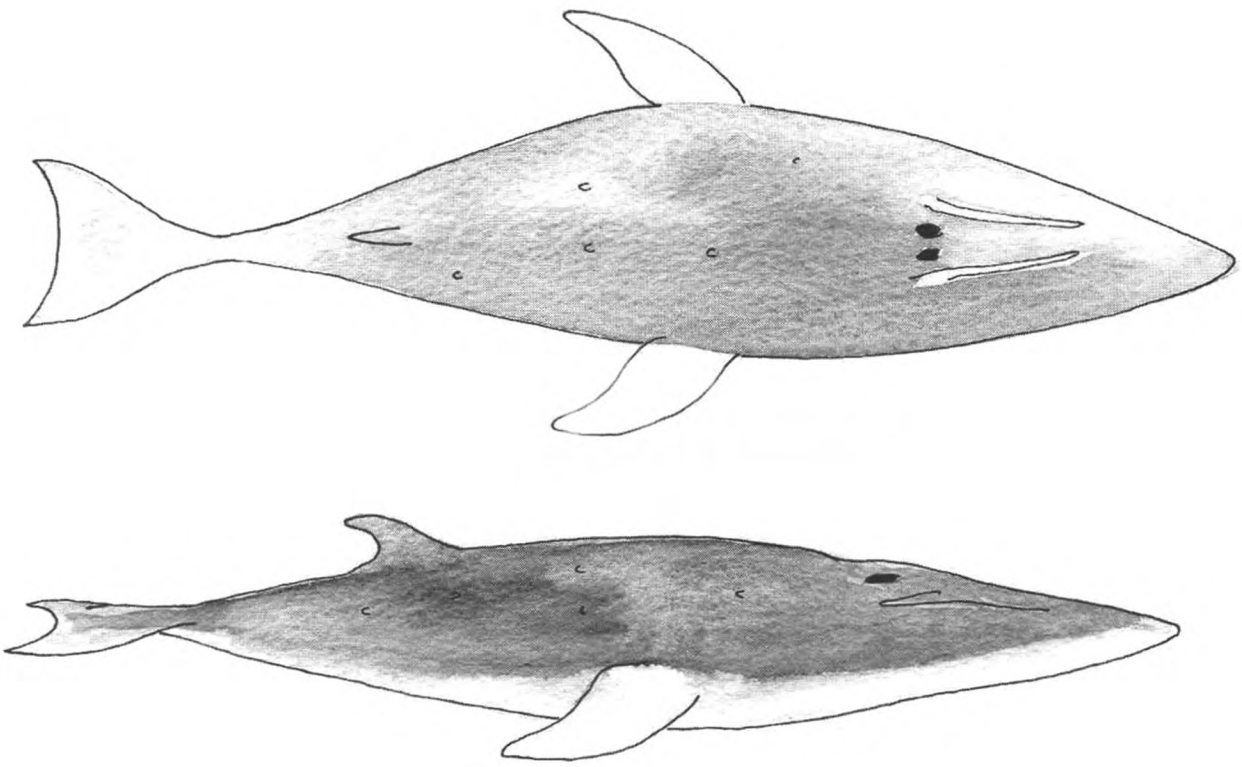
Whale
South Pacific
24 May 2000

- **m.v. *Capitaine Tasman* [New Zealand VOF]**
- **Drifting north-east of Vava'U Group, Tonga**
- **Captain J.M.S. Macleod**
- **Observers: G. Hamilton (Chief Officer), C. de Villiers (2nd Engineer), N.A. Allison (ETO) and K. Bunce (4th Engineer)**

The ship was drifting in position 17° 16′ S, 172° 26.5′ W, to facilitate a timed arrival in Tonga when, at 2100 UTC, a solitary whale approached it and kept all on board engaged with its playful behaviour for the next four hours. It could not be identified by ship's staff but seemed inquisitive, remaining very close to the vessel (1–2 m away) and continually circling it, surfacing or passing under the keel. The whale would regularly break the surface, blowing spume to announce its position, and could be readily observed at close range whilst submerged owing to the clarity of the water.

Its length was estimated at 5–6 m; it had a distinctive snout which was prominent and elongated, and the colour of its upper body was a mottled grey similar to that of a dolphin, and there was also a small number of what appeared to be white spots on its upper body. As indicated in the Chief Officer's drawing, the underbelly was white and so were its side fins. There was also a pair of distinctive parallel white lines running from its airhole down its snout. It had a small hook-like grey dorsal fin on its lower back.

Those on board enjoyed the spectacle but felt concerned for the whale's welfare as it seemed like a young whale owing to its size, and may have lost its mother hence becoming confused about the identity of our vessel.



Editor's note. Kelly MacLeod, of the Natural Resources Institute, University of Greenwich said:

"The sketch and general description of the whale suggested immediately that it was a species belonging to the rorqual whale group (baleen whales with throat grooves). These whales have 'triangular' flat head and white undersides (although this is a variable feature in the Humpback and Blue whales). At 5–6 m the sighting was obviously of a calf or juvenile. There are three species of whale, which roughly fit the description given: the Sei whale, Bryde's whale, and Minke whale. However, the Sei whale can be discounted because it is rare in tropical waters. As for the other two species, each has prominent features fitting the description. Firstly, it is difficult to interpret the description of 'distinctive parallel white lines running from its airhole down its snout'. No whales have white stripes along their heads but they do have raised ridges which could quite easily reflect light, giving the appearance of a white stripe. The Bryde's whale has three, one central ridge from the blowhole to snout, and one either side of it. This may be what the observers meant by 'parallel white lines' and the diagram also gives this impression. The skin of Bryde's whale can also appear mottled and they are strictly pan-tropical in their distribution. However, one feature which does not match is the presence of white flippers. If they were white only on the underside, then a young Bryde's whale fits the description well. If the observers saw white on the upper surface of the flippers then this is not a feature of the Bryde's whale.

"The Minke whale has several sub-populations, including the Atlantic, North Pacific, Antarctic and the dwarf form. The distinctive feature of a North Atlantic Minke whale is the white blaze on the topside of its flippers. In the southern hemisphere Minke, the blaze is absent with the exception of the dwarf variety where almost the entire flipper may be white. The dwarf form, therefore, fits the description and position of the sighting best. All Minke whales have a central ridge running from blowhole to snout and so may fit the description, depending on its interpretation. The dorsal fin is fairly small and falcate and the snout is more pointed than the other rorquals which have rounder tips. Another reason why I think it could be a Minke whale is because I have seen this behaviour before. Young Minkes, and sometimes adults, are often inquisitive and will approach boats and seemingly 'play' around them. It is highly unlikely that it

approached the observers' ship thinking it was its mother. Besides, whether this whale was a Minke or a Bryde's, it would have left its mother a long time ago. Bryde's are about 3–4 m long at birth and suckle for only about six months, so they are dependent on their mothers only for a short period. The Minke whale lactation period may be even shorter at about four months. A 6-m Minke whale may actually be approaching sexual maturity (although this varies geographically) and I would say it was very confused if it had any thoughts of taking on the ship!"

"So, although I cannot say for certain which species the observers saw, it is likely to have been one of the two suggested. My comments might help the observers on board to decide for themselves!"

Whale
South Atlantic
23 June 2000

- **m.v. *Resolution Bay***
- **Rotterdam to Fremantle**
- **Captain A.M. Tweedie**
- **Observers: M.K. Hill (2nd Officer) and Mrs Hill (Supernumerary)**

Over the three-day period between the 23rd and 25th June, many whales had been seen but most were very difficult to identify owing either to the range at which they were seen or because they were not seen for very long. On the 25th, however, a whale was sighted at 1010 UTC very fine on the vessel's starboard bow at very close range, approximately 60 m away. At this time the vessel's position was 15° 59.5′ S, 03° 00.4′ E.

The whale was heading in a westerly direction and was coming high out of the water as it swam. As shown in the sketch, it was noted to have an oval-shaped white patch just behind its eye and a white underside, and the dorsal fin was a very distinctive pointed shape.

Immediately, it was thought to be a Killer whale owing to its distinctive features. As it passed quite close down the starboard side of the vessel, the markings and the shape of its fin could be clearly seen as it broke the surface. Consultation with books onboard confirmed our opinion that this was a Killer whale.

Initially, only one mammal was seen but as the vessel passed, many more could be seen further to the west at a distance of about one mile. These, however, did not appear to be whales but were more like dolphins or porpoise owing to their much smaller size and also by the way that they were leaping out of the water. Unfortunately, they were too far away for this to be confirmed. These mammals were also heading in a westerly direction. Once the vessel had passed nothing more was seen, the Killer whale had been observed for approximately two minutes.

In brief: Whilst the *British Ranger* was on passage from Ash Shihr to Hong Kong, about 50 dolphins were sighted on the starboard side by 3rd Officer J. Hassall and Cadet R. Bickerton on 5 April 2000. They had light-grey backs with white underbellies, and were thought to be Common dolphins. As they passed close by, they were observed 'playing' and leaping but were also headed in a definite westerly direction. The ship's position at the time was 05° 16.7′ N, 83° 37.9′ E.

Fish
South Atlantic
6 May 2000

- **m.v. *Curico***
- **Paranagua to Sharjah**
- **Captain R.J. Kendall**
- **Observers: Captain Kendall and J.R. Pesudas (2nd Officer)**

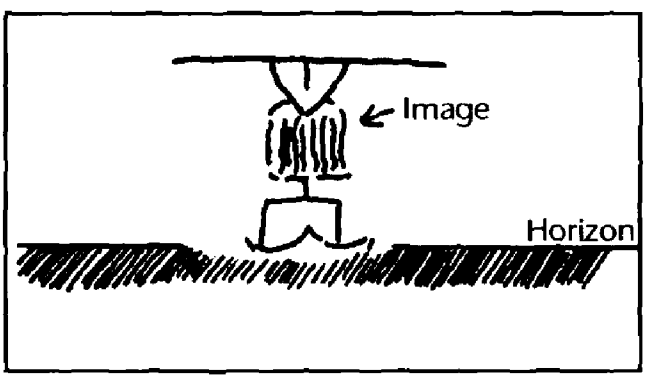
Whilst the vessel was stopped for repairs in position 31° 38′ S, 06° 39′ W two large fish were seen; together they came close to the side at intervals of about 20 minutes.

They were about 2m long and 'barracuda-like' in appearance; one of them had a striking yellow-coloured tail but whether its companion had one too was not clear because that fish was swimming a little deeper. Similar fish had been seen once before, when the vessel was in the Moçambique Channel — no doubt they are called 'Yellowtails'!

Refraction
Gulf of Bothnia
20 June 2000

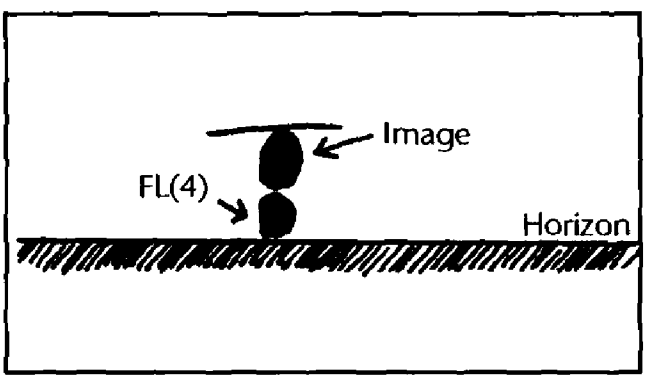
- **m.v. *Baltic Eagle***
- **Mantyluoto to Kotka**
- **Captain D. Torr**
- **Observers: D.J. Levins (2nd Officer) and Y. Guskov (AB)**

Whilst on a course of 225° at 16.8 knots, in position 61° 05.2′ N, 20° 23.5′ E, another vessel was sighted off the starboard bow at 2250 UTC on a course of 042°.



(a)

On closer inspection with binoculars it was noticed that refraction affected the appearance of it, the vessel's accommodation and navigation lights being shown in a mirror image as indicated in sketch (a).



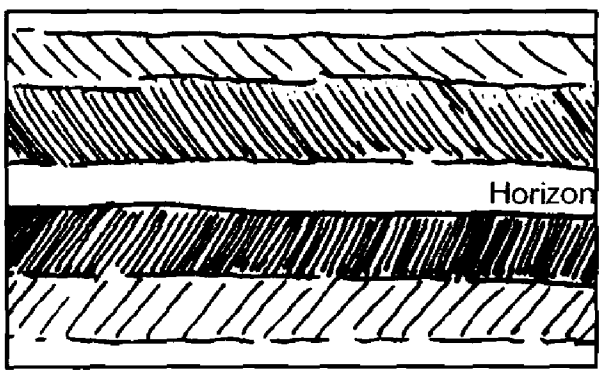
(b)

In the process of observing this effect, a light with characteristic 'Fl (4) 15s' was also sighted one point on the port bow, again showing the same mirror image as indicated in sketch (b).

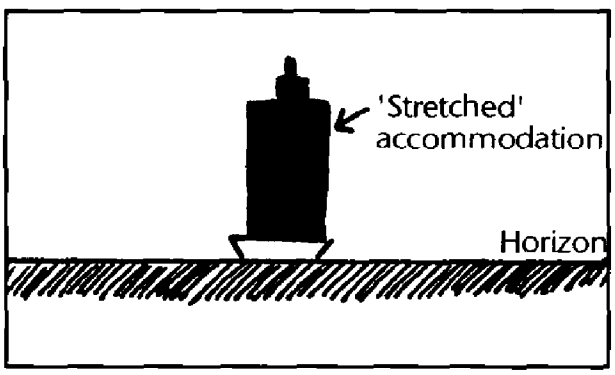
Other lights were also seen between one and three points off the port bow but their characteristics could not be determined.

Upon verifying the first light, it was found to be Understen Light — Fl (4) 15s 23 miles — but its distance as seen from the *Baltic Eagle* was over 67 miles. The light was confirmed as Understen by taking continuous bearings of it until it was sighted visually.

As the light was approached, others could be seen showing the same 'image' but at ranges well outside their characteristics. Refraction was also noted on the horizon, from the bow to approximately 30° off each beam, where the horizon also appeared with a mirror image, as indicated in the sketch (c).



(c)



(d)

A continuous observation was also maintained of the ship that had passed earlier; this could be seen visually and unaided up to a range of 20 miles, its vertically elongated appearance as shown in sketch (d). Weather conditions at the time were: air temperature 8.5°, wet bulb 7.7°, sea 7.6°, pressure 1013.4 mb, wind NNE'ly force 3. The cloud cover was one okta of cirrus.

In brief: A waterspout and a funnel cloud were sighted on 18 April 2000 by Captain M. Philips and Second Officer A. Ridgley on the *British Valour*. The funnel cloud, bearing 60° on the port bow, reached only one-quarter of the way to the surface whereas the waterspout was on a bearing of 20° on the port bow, fully formed and rotating anticlockwise. It passed to within one cable of the vessel's port side. The position of the double sighting was 08° 03.5′ N, 109° 00.6′ E.

In brief: A funnel cloud was sighted from the *Maersk Sussex* on 11 June 2000 by 2nd Officer I. Blair and 3rd Officer S. Fenton. The funnel formed below a cumulus cloud of strong vertical extent about six miles ahead of the vessel, and extended about half-way to the surface before petering out (the cloud base was about 1,000 feet). At the time the vessel was on passage from Lavera to Houston, and was on a heading of 293° at 17 knots.

In brief: On 11 June 2000 in position 35° 20.5′ N, 74° 37.9′ W, the *Tudor Star* crossed a visible line between two bodies of water that seemed to be delineated by a string of sargasso weed. Captain A. Tibbott and Third Officer J. Monton noted that the vessel's ground speed was affected, dropping from 19.7 knots to 19.1 knots, and that within two minutes of crossing the line the sea temperature fell from 27.8° to 26.8°.

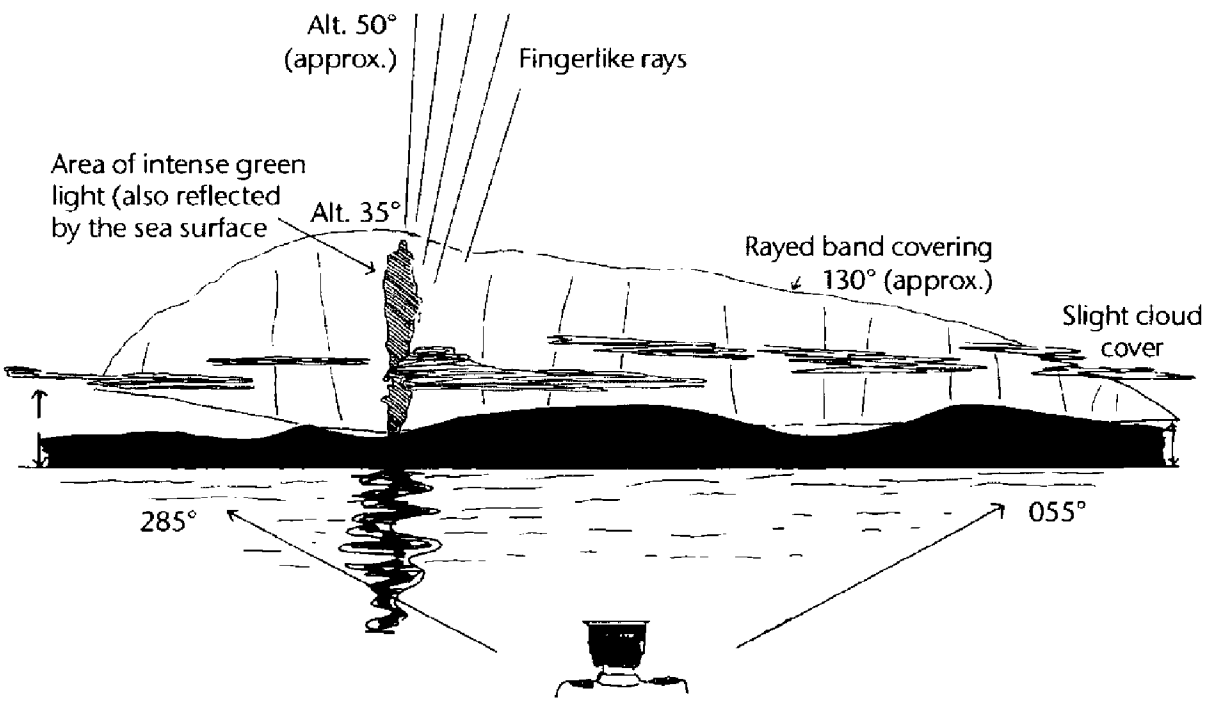
In brief: On 26 June 2000 a Sperm whale was sighted from the *Isomeria* by Chief Officer J. Harrison. The ship's position was 37° 25′ N, 33° 06′ W and the whale was about 1.5 miles away. The visible area of the whale extended from its head to its dorsal hump, and the length of this part was estimated to be about 5 m. The whale was dark-grey in colour and, upon diving, its flukes were raised vertically.

Aurora Borealis
North Atlantic Ocean
26/27 June 2000

- **m.v. *OOCL Belgium***
- **Montreal to Thamesport**
- **Captain D. Prichard**
- **Observers: A. Scarrott (3rd Officer), B. Keegan (2nd Officer) and members of ship's company**

Whilst outbound in the Gulf of St Lawrence, a green rayed band appeared at approximately 0300 UTC on the 27th within an arc of 130° along the horizon between bearings 285° and 055°.

Initially it was most striking on a bearing of 325°, this area consisting of an intense green patch bright enough to produce a reflection on the sea surface, as indicated in the sketch. Here the elevation of the rayed band and the bright area reached 30–35°, and there was also a group of finger-like rays continuing to an elevation of about 50°. Elsewhere, the elevation of the band was between 5° and 10° above the horizon.



After the initial display, the lights were observed to dim a little although they continued to be visible until 0700. At the time of the display, the cloud cover was 2–3 oktas and the visibility was 16–21 miles. The ship's position at 0300 was 49° 23.1′ N, 66° 38.8′ W.

Satellite
South China Sea
21 June 2000

- **m.v. *Ormond***
- **Ponta da Madeira to Pohang**
- **Captain P.A. Miley**
- **Observers: A. Banerjee (2nd Officer) and R.M. Fernandez (GP 1(D))**

Shortly after the watch hand-over a bright 'star' — brighter than Venus — was seen in the northern sky at 0420 UTC, bearing 005° and at an elevation of 5° above the horizon. Looking at it through binoculars it seemed absolutely stationary, and no flashing lights could be seen.

Slowly the object started to fade away until it vanished all together, the whole incident lasting about five minutes. The only explanation that could be found was that a satellite, twisting through space, had caught the sun's rays at just the right angle. The ship's position at the time was 13° 18′ N, 114° 39′ E.

Four nights later, on the 25th, the object shown in the sketch was seen at 1200 UTC moving across the sky from west to east. Third Officer A. Mehendale first saw it at an altitude of approximately 40° above the horizon, and it was moving from the port beam to the observer's zenith. On reaching an altitude of approximately 80° it disappeared.

Through binoculars it appeared to consist of a steady bluish-white light with white smoke-like contrails; it occurred during twilight after sunset, and seemed to be catching the last rays of the setting sun. It was moving relatively slowly, covering the above distance in approximately 10 minutes. The ship's position at the time was 25° 21.4′ N, 123° 48.2′ E.

Editor's note. The sketch reminded us of television images of rocket launches, particularly the part where one stage of the rocket launcher is about to be jettisoned. We checked a web site which gives details of launches from centres world wide to see if any were logged for that date. By coincidence, one was logged for 1150 UTC from the Xichang Satellite Launch Centre in China (28.2° N, 102° E), in which a meteorological satellite was put into orbit. From the information given in the above report, this launch may be a possible explanation of the sighting. [For web surfers, the site used was: www.orbireport.com]

A reminder to observers...

Check the listings on pages 95-96 to see if there is an unclaimed 'Excellent Award' in your name 1999.

UK Inshore Waters Forecast and NAVTEX update

Martin W. Stubbs

Following lengthy discussions between the Maritime and Coastguard Agency (MCA) and the Met Office a new, tailor-made, forecast for the inshore waters of the United Kingdom was inaugurated on 6 December 2000.

HM Coastguard requirements

When the MCA took over the commitment for providing Marine Safety Information from BT on 1 July 1999, HM Coastguard provided a formal broadcast schedule for promulgating warnings and forecasts to vessels via MF and VHF broadcasts. The broadcasts were to include the transmission of the main Shipping Forecast for those areas relevant to the particular Maritime Rescue Co-ordination Centre (MRCC), or the Maritime Rescue Sub-Centre (MRSC), making the broadcast. However, it became clear that the nine-area Inshore Waters Forecasts issued for broadcast by the BBC would not meet HM Coastguard requirements. As an interim measure, the texts on MetFAX (a commercial service provided by the Met Office) were utilised, but being rather detailed the individual coastguard offices had to précis the MetFAX text — a task that took time from their other duties.

Sixteen inshore areas

Following consultations between the MCA and the Met Office, a specification was agreed for a tailor-made Inshore Waters Forecast. This called for the number of discrete coastal areas to be increased from nine to 16 for a specific 12-hour forecast of wind, weather, visibility and sea state for each individual area, and a 24-hour outlook in the same detail for each area. Also specified was a short national three-day outlook for all the Inshore Waters of the UK. Unlike the groups of sea areas in the main Shipping Forecast, the Inshore Waters Forecast always contains a discrete forecast text for each of the 16 inshore waters areas.

The inshore areas are: Cape Wrath–Rattray Head, including Orkney; Rattray Head–Berwick-upon-Tweed; Berwick-upon-Tweed–Whitby; Whitby–The Wash; The Wash–North Foreland; North Foreland–Selsey Bill; Selsey Bill–Lyme Regis; Lyme Regis–Land's End including the Isles of Scilly; Land's End–St David's Head including the Bristol Channel; St David's Head–Colwyn Bay including St George's Channel; Colwyn Bay–Mull of Galloway including the Isle of Man; Lough Foyle–Carlingford Lough; Mull of Galloway–Mull of Kintyre including the Firth of Clyde and the North Channel; Mull of Kintyre–Ardnamurchan Point; Ardnamurchan Point–Cape Wrath including the Outer Hebrides; Shetland.

Overall, the new forecasts have been well received by HM Coastguard (who broadcast the information), and by the recipients. There have been some comments by users that the forecasts are less detailed than the extracts from the MetFAX texts. However, the forecasts are intended to provide safety information and can be copied easily when listening to the VHF or MF broadcast since the format of wind, weather, visibility and sea state is invariable. In its continuing policy of ensuring that marine safety information is available to all, the Met Office has placed the new Inshore Waters Forecast texts on its public web site. [1] [2]

[1] (http://www.metoffice.com/datafiles/inshore.html)

[2] [*Editor's note.* At the time of writing, owing to a technical difficulty, forecasts for waters around Shetland are not included in the web site text, but are broadcast by the relevant MRCC/MRSC and are included in the relevant NAVTEX broadcast.]

'Time and Place' forecast service

For those wishing to have more detail there are now many other services provided by the Met Office whichaugment the safety information, such as direct access to 'Time and Place' forecasts for areas as small as three square miles and for specific times (hourly if required). These new services are now available via SMS (text message) and WAP telephones and full details can be obtained from the Met Office or can be viewed on our web site.

Forecasts and warnings via NAVTEX

Revised and new arrangements for the provision of weather forecasts and warnings via NAVTEX have been implemented during the last few months. In particular, the new UK national service on 490 kHz (Table 1) now carries the text of the Inshore Waters Forecast twice a day together with any Strong Wind Warnings (Force 6 and above) for the inshore waters of the UK.

Table 1 — Inshore Waters Forecast via the UK NAVTEX service on 490 kHz

Station [ID]	Cullercoats [U]	Niton [I]	Portpatrick [C]
Time (UTC)	0720 and 1920	0520 and 1720	0820 and 2020

During the last few years there has been a steady increase in the number of messages broadcast by the three UK NAVTEX stations transmitting on 518 kHz. Since each transmission is limited to 10 minutes efforts have been made to ensure that the content of the messages is kept to a minimum. Accordingly, the Met Office was requested by the IMO NAVTEX Co-ordination Panel to look into ways of reducing the word count of each forecast bulletin. This was achieved by omitting all extraneous words in the headings — an action that did not reduce the meteorological information.

It was also agreed at a meeting between the Met Office and the MCA in July 2000 that the UK NAVTEX service need not carry weather forecasts and warnings for areas already adequately covered by the NAVTEX broadcasts provided by other European countries. It was also noted that, for historical reasons, there was rather a large overlap of sea areas included in the forecast texts broadcast by each of the UK stations. Thus, in March this year, a revision of the sea areas for which forecasts are available via the three UK stations was implemented (Figures 1, 2 and 3).

The two stations in the Republic of Ireland, Malin Head [Q] and Valentia [W], are now fully operational (Figures 4 and 5). Although not shown in the figures, the Irish Coastguard have also agreed to include the forecasts issued by the Met Office for the more western sea areas (previously included in the Niton and Portpatrick broadcasts) in their transmissions.

Since the MSI boundary for information to be disseminated by NAVTEX is now defined as at 20° W rather than at 15° W, the forecasts for the areas East Northern Section and East Central Section in METAREA 1 are also being disseminated courtesy The Irish Coastguard via Malin Head and Valentia.

It is noted that vessels crossing the North Sea will now have to program their receivers to copy Rogaland [L] as well as Cullercoats [G] if short-term forecasts for the sea areas in the eastern part of the North Sea (e.g. North Utsire, South Utsire, Fisher and German Bight) are required, since these areas are no longer included in the Cullercoats [G] broadcast.

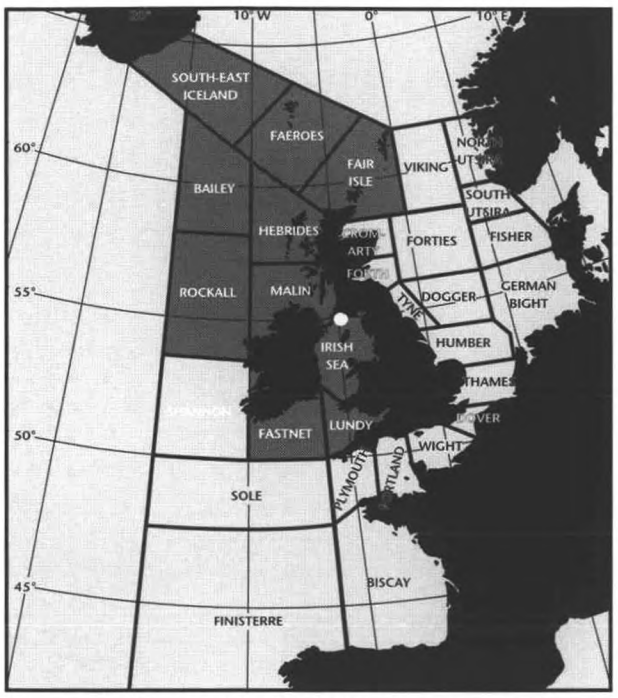


***Figure 1**: Portpatrick [O] NAVTEX coverage*

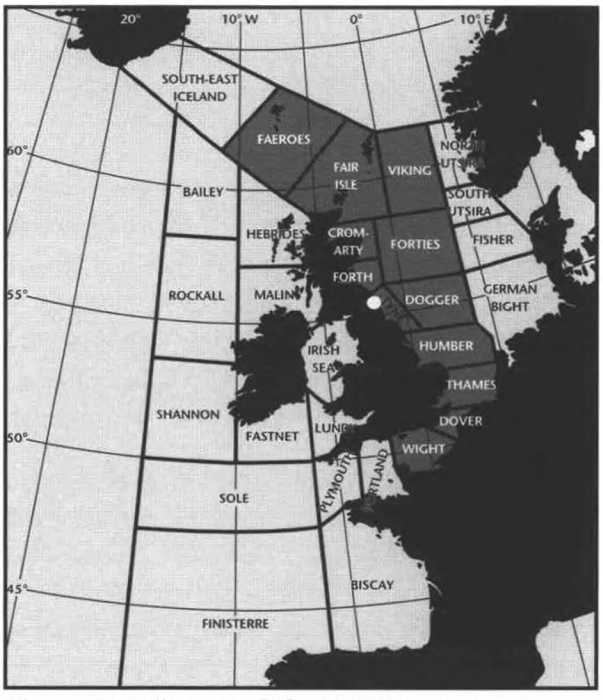


***Figure 2**: Cullercoats [G] NAVTEX coverage*

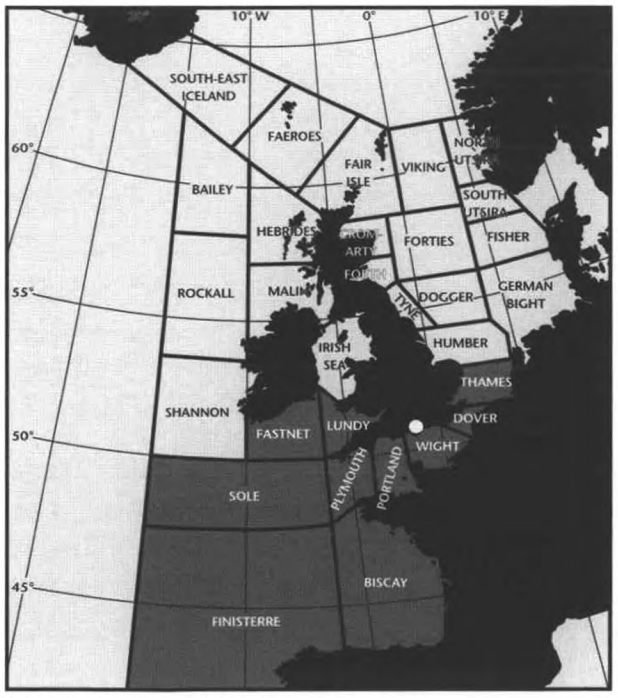


***Figure 3**: Niton [S] Navtex coverage*

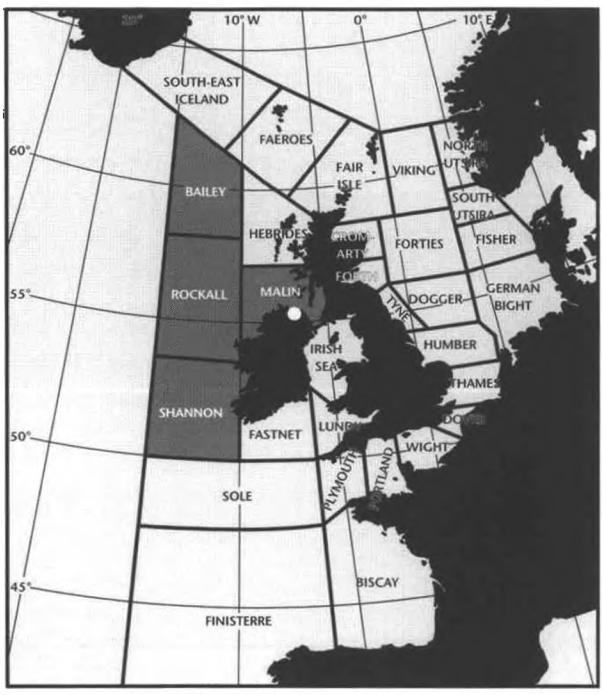


Figure 4: *Malin Head [Q] NAVTEX coverage*

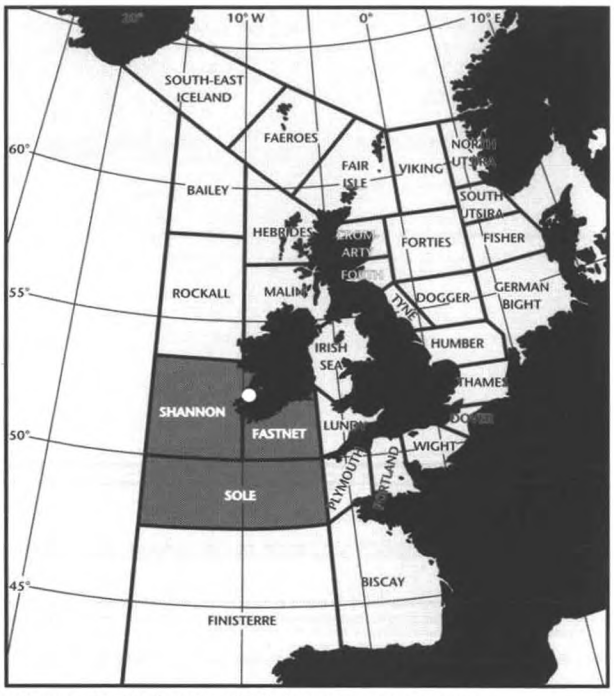


Figure 5: *Valentia [W] Navtex coverage*

Extended Outlook via NAVTEX

An Extended Outlook, highlighting meteorological hazards such as the expectation of gales and/or extensive sea fog, is now prepared by the Met Office and transmitted on the 518 kHz service, the text being relevant to the service area of each of the three UK NAVTEX transmitters. The full service from the three UK transmitters followed a trial during which the outlook for the English Channel, South-west Approaches and the Irish Sea was broadcast from the Niton transmitter. The target areas in the outlook broadcast by Cullercoats [G] at 0100 UTC include Fair Isle and all the North Sea areas including North Utsire, South Utsire, Fisher and German Bight and also Dover and Wight; that broadcast by Niton [S] at 2300 UTC includes Thames, Dover, Wight, Portland, Plymouth, Biscay, Sole, Lundy, Fastnet, Shannon and the Irish Sea, while the Portpatrick [O] broadcast at 0220 UTC includes all the western and north-western sea areas from Lundy and Fastnet in the south to Fair Isle, Faeroes and South-east Iceland in the north.

The VOS Climate Project

Introduction

Final preparations for the Voluntary Observing Ships (VOS) Climate Project are now being made and, subject to the resolution of a few outstanding matters, it is anticipated that initial recruitment of participating ships will commence shortly after the publication of this issue.

The following article is therefore intended to provide an overview of the objectives of the project, its present status, and how it is intended to operate.

Background

The project is a natural extension of the earlier Voluntary Special Observing Programme for the North Atlantic (VSOP-NA) [1] which demonstrated that the quality of observed measurements depends significantly upon the types of instruments used, their exposures, and the observing practices of shipboard personnel. It made a number of substantive recommendations in these areas aimed at providing ship observations of a quality appropriate to global climate studies.

Objectives

Whilst VOS observations continue to be an essential ingredient for numerical weather prediction, a growing need for higher quality data from the observing fleet has been identified. In particular, recent trends, such as the increasing availability of data from satellite sensors, and the increased concern with regard to climate analysis and prediction, are making further demands on the quality of ship observations.

The project therefore aims to provide a high-quality subset of marine meteorological data, available in both real time and in delayed mode, which can be used for:

- **Satellite ground truth verification**

  An important role for accurate VOS data is the detection of biases in remotely sensed satellite data due to instrument calibration changes or changing atmospheric transmission conditions. Ship and buoy observations can, for instance, be used to detect and correct biases in satellite data caused by varying atmospheric aerosol loading due to volcanic eruptions. Without such real time bias corrections, errors can occur in satellite derived data. Consequently, for satellite verification purposes, there is an established need for a dataset of accurate ship observations with known error characteristics.

- **Climate Change Studies**

  Data from observing ships are increasingly being used for climate change studies e.g. to quantify global changes of sea-surface and marine air temperature. However, the detection of climate trends is only practicable if, as far as is possible, observational biases owing to the changing methods of observation are corrected. Sea temperature data, for example, have different bias errors depending on whether temperatures were obtained using wooden, rubber or canvas buckets, or using engine room intake thermometers. It is therefore important to clearly document the observing practices that are being used on board ships.

[1] See *The Marine Observer*, January 1992, 24

■ **Climate Research and Climate Prediction**

Increasingly, coupled numerical models of the atmosphere and ocean are being used for climate research and climate change prediction. The simulated air-sea fluxes of heat, water and momentum must therefore be shown to be realistic if there is to be confidence in model predictions. Accordingly, model predictions of near surface meteorological variables (air temperature, humidity, sea-surface temperature (SST), etc.) need to be verified against high-quality *in situ* observations from buoys and specially selected voluntary observing ships.

In addition to the above, the project will provide a reference data set which can be used to assess the quality of data received from the rest of the voluntary observing fleet.

Ship selection and recruitment

Ship recruitment is a critical component of the project and it is hoped that the ships selected will provide more or less global coverage in both space and time. To this end, ships which make frequent and regular ocean crossings as well as ships sailing in the southern ocean, Antarctic supply vessels and research ships, have been identified as potential recruits. Where feasible it has also been decided that ships engaged in the Ship of Opportunity Programme, and the Automated Shipboard Aerological Programme should be recruited.

A relatively small target of ~200 ships has been set for recruitment to the project and provisional lists of participating ships have been prepared by Australia, Canada, France, Germany, India, Japan, Poland, UK and USA. Several other countries are also potential project participants and it is anticipated that the target number of ships should be achieved.

The UK is aiming to recruit approximately 30 observing ships to the project with emphasis being given to those ships which routinely return to the UK, have a good observing record, and are preferably fitted with hull sensors and the Royal Netherlands Meteorological Institute's TurboWin software. The selected vessels will be drawn from those operating both on world-wide and near continental voyages, and will include some research vessels providing observations in data sparse areas. Figure 1 shows the extent of coverage expected from UK voluntary observing ships, whilst Figure 2 indicates the projected global coverage.

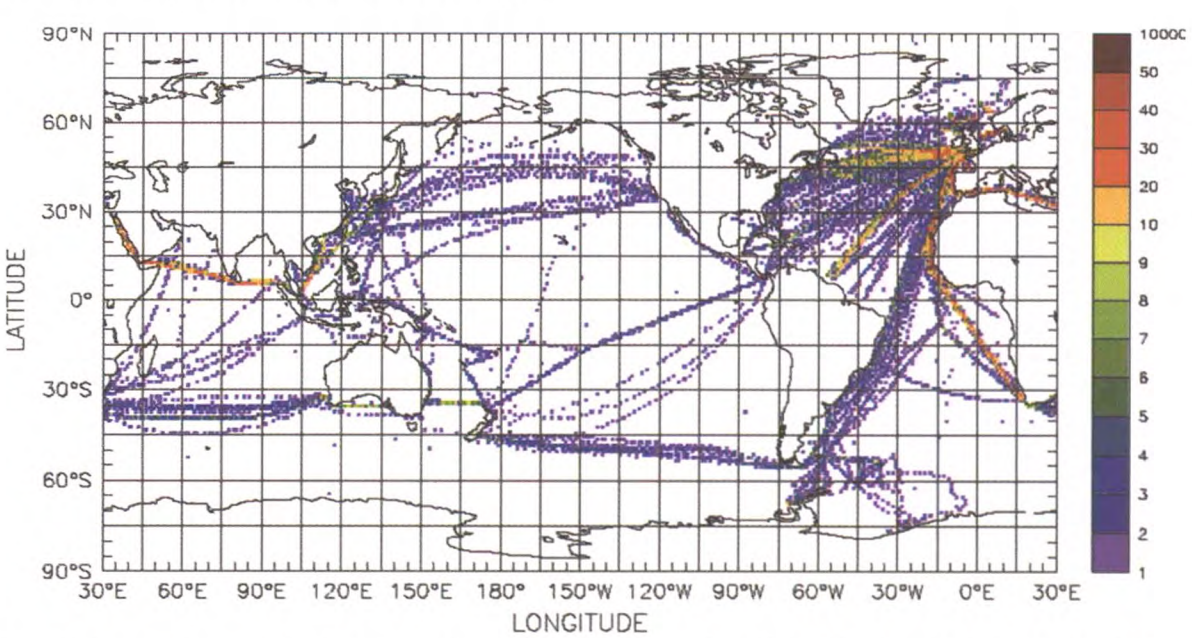


***Figure 1**: Extent of coverage anticipated from UK voluntary observing ships participating in the VOS Climate Project. (Courtesy of Southampton Oceanography Centre.)*

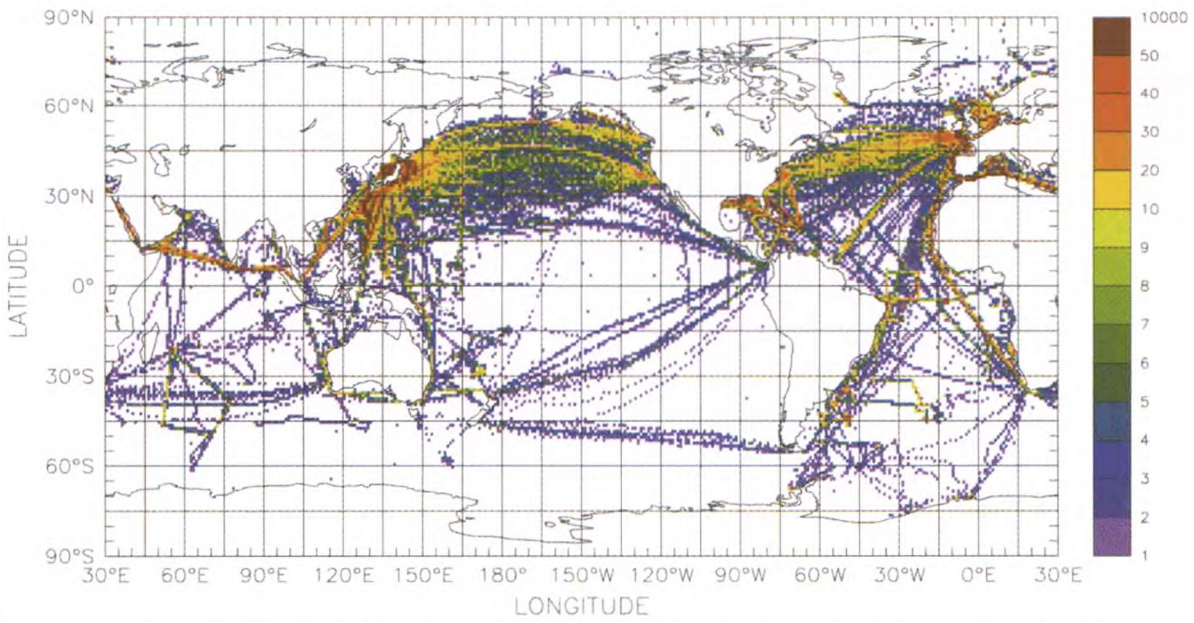


Figure 2: *Projected global coverage of ships taking part in the VOS Climate Project [drawn from raw reports from the Global Telecommunication System (GTS) using data from November 1999 to October 2000), downloaded from http://www.cdc.noaa.gov/coads/ncep_obs/]*

These preliminary maps showing the potential route coverage of the proposed project ships have been prepared by Southampton Oceanography Centre, who have been actively involved in setting up the project. Such maps will assist in planning national recruitment and will also allow the selective targeting of obvious data sparse areas as recruitment proceeds.

Data Assembly Centre

Data collected during the project will undergo quality control (QC) and be archived by a Data Assembly Centre (DAC). The National Climatic Data Center, NOAA, USA, has agreed to perform this role which requires them to merge the real time observation reports with the delayed mode reports, eliminate any duplicates and compile a complete project data set which will be available to users.

The DAC will also create and maintain a relational database so that the information on instrument types, exposure and observing practice can be automatically associated with each observation. The database will also be freely accessible to registered users.

Real Time Monitoring Centre

The project will require real time monitoring of the observational data, and comparison with model fields. To this end, the Met Office (which already undertakes such monitoring of ship observations on a routine basis) has agreed to act as Real Time Monitoring Centre (RTMC) for the project.

Priority will be given to the following six parameters: wind direction and speed, sea level pressure, sea-surface temperature, air temperature and humidity. The Met Office will monitor these variables for all project ships and forward the resultant statistics to the DAC for inclusion on a dedicated project web site.

Statistics on the 'fit' of the observed variables to the numerical weather prediction Global Model's background forecasts will be used to produce lists of 'suspect' ships, i.e. ships will be flagged as suspect if the mean and standard deviations of their observation-minus-background (o-b) values meet certain agreed criteria. Lists of

flagged ships will be forwarded by the RTMC to the DAC each month, and to participating countries on a weekly and monthly basis. As ships' call signs are subject to change when there are changes in registry it will be necessary for the RTMC to regularly check call signs to ensure the correct ships are being monitored.

Any project ships identified as having submitted suspect observations will be followed up by the Port Met. Officer networks as quickly as possible, and the results of any corrective action taken thereafter notified to the DAC.

In addition to the monitoring function, the RTMC will also extract the six observed variables for each project ship received in real time from the Global Telecommunication System (GTS) and associate them with the co-located model field values. The resultant data sets will then be transferred on a regular basis to the Data Assembly Centre.

Instruments

Although relevant, the quality of ships observing instruments has, however, less effect upon the quality of data than their use and exposure. It will therefore be essential for the project to ensure that observing instruments, their physical exposure and the associated observing practices conform to high standards and that up-to-date instrument records are maintained and catalogued.

Ideally, it is recommended that ships taking part in the project should have the following instrumentation and facilities:

- Accurate and well-exposed thermometers with precision to 0.1 °C;
- Sea surface temperature measuring instruments from hull contact sensors;
- Permanently-mounted, well-exposed anemometers to 0.1 m s^{-1} precision;
- Precision marine barometers to 0.1 hPa precision, preferably connected to a static head;
- Electronic logbook facility, to include true wind computation, QC checks and updated encoding in the revised code forms, required by the project.

It is recognised, however, that common instrumentation is unlikely to be achieved; for instance, UK observing ships traditionally estimate the wind speed and direction from the sea state and are not provided with calibrated anemometers.

Regular checks upon the serviceability and calibration of instruments by Port Met. Officers will be essential to the project, e.g. calibration of temperature sensors can be performed using a water bath, and it is possible to calibrate some types of wind speed sensor by mechanically rotating the propeller.

Inter-comparison of instruments is a difficult and time-consuming task; it is possible to compare typical samples of each type or source of manufacture, but often variations between members of the same type are greater than between different instruments. This problem will therefore be addressed by inter-comparison of the observations of the VOS climate subset with large-scale model fields, or with neighbouring ships at sea.

At a later stage in the project development, it is expected that consideration will be given to enhancing or upgrading participating ship instrumentation as necessary, in line with VSOP–NA recommendations.

Metadata

To achieve the accuracy required by the project it will be essential to have comprehensive information about the type and location of meteorological instruments. This will include information of the date of any changes to instruments, and details of their exposures supported by digital imagery. Details of such 'metadata' will be stored in a master index of ships which will be developed as a supplement to, but separate from the main WMO ship catalogue (*International List of Voluntary Observing Ships WMO–No. 47.*) The catalogue will be continuously updated and made available through the Data Assembly Centre. It will contain details of the instrument locations for each ship in an agreed format together with details of the results of inspections performed by Port Met. Officers.

Port Met. Officer involvement

The involvement of the Port Met. Officer networks of participating countries will be essential for the project's success as close liaison with ships' masters, observing officers and ship owners will be needed.

PMOs will, in the first instance, visit individual ships to explain the project to observers and to assess their likely commitment to the project. They will also record details of the exposure of the observing instruments noting any permanent structural features which might affect the observation, e.g. water outfalls, airflow obstructions, air-conditioning vents, etc., and the relevant ship specifications. In addition to detailed written descriptions, the location of instruments will be marked on simple arrangement drawings, and supported by photographs in digital format.

Final selection of ships will take note of existing instrumentation and exposure, past performance and the general impression gained by the Port Met. Officers. Difficulties may arise where a ship is well equipped for one parameter but not another, e.g. no anemometer, but mounting a hull sensor for sea-surface temperature. The value of the ship's contribution will be assessed in terms of the importance of the parameters which are acceptable.

The information obtained by PMOs for selected ships will be forwarded to the Data Assembly Centre for compilation of the metadata catalogue. PMOs will also explain the use of new coding requirements and new logbooks (electronic or hard copy) being developed for the project. Later visits will be needed to check that instrument exposure has not changed and to discuss any problems with observers. These observer 'contact' visits will be extremely important in maintaining the interest of the observers and the impetus of the project.

Ship survey and inspection forms

Special ship recruitment and inspection report forms are being designed for the project, and will be made available in French, Russian and Spanish versions. The forms, together with associated instructions, will be downloadable from the new project web site and will be suitable for use in both hard copy and electronic format.

The initial ship survey report form will be completed by Port Met. Officers immediately following recruitment to the project. Follow-up ship inspection visits will be made by each recruiting country's PMOs when project ships are visiting their home ports, as far as possible on a quarterly basis (the current UK practice). Some ships not on regular trades may also need to be inspected by other participating (i.e. non-recruiting) countries, and care will be needed to ensure there is no duplication of inspections. The completed inspection reports will be submitted to the DAC by e-mail in order to establish a complete metadata and inspection history for each ship.

Observation codes

To ensure that the project provides timely and complete information, and that no reports from participating ships are lost, data will be submitted in both real time and delayed mode. Although real time observations will continue to be transmitted in the Ships' International Meteorological Code (FM13–XI), the delayed mode observations will be augmented by additional code groups. These extra codes are essential to the success of the project, and comprise details specific to each ship, as follows:

Ship parameters		
Code 1	**ss**	Instantaneous ship's speed in knots at time of observation
Code 2	**DD**	Ship's heading in tens of degrees true
Code 3	**LL**	Maximum height in metres of deck cargo above summer maximum load line
Code 4	**hh**	Departure of summer maximum load line from actual sea level (m)
Wind		
Code 5	**ff**	Relative speed in knots or m s^{-1} (in conformity with wind code indicator)
Code 6	**DD**	Relative wind direction in tens of degrees (00 to 36) off the bow.

Originally, the intention had been to require these additional code groups in both real time and delayed mode. However, proposals to modify the ship code were not supported by WMO because of their long-term ambition to phase out the use of such alphanumeric codes in favour of new table-driven codes (e.g. BUFR[2] and CREX[3] codes).

Recognising that it would be impractical to retrain observers to use complex new code forms in time for the start of the project, it was therefore decided that the additional code groups were not absolutely essential in real time, provided that the expected delay in the non-real time data delivery did not exceed 6–12 months.

To enable the international exchange of the extended observation reports in delayed mode, a revised version of the International Maritime Meteorological Tape Code (IMMT) has also been developed for the project.

Paper and electronic logbooks

Observations will be recorded for delayed mode submission using either hard copy or electronic logbooks. In order to collect and process the additional delayed mode observation data in hard copy format it will be necessary to either implement new logbooks (or logsheets), or to modify existing ones. Similarly, new versions of electronic logbook software programs (e.g. TurboWin, SEAS 2000 etc.) are being developed to incorporate the additional delayed mode data. The logbooks (or logsheets) will need to be collected on a regular basis by Port Met. Officers, who will also download the electronic log files.

The use of software programs, such as TurboWin, will greatly simplify the collection of delayed mode data required by the project as they will electronically record the observations in the revised IMMT format at source. This avoids the need for observations to be manually digitised following receipt at participating national meteorological services, which is presently the case for paper logbooks. For that reason it is hoped to

[2] Binary Universal Form for the Representation of meteorological data (FM94–XI Ext. BUFR)
[3] Character form for the Representation and EXchange of data (FM95–XI Ext. CREX)

equip the majority of UK ships participating in the project with such software, either loaded into dedicated 'notebook' computers or, if acceptable, loaded into one of the ships'computers.

Data Transmission

Observational and instrumentation data submitted by project ships will be subjected to various procedures, and relayed via a number of centres, before it eventually reaches the Data Assembly Center. A simplified flow diagram showing the data will be routed is given in Figure 3 below.

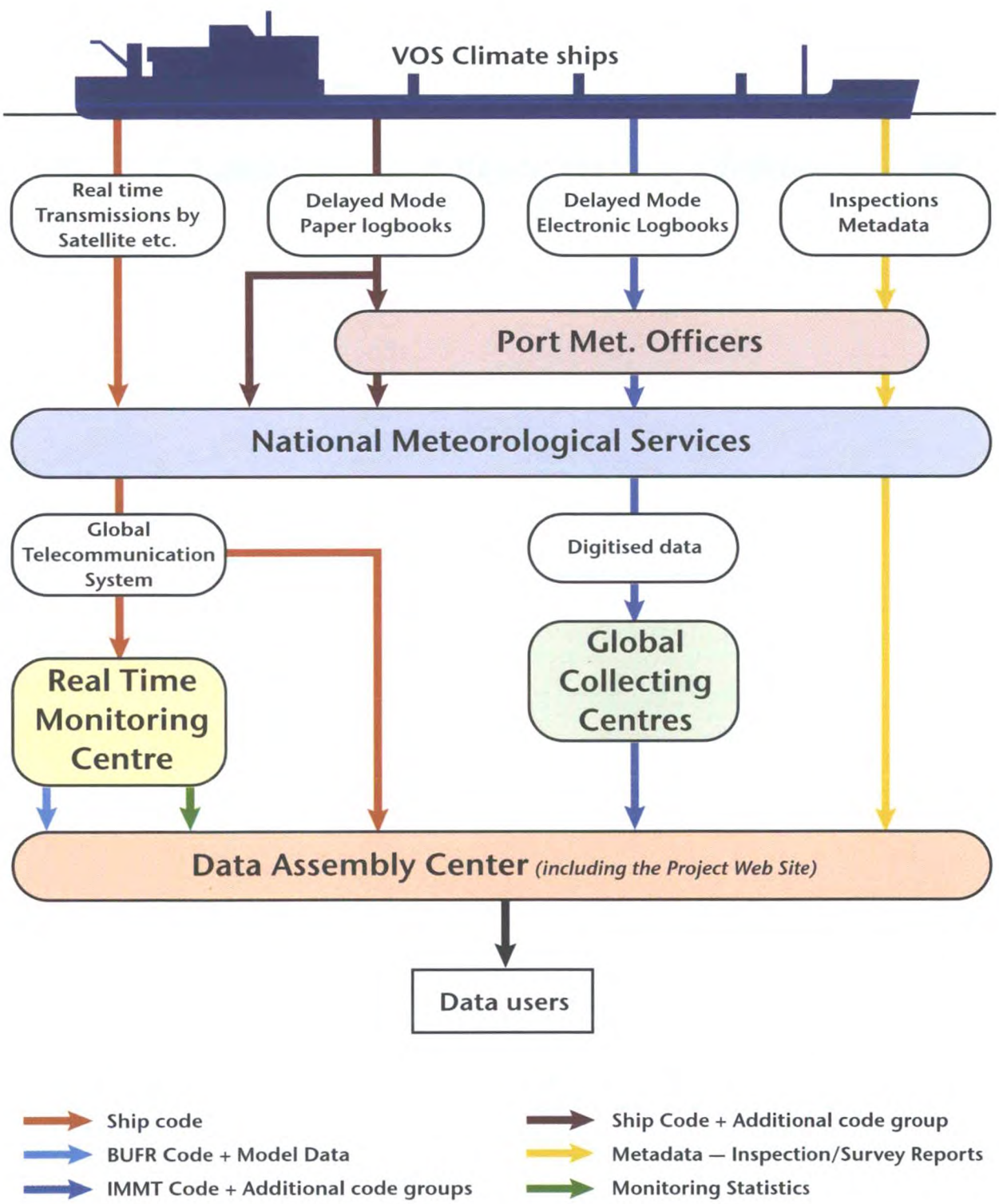


Figure 3: Simplified flow diagram showing the routeing of data for the VOS Climate Project.

Minimum QC procedures will be applied to the digitised observations in the revised IMMT format, by the national meteorological services participating in the project.. The digital data sets will then be forwarded to the two Global Collecting Centres (GCCs) for the WMO Marine Climatological Summaries Scheme (located in Hamburg in Germany and in Bracknell in the UK). The GCCs will thereafter apply their normal QC and related procedures, and forward the data to the Data Assembly Centre in IMMT format (using an appropriate medium, or via the Internet) with a minimum delay.

The Met Office, in its capacity as the RTMC, will also transfer datasets of the real time reports and associated model field values to the Data Assembly Centre. As this data will be transmitted in BUFR code (which is now regarded as the preferred standard for the international distribution of weather data) decoding software will be needed in order that the DAC can merge the received real time and delayed mode reports and compile a complete project data set.

Project promotion literature and logo

Draft literature to promote the project and an associated logo for the project have been developed. The logo will in due course appear on a plaque which will be presented to participating ships.

The promotional literature will include a small explanatory brochure which will be made available to participating shipping companies and officers, and will be available in multi-lingual format. As the project unfolds, observers will inevitably have questions about why the additional observations are needed and about how they will be used. The brochure will therefore address these points, and extracts are reproduced on pages 84 and 85.

Project Web Site

The primary means of information exchange for the project will be via a dedicated web site which will be both developed and maintained by the DAC, with contributions to be made by both participants and users. Information to be made available through the web site will include:

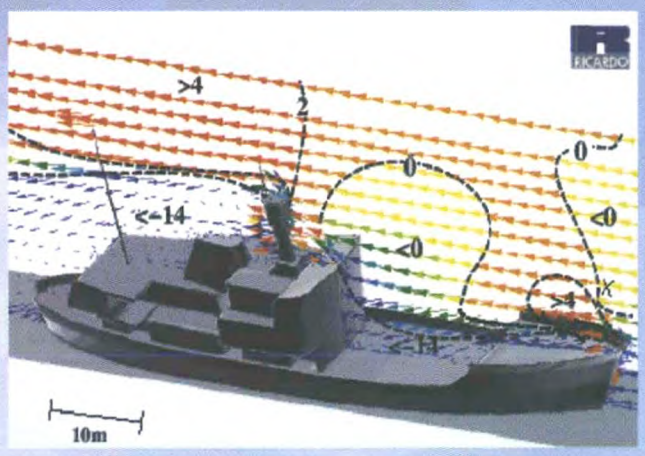
- metadata catalogue of participating ships;
- regular project update reports;
- monitoring and data application results;
- project newsletter for participating ships;
- data catalogues;
- links to other relevant web sites;
- project focal points and other relevant contact details;
- the project document and other publications;
- any other information relevant to the project.

Access to the ship metadata catalogue will be via the ship name, call sign or IMO number, which will then allow selection of any required subsets of ships' instruments, etc. This catalogue will also allow access to ship status reports, with links to the observational data and monitoring reports.

The project data (observations, metadata, real time monitoring data and the additional observational data) will also have a direct access through the web site for ftp download. Similarly, ship survey and inspection forms (including instructions for their completion) will be available from the web site for download. Some password protection to guard against abuse and to safeguard potentially sensitive information is anticipated.

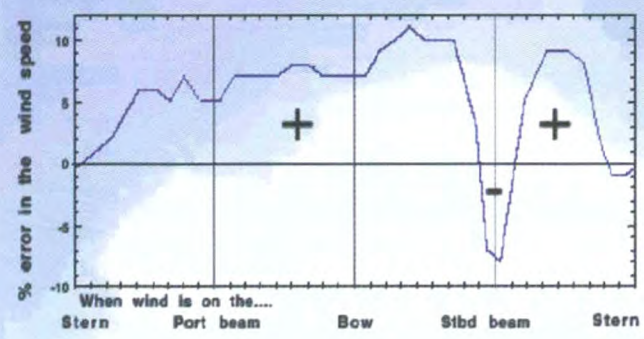
Extracts from the VOS Climate Project promotional information

Q "Why do you want to know the dimensions of the ship and the position of the anemometer?"



A The ship disturbs the airflow - the anemometer will not measure the true value that the wind would have if the ship were not there.

Using computer models we can calculate the flow around ships and find out how big this error is.

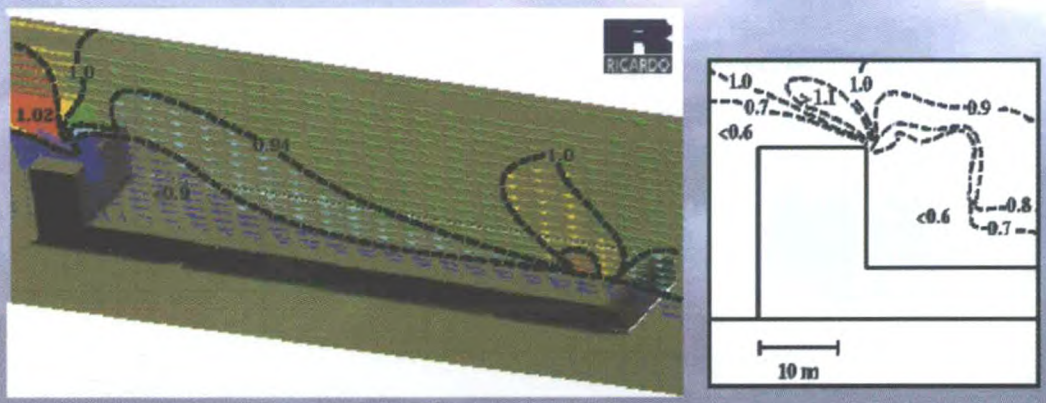


....or we can place a model of the ship in a wind tunnel and measure the error for different wind directions.

This plot is for an anemometer on the port yardarm of the main mast of the ship in the computer model.

The winds are speeded up over the wheelhouse except when the wind is from astern (or from the starboard beam when the anemometer is in the wake of the mast).

The example above is a Research Ship which has been used for special experiments. We can't hope to study each VOS-Clim ship in great detail but if we know the main dimensions of the ship we can use simple models, like the "tanker" below, to estimate how much the wind speed is likely to change for a typical anemometer position on a merchant ship.



This is the airflow over a very simplified model of a tanker or bulk ore carrier. The left plot was generated from a computer model. The detail (right) shows the dimensions of the plume of speeded up air which occurs over the wheelhouse. The shape of this plume depends on the distance between the main deck and the wheelhouse-top... one of the dimensions that you are being asked to specify.

[Courtesy Robin Pascal, Southampton Oceanography Centre]

Extracts from the VOS Climate Project promotional information (contd)

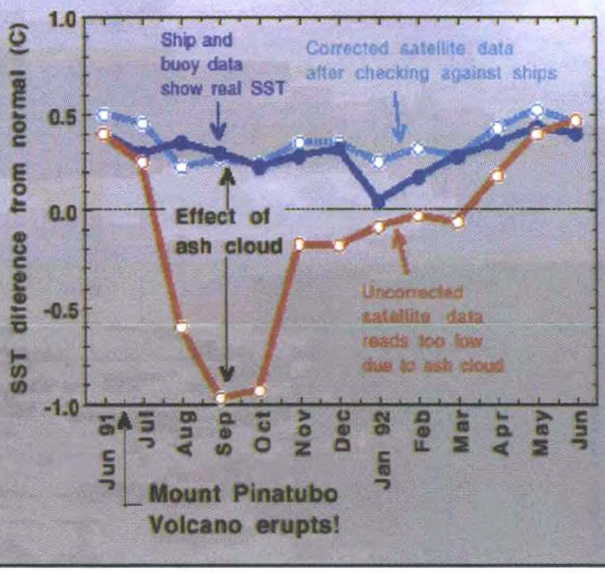
Q "But what about satellites - nowadays don't they tell you everything you need to know?

A NO!

..for example, for about 20 years satellite data have been used to determine the SST over the globe... but when the Mount Pinatubo volcano erupted in June 1991 large quantities of ash were thrown high into the atmosphere...

..this ash cloud circled the tropics and caused the satellite sensors to report that the tropical SST was suddenly about 1°C **colder** than usual but the ships and buoys showed that really the SST was about 0.5°C **warmer** than usual! The graph below shows that it took a whole year for the satellite readings to return to the correct value. So satellite data is always checked against ship & drifting buoy data and corrected as necessary before it is used.

There are other problems with satellite data - satellites may not measure storm force winds correctly, some instruments can not see through clouds or do not provide values close to the sea surface. Despite all the advances in space technology we still need good data from merchant ships!



[Courtesy: European Space Agency (top); Rick Hoblitt, USGS/Cascades Volcano Observatory (centre); after Reynolds & Smith (1994) (bottom).

Project newsletter

A project newsletter is also considered to be an essential component of the project providing a means of informing and communicating with participating ships as well as among meteorological services, data centres, users and other participants. It is hoped that it will help to maintain interest and enthusiasm among observers, regularly informing them of the status of the project in general, and of their own specific contributions.

The newsletter will contain information, reports and statistics on participating ships together with information drawn from all participants, including the Port Met. Officers, participating ship operators, the RTMC, the DAC and the ships' crews themselves whenever possible. It will be issued biannually and edited by the WMO Secretariat. It will be made available on the project web site in a suitable format to allow downloading by participating operators for printing and distribution to ships.

The future benefits

The potential benefits of the project are clear. For the shipping industry, it will encourage the development of new marine meteorological systems which will result in improved marine weather forecasts and real time weather information for operational purposes. Moreover, the improved quality of ship observational data will help us to better understand the large-scale weather changes associated with climate change.

The success of this ambitious project will therefore depend upon the close involvement and co-operation of the national meteorological services, the Port Met. Officer networks and, of course, the ships' voluntary observers. It will require careful management if it is to achieve the aim of developing into a long-term, operational programme.

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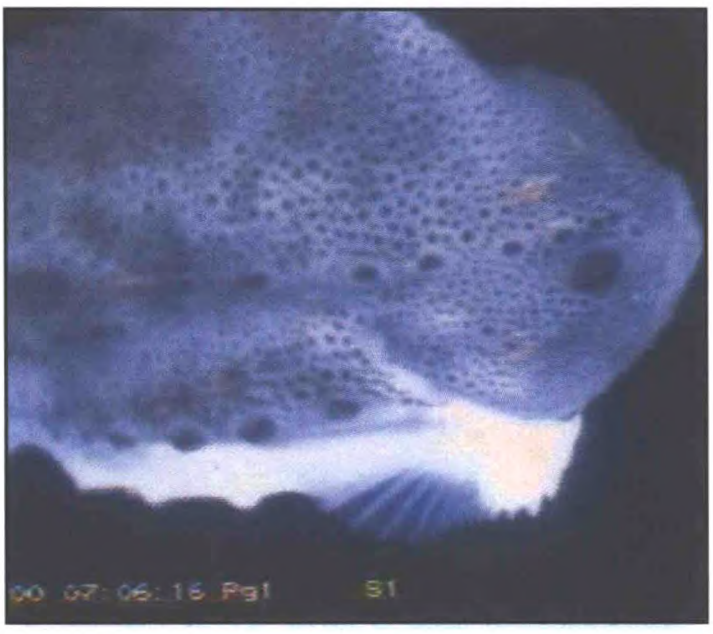
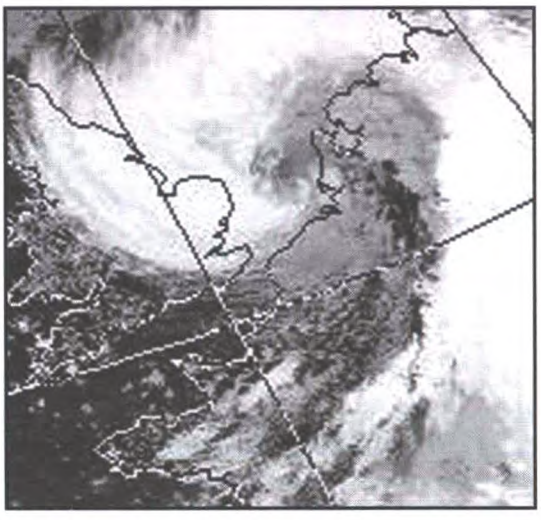
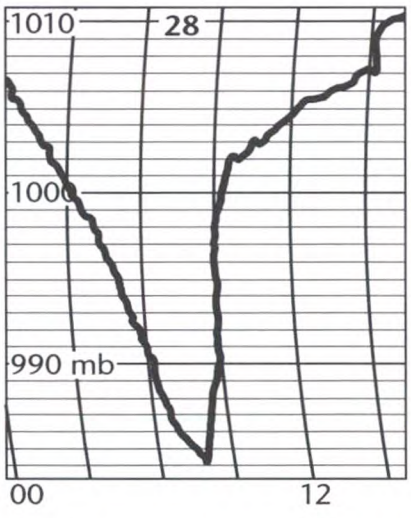
Scene at sea



Left: This fish was filmed by the ROV on the *Glomar Arctic III* in November 2000, at 59° 25′ N, 01° 40′ E at a depth of 117 m.

Dr Frank Evans, of the Dove Marine Laboratory, Cullercoats, subsequently identified the fish as a Lumpsucker (*Cyclopterus lumpus*) which occurs from the shore to a depth of 300 m, feeding on small crustaceans, worms and fishes. It migrates inshore to spawn and, once dyed black, the brightly-coloured eggs (often pink or blue) are canned and sold as 'lumpfish caviar'. The fish itself measures 25–30 cm long as an adult, it has a sucker on its ventral surface, and it is the male that takes on guardianship of the eggs.





Far left:

The curled cloud formation of a deep depression that affected the UK on 28 May 2000. This image is for 0855 UTC.

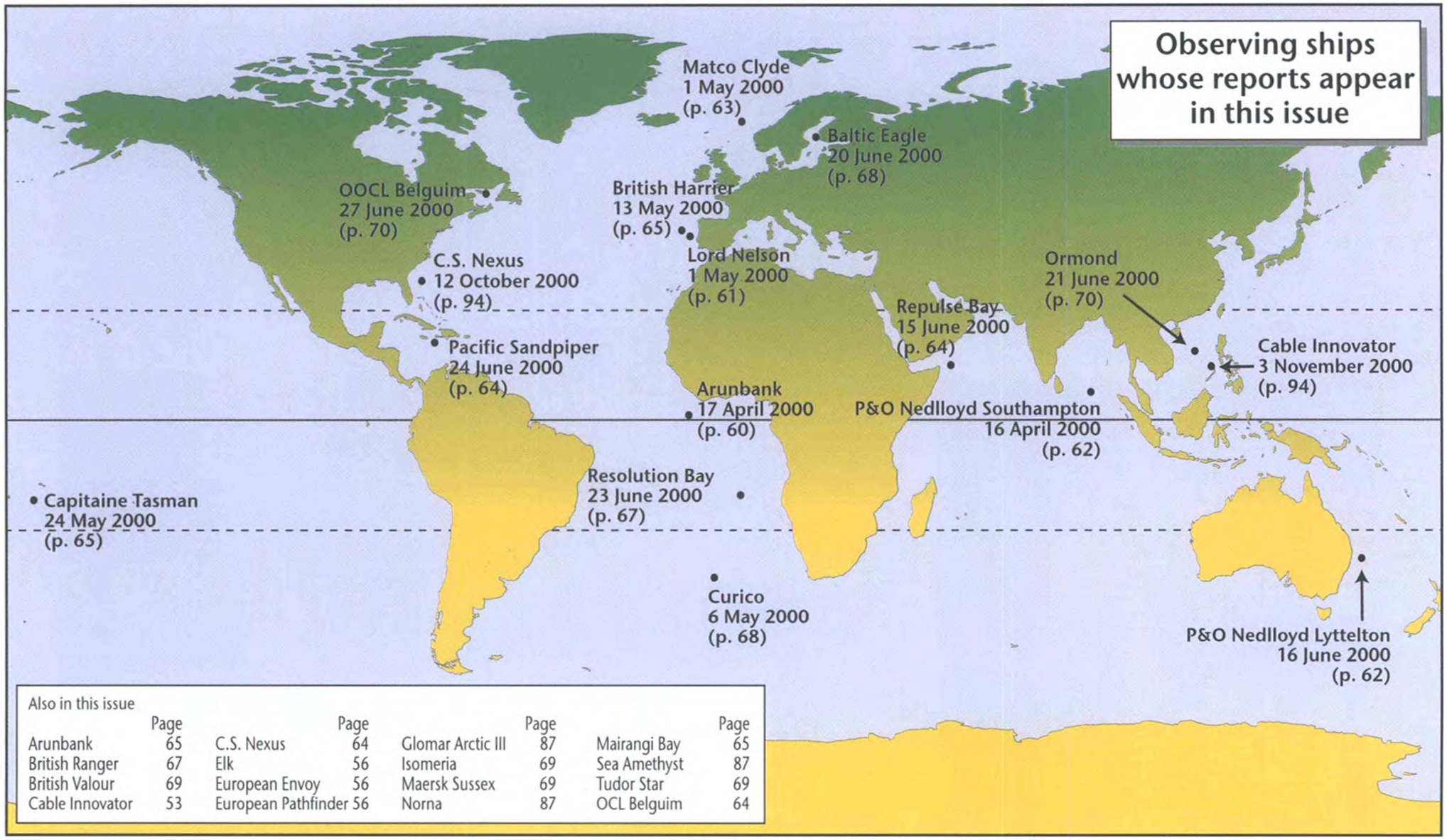
Left:

The barograph trace for 28 May 2000 from the *Sea Amethyst* showing pressure changes experienced in the Strait of Dover. The minimum pressure was registered at 0808 UTC when the vessel was passing the South Falls Buoy. There were gales and heavy rain (described "monsoonal" by those on board). [Satellite image courtesy of Dundee Satellite Receiving Station, Dundee University, Scotland: www.sat.dundee.ac.uk/]

M.C.J. Jewell

Left:

A Curlew strides out along the deck of the *f.p.v. Norna* on 24 April 2000 at 1320 UTC. The ship's position at the time was 59° 47′ N, 07° 06′ W.



Also in this issue

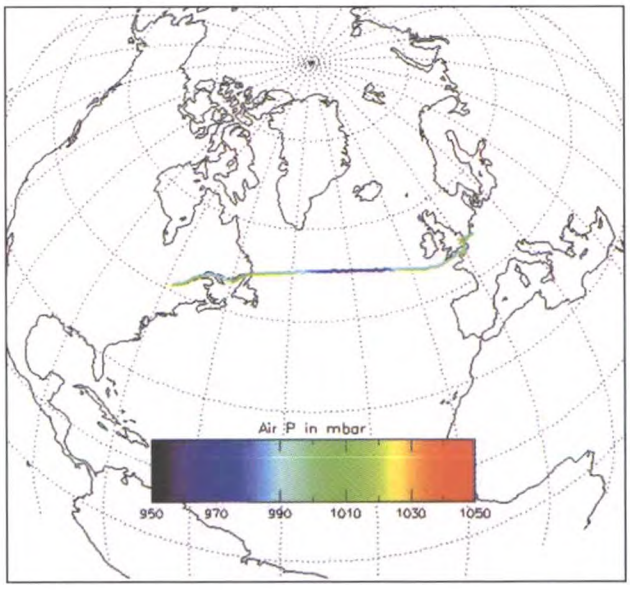
'Automet' — pressure and temperature sensor unit

Over the North Atlantic Ocean there is an addition to the thousands of weather messages that stream in silence from ships of the UK Voluntary Observing Fleet. Like many others this one is transmitted via Inmarsat-C, but in this case the information is sent automatically and contains only atmospheric pressure and air temperature data. The source of this transmission is a strange cylindrical object bolted to the rails on the monkey island of the *OOCL Belgium*.

Figure 1: *First transect of the Automet on board the OOCL Belgium crossing the North Atlantic Ocean. The chart shows the variation in air pressure between 27 November 2000 (UK) and 8 December 2000 (Canada).*

It is an automatic weather station that the Met Office has recently installed on the ship, and the performance of the system will be monitored as it is carried back and forth across the North Atlantic between Europe and the US eastern seaboard. The unit (known as 'Automet', shown left) is self-contained and operates independently of its host ship (although powered by it). It can be programmed to record and transmit temperature and corrected pressure data as required. The weather station is so independent of its host that it even has its own call sign, and the data it transmits is also sent in the FM13-XI ship code as with observations made by *OOCL Belgium's* own observing officers.

The unit is 75 cm high, has a maximum diameter of 30 cm, and weighs in at 20 kg. Inside the casing are housed the high-precision pressure and temperature sensors, real-time clock (GPS corrected), Inmarsat-C transceiver and GPS, plus backup batteries. Figure 1 shows the results for air pressure data from the first crossing of the North Atlantic by the OOCL Belgium. Because Automet has GPS facilities it can also be programmed to cease or commence observations according to location. Therefore in areas where the host vessel is not in an ocean location (such as the St Lawrence Seaway or the major canals) the observations can be discontinued; similarly, in areas away from recognised commercial shipping lanes (so called 'data-sparse' areas) Automet can be programmed to operate at hourly intervals. This 'switch-off' facility will also be of use in areas already well covered by full surface observations.



Conceived in 1997 by the Norwegian national weather service, Automet was tested on the Norwegian ocean weather station 'M' (66° N, 02° E) in 1998. In those trials, the data from Automet agreed with the weathership's manual observations to within +/- 0.1°.

Among Automet's advantages are its independence (it needs to be serviced only at intervals of one to two years), it can be easily tested by the user, and its compact nature means that it can be quickly installed or replaced. Certainly, hourly data from automatic units such as this could be of great benefit to the quality of marine weather forecasts, but it remains to be seen whether or not Automet has a future with the UK VOF.

Satellite observations of a coccolithophore bloom in the English Channel*

Steve Groom
(Centre for Coastal and Marine Sciences, Plymouth Marine Laboratory)

During the summer of 1999 the West Country was the scene of two spectacular natural phenomena: the total eclipse of the sun on 11 August, and a highly reflecting bloom of algae in July that could be seen from the coast of Devon and Cornwall and was visible from satellite-based sensors. The strange appearance of the bloom, which looked like turquoise milk, generated a lot of interest from the public and the story was taken up by local and national television, radio and the press — the bloom being dubbed a 'maritime Milky Way' or 'vegetable soup'!

Reflecting scales

The bloom comprised coccolithophores, a type of phytoplankton or algae that float in the surface sunlit layer of the seas and oceans, characterised by external scales made of calcium carbonate (Holligan et al., 1983). The bloom seen off south-west England was caused by a species called *Emiliania huxleyi* (Figure 1), that has previously been observed to form large blooms up to 300,000 km^2 in extent (Holligan *et al*, 1993). Its geographic range spans the northern sub-arctic to the Southern Ocean (Brown and Yoder, 1994).

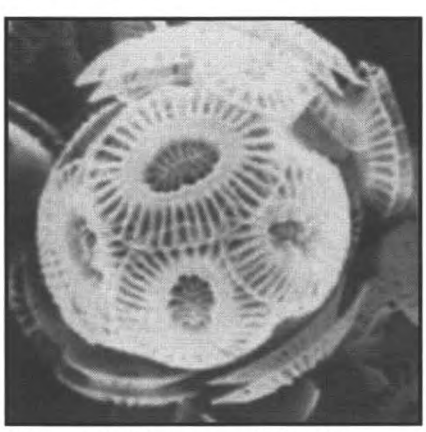


Figure 1: The coccoliths from *E. huxleyi* reflect sunlight and turn the seas milky. Scanning electron-microscope image of a coccolithophore (diameter ~6 micrometres).

E. huxleyi blooms are conspicuous from satellites, since their external scales (also called coccoliths) become detached and by virtue of the high concentrations (up to 800,000 per millilitre) and small size (~2 millionths of a metre in diameter), they are very effective at scattering sunlight out of the surface waters, giving the typical milky appearance.

Coccolithophores are of interest both scientifically and for more practical reasons. During the bloom, the Plymouth Marine Laboratory (PML) received a number of enquiries from fishermen and local residents concerned that the phenomenon may be related to pollution, or could be a bloom of harmful algae.

From a scientific perspective, coccolithophores are interesting for a number of reasons. Firstly, blooms have been linked to a potential climate feedback — coccolithophores make the precursor of a chemical that causes cloud droplets to form (Charlson *et al.* 1987). An increase in coccolithophores could lead to an increase in these cloud condensation nuclei, producing clouds that reflect more sunlight from the Earth, and hence produce cooler temperatures. By coincidence, PML co-ordinated a month-long cruise on the NERC[1] ship R.R.S. *Discovery* in June–July 1999 to investigate the biogeochemical properties of coccolithophore blooms in the North Sea. Secondly, the high reflectance in coccolithophore blooms can affect the measurement of chlorophyll concentration in sea water from satellite colour sensors.

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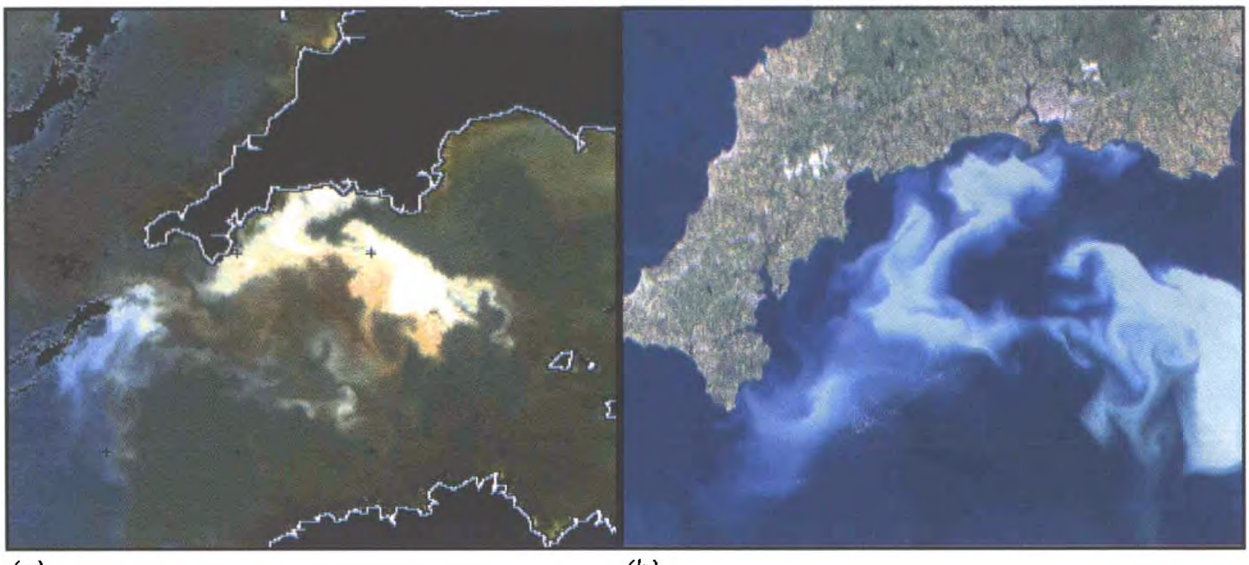
* An updated version of the article 'A maritime Miky Way' which appeared in *NERC News — Quarterly magazine of the Natural Environment Research Council* (Summer 2000, 10–11).

[1] Natural Environment Research Council

This is important because the concentration of chlorophyll is the most commonly used estimate of algal biomass, which can be used to define the biological productivity of a given area of sea. Finally, scientists are interested in the influence of a coccolithophore bloom and the resulting high density of coccoliths upon the physical structure of the water column and the functioning of the ecosystem.

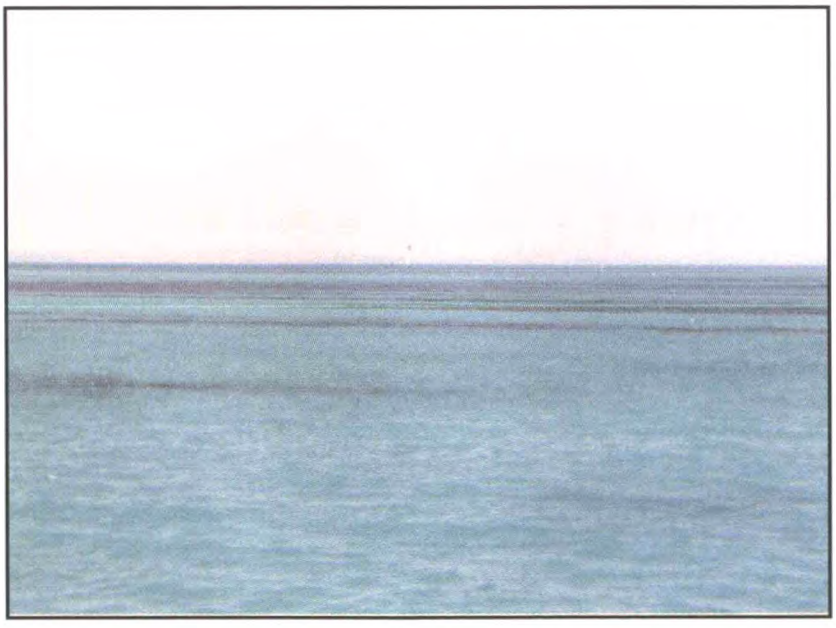
The Plymouth 1999 bloom

The 'Plymouth' bloom first became apparent around 8 July in satellite images from the NASA Sea-viewing Wide Field-of-view Sensor (SeaWiFS). It was then hidden by a period of cloud cover, after which it had increased in brightness significantly and on Saturday 24 July (see Figure 2a) it reflected up to 18 per cent of green light at 555nm — typically ocean water reflects only 0.5 per cent of incident sunlight at this wavelength. By a stroke of luck a high resolution Landsat image was also received on 24 July showing the bloom at 30-metre resolution (Figure 2b). The bloom was also photographed from the NERC vessel R.R.S. Challenger on 25 July (Figure 3).



(a) (b)

Figure 2: The dramatic bloom was captured on 24 July 1999 by (a) the SeaWiFS satellite and (b) Landsat 7 (both pictures are colour composite images). Interestingly, the first satellite images believed to show coccolithophore blooms were obtained from the earlier Landsat 2 in 1977 (Le Fèvre *et al.*, 1983).



T. Smyth

Figure 3 (left):

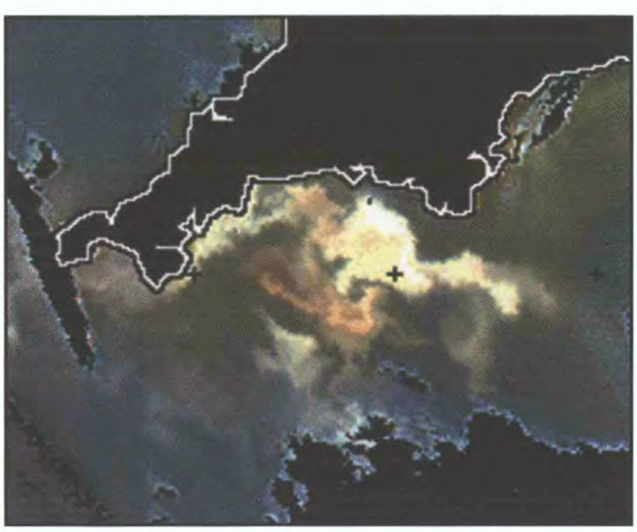
Hand-held camera image of the bloom taken from the *R.R.S. Challenger* on 25 July.

The dark streaks are caused by another type of phytoplankton.

Blooms have previously been seen just south of Plymouth in the western English Channel and sampled by PML scientists (e.g. Garcia-Soto *et al.*, 1995). However, the 1999 bloom was of particular interest for three reasons: first, it could be viewed by SeaWiFS launched in August 1997; second it was extremely bright; and third, it was very close to the shore.

On 26 July it was decided that the opportunity to sample the bloom 'on the doorstep' was too great to miss and planning started for sampling the bloom simultaneously by satellite, ship and aircraft on 30 July. The Plymouth research vessel Squilla would take direct samples, and the NERC aircraft would use the CASI 1 optical scanner at the time of the satellite overpass to measure the spectral characteristics of the bloom.

As the week and cruise preparations progressed, daily SeaWiFS images were used to monitor the development of the bloom. The growing scientific activity was mirrored by interest from the media. An article in the local paper *Western Morning News* was followed by an interview on regional BBC TV. This was picked up by the Daily Mail and finally national BBC 1 News and the BBC Radio 4 '*Today*' programme.



The day before the cruise, the western part of the bloom was obscured by cloud and it was feared that the satellite images on the 30th may be masked. However, on the morning of the cruise, the weather was excellent, almost cloud-free but with a lot of haze.

Figure 4: SeaWiFS colour composite image from 30 July 1999 (the day of the ship sampling).

Results

The scientists on board *R.V. Squilla* measured light entering and leaving the sea, the optical properties of the water column, temperature, salinity, coccolithophore and coccolith abundance, pigment concentrations, phytoplankton species numbers, zooplankton grazing and abundance, and viruses.

The NERC aircraft also flew a number of passes over the research vessel, with the author sitting in the co-pilot's seat — trying to locate the ship from 8,000 feet through the atmospheric haze was very difficult! The Environment Agency was also interested in the bloom and arranged a flight of their CASI[2] scanner on the same day. The EA subsequently provided their imagery as a swap for the PML phytoplankton data. The BBC also chartered a helicopter to obtain pictures of the bloom and a film crew was waiting on the quay when *R.V. Squilla* docked; the interview was conducted at about 5pm and shown on national TV an hour later.

Since then there has been further press and scientific interest; the cruise data have been analysed and work on a number of research papers is underway. The experiment provided some of the first ever direct measurements of coccolithophores blooms coincident with SeaWiFS images, and these have been used to test the methods for measuring chlorophyll and coccolith concentration from space. Results from the experiment have also been highlighted in an exhibit at the Natural History Museum in London.

[2] *Compact Airborne Spectrographic Imager*

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Further information on the images and the press coverage are on the web at:
www.npm.ac.uk/rsdas/papers/plym_bloom_jul99/

'Obsmar' inbox — e-mailed reports

m.v. *C.S. Nexus*. From G. Hemmings, 3rd Officer.

"We are presently [12 October 2000] laying telephone cable at latitude 29° 55′ N, 76° 58′ W, using a plough to bury the cable — the water depth is currently 955 m. The plough was launched at the 1,000-m contour, and we are laying towards the south. There is a forward-facing camera on the plough and, from the start of the dive, an unusual number of eels have been seen with this camera — for example, one eel every 30–50 m. Their sizes range from about 15 cm to 60 cm. No other fish or life form has been seen, just eels. I would welcome comments regarding these eels in the light of our proximity to the Sargasso Sea."

Editor's note 1. Dr Frank Evans, of the Dove Marine Laboratory, Cullercoats, said of this sighting:

"Mr Nigel Merrett, formerly of the Natural History Museum, London, has kindly supplied the following information. First, these are not the Common eels of European lakes and rivers, which would be bigger at this stage of their life history, but strictly deep-sea eels. At this depth on the east side of the Atlantic only one species is found, but on the west side at this depth there are three or four common species, all of the genus *Synaphobranchus* of the family *Synaphobranchidae*. As in other parts of the world, deep-sea eels tend to be stratified into different species by depth. Helpfully, this enables the naming of the fish in this observation to be narrowed, and the likelihood of their being specimens of the genus *Synaphobranchus* is very strong. Other species, although present, are much rarer. Exact identification would require a study of the skin of the fish as well as other features.

"Deep-sea eels are true eels, with the same type of leaf-like larvae as the Common eel of European rivers. As with the Common eel, much remains to be discovered about their life history."

Editor's note 2. This observation is our first ever 'sub-marine' report!

m.v. *Cable Innovator*. Captain D.S. Hibberd. Portland (UK) to Japan. Observers: C. English (Chief Officer), D. Smith (2nd Officer), J. Dell (Purser) and R. Wilkinson (Deck Cadet).

The vessel was navigating in the South China Sea approximately 50 miles from Palawan, on a heading of 028° at a speed of 17 knots. At around 0700 UTC on 3 November 2000 the Chief Officer contacted the bridge informing us of a bird on the starboard lifeboat. Through binoculars it was identified as a Short-eared owl owing to the characteristic short ear tufts and long wings. The observers also noted that it was reasonably far from its habitat. The Cadet on watch was able to leave the bridge to take a photograph of the owl. which was aware of his presence but stayed still allowing a picture to be taken [see front cover].

The vessel's position at the time of first sighting the owl was 1° 57.3′ N, 118° 19.69′ E. The weather at this time was good with partially clouded skies, the dry-bulb temperature was 30° while the visibility was approximately 13 miles. The vessel was rolling easily to a long low swell in calm seas.

Observers are reminded that 'Additional Observations' can be e-mailed direct to us at: obsmar@metoffice.com

Unclaimed Excellent Awards for 1999

At the time of going to press with this edition, we are happy to say that almost two-thirds of the 300 observers nominated to receive an award in recognition of their high quality weather observations made during 1999 have contacted us to claim their prize books. However, we would still like to hear from those named in the following lists as their awards are waiting to be claimed.

Since letters notifying observers of their selection to receive an award are sent via the employer named in meteorological logbooks (in this case concerning logbooks submitted during 1999) it is quite likely that some nominees have now moved to other ships or employers. We therefore recommend that all observers who have not received such a letter should check for their names in these lists. Any person named, who has not already been in contact with us, is advised to write direct, or fax or e-mail soon as possible so that the award can be processed. The relevant addresses are given on the first page of this edition. Additionally, any UK Port Met. Officer will be pleased to assist. Those observers for whom we have no current records are:

Agapov, Y.	Hopton, C.C.
Ainscough, A.F. (Master)	Howarth, M.J. (Master)
Alayon, L.G.	Hughes, C.J.A. (Master)
Alledahn, R.	Inserto, R.
Alwis, D.C.	Jackson, P.W. (Master)
Andaya, B.I.	Jayawickreme, S.R.
Anvelt, T.J.M. (Master)	Kaul, S.
Babidar, E.B.	Leyland, T.B.
Barane, L.	Liden, T.E. (Master)
Bayley, T.B.	Littlewood, M.
Berglund, P.	Lobo, A.G.M.
Bhadra, J.K.	Marr, D. (Master)
Borbon, G.M.	McCardle, P.G.
Bradley, M.	McCormack, W.
Campbell, C.F. (Master)	McHardy, F.
Catt, M.J.	Minnitt
Chase, S.C.	Miranda, M.V.
Chidlow, M.B.	Mistry, N.F.
Decretales, R.A.	Mottram, C.A. (Master)
Desai, K.	Nabor, F.R.
Dewan, P.D.	Naj, S.
Dhule, P.D.	Osei-Amoako, I.
Dixon, J.G.W. (Master)	Paala, R.C.
Dumangas, G.	Patnakar, B.G.
Fillingham, N. (Master)	Phadke, S.B.
Finlayson, I.F.	Ravindran, B.
French, P.C. (Master)	Rayburn, A.C.
Fuller, C.	Razbitnov, I.
Gabutin, R.M.	Recamadas, S.O.
Gill, S.S.	Reyalosa, T.P.
Greig, N.J. (Master)	Selvido, D.A.
Hansen, F.J.	Semilla, J.
Hawkins, B.F. (Master)	Silva, G.A.
Hingpit, H.C.	Siwach,S
Hope, W.D.	Stockley,R.A. (Master)

Sukanov, A.	Topczewski, G.
Tandog, P.	Ul, S.
Teodoro, D.C.	Vaswani, S.G.
Thompson, J.	Villas, A.C.
Thomson, G.K. (Master)	Vinarao, D.
Tolosa, B.A.	Webb, G.D.
Tongo, F.O. (Master)	Whitty, J.V. (Master)

We should also like to remind observers that there is a deadline of 30 April for the receipt of claims for this round of awards. Beyond this date we cannot guarantee the availability of book titles with which to honour claims, and certificates may be used as an alternative.

Special Long-service Awards for the year ending 31 December 1998

Shipmasters who have contributed a minimum of 18 years service to the UK Voluntary Observing Fleet become eligible for nomination to receive a Special Long-service Award taking the form of a marine barograph housed in a suitably inscribed presentation case.

Observing careers to the end of 1998 have been considered and ranked in order of merit according to an assessment that takes into account the length of service, the number of meteorological logbooks submitted and, more importantly, the quality of their contents.

The four Masters, all of whom are still serving, are:

- **Captain L.J. Fletcher** (P&O Nedlloyd Ltd) whose first logbook was received from the *Discovery Bay* in April 1972;
- **Captain L.J. Hesketh** (Associated Bulk Containers (London) Ltd) whose observing career began on the *Paparoa* of the New Zealand Shipping Company in 1969;
- **Captain S.D. Smith** (P&O Nedlloyd Ltd) whose first logbook also came from the *Discovery Bay*, in June 1972;
- **Captain K. Worthington** (P&O Nedlloyd Ltd) whose first logbook came from the *Suevic* in 1973.

All the recipients will be invited to receive their awards at the Met Office on a mutually convenient date to be arranged. They will also be joined by Captain K.S. Hardy who was nominated to receive a Special Long-service Award for 1997, but whose unsympathetic sailing schedules have so far prevented him from collecting it.

UK Port Met. Officers' Conference

Between 23 and 25 January 2001, the Met Office convened a conference for its UK Port Met. Officers. The conference, which was the first to be held since 1991, took place at the Met Office College, Shinfield, near Reading.

Status reports were given by each of the Port Met. Officers present at the conference, following which detailed discussions took place on potential improvements to the operation of the current PMO network. Particular importance was attached to ensuring the quality and timeliness of ship's observations, which is essential for accurate weather forecasting.

Consideration was also given to the role of UK Port Met. Officers in ensuring the success of the new VOS Climate project { see pages 76 to 86} and a report was given on the increased involvement of the Met Office in ASAP operations.

A number of guest speakers were invited to give presentations on a wide range of topics, including the use of marine observations in Numerical Weather Prediction, and marine forecast products.

Port Met. Officers attending the conference 23–25 January 2001.

Left to right: *Sarah North (*Nautical Officer, Met Office*); Colin Attfield (*Port Met. Officer for North-west England*); Captain John Steel, (*Port Met. Officer for East England*); Captain Harry Gale (*Port Met. Officer for South-east England*); Captain James Roe (*Port Met. Officer for South-west England*); Iain Hendry (*Offshore Adviser Aberdeen*); Captain Peter Barratt (*Port Met. Officer for Scotland and Northern Ireland*); Captain Austin Maytham (*Port Met. Officer for Bristol Channel*); Captain Eddie O'Sullivan (*Manager, Marine Networks*); Steve Key (*Port Met. Assistant, South-east England*).*

The conference was among the final official appointments to be undertaken by, Margaret Bushby, Head of the Observations-Voluntary (Marine) Section, who retired at the end of January. Her successor, Robert Shearman, who also joined the conference outlined his proposals to restructure the Port Met. Officer network as part of a new Observations Supply branch.

The general consensus was that the conference had provided a valuable forum for Port Met Officers to exchange views on both the nature and scope of their work, and it is hoped that more frequent meetings will be convened in the future.

Postbag

The pleasures of observing in New Zealand waters

Although not planned when my wife and I emigrated in 1996, I have found myself back at sea as 1st Mate on one of New Zealand's coastal tankers, the *Taiko*. She is a regular weather reporting ship for the New Zealand VOF, and I have visited MetService in Wellington on more than one occasion, and have met our Marine Meteorological Officer, Julie Fletcher, on several occasions.

The *Taiko* is a product tanker specially equipped to act as a distribution tanker for the New Zealand coast (along with the *Kakariki*). We mainly load at Marsden Point, near Whangarei, at the one and only refinery in New Zealand, and visit all the main ports. One thing I quickly learnt, especially as I had only ever visited New Zealand once in 37 years at sea up to 1996, is that the country really does have a climate unique to itself.

Another aspect I now enjoy about coastal trading is the rapport that one can build up with the coastal Maritime VHF services, and the willingness displayed by the duty operators to pass on any weather messages one wishes to be relayed to Wellington, as a matter of urgency, for the information of the many small craft we encounter close offshore. Naturally, the written reports follow later — for posterity. It is quite satisfying to hear a new coastal warning being issued advising of high winds etc. not forecast but being promulgated often within 15 minutes of one talking to the Maritime service.

Yet another aspect is the marine life. Dolphins abound — Common, Hector's and Bottlenose are very prevalent, especially on the east coast. Minke whales in Bream Bay (Whangarei), Killer whales in Wellington harbour, and the Humpbacks off Kaikoura, plus Sperm whales.

The dolphins and Killer whales are frequently seen in the Bay of Islands, and they delight in the company of boats and people. There are a couple of canny old male Bottlenose dolphins which seen to have learnt a new trick. This is to actually place their flukes against the prow of a boat and allow themselves to be pushed along at speeds up to 15 knots. I witnessed this in person about three months ago [autumn 2000]. I was onboard a wave-piercing catamaran, which had very fine entry bows, and watched these two mammals for a good two or three minutes, just being pushed along. I could even hear their 'whistling' under water from our position about two metres above them.

The sight I am really hoping to catch, is that of the Killer whales chasing the sting rays into the shallows to catch their favourite snack. The bird life is yet another story, but the highlights have to be the Albatross colony that can be seen at Taiaroa Head inbound to Dunedin or the Little Blue penguins of the North Island. We do also experience some wonderful sunsets.

Captain J.P. Briand, Russell, Bay of Islands, New Zealand

Editor's note. We are very pleased to hear from Captain Briand, and would like to remind all observers on board ships of sister fleets to the UK VOF that their reports of marine phenomena and wildlife are welcome in *The Marine Observer*, and can be e-mailed to us.

It goes without saying that coastal and oceanic marine weather reports, the *raison d'être* of any observing fleet, are as important to forecasting in the southern hemisphere as those made and transmitted for forecasts in the northern hemisphere.

Book review

The Race to the White Continent by Alan Gurney. 165 × 242 mm, *illus.* (black and white), 320 pp, including bibliography and index. Published by W.W. Norton & Company Ltd 10 Coptic Street London WC1A 1PU. ISBN: 0 393 05004 1. Price: £19.95.

"Enthralling" — and words such as "amazing", "incredible" and "outstanding" — also leap to mind. There are few books published recently that I have enjoyed more, or that have captivated my imagination so much. Factually, there may not be anything new in the book, but the account of the 'race' to reach Antarctica has been put together in such a way that this reviewer was kept on the edge of his chair. The main facts are already well known, but the research into the details raises this book to a much higher plane than the 'ordinary'.

The book takes us through the quest for the Antarctic by three countries — Great Britain, France and the United States — their various preparations for the race and, to a high degree, why each was involved. There are details of the differing expeditions themselves, the outcome of these efforts and the consequences of the activities for trade and further exploration. Great reading.

The British go because they want somewhere new to go; the French because they do not want to be left behind, and the Americans feel it is incumbent upon them to go because the British and French are going. Actually, the science of the day in the Americas believed this was the way to the centre of the Earth, and that the Antarctic was the land of "milk and honey"; no comments from explorers on that topic, but there is a bibliography for further reading if required.

There seems to be a degree of reluctance by the Americans to flex the marine power they were developing; however, if they were 'in', they wanted to beat everyone — and were thus committed. The preparations for the assorted expeditions, and management attitudes towards them are all covered in detail. The Americans threw their "best" into it, and gave what they believed to be "firm and direct" command; the French put an enthusiast in command, and the British simply someone who wanted to go (another enthusiast).

The planning was equally diverse, and the reader is given an insight into the attitudes of senior management of the day. The French had a good plan, with an idea of what may be needed. The Americans planned well, and had a degree of concern, as one would expect. The British tried to cut down on everything, without understanding what was involved or what they were sending their men into, and I find it amazing that any of the crew of the British expeditions survived at all; given the interference from all sides by 'officialdom'. It was the officers' blind enthusiasm that carried them forwards, to go as directed, that got their project off the ground. Each 'team' faced different obstacles from the start, and following these through makes enthralling reading.

The book covers all the stages of this prolonged and intrepid venture to reach Antarctica. The beginnings of exploration, the first person to circumnavigate the southern continent (Cook), and the "need to know what is beyond the Ice". All the planning, the execution and the results are laid out in an interesting and enlightening fashion.

The outcome of all the explorations is well known — the race to Antarctica was never truly won by anyone, although there was the race for the South Pole itself. The finding of a route south took all the expeditions into different areas, and from different starting points. This book is both a history and a story. It is an imaginative and well-documented work and contains a comprehensive bibliography.

Captain Austin P. Maytham
Port Met. Officer — Bristol Channel

Noticeboard

Change of name and address for the Observations–Voluntary (Marine) section

As this edition was going to press, arrangements were in hand to relocate the Observations–Voluntary (Marine) section of the Met Office. After many years of association with its former address at Eastern Road in Bracknell, the section is expected to be integrated within a new branch to be known as Observations–Supply, and relocated to a local satellite site attached to the Met Office.

As a results of this change the postal address will now be:
Met Office Beaufort Park Easthampstead Wokingham Berkshsire RG40 3DN

Any further changes concerning telephone and fax numbers. will be notified as necessary, but E-mail addresses will not be affected.

Change of address for Offshore Advisor

With effect from the 5 March 2001 Iain Hendry, our Offshore Advisor will be relocate to the following address:

Met Office Davidson House Campus 1 Science and Technology Park
Bridge of don Aberdeen AB22 8GT

Tel: 01224 407557 Fax: 01224 407568

Inmarsat–C 'Code 41'

Voluntary Observing Ships equipped with Inmarsat-C are advised that an additional Land Earth Station is now available for ships transmitting from the Indian Ocean. The Indian LES at Arvi, is now accepting 'Code 41' messages (ships' weather observations), and serves Metarea VIII.

The Argo Project

In January 2001 the Met Office deployed the first five Argo floats (see *The Marine Observer*, October 2000, 173) in the Irminger Sea south-east of Iceland, from the Icelandic vessel *Bakkfoss* on passage from Reykjavik to Argentia (Newfoundland). Five more floats were scheduled for deployment in March.

These floats, together with four surviving floats deployed by the Southampton Oceanography Centre in 1996 (and still providing data) marked the start of the UK's contribution to the international Argo programme.

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