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The Marine Observer

A quarterly journal of Maritime Meteorology

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THE MARINE OBSERVER

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

VOL. 67 **No. 335** **JANUARY 1997**

CONTENTS

COVER PHOTOGRAPH: A Dunlin pictured in February 1996 on board the Fishery Research Vessel *Scotia* during operations in the North Sea about 50 n.mile east of Aberdeen. It was photographed by Captain J.B. Nichols, a member of the Royal Naval Birdwatching Society.

Letters to the Editor, and books for review should be addressed to the Editor, *The Marine Observer*, The Met. Office (OM), Scott Building, Eastern Road, Bracknell, Berks RG12 2PW.

LONDON: THE STATIONERY OFFICE

Editorial

The Roman god Janus, the guardian of the door, was reputed to have had two faces so that he could look behind and forwards at the same time; perhaps it is fitting in the month that bears his name, to cast a final backward glance as we launch into another year.

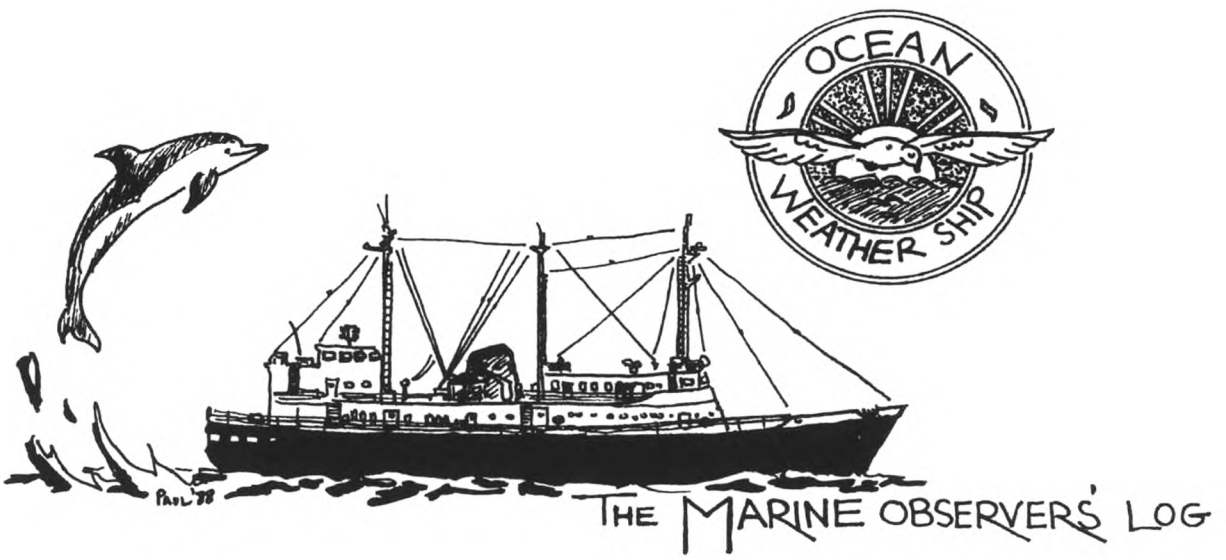
It would be difficult to refer to the previous twelve months in the Observations (Marine) branch as "business as usual" when "challenge", "change" and "restructuring" come more readily to mind but along with numerous other departments of The Met. Office, change has been the key word for many months. Throughout the reorganisation going on behind the scenes we trust that our services to you, the observers in the United Kingdom's Voluntary Observing Fleet, have been delivered to expectations and requirements, and that as far as you have been concerned, it has been business as usual.

"Change" is a vital word in the world of weather observing for without it ships' logbooks would be full of lifeless pages and making observations would be very dull affairs, indeed the need for recording the weather at all would be quite difficult to justify. As it is, the weather never sits still and during 1996 your met. logbooks have provided data and additional information covering a wide range of events from tropical storms to calms, rogue waves to ripples, lightning strikes to St Elmo's fire (although we are still waiting for that elusive, or conclusive, ball-lightning observation!) and precipitation of many kinds and intensities. We appreciate that in your efforts to provide details of the weather you may have been either soaked, frozen, sun-baked, windswept or even bored while we have sat in relative comfort at our desks (except when the central heating breaks down) but all the information received is utilised for forecasting purposes, climatological records or for verification of satellite data. Nature has also produced other phenomena during the past year such as volcanic eruptions, earthquakes and a comet or two, all of which have been reported in logbooks and we have duly passed the reports to grateful recipients, all experts in their own fields. Many of these accounts we hope to bring to the pages of this journal during the coming year.

Sadly, not all observers of the VOF who started the year are with us now, either through retirement, planned or enforced, or through more tragic circumstances; their contributions to voluntary observing work are nevertheless gratefully acknowledged. Several ships have also ended their observing operations; even so, as is shown in the Fleet List update on page 40, the nature of the VOF is that more willing volunteers continue to come forward to fill the breach, and watching the weather goes on.

As, like Janus, we now peer through the door into 1997, what would we wish to see? Clearly this depends on the vantage point of the "wisher": perhaps for the forecaster it might amount to three things — observations, observations and observations whereas for the Editor of this journal, it would be for as much as you care to write about life over, on or in the sea; certainly *The Marine Observer* is largely what you, the observers make it. No doubt seafarers' hopes and aspirations revolve around sailing schedules and encountering favourable conditions which allow those schedules to be met but wherever you find yourselves reading this first edition of the journal for 1997, on behalf of the Chief Executive, Directors and Staff of The Met. Office, we wish you all a very happy New Year.

Marine Superintendent



January, February, March

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

PASSAGE OF DEPRESSION

English Channel

m.v. *Newport Bay*. Captain J.A. Oscroft. Southampton to Marsaxlokk. Observers: the Master, Mr J.D. Lay, 3rd Officer, Mr J. Bastable, SM1 and ship's company.

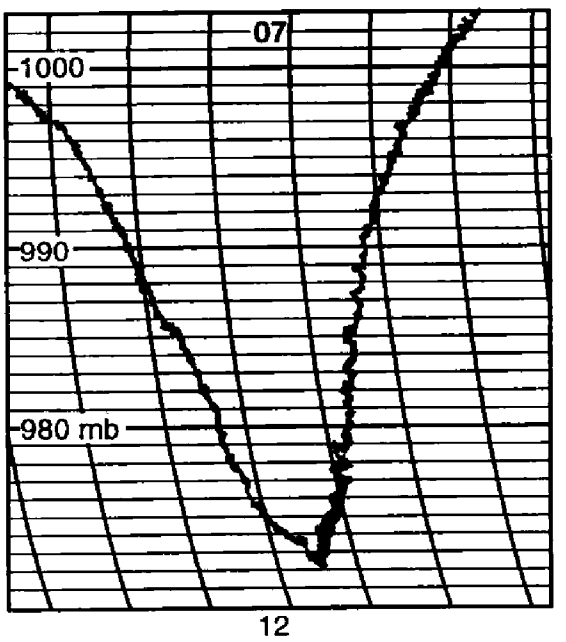
7 February 1996. At 1145 UTC whilst on a course of 232° the ship began to encounter the effects of an approaching depression; the following notes are based on extracts from the ship's Deck Log.

1200: Course 232°. Speed 20.4 knots. Wind W×N'ly, force 8. Pressure 974.2 mb. Temperature 8.9°.
1225: Reduce to 84 rpm.
1245: Reduce to 70 rpm.
1247: Reduce to 60 rpm. (Full Ahead).
1249: (Approximately). Vessel struck forward on starboard bow by breaking swell estimated to be well in excess of 15 m. Very heavy water shipped forward and generally overall. Inspection underdeck shows water ingress to focsle store, under deck port alleyway, rope store aft and steering flat. Damage noted at time: forward anchor light and possible damage to containers No. 1 Bay.
1250: Empty yellow and black liferaft sighted.
1300: Speed 13.9 knots. Wind WNW'ly, force 11.
1315: Vessel hove to at 50 rpm. Courses various to ease violent movement.
1400: Speed 6.5 knots. Wind NW'ly, force 11.
1500: Speed 4.1 knots. Wind NNW'ly, force 11.

Between 1300 and 1730, water was being drained continually from underdeck alleyways and steering gear. All vents were closed aft with access forward not being possible owing to the weather. After this time, the conditions moderated sufficiently for the vessel to resume passage to Malta.

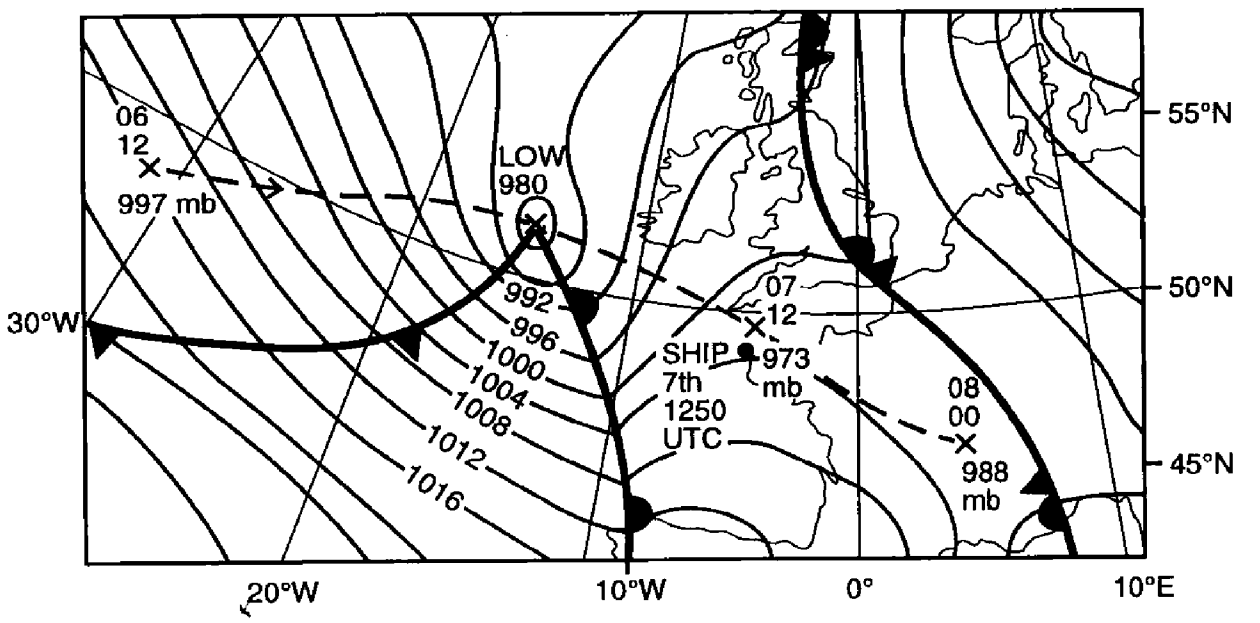
Position of ship at 1250 UTC: 48° 57.7′N, 04° 56.7′W.

Editor's note. The depression which hampered the progress of the *Newport Bay* was developing in the Atlantic at 1200 UTC on the 6th, near position 48° 30′N, 31° 30′W, where its central pressure was 997 mb. By 1200 on the 7th it was near 49° 30′N, 04° 30′W and had deepened to 973 mb. The recorded pressure of 974.2 mb at the ship fits in well, therefore, and the centre of the depression passed very close to the vessel, see barograph trace from *Newport Bay* and the chart showing the track of the depression.

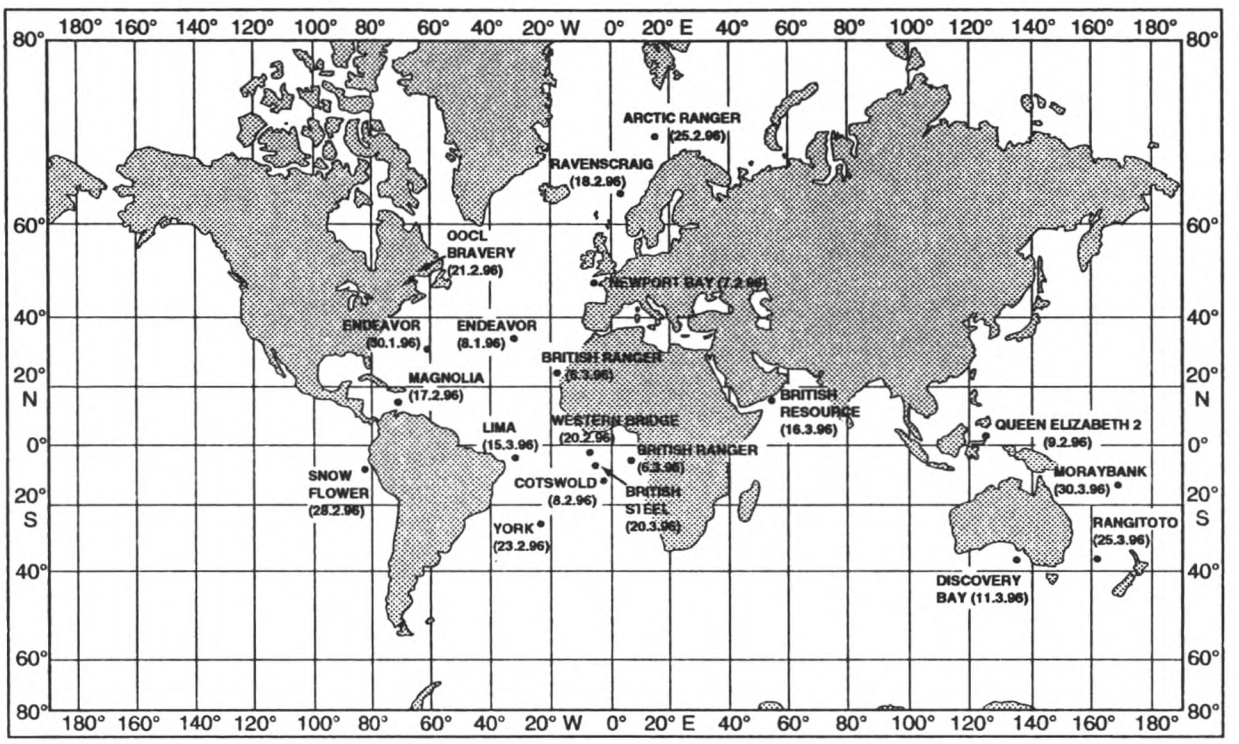


Left: Barograph trace for 7 February.

Below: Synoptic situation at 0000 UTC on the 7th, with previous and subsequent positions of the low shown at 12-hour intervals.



As the chart indicates, the passage of the cold front probably did not produce a sharp veering of the wind direction, and this feature is also supported by the recorded wind direction at the ship.



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

WATERSPOUT

North Atlantic Ocean

m.v. *Endeavor*. Captain K.A. MacLeod. New Orleans to Rotterdam. Observers: the Master and Mr N. Atkinson, 3rd Officer.

8 January 1996. At 1055 UTC there appeared to be, to the north of the vessel and about 0.5 n.mile away, a ray of sunlight breaking through the clouds. Upon closer inspection the phenomenon transpired to be a developing waterspout moving in a south-easterly direction, towards the ship.

Unfortunately, the spout had no chance to develop fully as strong winds dispersed the water before it could develop past the preliminary stages. What could be seen, however, was the heavy spray from the cresting waves being picked up with an intense cyclonic motion.

Judging by the size of the ship's foremast in relation to the spout when it was only about 30 m from the vessel, it was apparent that this localised area of low pressure was creating a vacuum phenomenon to a height of about 15–18 m with an anticlockwise direction of rotation, before the light water dissipated. The waterspout preceded a dense area of cumulonimbus cloud which was accompanied by heavy rain. The cloud displayed an area of roughly 1 n.mile × 2.5 n.mile on the radar screen, and gave rain at and within sight of the ship for at least 30 minutes.

Weather conditions at the time were: air temperature 15.5°, wet bulb 11.0°, sea 17.0°, pressure 1012.8 mb, wind NW'ly, force 9/10. The sea was high and there was a north-westerly swell of 9–12 m.

Position of ship: 34° 41′N, 31° 20′W.

Note. Mr M. Rowe, of the Tornado and Storm Research Organisation, comments:

This is a very interesting report. The description shows that the spout definitely reached the sea surface, and it is useful to know the direction of rotation; anticlockwise is the direction one would expect in the Northern Hemisphere.

The spout consists of water vapour rather than "solid" water, though it is certain that a considerable amount of water can be lifted from the sea, as spray, by a powerful waterspout.

CURRENT

Celebes Sea

R.M.S. *Queen Elizabeth 2*. Captain J. Burton-Hall. Manila to Ambon. Observer: Mr S.S.M. Smith, Chief Officer.

9 February 1996. At 0300 UTC whilst proceeding on a course of 150° at 25 knots, the vessel slowed by 2 knots and started being set to the east. The course was altered to 116° in position 02° 06′N, 125° 00′E so as to transit Bangka Passage, and shortly afterwards maximum set and drift was experienced in position 02° 04′N, 125° 04.5′E, when it was 067° × 4.2 knots. The following figures were then obtained from GPS stabilised radar:

Time	Set and drift
0345	092° × 3.1 knots
0349	070° × 3.0 knots
0400	111° × 3.1 knots
0406	152° × 2.8 knots
0415	137° × 1.4 knots
0420	170° × 1.2 knots

At 0424, in position 01° 52.4′N, 125° 26.6′E, a line bearing 040°/220° became visible in the water. This line was weak and did not show on radar but did contain large amounts of foliage. Shortly after transit of the line, set and drift from radar was noted as 118° × 0.6 knots and the sea-water temperature rose by one degree to 28°.

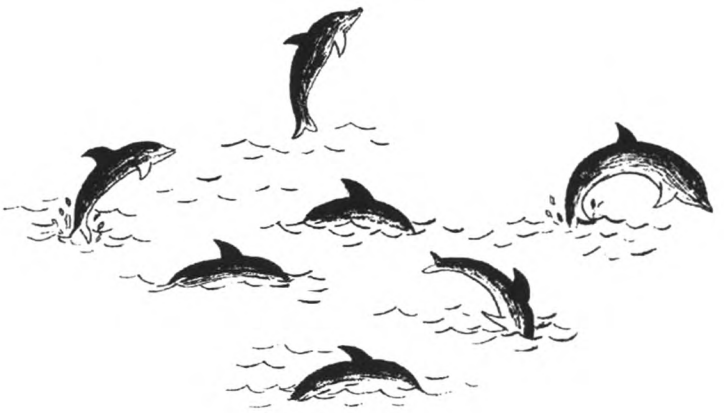
Position of ship at 0300 UTC: 02° 11′N, 124° 57.4′E.

CETACEA

Arabian Sea

m.v. *British Resource*. Captain G.M. Hallett. Ras Tannurah to Ain Sukhna. Observers: the Master and ship's company.

16 March 1996. Observed initially on the radar screen as a patch having an area of about 1.5 × 1.5 n.mile, a group of dolphins came into view at a range of approximately 2.5–3.0 n.mile. The wind speed was force 2 and there was no swell, so they could be heard splashing around even before the bow reached the first of them. The sketch [overleaf] gives an idea of the activity of the dolphins.



The vessel passed through the middle of the school and, as she did, the dolphins seemed to become even more playful, leaping higher and playing in the bow wave. Their average number estimated by all the observers was in excess of 150.

Position of ship: 15° 18′N, 52° 12.5′E.

North Atlantic Ocean

m.v. *Endeavor*. Captain K.A. MacLeod. Rotterdam to New Orleans. Observers: the Master and Mr J. Barrett, Chief Officer.

30 January 1996. At 1140 UTC, whilst the weather "obs" was being prepared, a large splash was noted fine on the port bow at a distance of about 1.5 n.mile. Binoculars were trained on the area and we were treated to the amazing display of two large Humpback Whales leaping in unison until approximately three-quarters of their body length was exposed. At the top of their leap they appeared to do a half-turn, showing the white undersides of their long flippers. The pair leapt four times, each time resulting in a huge splash and spray of white water.

At a range of roughly 0.5 n.mile the pair sounded and, although we could see the plumes of their blows for quite some time afterwards, unfortunately they never leapt again. We think it may have been a courtship ritual because everything they did seemed to be perfectly synchronised; whatever it was, it was a wonderful sight to see.

Position of ship: 29° 55′N, 61° 19′W.

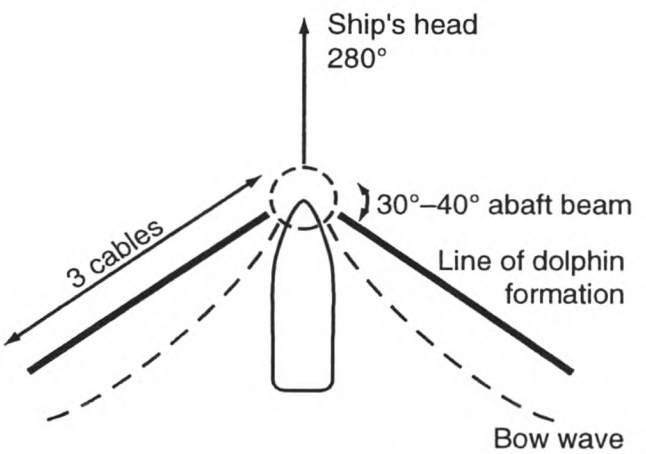
Note. Miss Kelly Hughes, zoologist on board EarthKind's *Ocean Defender*, comments:

The time of the sighting coincides with the breeding and calving time for Humpbacks but is a little far north of the main breeding grounds. Humpbacks are renowned for their acrobatic displays, often breaching, spy-hopping and tail- and flipper-slapping. Humpbacks do have courtship displays which are very often a social event involving much splashing from breaching and slapping. When a pair finally emerges, they may be seen to rise vertically out of the water, locked belly to belly with their flippers interlaced, for 30 seconds or more in the act of copulation, until they subside. Once breeding has taken place, and prior to the summer months setting in, the pregnant females and their previous year's calves will leave and head for the high-latitude summer feeding grounds where food is abundant for the developing foetus and for a mother who may be lactating for last year's calf. The males follow later. When autumn arrives the whales will begin their migration back to the previous year's low-latitude winter breeding ground to give birth. It is known that new mating may occur soon after birth and so it is possible for Humpbacks to have a calf every year.

m.v. *Discovery Bay*. Captain T.G. Whittaker. Melbourne to Fremantle. Observers: Mr J.V. Dilley, 2nd Officer and Mr C. Stretton, SM1.

22 March 1996. At 0300 UTC a large school of dolphins was spotted approaching the vessel. The dolphins took up a formation about the vessel as shown in the first sketch, forming first on the port side and then to starboard. It was at this point that the number of dolphins present became apparent.

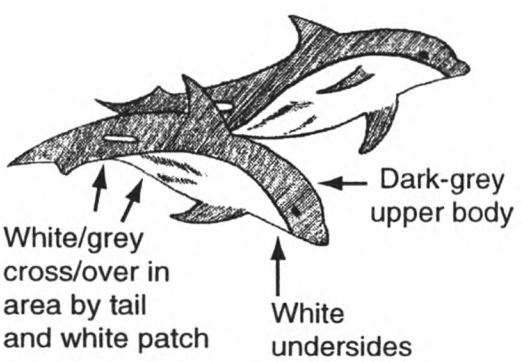
The formation stretched from each bow at an angle of about 30°– 40° abaft the beam for a distance of about 3 cables. A large number of dolphins also played in the bow wave of the ship immediately next to the bow while the remainder were



well forward of the bow wave as it moved away from the ship. The dolphins remained in this formation for about five minutes before first the port side and then the starboard side formation moved away to the north. The total duration of the observation was about 10 minutes.

Additionally, the following points were noted. They jumped in groups of 20 or 30, almost in unison while remaining in line, and the total number of dolphins was estimated to be 500–700 (this figure was arrived at by counting the average number of individuals in one group and then making a simultaneous count of groups on each side of the ship at a given time. This number was then doubled to allow for those underwater). On most previous dolphin sightings, there has always been one "show-off" individual which would insist on making backward, double, twisting or otherwise unusual jumps but nothing was seen on this occasion.

The dolphins were believed to be Common Dolphins, identified from a poster on board the vessel, showing six species. Their upper bodies were dark grey and they had white undersides which showed a white-grey "cross over" area by the tail; a mark which showed up well on most of those sighted was a patch of white,



shown in the second sketch. The number of dolphins sighted was far in excess of any seen before. At the time of the sighting there was little wind, a very slight sea and low swell. It was overcast, clear and there was good visibility.

Position of ship: 37° 50′S, 135° 04′E.

Note. Kelly Hughes comments:

Firstly, I would say that your numbers are perhaps underestimated! The way in which you counted the individuals was very systematic but multiplying by two will generally not account for the proportion of dolphins below the surface. In many groups, more than two-thirds of the group are underwater at any one time and so multiplying by 3 or 4 is more representative. You probably sighted, therefore, over 1000 dolphins! Although this is not "normal", Common Dolphins have been recorded in even larger groups of about 2000 individuals. Many populations stay in an area the year round, whilst others undergo seasonal movements, when it is most likely to see such large groups.

Commons are very active and often bow ride boats and ships. The dolphins ride in the pressure wave formed at the front as the ship moves through the water. The dolphins will position themselves in the small region of force where they can actively stop swimming. You may have seen the dolphins swapping position in the wave, trying to find the exact spot which allows them an effortless ride. Sometimes, dolphins are seen bow riding the large baleen whales, such as the Fin Whale which is some 18–22 m long. However, the whale, as with ships and boats, must be travelling at considerable speed or else the pressure wave will break down and bow riding is of no benefit. The dolphins lined up on either side of the ship may also have been getting a free ride if the ship's bow wave was large enough. Alternatively, they may simply have been lining up for their turn at the front. Good relations in dolphin groups are often kept up by their altruistic nature.

North Atlantic Ocean

m.v. *British Ranger*. Captain W.A.J. Cameron. Freeport to Forcados. Observer: Mr T.T. Latto, 2nd Officer.

6 March 1996. At 1742 UTC whilst on a heading of 180° at 14.5 knots, three medium size whales (two adults and one calf) were observed very close to the port side of the vessel. Despite the rough sea and deep green colour of the water around the vessel, the whales could be seen clearly under the surface as they were so close. The calf swam alongside one of the adults on the latter's right-hand side while the second adult was some 50 m behind.

No flukes were visible when the whales surfaced but a light spray was observed when the whales blew. The estimated length of the adult whales was 7 m while the calf was thought to be about 3 m long. Their colouring consisted of deep black on the top with white undersides and there was a sharp line defining the two colours. Despite being very close to the ship's wake, the whales did not seem alarmed and continued to swim in a southerly direction. On consulting *The Seafarer's Guide to Marine Life* by Paul Horsman, it was concluded that the size and colour indicated that these were Minke Whales.

At the time of observation the wind was NW'ly, force 5 and there was a rough sea with a west-north-west swell of 3 m.

Position of ship: 22° 02′N, 17° 59′W.

BIRDS

Caribbean Sea

m.v. *Magnolia*. Captain K.J. Beverley. Bonny to Galveston. Observers: the Master and Mr C.W. Blacker, Chief Officer.

17 February 1996. At about 2200 UTC a large bird was seen approaching from the north-east; it then flew around the ship several times, making numerous attempts to land. During its circuits, the bird passed close over the port bridge wing and offered a good view to the observers. As shown in the sketches, it was estimated to have a wing-span of 1.2 m; the upper sides were black, the lower sides were white and the ends of the wings were "fingered".

The head was white but there was a black mask across the eyes and along the sides of the head; the beak appeared to be grey. The main body and legs were white, the legs being heavily feathered on the upper half. When the tail feathers were spread during landing, they appeared to make a black-and-white chequered area. Eventually, the bird landed on the port samson post but after a short time it took off again and moved to the starboard side where it spent the night before leaving at sunrise and heading towards the south-west. The Master thought that the bird may have been an Osprey. The nearest land to the north-east was Puerto Rico, while to the south, Venezuela and Colombia were about 200 n.mile away.

Position of ship: 14° 35′N, 72° 10′W.

Note. Commander M.B. Casement O.B.E., of the Royal Naval Birdwatching Society, comments:

The description and sketch confirms the identity of the bird as an Osprey (*Pandion haliaetus*). This is widespread throughout North America, migrating south in autumn and returning in spring. It is frequently recorded on board ships. It is a fish eater.

St Lawrence River

m.v. *OOCL Bravery*. Captain D.J. Pritchard. Approaching Escoumins Pilot station. Observer: Mr J. McGushin, Cadet.

21 February 1996. At 1500 UTC a large Bald-headed Eagle was sighted. It had a black body, white head and tail whereas the talons and beak were yellow. The wing tips had "fingered" flight feathers.

The eagle was observed catching a large fish in its talons; while flying away with the fish it appeared to stun it by biting it behind the head.

Position of ship: 47° 20′N, 69° 10′W.

South Atlantic Ocean

m.v. *Lima*. Captain A.F. DeVanney. Ras Tannurah to St Eustatius. Observers: the Master, Mr A. Ahmed, Chief Officer, Mr N. Rice, 2nd Officer, Mr B. Bruce, 3rd Officer and Mr T. Cato, Cadet.

15 March 1996. During the 8–12 morning watch, five seabirds were observed to be continuously flying with the ship. They were identified as Blue-faced or Masked Boobies, the identification being made more difficult by their reluctance to fly near the aft accommodation block. The birds circled mostly just off the bow, on both sides of the ship, searching for food from a height of about 40 m or occasionally skimming the surface of the sea. Periodically, they would dive from this height (40 m) straight into the water, their wings fully tucked back so as to gain speed and make entry into the water easier. They entered the water at about 10°–15° from the vertical, at great speed, and remained submerged for 2 or 3 seconds. Upon a successful dive, a booby would float on the surface for a short time whilst eating its catch.

The birds never rested or perched on any part of the vessel and rarely flew over it and this feeding pattern was maintained for five hours or more but with occasional periods of "gliding rest". The same species of bird and also other boobies were seen for several days before and after this observation but whether the same individual birds visited the ship again was not known.

At the time of this observation the sky was overcast and there were numerous short and heavy rain showers which reduced visibility to less than 1 n.mile at times.

Position of ship: 03° 00′S, 32° 00′W.

Note. Captain P.W. Chilman, of the Royal Naval Birdwatching Society, comments:

The identification sounds correct; the Masked, or Blue-faced Booby (*Sula dactylatra*) breeds all round the tropics, including islands in the area of this report. They range widely across the ocean, often being seen far from land. It is probable that several different birds were seen, rather than the same ones all the time.

South Pacific Ocean

m.v. *Rangitoto*. Captain J. Deeney. Tauranga to Melbourne. Observers: Mr G. Grey, Chief Officer, Mr G. Andrews, 2nd Officer and Mr B. Halloran, Seaman.

24 March 1996. At about 1600 UTC a grey heron was found by the Mate in the ship's office which was three decks up from the maindeck and accessible from a narrow external cross-alleyway into the accommodation.

The bird stood about 45 cm tall and was all grey in colour apart from a small, irregular whitish patch around the eyes. It appeared to be in good health apart from probably being stressed from being trapped in the office and unable to find its way out. After some initial resistance, the heron allowed itself to be handled and taken to the bridge to be checked over.

As the office was obviously unsuitable, it was decided to put the visitor in the fire equipment room on the maindeck which had a large direct access from the deck. However, once out of the accommodation and on to the deck, the bird commenced to struggle in an obvious desire to be freed. It was immediately

released on deck, and some fish was placed nearby. At about 1700 the heron was seen flying around the ship after which it rested briefly on the starboard bridge wing. It had left the ship by daylight at about 1930 and was not seen again.

At the time the weather was overcast with SE'ly winds of force 3–4. The vessel was experiencing a large Tasman Sea anticyclone with the pressure at 1700 being 1024.9 mb. Since clearing Cape Reinga three days earlier, the ship had experienced winds of force 5–6, initially SW'ly but slowly backing and easing over the following days. The nearest land was Cape Reinga, approximately 500 n.mile away.

Position of ship: 35° 50′S, 161° 00′E.

Note. Commander M.B. Casement, O.B.E., comments:

The description strongly suggests a White-faced Heron (*Ardea novaehollandia*). It is widely distributed throughout Australia, including Tasmania.

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

South Atlantic Ocean

m.v. *British Ranger.* Captain W.A.J. Cameron. Bonny to Galveston. Observers: the Master and ship's company.

10 January–4 February 1996. At 1010 UTC a pigeon was observed flying around the vessel; it eventually landed and wandered into the bridge. As can be seen from the photograph, "Speckled Jim", as he came to be called, was definitely a racing pigeon because of the rings on his legs. On the left leg were two bands, one yellow, one white while on the right leg was a red band which was marked ESP 95 RFCE 100386. Presumably he had come from the Canary Islands which the vessel had passed the previous day. After being let go, he was seen to settle on the maindeck and took up residence at the top of the pump room area.

Photo by T.T. Latto

Over the next few days he was regularly seen wandering about the poop deck or sitting in the shade of the deck pipes. Some rice, crushed biscuits and fresh water were left for him under the pipes on a regular basis but it was not known if he consumed much of this.

The vessel loaded at Bonny on 20 January but Jim showed no signs of leaving for the shore about 20 n.mile away. On sailing for Galveston, he was still with the ship although looking somewhat thinner and some of his feathers were smudged with grease. Occasionally, he would fly around the accommodation and wander around various decks but still seemed to spend the night on the maindeck and it is thought that this may have been his downfall.

Alas, on 4 February the swell increased and seas were shipped on deck during the night; the next day there was no sign of Jim. Either he was swept over the side by a wave or he had seen enough of the ship and made a flight to the Brazilian coast which was some 450 n.mile away to the south-west.

Position of ship on 20 January: approximately 04° 00′S, 07° 00′E.

BIOLUMINESCENCE

South Atlantic Ocean

m.v. *Cotswold*. Captain J.A. Smeeton. Hay Point to Rotterdam. Observer: Mr J. Khare, 3rd Officer.

8 February 1996. At 2200 UTC whilst the ship was on a heading of 326° at a speed of 13 knots, very bright sparkling bioluminescence developed over a period of one hour. A bright yellow-green glow was observed and seemed to be activated by the disturbance of the bow wave. During the period of observation, the vessel was proceeding through calm seas and the sky was mainly cloudy.

Weather conditions were: dry-bulb temperature 25.7°, sea 26.5°, pressure 1011.2 mb.

Position of ship: 09° 34′S, 02° 18.8′W.

DISCOLOURED WATER

South Pacific Ocean

m.v. *Snow Flower*. Captain W.G. Lockie. Balboa to Valparaiso. Observers: the Master and ship's company.

28 February 1996. At 1700 UTC the vessel passed through an area of water which was a deep crimson colour. It covered an area of 8–8.5 n.mile, as far as the horizon from port to starboard. The wind was SE'ly, force 4 and the discoloured water was "fingered" in the direction of the wind, each finger being about 2 n.mile deep and bearing south-easterly into the discolouration. The southern extremity of the area did not have finger projections but lay along a south-east to north-west line. During transit of the area, the wake of the vessel was also discoloured but gave the impression that the crimson colour was not reaching the depth of the propeller disturbance.

The vessel was in a region associated with the Humboldt Current and the nearest land was Isla Lobos de Tierra 22 n.mile away with mainland Peru at 31 n.mile. Prior to entering the discoloured area and until well clear of it, the vessel stopped the fresh water generator and other water contact (e.g. filling the swimming pool).

At the time the vessel was on a heading of 167° at 21.6 knots.

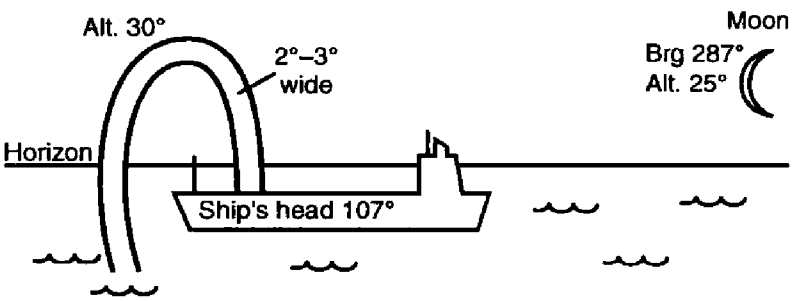
Position of ship: 06° 37′S, 81° 12′W.

RAINBOW

South Atlantic Ocean

m.v. *York*. Captain D.F. Heaselden. Tubarao to Singapore. Observers: Mr B. Dias, 3rd Officer and Mr V. Ebuen, GP1D.

23 February 1996. At 2149 UTC during the late hours of the astronomical twilight, the crescent moon at an altitude of about 25° was right aft, bearing 287° and the vessel was on a course of 107° at 13.5 knots. The sky cover was 7 oktas consisting of altostratus, stratocumulus and cumulus fractus, and there was intermittent slight drizzle which resulted in moderate visibility. During a period of drizzle a rainbow, shown in the sketch, was sighted, having a very blurred white image forming an arc from port to starboard.



It was 2° or 3° wide and the top of the arc reached about 30° altitude with the ship appearing to pass under it. The whole phenomenon lasted for about five minutes before disappearing when almost abeam.

Position of ship: 25° 10′S, 22° 02′W.

Note. Dr R. White, of the Institute for Research in Meteorological Optics, comments:

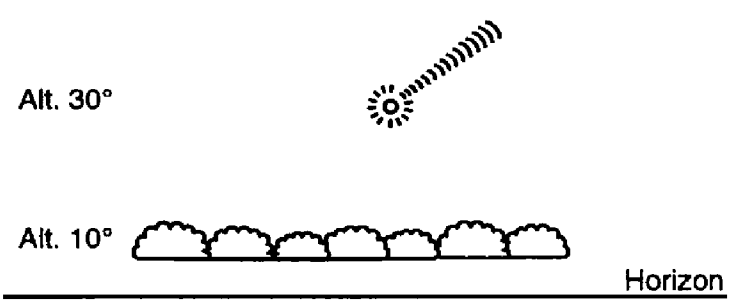
Lunar rainbows generally show little colour owing to the lack of sensitivity of the eye to the colour of faint light, although an alternative possible cause of the lack of colour in a rainbow (solar or lunar) is small water droplet size.

METEOR

South Atlantic Ocean

m.v. *British Steel*. Captain D. Bowman. Saldanha Bay to Redcar. Observers: Mr S. Moore, 3rd Officer and Mr H. Nonesco, AB.

20 March 1996. At about 1050 UTC the observers were on the bridge wing when the whole sky seemed to light up, like daylight, for a few seconds. On looking aft they saw the tail end of a very bright light, possibly a meteor or space debris, on a bearing of 165° at an elevation of approximately 30°. See sketch.



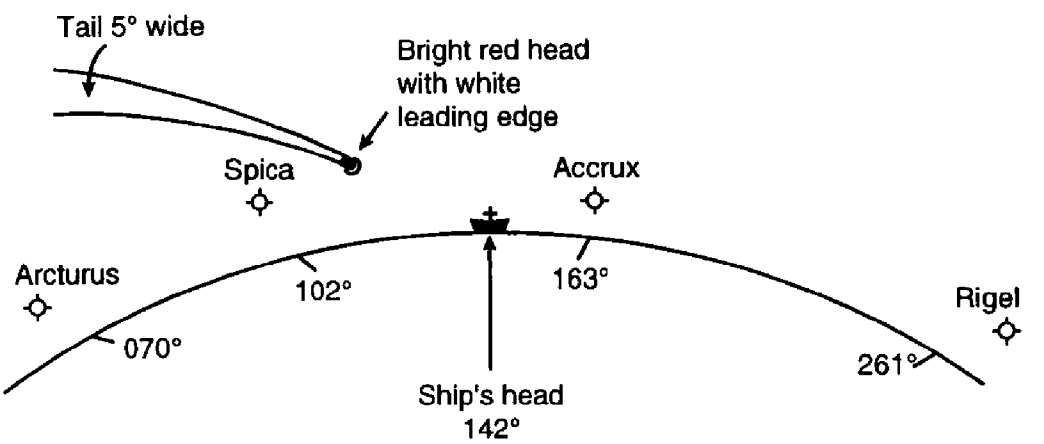
The sea state at this time was calm with light airs and the cloud cover was 1 okta of small cumulus which was mainly on the horizon and extending to about 10° above it. The ship's course was 322° at 12.0 knots.

Position of ship: 05° 49.7'S, 04° 58'W.

South Atlantic Ocean

m.v. *Western Bridge*. Captain S. Honey. Port Talbot to Saldanha Bay. Observer: Mr S. Regan, 3rd Officer.

20 February 1996. At 0030 UTC whilst the vessel was on a heading of 142° the object shown in the sketch was first seen at an altitude of about 30° above the constellation of Ursa Major.



It was a wide reddish-white tail approximately 5° wide travelling very quickly across the eastern horizon and narrowing to a distinctive head which appeared bright-red (similar to the after-burner of a jet engine). Tracking over Arcturus, it disappeared behind Virgo at an altitude of about 10°. Before the object passed over the horizon, its leading edge was a very bright white which became brighter as the altitude decreased.

The total duration of the event from the first sighting was about 10 seconds with the tail, which seemed to be made of dust-like particles, dissolving in 5–10 seconds. No audible sound was detected.

Position of ship: 01° 51.44'S, 08° 00.24'W.

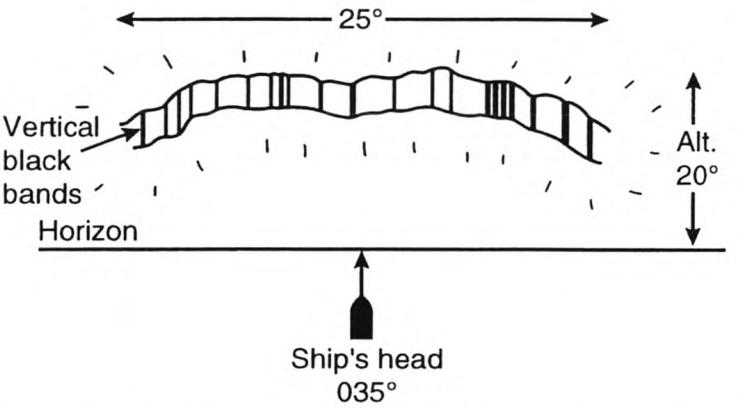
AURORA BOREALIS

Norwegian Sea

m.v. *Ravenscraig*. Captain T. Armstrong. Redcar to Kirkenes. Observers: Mr M. Westcott, 3rd Officer and Mr T. Jaya, AB.

18/19 February 1996. At 2225 UTC a bright glow was noticed shining from behind some clouds dead ahead of the vessel. The intensity of it quickly increased until a rayed band form of the aurora was visible, as indicated in the sketch.

The band was not very long, stretching from fine on the port bow to about 2 points on the starboard bow, making an arc of about 25°. The display was very intense with the brightest parts of the band located at the ends. A curious feature was that all along the band there were vertical "black stripes". These were irregularly spaced and "moved" backwards and forwards along it. In all, the



display was visible for around 10 minutes; then, because of its low altitude, about 20° above the horizon, it was obscured by clouds (5 oktas of cumulonimbus) and by the time they had cleared, the band had vanished. The ship's course was 035° at 11.5 knots.

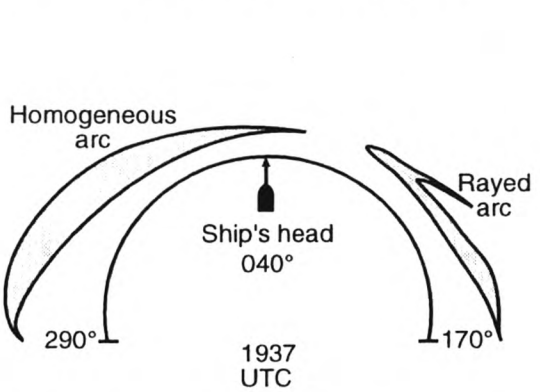
Position of ship: 64° 03.3′N, 04° 14.9′E.

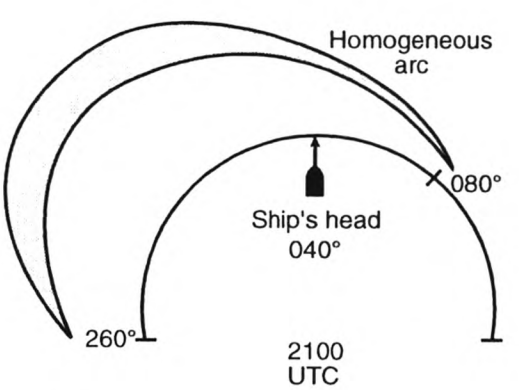
Norwegian Sea

m.v. *Arctic Ranger*. Captain A.W. Walker. Steaming to new fishing grounds. Observer: Mr M. Allison, Radio Officer.

25/26 February 1996. Between 1925 UTC and 2113 UTC whilst on a heading of 040°, a very active auroral display was observed, the details of which follow:

1925: Rayed band with numerous rays penetrating it. Active with moderate brightness. Altitude 20°.
1934: Rayed band starting to change to a homogeneous arc. Active, bright. Altitude 35°.
1937: Homogeneous band and rayed band displayed across the sky. Active, moderate. (See first sketch.)
1941: Homogeneous arc fading to weak and disappearing.
1942: Rayed band appearing and changing to a rayed arc. Pulsating, bright. Altitude 30°.
1944: Rayed arc fading.
1945: Rayed arc quiet and weak.
1947: Display fading and disappearing.





2045: Homogeneous arc with patches. Quiet, moderate. Altitude 20°.
2049: Arc fading to weak.
2051: Arc changing to rayed arc. Pulsating, brilliant. Arc shows light shades of green, yellow and blue.
2052: Rayed arc starting to pulsate heavily and going through various changes. Lower edges have distinct purplish tips.
2055: Arc starting to fade and become a homogeneous arc. Quiet, moderate.
2100: Homogeneous arc still visible. Quiet, moderate. (See second sketch.)

2107: Rays penetrating the arc. Rays active, moderate.
2108: Rays changing from vertical forms to curves and mingling with a rayed band beginning to form.
2110: Rayed band formed. Active, moderate. Altitude 30°.

At 2113 the rayed band faded away to leave numerous patches, the display at this point was rated as quiet and weak while the altitude had decreased to 15°. The cloud cover at 1947 was 2 oktas at a minimum of 3,000 feet and the visibility was 25 n.mile.

Position of ship at 1925 UTC: 69° 08′N, 14° 02′E.

Editor's note. This report is just one of several sightings made by Mr Allison during the period from January to March. Further details of these and of the *Ravenscraig* sighting appear in the Aurora Notes, on page 33.

VOLCANIC ERUPTION

Coral Sea

m.v. *Moraybank*. Captain P.S. Chase. Port Vila to Luganville (Vanuatu). Observer: Mr G. R. Armstrong, Chief Officer and members of ship's company.

30 March 1996. At 1300 UTC two orange glows were seen off the starboard bow and, on checking with the duty officer on the bridge, it was discovered that the glows lay in the direction of charted volcanos on the island of Ambrym, the volcanos being Benbow and Marum.

They were first observed at 30 n.mile while the ship was on an almost northerly course, initially having the appearance of clouds caught by the sun at dawn because they were so pink and looked like small clouds at a distance. However, they were too individual and were continually changing shape.

On passing them at about 1400, when 12 n.mile off the starboard beam, the appearance was of large clouds of molten lava or ash being thrown up or perhaps clouds of gas belching out and being lit from below.

Position of ship: 16° 16′S, 168° 07′E.

MISCELLANY ...

An additional mélange of maritime sightings

Abbey. 19 January 1996. For approximately one hour while in the area of 21°N, 18°W the vessel's company was treated to the sight of 50–60 whales which were spread over about 13 n.mile of ocean, many of them swimming in pairs. Very little of their bodies could be seen but they were dark in colour, about 12 m long and their dorsal fins were set roughly two-thirds of the way along their backs.

Arabiyah. 5 March 1996. Whilst on passage from the South China Sea to Kuwait, the Master and Third Officer Khaled El Emam sighted a fair weather waterspout in position 03° 45′N, 99° 55′E. It was 4–5 m across, rotated anticlockwise at about 140 rpm and ascended to 10–20 m high.

(*Editor's note.* The Tornado and Storm Research Organisation found this report particularly interesting; Mr M. Rowe said that he has very few observations of the "fair weather" variety of waterspout. The diameter is extremely narrow, as is usually the case with this variety and, if the quoted rate of rotation is correct, the speed of rotation was 50 km/hr [approximately 31 mph], which is a very reasonable figure. He said that such data is very rarely available, and is a most useful feature of the report.)

Avelona Star. 14 January 1996. From position 21° 22'N, 61° 10'W, Captain J.F. Dobson and B. Lapitan, OS watched a very bright meteor which was at least triple the brightness of Venus and coloured white with a green tinge. It appeared at an altitude of 42° above the horizon, headed "straight down", its trail lasting for 6 seconds and then disappeared at an altitude of 5°.

British Esk. 28 March 1996. After sailing from Colombo, Third Officers A. Slater and B. Ross together with members of the ship's company examined an ant-like insect discovered on board, although it did not seem to match that species because of its bright-green colour. It was 17 mm long and had two "wing buds" which suggested that it may have flown aboard and then shed its wings. The "ant" was very lethargic and made no sudden movements.

Cervantes. 1 February 1996. Whilst crossing the Bay of Biscay, from Bilbao to Le Havre, Captain D. Warmington and Chief Officer D. Millar spotted a single whale about 100 m away. It was identified as a pilot whale and was accompanied by a calf which virtually hugged it.

Encounter Bay. 6 March 1996. Whilst on passage to Fremantle from Melbourne, Bosun S. Keown spotted a lime-green wild budgerigar sitting on the deck. It flew off when he approached.

Ironbridge. 22 February 1996. Whilst on passage from Port Talbot to Port Cartier, in a position about 150 n.mile east of the Grand Banks, Captain J.O. Jubb, Second Officer C. Jackson and Cadet A. Queally watched a Sperm Whale as the ship passed close by. It was blowing every 10 seconds, the blow coming from the forepart of the head at an angle of 45°, and its flukes were raised upon diving.

Jostelle. 17 January 1996. Second Officer A. Crew noted an area of bioluminescence in the Gulf of Mexico, about 50 n.mile south-east of the Mississippi Delta. It was in the form of "sticks" roughly 15–20 cm long and 3–4 cm wide which glowed pale green and lasted for 30 seconds from first sightings in the bow wave until well astern. The display lasted for approximately 20 minutes.

Maersk Sussex. 11 January 1996. A large seabird, possibly a Brown Booby, was found sleeping on the after rail of the bridge deck when the vessel was at 16° 45'N, 162° 07'W. It was apparently hand-tame and was ringed with the number 1347 24833 and the inscription "Contact Washington D.C.". The Master and Deck Officers could do little with such information but watched the bird feeding from its base on the ship until the 16th when it left.

(*Editor's note.* Captain P.W. Chilman, of the Royal Naval Birdwatching Society, has told us that the Brown Booby ((*Sula leucogaster*)) was probably not tame as he has always found this species to be pretty docile when handled.)

Providence Bay. 28 February 1996. A waterspout was observed by Second Officer J. Holmshaw and SM1 J.M. Hopley in position 35° 44′N, 17° 22′E. It was about 3 n.mile away and moved north-westerly at about 20 knots, lasting roughly four minutes, rising up to the base of the lowest cloud at around 2500 feet.

(*Editor's note.* Mr M. Rowe said that the Tornado and Storm Research Organisation was glad to receive this report.)

St Helena. 14 March 1996. A school of about 12 dolphins accompanied by four Fin Whales and several small white seabirds were seen by Third Officer N. Mogg and passengers. The water was discoloured green, suggesting the area, in position 17° 40′N, 17° 46′W, was rich in food.

Shetland Service. 24 March 1996. The Master and ship's company recorded the following species of bird at or around the vessel, on station at the Kittiwake Oil Field in the North Sea: six Grey Herons, also Snipe, Lapwing and four Little Auks.

Siliqua. 17 February 1996. Whilst steaming through shallow fog in position 37° 11′S, 30° 00′E, Second Officer K. Bland spotted a corona around the sun but it did not last long enough for angles to be measured.

Taunton. 2 January 1996. In position 40° 24′S, 51° 52′E, Second Officer A.K.R. Pandey watched a whale as it first surfaced with a leap close to the port bow before diving under the vessel (draft 17 m, breadth 47 m) to appear on the opposite side about 10 seconds later. It continued to breach and dive until out of sight. Mr Pandey said, "Her leaps were high enough to be seen, she was huge".

Tokyo Bay. 1 March 1996. Whilst in the Red Sea, many jellyfish were sighted by Third Officer M. Baker. Some were slightly pink or purple in colour but most took on the blue colour of the water.

SCENE AT SEA

Photo. by I. Williams

A rainbow photographed from the *Exemplar* on 25 March 1996 at 1024 UTC; it lasted for 15 minutes and was watched by Second Officer M. Sloan, Third Officer A. Charlton and Radio Officer I. Williams, who also took the photograph. The ship was in position 38° 53′N, 51° 16′W.

Photo. by Captain J.B. Nichols

A Willow Warbler which arrived on board the *Scotia* during a foggy night in February 1996 when the ship was about 70 n.mile north-west of the Hebrides.

SCENE AT SEA (*contd*)

Photo. by S. Ward

Sea smoke in the early morning of 16 February 1996 photographed from R.R.S. *Bransfield* while manoeuvring off the Brunt Ice Shelf, Antarctica. At the time there were light S'ly airs off the ice shelf, the dry-bulb temperature was –17.5° and the sea temperature was –1.0°. The sea smoke was localised to the sea area adjacent to the ice and was dense enough in certain directions to obscure small growlers whilst the tops of larger icebergs were visible above it.
(Further general observations of the weather in this region appear on page 31.)

Photo. by Captain W. Yeo

Pancake ice on the St Lawrence River photographed from the *Cast Elk* whilst on passage from Liverpool to Montreal on 18 February 1996. The dry-bulb temperature was –18.0° and the wind was SW'ly, force 5/6. [The bridge height of the *Cast Elk* is approximately 27 m.]

The weather vocabulary of an eighteenth-century mariner: The log-books of Nicholas Pocock, 1740–1821*

BY D.A. WHEELER

(Geography Department, University of Sunderland)

Before the mid-nineteenth century, meteorological observations were undertaken by the often unco-ordinated efforts of 'gentleman scientists'. This is not to diminish the value of such work, and that of Thomas Barker of Rutland (Kington 1988) is an outstanding example of what could be achieved in those distant times. Archives and collections around Britain abound with similar items. Manley (1952) provides an excellent review of this material and has also, through the medium of his Central England Temperature record, shown what can be gained by the careful manipulation of such instrumental data. However, in order to satisfy the demand for information and for better understanding of recent climate change, scientists now look beyond purely instrumental and numerical data. The extraordinary contribution of Lamb, Pfister and Le Roy Ladurie to this field has demonstrated only too clearly that descriptive items such as diaries, letters, and other historical documents can help to create a vivid impression of the climate experienced by our predecessors.

In England we are fortunate in having at our disposal the logs maintained aboard Royal Navy vessels. The general content and background to these logs has already been reviewed in Oliver and Kington (1970). Admirals, captains and masters all kept logs, many of which have survived from as long ago as 1700 and can be found in the Public Records Office at Kew and the National Maritime Museum at Greenwich. By the mid-nineteenth century this system of logs kept by different officers was replaced by one of a single ship's log. The significance of the logs lies in the requirement set out by the Admiralty in their *Naval Instructions* of 1731 for officers to record not only the day-to-day running of their vessels but also the wind, weather and navigational information. Weather was usually noted at each of the three watches of the nautical day (which, until well into the nineteenth century, began 12 hours in advance of the civil day). The weather information in eighteenth- and nineteenth-century logs is largely qualitative and includes observations on wind direction (usually on a 32-point compass), state of sea, the general condition of the weather and the 'force' of the wind. It has been established (Oliver and Kington 1970) that by the closing decades of the eighteenth century the vocabulary employed by Royal Navy mariners was all but identical to that used today and formed the basis of Francis Beaufort's formalisation in 1808. It has also been demonstrated (Wheeler 1988) that even untrained officers could make reliable estimates of wind force and direction. But no matter how accurate these reports of wind speed and direction might be we are only dimly aware of exactly what the writers of the logs were endeavouring to describe in their accounts of the state of the sea and the weather. Terms used in the eighteenth century were certainly those still in use today but we should not necessarily assume that they represent the same conditions unless evidence can be offered to support this assumption.

* Reprinted from *Weather*, 50, No.9, by kind permission of the Editor.

Contemporary dictionaries of marine terms, such as Falconer's *An universal dictionary of the marine* shed some light on the matter. He describes 'wind' as: "a stream or current of air. If it blows gently it is called a breeze. If it blows harder it is called a gale or a stiff gale, and if it blows with violence it is called a storm or hard gale". He defines 'gale' as follows: "of wind, a phrase used by sailors to express a storm or tempest. It is more particularly termed a hard gale or strong gale". Falconer goes on, however, to quote from an earlier publication, *Robertson's navigation*, which states: "The swiftness of the wind in a great storm is not more than 50 or 60 miles an hour**, and a common brisk gale is about 15 miles an hour". The former definition compares well with that used today, especially if allowance is made for the difficulties which existed before 1800 of measuring wind speeds. But the latter definition suggests that the term 'gale' may have been used with less discrimination than it is today. On the other hand, Falconer is well aware of the particular characteristics and geographical incidence of hurricanes, which he defines as: "a violent and prodigious tempest...the hurricanes are more usual between the tropics particularly in the Atlantic Ocean, than to northward or southward of the torrid zone". The definitions of most terms, with the possible exception of the 'gale', appear to differ little from what would be recognised today.

Nicholas Pocock's log-books

Pocock was an independent merchant seaman and his logs are unusual in that so few of that type have survived. He used a system of notation that was identical to that of his contemporaries in the Royal Navy. Within a few years it would be more common to make entries at each of the three watches, first, middle and last, but Figure 1 shows that the Pocock entries were made in what was then the more established two-hourly manner. Such entries were to assist in the process of navigating by dead reckoning, a system more properly known as 'Mercator sailing', but the unquestionably abiding feature of the Pocock logs is the inclusion of a series of enchanting pen-and-ink sketches that accompany each day's entry. Pocock's subsequent life as a popular and successful marine painter is discussed in Cordingly (1986). He appears to have spent time sharpening his skills whilst at sea and his sketches reveal an eye for accuracy and detail that were to be his hallmark in later years.

The probable reliability of the sketches offers a rare opportunity of interpreting what sort of conditions might have been witnessed by the log-writer. In doing so we can gain an impression of the sea conditions that prompted log entries such as 'gales', 'fresh breezes' or 'light airs'. If we simultaneously determine how we might today describe those depicted conditions we can come to some understanding of the consistency in the use of terms which today have a clear meteorological definition.

Pocock's logs cover the period 1766 to 1776 during his mastership for Richard Champion, the Bristol merchant. In the early part of this period trade was conducted from Bristol to the British colonies of North America but later with the West Indies, though Pocock did make at least one journey to the western Mediterranean and Cadiz in 1770. During this ten-year period he mastered three vessels — the *Betsy*, the *Minerva* and the *Lloyd*. Each would have weighed a little

** 1 knot 1.15 miles per hour.

over 120 tonnes and would have been crewed by about 15 sailors. They were unarmed square-rigged ships with a main mast and foremast accompanied by a small trysail mast — a type of vessel known as a 'snow' (Figure 2).

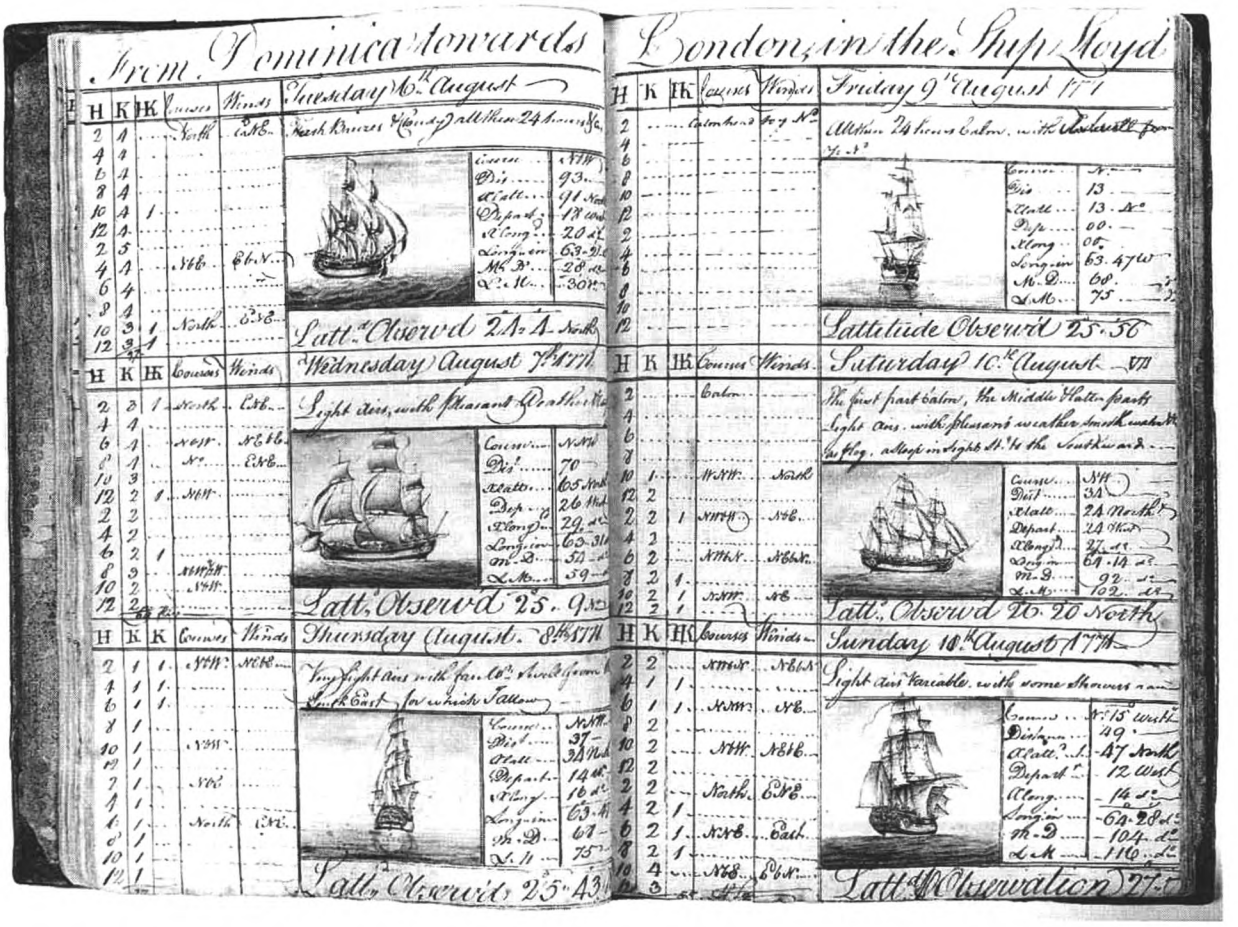


Figure 1. Two pages from Pocock's log showing his representation and description of stormy weather encountered on the outward leg of his second journey in January 1772. These gales, encountered off the Iberian coast, were responsible for the erratic course shown in Figure. 3. Observations on the weather and state of the sea are entered in the panel immediately above the sketches of the ship. The left-hand column, headed 'H', gives the hour of the day (starting at midnight); 'K' is the estimated ship's speed (in knots) and the third column, variously headed 'HK', 'FK' or 'K', is the fraction of knots applicable to that hour. The ship's course and the prevailing wind direction are given in the next two columns. The right-hand table gives an account of the ship's location and progress since the start of the voyage. (Courtesy of the City of Bristol Records Office.)

The following research is based on a study of the log for two journeys to the West Indies, now kept at the Bristol Records Office; other logs are held by the National Maritime Museum at Greenwich and by the Mariners Museum, Newport News, U.S.A. The terms he uses are exactly those enjoying wide currency with his Royal Navy contemporaries and our principal concern need only be with the degree of artistic licence that Pocock allowed himself when representing those conditions in graphical form.

The first of the two journeys began on 8 January 1771. Fresh gales in the Bristol Channel meant that he did not get beyond Lundy Island until the 13th. Even then the weather failed to moderate and Pocock's log notes fresh gales, sleet and snow on 14, 15, and 16 January. Gales followed on the 19th and 20th but Pocock continued his southerly course, as would all sailing vessels at the time, as far as

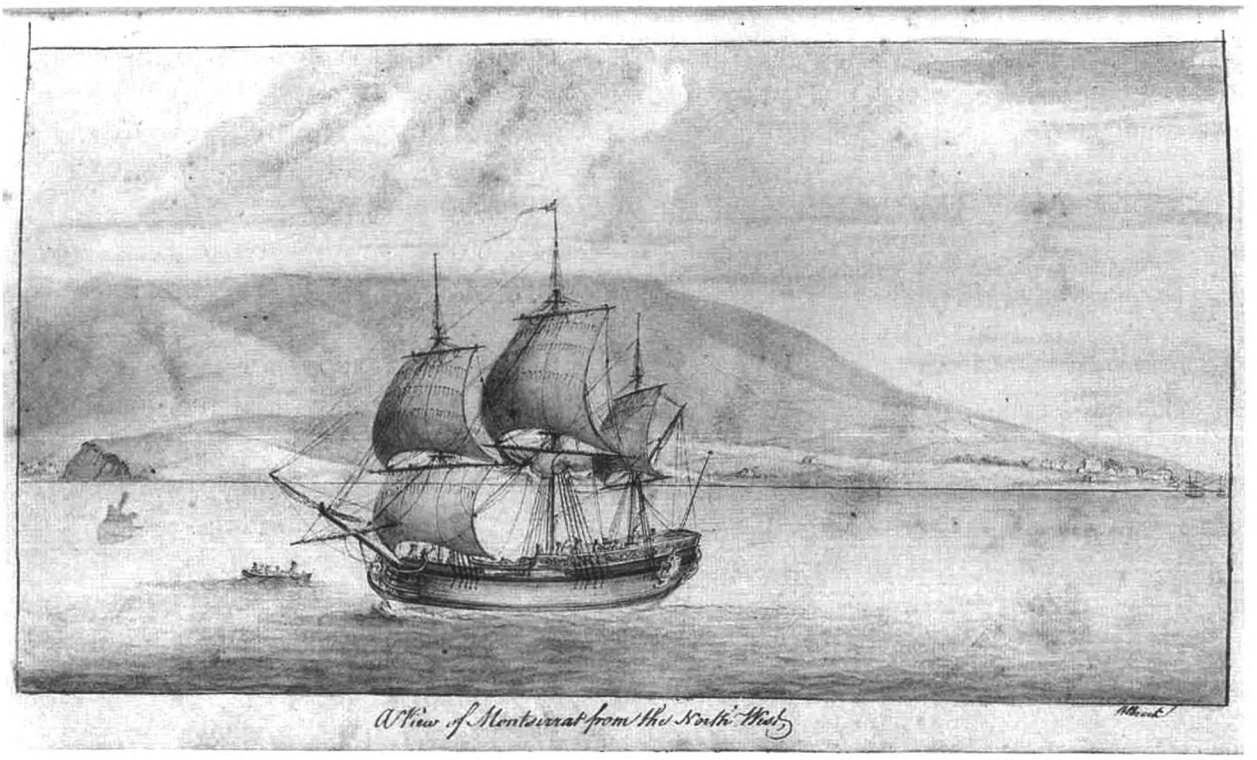


Figure 2. "A view of Montserrat from the North West" from the log-book of the *Lloyd*. Pocock's sketch of his vessel, of a type known as a snow, was probably made during the first few months of 1771. (Courtesy of the City of Bristol Records Office.)

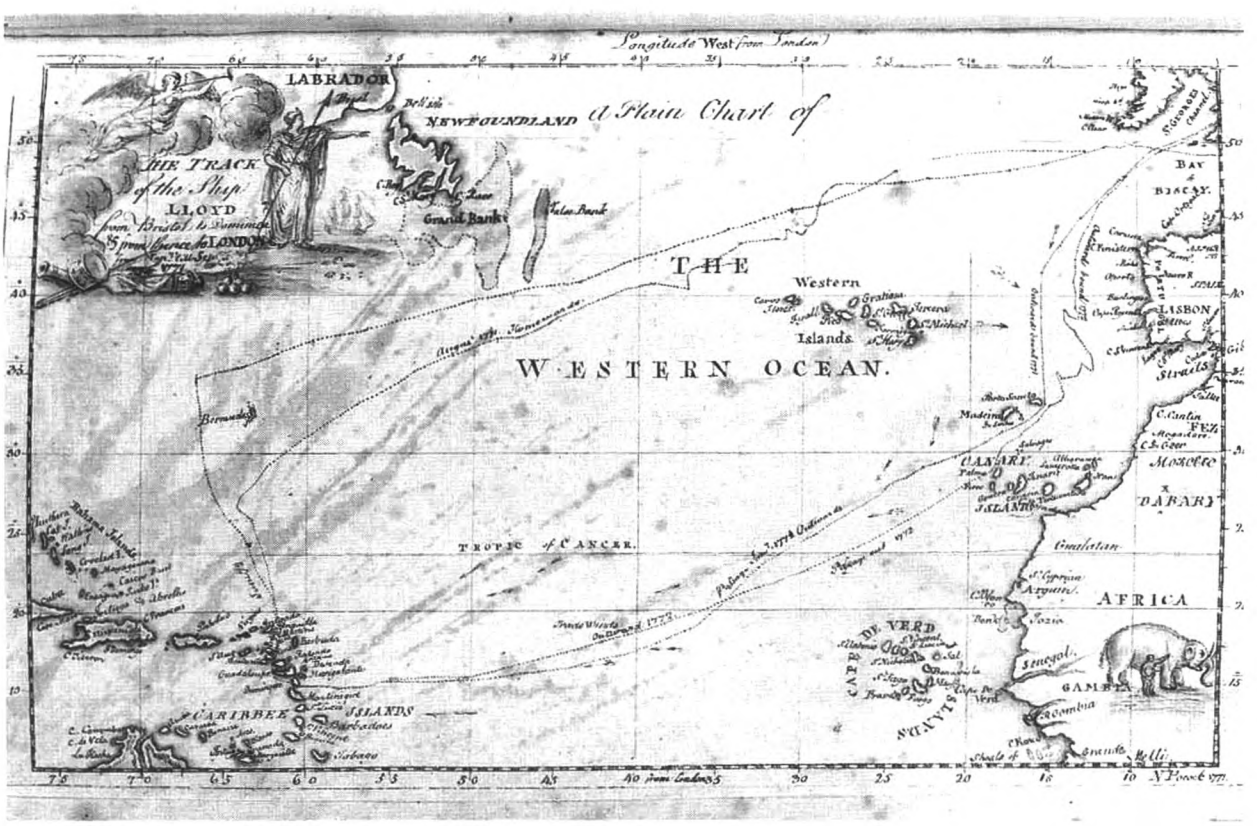


Figure 3. The map, prepared by Pocock, which opens the log of the *Lloyd* between January 1771 and August 1772. The route taken by Pocock on the two journeys from Bristol to the West Indies is marked (dotted line) and follows the well known path around the subtropical anticyclone, thereby taking advantage of the dominant winds. (Courtesy of the City of Bristol Records Office.)

Madeira from where a more westerly course would take advantage of the trade winds on the southern flank of the Azores anticyclone. This leg of the journey proved uneventful. Showers, some thunder, and occasional squalls appear in the log but nothing more serious occurred to challenge his seamanship. His navigation, relatively unscientific though it might have been, could not have been seriously in error as Dominica was sighted 8 leagues (45 km) to the west on 16 February. He anchored in 27 fathoms (49 m) off North Point at 3.00 p.m.

The return journey began on 25 July, though it was delayed by calms. Only the assistance of a strong current took him slowly northwards past Montserrat and Guadalupe on 3 August. A leisurely north to north-west passage continued as Pocock endeavoured to fall in with the westerlies on the north side of the subtropical high. South-westerly gales were recorded on 19 August, after which he continued north-eastwards with variable weather which deteriorated in the approaches to the English Channel. The south-west coast of England was sighted on 22 September, but because of the inclemency of the weather Pocock did not reach the Thames estuary until 9 October. Through the medium of his sketch map included in the frontispiece of his log (Figure 3) Pocock leaves us in no doubt of his course and the natural advantages offered in the age of sail by the circulation around the subtropical anticyclone.

He took the same route for the second journey which began from Bristol on 22 January 1772 and was marked by "hard gales from SbW [south by west]" with "great tumbling seas". On the 29th Pocock noted: "The first part Fresh Gales and Cloudy the middle and latter very hard gales with constant rain and a Great Head Sea and shippd a deal of water". Only on 3 February did conditions moderate. The island of Palma was sighted on the 9th and a westward course took Pocock to Dominica which he reached on 2 March. The return journey started on 19 June with a passage northwards until 2 July when he turned to the north-east. Several westerly gales were encountered on this Atlantic crossing though they may have been of some assistance as St. Alban's Head was sighted on 28 July and he docked at Woolwich on 1 August.

Methods of analysis

This study was made on the basis of a comparison of each day's sketch made by Pocock with the Meteorological Office's *State of sea booklet* (Meteorological Office 1983). Beaufort's original criteria in which winds were defined, in part, by the quantity and type of sail a ship might be able to carry under different conditions was of limited use in this study as it was designed by reference to battle-line ships. Such vessels carried a far greater variety and number of sails than Pocock's snow with which direct comparisons are frequently inappropriate. As great a measure of objectivity as possible was gained by being careful not to read the diary entry for the day until after the assessment had been made. The conditions represented by each sketch were then allocated to one of the present-day sea states. The log-book was then studied again, only now taking note of Pocock's description. Finally, the two sets of estimates were compared. Remembering that the terms used by Pocock were also those employed today, it is possible to attach a Beaufort scale number to each of his entries and also to their respective visual interpretations made by the present author. The numerical difference between the two gives a nominal measure of the departure of Pocock's use of the term from its present-day application. These differences can then be

summed and averaged over the whole range of Beaufort forces. The results are given in Table 1 where the categories are those of the Beaufort scale as it is currently defined. Pocock appears to have been very selective in his use of terms and those of strong breeze, moderate gale, and gentle and moderate breezes were not employed. On the other hand, Pocock did make occasional reference to 'pleasant' breezes. This probably equates to today's 'gentle' breezes but in the absence of any more persuasive evidence those entries were omitted from the analysis. Pocock, together with many contemporaries, makes use of the term 'hard gale'. This would seem to equate with a whole gale on the Beaufort scale and has been included and treated as such in Table 1. This degree of selectivity limits the utility of the study but is not unusual in log-keeping at that time. There were, inevitably, a number of days when the weather varied between the watches. As it is impossible to determine to which of the conditions that day's sketch applies such cases were not included.

Table 1. Summary of the results of the analysis

Beaufort class (and force)	Equivalent speed (kn)	Average force discrepancy	No. of positive anomalies	No. of agreements	No. of negative anomalies	Sample size
Calm (0)	<1	0	0	4	0	4
Light air (1)	1–3	+1.2	16	5	0	21
Light breeze (2)	4–6	+1.3	24	3	0	27
Gentle breeze (3)	7–10	—	—	—	—	—
Moderate breeze (4)	11–16	—	—	—	—	—
Fresh breeze (5)	17–21	-0.4	4	10	13	27
Strong breeze (6)	22–27	—	—	—	—	—
Moderate gale (7)	28–33	—	—	—	—	—
Fresh gale (8)	34–40	-1.7	1	1	10	12
Strong gale (9)	41–47	-0.1	1	4	2	7
Whole gale (10)	48–55	-0.8	0	2	4	6
Storm (11)	56–63	0	0	1	0	1
Hurricane (12)	≥64	—	—	—	—	—

Positive anomalies are those in which the visual estimate of the state of the sea in the sketch exceeds that given in Pocock's written account of the day, negative anomalies vice versa. The terms used in this table accord with those employed before the changes instituted in the early 1960s. Following the latter changes, terms were introduced which would not have been used by mariners in the eighteenth century; for example, near gale. Conversely, other terms, such as fresh gales, failed to survive the changes.

Whilst Pocock's use of terms might not at first sight appear to be consistent with their present-day application, the differences are not large and can be partly explained by the range of conditions that he attempts to describe with his limited and self-imposed vocabulary. The best means of discussing the results is to consider each of his descriptions in turn.

Calm. There appears, not surprisingly, to be no disagreement between present-day and past usage of this term, and in all cases Pocock's sketches of calm weather have that very appearance.

Light air. In this case there is disagreement of the order of one increment of the Beaufort scale. Of the 21 cases, only five present-day interpretations agree with Pocock's use of the term. In all other instances the impression is one of a sea state that would today be described as either light breezes (seven cases) or gentle breezes (nine cases).

Light breeze. Here again there is a disagreement of the order of one increment on the Beaufort scale. Only three of Pocock's applications of the term appear to be supported by his sketches. In 16 cases they depict gentle breezes, in seven cases moderate breezes and in one case fresh breezes. However, given that neither of the terms gentle or moderate breezes were used by Pocock it appears that he employed the expressions light breezes and light airs in an attempt to describe sea states and winds embracing a wider range than would be the case today. Had he employed the full range of terms available, discrepancies of this magnitude might not have arisen.

Fresh breeze. There is near-perfect agreement in the use of this term, with Pocock's sketches frequently creating an impression matched by present-day use of the term.

Fresh gale. This term provides the biggest anomaly in the dataset, nearly two increments on the Beaufort scale. But in this case, whilst Pocock often writes of a fresh gale, the apparent state of sea in his sketches suggests something rather less severe. Agreement is found in only one case and in three cases the sketches suggest only fresh breezes; the others would be described as moderate gales. Once again, however, in his unwillingness to use the terms strong breeze or moderate gale there is here every indication that Pocock is describing those conditions as fresh gales.

Strong gale. The degree of accord between Pocock's description and the interpretation of the sketches gives little concern that his use of the term would not be recognised today.

Whole gale. Pocock does not employ this term but that of a 'hard gale' which, to judge by the written accounts and sketches, is more severe than a strong gale. If this interpretation is accepted then the lack of accord is less than one increment on the Beaufort scale.

Pocock uses the term 'storm' only once and 'hurricane' not at all, and no comparisons can be made.

Conclusions

The evidence of contemporary dictionaries, combined with that offered by the Pocock logs, gives no serious grounds to doubt the consistency between late eighteenth-century and present-day usage of the nautical terms discussed here. The only exception to this might be the lingering anachronism of using the term 'gale' to describe winds and sea states that would now qualify for a less severe classification. *Robertson's navigation* certainly points in this direction, but Pocock's liberal use of the term probably results from his failure to employ the full range of contemporary wind and sea-state terms as a result of which it is used to cover less inclement conditions not otherwise included in his personal scheme.

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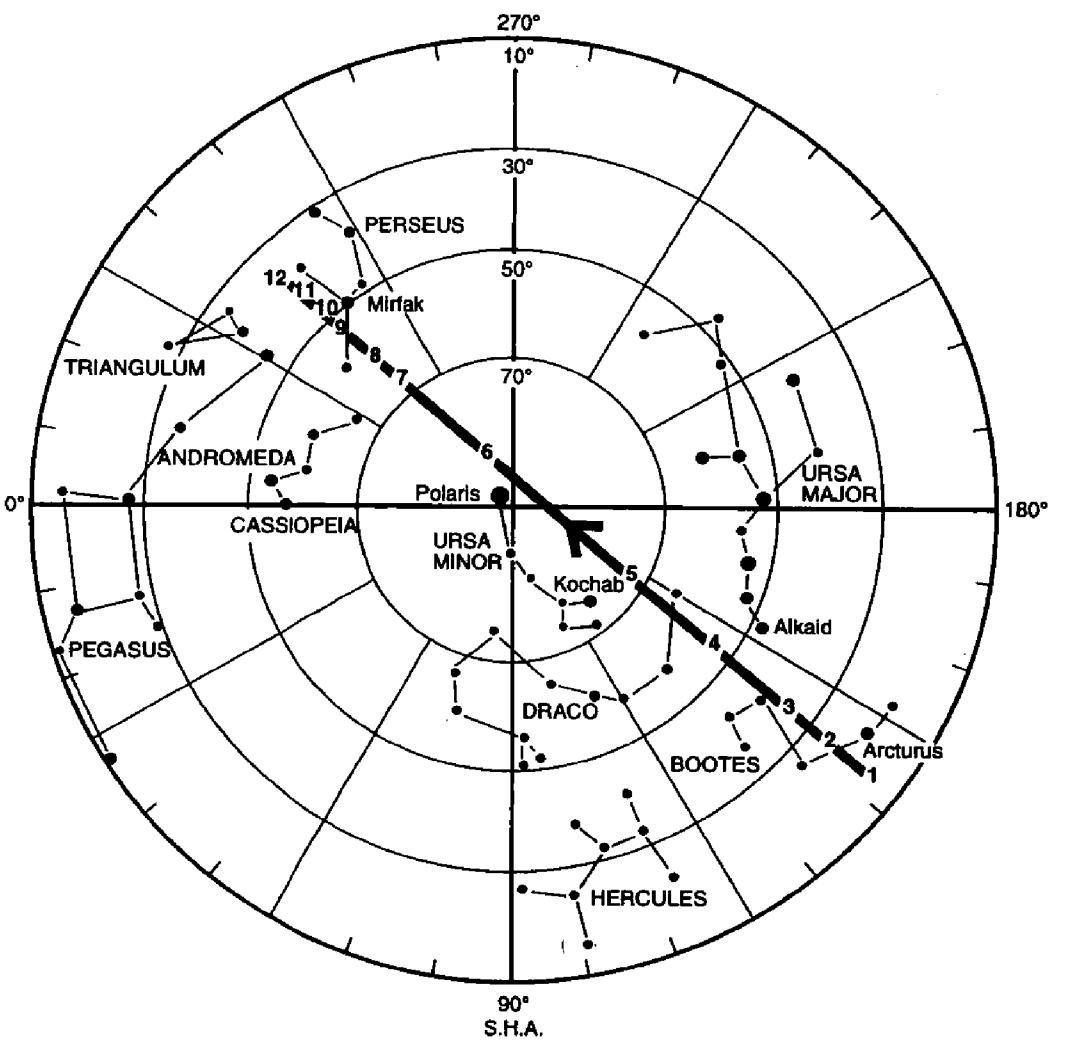
Observations of comet Hyakutake by United Kingdom VOF observers

Comet Hyakutake was discovered by an amateur Japanese astronomer on 30 January 1996, while scanning the night sky with a large pair of binoculars (the lenses were about 15 cm across). The faint patch of light which was later named after him was located between the constellations of Hydra and Libra but was far too dim to be picked up by the unaided eye. While continuing to approach the sun, the comet's elliptical orbit brought it closest to the Earth early on 25 March, at that time being a mere 10 million miles away but still not as close as comet IRAS-Araki-Alcock which skimmed passed the Earth at 3 million miles in 1983.

With ships at sea generally benefitting from dark skies and a clear atmosphere, the comet appeared brighter than it did over land where even simple street lighting was often enough to obscure a view of it. The chart shows the approximate track of the comet as seen from the *Colombo Bay* (Captain D.C. Thomson, 3rd Officer C.P.J. Robins, SM1 J.C. Benson and ship's company) on passage from Southampton to Port Said.

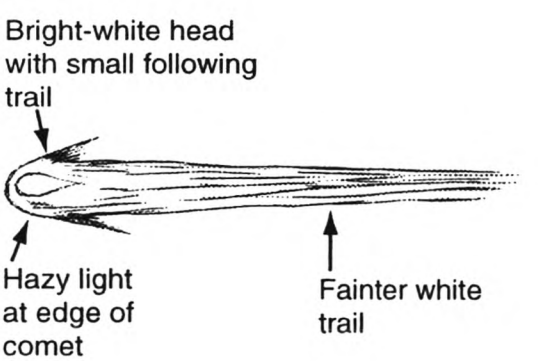


The course of the comet, as seen from the *Colombo Bay* between 21 March and 9 April 1996. The sequence of numbered points along the track denote the following details of the date and of the ship's position.

1. 21 March. 36° 16'N, 02° 56'W.
2. 22 March. 36° 16'N, 02° 56'E.
3. 23 March. 37° 14'N, 07° 25'E.
4. 24 March. 35° 36'N, 16° 30'E.
5. 25 March. 33° 18'N, 25° 47'E.
6. 27 March. 28° 02'N, 33° 26'E.
7. 28 March. 22° 10'N, 38° 20'E.
8. 30 March. 17° 21'N, 40° 39'E.
9. 31 March. 12° 20'N, 46°03'E.
10. 1 April. 11° 16'N, 55° 26'E.
11. 6 April. 05° 23'N, 97° 32'E.
12. 9 April. 05° 08'N, 106° 45'E.

Observers on 25 ships (to date) reported sightings of Hyakutake, between them giving continuous "night by night" coverage from 19 March (the first sighting came from P. Woodcock and J. McGushin on the *OOCL Bravery*, while in the Gulf of St Lawrence) to 23 April when the observing officers on the *Seki Pine* needed the use of binoculars to confirm the faintly visible comet after having watched it easily on previous nights. *

Descriptions of Hyakutake ranged from a "large but dull foggy blob" (*OOCL Bravery*) to "a very impressive spectacle" with a tail growing in length each night (3rd Officer S. Regan, on the *Western Bridge*). The tail was generally noted to have been at its longest on 24 and 25 March; the *Norna*, whilst patrolling fishing grounds off Skye, measured it as the "width of two hands plus two fingers, at arm's length" (Chief Officer A.R. Davidson). The majority of reports indicated that the tail was straight and was hazy, or like the Milky Way in brightness or "blurred", although observers on the *Matco Thames* (Captain I. Coppack, Chief Officer E. Bibby, 2nd Officer I. Henderson, 3rd Officer M. Trickley and Watchkeeper P. Grindle) noticed when they watched it on the 25th, from 59° 29′N, 01° 20′E, that it had a "bright, short trail within the larger trail", see sketch.



Although Hyakutake was a previously unknown comet and little was known about how it would "perform", it did at least become more of a phenomenon and was more memorable than the famed Halley's comet which made its most recent and rather disappointing appearance in 1986. Unlike Halley's, which some people may just manage to see twice in a lifetime, Hyakutake is not expected to return for thousands of years and so we acknowledge the contributions made by the following in recording this particular once-in-a-lifetime event: the Masters and observing officers of *Al Awdah, Baltic Universal, Bora Universal, British Resolution, Cardigan Bay, Chiquita Baracoa, Colombo Bay, Eagle, Encounter Bay, Exemplar, Hemina, Kumasi, Matco Thames, Nolizwe, Norna, OOCL Bravery, Pacific Pintail, Palliser Bay, Pride of Cherbourg, Ravenscraig, Rixta Oldendorff, Seki Pine, St Clair, Tonbridge, Western Bridge.*

* The observers on the *Seki Pine* entered into the spirit of watching the comet's progress; the following account describes their efforts on 23 April at 1950 UTC:

Now that word has been promulgated to the effect that it is known a record is being made of sightings, the Comet Appreciation Society Team (CAST) regularly meet on the navigation bridge wings to determine the absolute last sighting. Motives are considered to be not entirely altruistic as "I was last to see the comet" syndrome takes over. The Chairman (Chief Engineer D. Yates) is usually the first to arrive on site in order to gain access to a pair of bridge-wing mounted binoculars (×15) which we have thereafter jealously guarded. If the two watchkeepers who are also members of CAST (Chief

Officer H. Wright and GP Lookout A. Patrick) are on the ball, they are usually able to circumvent the Chairman but on occasion do not. So it was, on the above date and time, that the Chairman last saw comet Hyakutake at about 5° altitude, initially through binoculars, thence to the surrounding CAST as a naked eye object. Some doubt is still expressed that it could actually be seen with unaided vision but due deference is shown to the Chairman, and this minute is officially recorded.

The idiosyncrasies of Weddell Sea weather noted by R.R.S. *Bransfield* *

The British Antarctic Survey Station, Halley, was first established in 1955 as part of the United Kingdom's contribution to the scientific pursuits for the International Geophysical Year [1957–1958], on the Brunt Ice Shelf, part of the Caird Coast, Coates Land, Antarctica in 75° 30′S, 25° 30′W.

Since 1970 the purpose-built, ice-strengthened R.R.S. *Bransfield* has been the relief vessel, carrying each year all the personnel, mail, stores, fuel and building materials for the station, which has had to be rebuilt five times since its inception as a result of snow accumulation and ice melt. Relief normally involves two each way passages through the Weddell Sea in December and February respectively, often requiring the vessel to navigate through 600 n.mile of pack-ice. Whilst on these passages, as throughout her Antarctic season, in addition to the synoptic weather and ice analyses, a daily upper-air programme is carried out by the launching and tracking of a sonde balloon. In addition iceberg data is supplied to the Norwegian Polar Institute.

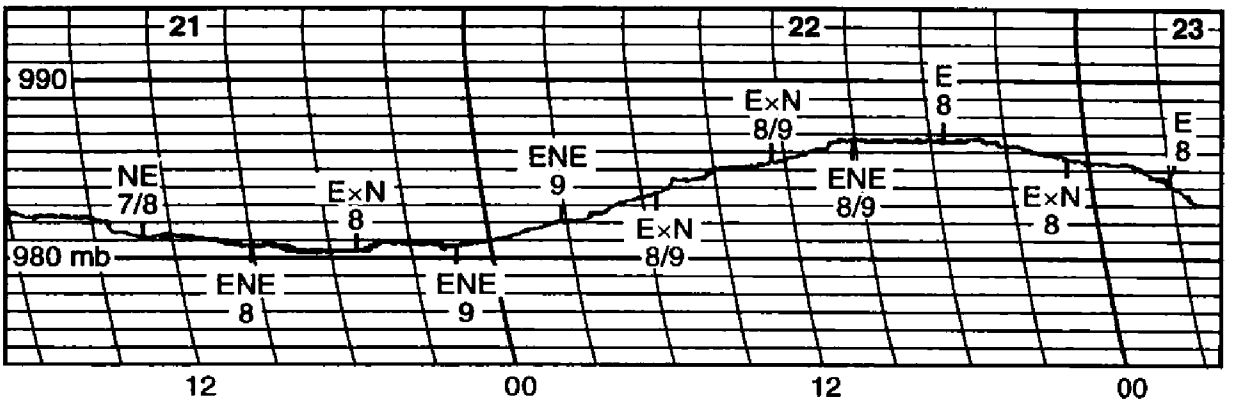
The Halley Research Station, which presently is erected 4 m above the ice shelf, on three jackable platforms, is the winter home for eight scientists, one doctor and nine support staff. The scientific duties carried out there include meteorology, glaciology, seismology, radio astronomy, ionospherics and airglow, with the finding of the Antarctic Ozone Hole being the best known event.

The station is situated approximately 15 km from the Brunt Ice Shelf front, which itself has an average height of 25 m at its seaward edge. Therefore, the *modus operandi* for the relief is by means of tracked vehicles and sledges utilising the blown snow ramps that develop between the annual sea ice formed in the winter, and the shelf top, in "creeks" along the ice front. The creeks themselves are formed by the westward flow of the Brunt Ice Shelf grounding on a bathymetric shoal patch, fortuitously situated to the east of the station.

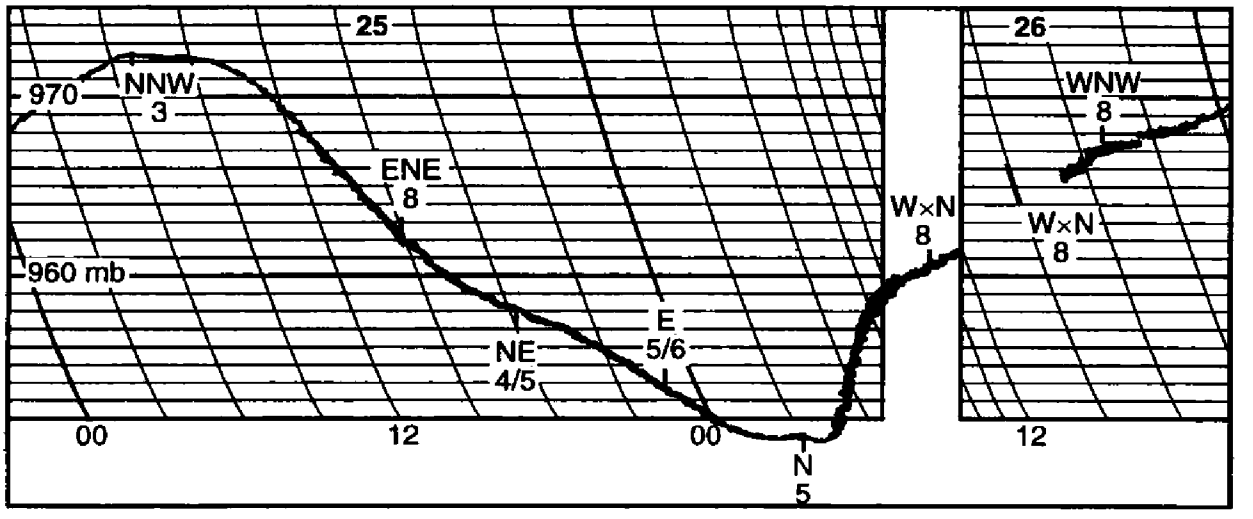
The summer (November to February) atmospheric pressure this far south in the Weddell Sea is normally low, never rising above 1000 mb but seldom dropping below 960 mb. The normal tracks for Weddell depressions are either through Drake Passage and thence in a south-easterly direction to arrive at the continent at about 70°S, 10°W, or to cross the Antarctic Peninsula between 68°S and 70°S thence travelling due east across the southern Weddell Sea. Both of these routes, therefore, pass to the north of the Halley area hence the normal easterly airstream found there. On a reasonably frequent but barely satellite detectable and hence

* Contributed by Captain Stuart Lawrence and Principal Observing Officer, Simon Ward.

presently unforecastable basis, intense micro-depressions develop, either on the continent or as lee side depressions from the eastern side of the Antarctic Peninsula, wreaking short term havoc at Halley station.



(a)
21–23 February 1996



(b)
25/26 February 1996

The barograph traces show how, unlike in lower latitudes, the correlation between pressure tendency and wind strength becomes irrelevant, as in (a) for example, while (b) shows the trace of a deep Weddell depression passing close to the north of the vessel.

AURORA NOTES JANUARY TO MARCH 1996

By R.J. Livesey

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

Marine observations of the aurora received to date for the period under review are listed in Table 1. The active aurora recorded by the *Ravenscraig* on the night of February 18/19 was notable for the irregularly spaced vertically oriented "black stripes", to quote the observer, that appeared to move backwards and forwards along a rayed band. This band was 25 degrees long in azimuth, with a maximum height of 20 degrees. The apparition was short lived due to the advent of clouds accompanied by showers of snow. Light and dark striations are not uncommon in auroral forms due to variations in the brightness of the active zones therein. The dark stripes referred to may look even darker due to the contrast effects with the brighter parts of the band. In auroral literature, P.J. Tanskanen of Finland, refers to observations of "Black Aurora" which are regions of very low luminosity embedded in a diffuse auroral substorm near to the poleward boundary of a diffuse aurora. Be that as it may, the observation by the *Ravenscraig* is an interesting one. The aurora was associated with very disturbed geomagnetic conditions.

Table 1 — Marine aurora observations January to March 1996

Date	Ship	Geographic Position	Time (UTC)	Forms in Sequence
Jan. 18/19	*Arctic Ranger*	71° 30′N, 23° 57′E	1730–1744	mP. Max. alt. 80°.
26/27	*Arctic Ranger*	71° 25′N, 25° 54′E	1735–1754	aHA.aRB.Max. alt. 90°.
Feb. 18/19	*Ravenscraig*	64° 03′N, 04° 15′E	2225–2235	G.a_3fRB.a_3 dark vertical stripes. Max. alt. 20°.
25/26	*Arctic Ranger*	69° 08′N, 14° 02′E	1925–2113	aRB.aHB.aHA+aRB.HA. p_1RB.p_1RA.RA.HA+mP. HA+RA.p_1RA.HA. aHA+RR.RR+RB.aRB. Max. alt. 35°.
Mar. 10/11	*Arctic Ranger*	70° 17′N, 17° 46′E	1848–2016	RB.aRB.m_2P.am_3.RB. p_1m_3RB.aMRB.HA. Max. alt. 40°.
11/12	*Arctic Ranger*	70° 19′N, 18° 07′E	1932–1954	mHB.aRR+HB.amHB. HA+RR.HA+RA.p_1HA+ RA.p_1m_2RA.HA.p_1RA+ RR. p_1mRA.mP. Max. alt. 25°
13/14	*Arctic Ranger*	69° 33′N, 14° 54′E	2028–2044	qHA.aHA.mRR+HA. amHB.RB.p_1RB.aHA+ aHB. p_1RR+RA+HA.p_1RA.RA. HA.mP. Max. alt. 35°.

KEY: a = active (moves or changes rapidly), a_3 = rapid horizontal movement, m_3 = multiple (number of forms), p_1 = flaming, q = quiet, G = glow, H = homogeneous, P = patch, RA = rayed arc, RB = rayed band, RR = rays.

The fishing voyages of the *Arctic Ranger* took her from the port of Hull up towards the North Cape and into the northern auroral zone. The reports of relatively inactive aurorae on January 18/19 and 26/27 were associated with low

levels of geomagnetic disturbance. However, the very active aurorae of 25/26 February and 10/11, 11/12 and 13/14 March were found to be associated with active or stormy geomagnetic conditions and the auroral activity was confirmed by North American observers, see Figure 1.

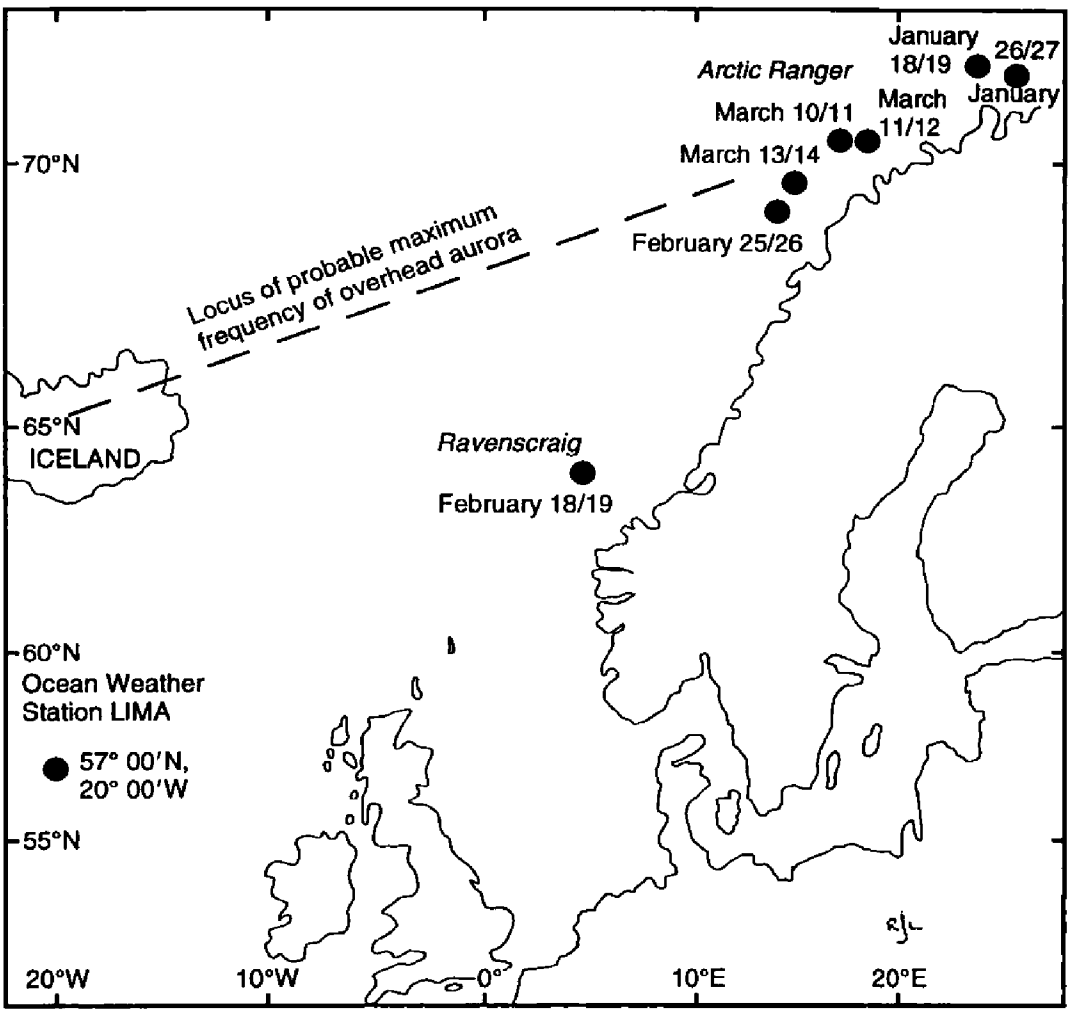


Figure 1. Locations of observing ships relative to the auroral zone.

On 9 June, 1996, the Ocean Weathership Service of The Met. Office ceased to be and O.W.S. *Cumulus* was returned to her Dutch owners. Thus ended a long association between Atlantic weather ships and observations made by them of the aurora. Weather ships provided data to the Balfour Stewart Laboratory, in Edinburgh University, during the International Geophysical Year (1957–58) and the International Quiet Sun Year (1964–65) and at other times. When the Balfour Stewart Laboratory, which had been so ably directed by James Paton and whose death was sudden and untimely, closed its doors, the British Astronomical Association took over the role of collecting and analysing auroral observations. From January 1976 until June 1996, United Kingdom weather ships continued to provide auroral observations to the BAA with the approval of The Met. Office. Prior to O.W.S. *Cumulus* assuming the British flag in 1985, the Royal Dutch Meteorological Institute, at De Bilt, provided copies of auroral observations made by this ship.

In Table 2 are listed the auroral observations received from ocean weather ships, giving details of the maximum activity reported. The frequency with which aurora has been reported, principally at station Lima (57°N, 20°W) does not truly reflect the variations in auroral and geomagnetic activity with the sunspot cycles concerned. Several factors are involved which include the individual layouts of the ships concerned, together with their deck lighting arrangements, observing procedures and duties to be carried out. As auroral observing from a weather ship can only be classed as a voluntary extra curricular activity, on behalf of the BAA I would like to record my most grateful thanks to the captains, crews and weathermen of the weather ships concerned for taking the time and trouble to make and report such auroral observations as they did during the past 21 years.

Table 2 — Aurora observations from weather ships 1976–1996 (principally from United Kingdom Ocean Weather Station Lima): Highest order of activity seen on each reported event night

YEAR	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
Glow or unspecified light	28	10	2	3	5	8	9	9	24	21	15	11	13	30	14	12	4	1	2	1	0
Homogeneous arc or band	1	1	0	2	1	5	2	2	6	3	1	1	1	1	3	2	0	2	0	0	0
Rayed arc or rayed band	4	4	1	5	0	5	5	7	5	3	5	2	2	2	0	0	4	5	1	0	0
Bundles of rays	1	1	0	1	1	2	2	1	6	5	2	3	1	6	2	8	4	1	1	0	0
Coronal structures	1	0	0	0	0	0	1	0	3	0	1	0	0	1	0	0	1	0	0	2	0
Annual event night total	35	16	3	11	7	20	19	19	44	32	24	17	17	40	19	22	13	9	4	3	0

The CLUSTER group of artificial earth satellites was intended to be part of the International Sun-Earth Explorer Project. They were to have investigated the particles and magnetic fields emanating from the sun and how these interacted with Earth's magnetic field and atmosphere thereby adding knowledge to the processes that form the aurora and magnetic storms. Unfortunately, the CLUSTER satellites came to an abrupt and untimely end when the Ariane 5 launch rocket went off course after take-off and self destructed. After the loss of such a valuable cargo and years of preparatory work, one is reminded of such marine disasters as the loss of the *Mary Rose* off Portsmouth and the *Wasa* in Stockholm Harbour, both fully laden. Whereas both sailing vessels have provided much for archaeologists and historians to study in the years after their loss, the CLUSTER satellites provided the immediate onlookers with a very expensive fireworks display. The moral here must be never to trust a valuable cargo, uninsured, to an untrialled vessel, whatever accountants say about saving costs.

VOF Observing Officers' records

The purpose, in the Observations (Marine) branch, of maintaining a record of observing careers in the United Kingdom VOF is to ensure that observing officers' efforts in the cause of weather observing at sea can be considered for due reward by nomination for an Excellent Award, made annually to 300 nominees and that the records will ultimately show when a minimum of 18 years' of observing service has been completed which will enable Masters to be considered for a special Long-service Award taking the form of an inscribed barograph.

In 1987 the use of a cumbersome card index system to record observing careers with the U.K. Voluntary Observing Fleet was finally phased out in favour of a computerised version. The carding system had grown spectacularly over the previous fifty years or so and the associated filing drawers were threatening to take over the entire floor space of what was then known as the Marine Division. The new version operated in exactly the same way as the manual version but a new way had to be found for the identification of each observing officer since a method based on surnames (used previously) was inefficient when dealing with duplicate names, and it was found that surname/initials combinations could not be relied on either, while ship names were not considered as observers often change ship and ships can be renamed. The answer lay in the use of a number, namely the Discharge Book Number (DBN) which, as readers are aware, is more likely to be permanent and is unique to each observer.

A career record is built up over the years using the information supplied on the special page at the back of each met. logbook. The observing officer's DBN is used to identify the correct record from the database, while the surname and full initials together with the names of past observing ships are used as a double-check for correct identification. Once identified the record is updated with the name of the current observing ship, the serial number allotted to the logbook, its date of receipt and the assessment mark given for its contents by the Nautical Officer (according to a set formula). Finally, the ship's owner or management company is added to complete the entry. No sensitive or personal information, therefore, is held on the record. If the officer is nominated to receive an Excellent Award or, in due course a Long-service Award, a note is also made on the record.

Observers' career records are updated directly from the information given in the logbooks*, and new records are created if none already exist but only those entries displaying a DBN can be processed; thus, it is easy to see that without the necessary information, a period of observing service can remain forever unrecorded on the database.

To enable us to maintain full records of observing careers for the benefit of those involved and to make recommendations for awards where deserved it is important that all of the required information at the back of each logbook is entered. This applies even when multiple logs are returned since all books are treated as separate items once they arrive at Bracknell.

If you are an observing officer, why not complete your own entries on the page or ensure that you check the entries if they are made on your behalf for without the DBN and all the other pieces of information your prospects of being nominated for awards are greatly jeopardised.

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* Information from logbooks is also used to compile the fleet lists which are published in this journal.

Letters to the editor

Dolphins and diamonds

The *Grand Banks* is one of De Beers Marine's diamond mining vessels operating off the west coast of South Africa, approximately 15 n.mile from the mouth of the Orange River. The operation involves lifting sediment from the sea bed by means of an air lift, removing the diamonds from the slurry and discharging the residue. While mining there is a plume of discharged mud emanating from the vessel and drifting according to tide and current.

There is a pod of approximately 50 Heaviside's Dolphins in the area (identified from *Two Oceans* published by the Southern Africa Nature Foundation). They are most frequently visible on calm days but have been seen in all weathers during the period of observation, the [southern] summer of 1996. The highest concentration of dolphins is usually along the weather side of the plume but they swim through it and around the vessel as well, particularly when the inflatable has been launched.

The pod subdivides into groups of up to six individuals some of which appear to be family groups of adults, adolescents and calves, others appear to be peer groups and there are soloists. Only surface behaviour is readily observable due to the relative opacity of the water in this area and the dolphins' distance from the vessel.

Swimming varies from slow surface progress to fierce chases after prey. Several distinct patterns of surface behaviour are observed, varying from the calmest of breathing turns to spectacular twisting leaps. Simplest is the breathing turn, exposing blowhole and dorsal fin. Next in complexity is an observation rise where the head is lifted clear of the water and may be held there for several seconds. This is frequently seen within the opaque water of the plume. Tail-splashing involves keeping the head underwater and splashing the surface of the water with the tail. A simple jump lifts the whole body clear of the surface, and re-entry is smooth. Splashing jumps are higher, and the body is twisted in the air so that the dolphin lands on its side or back with a considerable splash. A particularly interesting jump involves a vertical exit from the water, a sharp curve of the body in the air followed by a smooth re-entry through the point of exit.

I have not observed mating behaviour yet.

Captain F. Hugo, Master, m.v. *Grand Banks* (a non-observing vessel).

Editor's note. This letter was of great interest to Kelly Hughes, of EarthKind's *Ocean Defender* project, and she replied as follows:

This report is of huge interest to me. These dolphins are extremely rare in the sense that their range is restricted to off the western coasts of Namibia and South Africa, along 1600 km of coastline, approximately. This species appears to be associated with the cold, northward flowing Benguela Current. This sighting is perhaps the southernmost ever recorded. Very little is known about their social groupings and behaviour thus your comments are extremely appealing. Most identification books tell you that Heaviside's dolphins are seen usually in small groups of 2–3 individuals occasionally coming into larger groups of about 30 to feed — your information now shows that larger groups are not uncommon. Generally, the dolphin is thought to be fairly shy and undemonstrative. However, they have been sighted leaping some 2 m out of the water, tail-slapping, porpoising and spy-hopping (as described by yourself). These dolphins feed primarily on squid and demersal fish species and tend to live in waters no deeper than 100 m. Unfortunately, because their numbers are thought to be so low (surveys within 8 km of the shore have shown less than five sightings per 160 km) they are potentially threatened by certain activities. Up to 100 of these dolphins are entangled in fishing gear every year and some are even shot or harpooned to eat by locals. I would have thought that mining is also a

serious threat to the species since it will cause drastic alterations of their habitat and to the food chain. However, from your observations it does appear that the dolphins are unaffected by the mining industry at present.

Further reports of these dolphins in this area will be of great use and may help explain why they are seen when there is so much activity nearby.

Personalities

OBITUARY — CAPTAIN J.B. WATSON died on 22 July 1996, a few days after his 58th birthday, so bringing to a premature end a career which had covered some 37 years.

John Booth Watson was born in Bingley, Yorkshire on 13 July 1938 and joined the Brocklebank company as a Third Officer in 1959. The Met. Office received his first meteorological logbook in 1963, from the *Mahout*, and following this came further contributions from the *Magdapur*, *Mahseer* and *Mawana*, the last of these being received in 1968. His career then took him for a while to ships which were not involved with U.K. VOF observing but during this period he stayed with companies of the Cunard group, gaining promotion to Master in May 1973, with his first command being the *Lucigen*, operated by Moss Tankers. Captain Watson returned to observing in 1977 when in command of the *Samaria* and then served on this ship along with the *Scythia*, *Servia* and *Lucerna* until 1984. From 1985 until 1989 he was Master of the *Luminetta*, and 14 logbooks were sent from that ship before he transferred from Cunard to P&O Containers Ltd in 1991, taking command of the *Energos* prior to being appointed to his one and only container ship, *Table Bay*, in August 1992. This, his final command, yielded a further nine logbooks the last of which was assessed as Excellent.

In 1987 and 1989 he received Excellent Awards and, with 18 years of valuable and much appreciated work for the United Kingdom VOF to his credit, would have been entering the list of those coming into consideration for a Long-service Award. Away from the bridge he found relaxation in quieter moments by building model boats, indeed two were left unfinished on board *Table Bay* for completion by others; however, when ashore his main hobbies also included bird watching and hill walking.

Captain Watson's wife was accompanying him on the voyage during which his untimely death occurred, at sea, south of Ascension Island and we extend our condolences to her and her family upon the loss of one who was regarded as one of the gentlemen of the sea.

RETIREMENT — COMMODORE I. GIBB retired at the end of August 1996 after 42 years at sea.

Ian Gibb was born on 5 October 1936, in Newcastle upon Tyne and his nautical career began at the School of Navigation, Warsash, University of Southampton. Although his observing career began as a cadet on P&O's *Arcadia*, in 1954, the first logbooks bearing his name were received by The Met. Office in 1958, when he was Third Officer on the *Socotra*, and they were followed by logs from the

Stratheden, in 1960. After this came a period during which he was attached to P&O ships reporting for the Canadian VOF whilst on the west coast of America, being appointed Chief Officer on the *Chusan* in 1972.

In 1985 Commodore Gibb returned to observing for the United Kingdom when Master of the *Sea Princess* and also in that year began his association with P&O Cruises' liner *Canberra*, overseeing the completion of 15 logbooks from her during the next 10 years. P&O Cruises' new *Oriana* became his final command when he was appointed Master in 1995. He says that he contributed "spasmodically" to *The Marine Observer* during his career and believes that his most exciting observing experience was seeing (and feeling on his own hands) St Elmo's Fire whilst on the original *Oriana* in the Tyrrhenian Sea in 1966.

Commodore Gibb says, "I would be pleased if you will thank all the staff of Observations (Marine) and marine forecasting for their assistance to me, and my ships, over the years, particularly when *Oriana* was undergoing sea trials and during our Hurricane Voyage, last September* . Particular thanks also to Captain Douglas McWhan for his continued support in the port of Southampton."

Future hobbies and pursuits will centre around his Wiltshire home, in Great Bedwyn, where walking the family beagles, listening to classical music, reading and photography will fill his time when he is not acting as chauffeur to his two daughters, at school locally. We thank Commodore Gibb for his observing work over the years and wish him a long and happy retirement.

* *Editor's note.* The "Hurricane Voyage" referred to by Commodore Gibb occurred in September 1995 when, between the 2nd and 15th, *Oriana* felt the effects of hurricanes Iris and Luis which were already active, while Marilyn developed later in this period. The MetROUTE team, based in the Central Forecasting Office, at Bracknell, provided weather forecasts on request.

Notices to Marine Observers

ADMIRALTY LISTS OF RADIO SIGNALS VOLUMES 3 AND 5

The latest edition of *Admiralty Lists of Radio Signals* Volume 3, Radio Weather Services and Navigational Warnings, has now been split into two volumes. The first part, Part 1 (NP283(1)), covers Europe, Africa and Asia while Part 2, (NP283(2)), covers the Philippines, Indonesia, Australasia, the Americas, Greenland and Iceland. The split will give each part the same geographical coverage as *Admiralty Lists of Radio Signals* Volume 2, Parts 1 and 2.

Volume 5, (NP285) Global Maritime Distress and Safety System, has been revised to show the increase in planned and operational sea area communications stations while the NAVTEX sections have been fully updated as have the Distress, Search and Rescue entries.

Fleet Lists

UNITED KINGDOM

Updated information regarding the list published in the July 1996 edition of *The Marine Observer*. Amendments for this list are required by 15 September. Information for the main listing in July is required by 15 March.

Name of Vessel	Date of Recruitment	Master	Observing Officers	Radio/GMDSS Officer	Owner/Manager
Arktis Force	13.9.96	J.Y. Madsen	J.D. Pascua, B.M. Estolas, J.R. Gonzales	GMDSS	Elite Shipping A/S
Arunbank	17.4.96	D.E. Ginder	A. Balashov, D. Porublev, J. Warren	S. Chernoguz	Andrew Weir Shipping Ltd
Atlantic Liberty	31.5.96	—	—	—	MOL Tankship Management Ltd
Front Guider	10.6.96	G. Borud	B.T. Lladoc, J.C. Nocon	H.L. Sedayon	Nordic Oriental Shipmanagement Pte Ltd
Golden Duke	13.8.96	J. Krishnapillai	R. Manda, F. Punay, Y. Yoro	GMDSS	Jardine Ship Management Ltd
Kagoro	7.9.96	G. McGuire	E.K. Oduro, E. Kodjoe, J. Pesudas	GMDSS	Acomarit (U.K.) Ltd
Kintampo	19.4.96	W. Andersen	S. Hagan, J. Quayson, N. Hermosa	V. Arcegono	Acomarit (U.K.) Ltd
Klazina C	6.6.96	R. Hawkes	R. Hawkes, A. Baker	GMDSS	Carisbrooke Shipping PLC
Leopard	27.8.96	J.P. Park	E.H. Millar, K. Dornan	GMDSS	Pandoro Ltd
Maersk Somerset	6.8.96	N. Vause	G. Moir	GMDSS	The Maersk Company Ltd
Maersk Surrey	5.8.96	—	—	—	The Maersk Company Ltd
Mineral Prosperity	20.3.96	K. Nayyar	G.B. Sethi, G.K. Mallick, V.K. Singh	GMDSS	Anglo-Eastern Ship Management Ltd
Mineral Venture	2.8.96	A.A. Kadkol	S.M. Phanse, M.N. Amin, H.C. Wong	K.F. Lee	Wah Kwong Shipping Agency Co. Ltd
Myrina	9.5.96	—	—	—	Shell Marine Personnel (I.O.M.) Ltd
Norquest	27.6.96	W.H. Walker	—	GMDSS	Phoenocean Ltd
North Sea Trader	6.5.96	P. Whitehouse	N. Coombs	GMDSS	F.T. Everard & Sons Ltd
Ocean Defender	1.11.95	D. Burns	D. Burns, J. Taylor	GMDSS	EarthKind
Ocean Sky	6.7.96	B.E. Jensen	—	GMDSS	Sartol Shipping/Enterprise Oil PLC
OOCL Britain	9.8.96	E.G. Brady	J. Hann, K.H. Lim, W.H. Kong	GMDSS	OOCL Agency Ltd
OOCL Canada	7.7.96	D.R. Llewellyn	P. Ivory, E. Godolphin, S. Begley	GMDSS	OOCL Agency Ltd
Pathum Navee	25.6.96	C.P. Jerry	T. Min, L.T.M. Win, G.S. Mishra	R.W. Dandona	Univan Ship Management Ltd
Pisces Trader	28.5.96	M.A. Pillai	—	V.M. Dandekar	T.& J. Harrison Ltd
Putford Ajax	20.3.96	G.A. Cubbison	I. Bulley, C. Veitch	GMDSS	Boston-Putford Offshore Safety Ltd
Putford Aries	21.8.96	R. Stockley	M. Chapman, P. McCardle	GMDSS	Boston-Putford Offshore Safety Ltd

Raven Arrow	31.5.96	R.L. Sequeira	T.I. Karimpanal, P. Tyagaraju, G.R. D'Souza	GMDSS	Gearbulk (U.K.) Ltd
Saldanha	19.8.96	N. Cooper	N. Acot, R. Sarabia, F. Ancuelo	GMDSS	SAFSHIP Agency
Snow Cape	19.6.96	C.R. Mundy	R.L. Reazo, R.E. Rentero, D.G. Spooner	I.L. Guinoo	Blue Star Ship Management Ltd
SubSea Mayo	7.8.96	R. Greenwood	P. Wheat, A. Gibson	M. Thomas	SubSea Offshore Ltd
Trojan Star	2.7.96	P. Richards	R. Cantalejo, R. Cuartsma, C. Enriquez	GMDSS	Blue Star Ship Management Ltd
Tsuru Arrow	18.7.96	T. Brandal	E. Sarigumba, G. Ness, A. Chongawen	J. Seneviratne	Gearbulk (U.K.) Ltd
Tudor Star	22.6.96	—	—	—	Blue Star Ship Management Ltd

The following Selected Ships have been withdrawn:

Aldrington, Almeda Star, Alnmouth, Antwerpen, Brussel, CMB Ebony, Cornelis Verolme, DeLoris, Echoman, Ellen Hudig, Gardline Locater, Gem, Havpil, Helen, Hermod, Lerma, Lioness, Martha II, Mercury, Petro Milford Haven, Rafnes, Reefer Jambu, Sea Searcher, Stena Londoner, Vectis Falcon, Windsor, Zenatia.

BRITISH COMMONWEALTH

The following Selected and Supplementary Ships have been recruited to or withdrawn from the list published in the July 1996 edition of this journal.

HONG KONG

Recruited (Sel.): *Bunga Pelangi Dua, Kitty, Navios Bulker, OOCL America, OOCL Japan.*
Withdrawn (Sel.): *Jahre Rose, Maritime Grace, Ocean Competence, OOCL Concord, Ratana Valai.*

Recruited (Sup.): *OOCL China, Tohzan.*

INDIA

Withdrawn (Sel.): *INS Deepak, INS Godavari, INS Gomati, INS Kripan, INS Magar, INS Ranvir, INS Taragiri, INS Vikrant, INS Vindyagiri, Vishva Vikram.*

NEW ZEALAND

Recruited (Sel.): *Freshwater Bay, Marico, Matilda Bay, Toanui, Wellington Express.*
Withdrawn (Sel.): *Atlantic Defender, Auckland Express, Canterbury Express, Chitral, Fishguard Bay, Forum Papua New Guinea, Fulmar, Kuaka, Rangikura.*

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