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THE MARINE OBSERVER

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

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COVER PHOTOGRAPH: Waterspout near Portland Bill on the morning of 12 September, 1993, photographed by Mrs F. Lockyer, the observer at Portland Auxiliary Station.

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

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EXCELLENT AWARDS 1993

Incentives of one sort or another have been continuously presented to voluntary observers for 140 years, since the founding of the Met. Office in 1854 as the Meteorological Department of the Board of Trade under Captain Robert FitzRoy. From then up to 1924, Masters and Officers gaining awards were sent a personal letter by the Director of the Met. Office. For 70 years since the book award scheme was introduced in 1924 by the Marine Superintendent of the day, Captain L.A. Brooke Smith, R.D., R.N.R., it is estimated that about 16,916 books have been awarded to marine observers.

In the words of Captain Brooke Smith, 'The interest shown and the support given during the year are very much appreciated.' Thus we are once again pleased to congratulate 'the salt of the sea', 100 Masters, Principal Observers and Radio Officers. They have been selected to receive book awards in recognition of their first class observing and transmission records, chosen from the 924 meteorological logbooks received during 1993. The message being sent by all this is that we are as much in need of **accurate, reliable data** as we are desirous of receiving **more information** from our friends at sea.

Unfortunately it was not possible to complete the assessment procedure for all logbooks received in the year in time to make the usual announcement in our July edition. Nevertheless, advice and despatch of awards has already been undertaken, and we must offer commiserations to those who were not selected on this occasion. Staff on the many Voluntary Observing Fleet ships who either do not send in their completed logs, or have been unable to motivate themselves to make the observations, may feel inclined to remedy this, thereby benefitting both the meteorological community and themselves.

As is customary, smaller observing ships with a bare minimum of staff are also recognised as deserving of consideration, allowances being made for their reduced opportunity, in arriving at the decision to make awards to some of their number. Twelve officers on the MARID ships, carrying out basic observations, mainly in North European coastal waters, have also been chosen for their unique contribution to fog and sea ice forecasting in the North Sea and Home Waters.

The following received the highest markings for logs received at Bracknell between 1 January and 31 December 1993:

1. m.v. *Pacific Teal*, owned by Pacific Nuclear Transport plc and managed by James Fisher and Sons plc of Barrow-in-Furness; Captain A.G. Lacey and Principal Observing Officer C.A. Bates.
2. m.v. *Dawn Blazer*, Boston Putford Ltd of Lowestoft; Captain W.A.E. Smith, for personally carrying out all the observing and radio despatch.
   m.v. *British Renown*, BP Shipping Ltd; Captain J.A. Buchanan, Principal Observer T.T. Latto and Radio Officer J.G. Minogue.
   m.v. *Oriental Bay*, P&O Containers Ltd; Captain A.P. Talbot, Principal Observer K. Bradshaw and Radio Officer P.W. Ferguson.
3. m.v. *Taunton*, P&O Bulk Shipping Ltd; Captain C.J. Davies, Principal Observer H. Narvekar and Radio Officer F.A. Patel.
   m.v. *Remuera Bay*, P&O Containers Ltd; Captain J.H. Hutson, Principal Observer N.B.H. Skinner and Radio Officer D.W. Ray.
   m.v. *Pytchley*, P&O Bulk Shipping Ltd; Captain G. Hepple, Principal Observer M.K. Alam and Radio Officer V. Sriramulu.

4. m.v. *Pacific Sandpiper*, Pacific Nuclear Transport plc; Captain J.M. Miller, Principal Observer R.C. Micheson and Radio Officer C.P. Brockbank.
m.v. *Mairangi Bay*, P&O Containers Ltd; Captain B. Graham, Principal Observer J.B. McGruer and Radio Officer J. Thompson.
m.v. *West Moor*, Jeppesen Heaton Ltd; Captain H. Böse and Principal Observer N.C. Horner. (No Radio Officer carried, as observing officers enabled to transmit weather messages automatically via SEAS equipment, the U.S. National Weather Service equivalent of our MOSS.)

Pacific Teal

Dawn Blazer (now *Boston Blazer*)

British Renown

Oriental Bay

Four ships gaining the highest markings for logbooks during 1993.
(Photographs by courtesy of (clockwise from top) British Nuclear Fuels plc; BP Shipping Ltd; P&O Containers Ltd; Boston Putford Offshore Safety Ltd.)

The books chosen as awards this year are Cassell's *Concise English Dictionary*, *Philip's World Atlas and Gazeteer* (2nd edition, published 28 July 1994) and *The Oceans — A Celebration*, compiled by the Living Earth Foundation and reviewed in the previous edition of this journal.

Any queries concerning the eligibility or distribution of the awards should be directed to the Marine Division, enclosing name, Discharge Book or Seamen's Book number and forwarding address to which the award can be sent. On a few occasions parcels of books have been returned, after despatch to an address supplied: it is clearly prudent to ensure that parcels can be accepted in the officer's absence. Unclaimed awards from previous years are still awaiting claimants at Bracknell (see page 173).

Excellent Awards (Year ended 31 December 1993)

Captain	Company
M. Allen	The Maersk Co. (I.O.M.) Ltd
I. Anderson	P&O Containers Ltd
P.R. Anderson	Dorchester Maritime (I.O.M.) Ltd
D.L. Batchelor	P&O Containers Ltd
M.L. Bechley	P&O European Ferries (Portsmouth) Ltd
N.A. Beer	British Antarctic Survey
J.R. Bell	Marine Management Services Ltd
M. Bernis	OOCL Ltd
D.L. Beveridge	Scottish Office Agriculture & Fisheries Department
C. Billimore	Caledonian MacBrayne Ltd
R.K. Bilton	Blue Star Ship Management Ltd
T.C. Black	Blue Star Ship Management Ltd
R.T. Blackman	Sealion Shipping Ltd
H. Böse	Jeppesen Heaton Ltd
J.C.E. Bovaird	Dorchester Maritime (I.O.M.) Ltd
P.N. Bowden	Shell Ship Management Ltd
M.B. Bradley	Ropner Shipping Services Ltd
W.A. Brown	Scottish Office Agriculture & Fisheries Department
J.A. Buchanan	Dorchester Maritime (I.O.M.) Ltd
J.M. Bullard	Souter Shipping Ltd
D.W. Bunyan	Marine Management Services Ltd
B.A. Chapman	Ministry of Agriculture, Fisheries & Food
P.J. Cooper	Seaboard Offshore Ltd
B. Cushman	P&O Containers Ltd
C.J. Davies	P&O Ship Management Ltd
A.F. DeVanney	Shell Ship Management Ltd
D.A. Dornom	P&O Containers Ltd
P.J. Duff	Bibby Line Ltd
M. Edward	P&O European Ferries (Portsmouth) Ltd
A.W. Ellis	P&O Containers Ltd
M.C. Etherington	BP Shipping Ltd
R.A. Farmery	Boston Putford Offshore Safety Ltd
E. Gaffney	Stephenson Clarke Shipping Ltd
B. Graham	P&O Containers Ltd
I.S. Grant	P&O Containers Ltd
B.A. Hall	Scottish Office Agriculture & Fisheries Department
A.E. Hamill	Frigomaris Shipping (GmbH)
N.M. Hardy	P&O European Ferries (Portsmouth) Ltd
C.W. Harvey	V.Ships (U.K.) Ltd
R.G. Head	Egon Oldendorff (H.K.) Ltd
T.H. Henderson	Scottish Office Agriculture & Fisheries Department
G. Hepple	P&O Ship Management Ltd
L.J. Hesketh	P&O Ship Management Ltd
M.A. Hill	P&O Ship Management Ltd
B. Hopper	Sealion Shipping Ltd
D.S. Hughan	P&O Containers Ltd
A.J. Hughes	Seaboard Offshore Safety Ltd
J.H. Hutson	P&O Containers Ltd
T.L. Jeffery	F.T. Everard & Sons Ltd
D. Johnstone	Jeppesen Heaton Ltd
B.N. Jones	Acomarit (U.K.) Ltd
O.G.Keen	Logbridge Ltd
J.N. Kelleher	P&O Containers Ltd
N.P. Kelly	Souter Shipping Ltd
R.J. Kendall	London Ship Managers Ltd
M.L. Kinnear	Logbridge Ltd

Excellent Awards *(contd)*

Captain	Company
D.M. Kissane	P&O Containers Ltd
M.J. Knight	Bibby Line Ltd
C.B. Kulkarni	Barber Ship Management Ltd
A.G. Lacey	James Fisher & Sons plc
S.J. Lawrence	British Antarctic Survey
D.W. Lax	P&O Containers Ltd
A.J. Leslie	P&O Containers Ltd
D.R. Lewis	Dorchester Maritime (I.O.M.) Ltd
K.J. Lightbody	Esso Petroleum Co. Ltd
W.G. Lockie	Logbridge Ltd
M.R. Mansbridge	Dorchester Maritime (I.O.M.) Ltd
W. Marien	OOCL Ltd
D. Marr	James Fisher & Sons plc
C.H. Marsh	Bibby Line Ltd
F.R.F. Martin	Bibby Line Ltd
J.M. Miller	James Fisher & Sons plc
V.F.R. Moorman	C.M. Willie & Co. (Shipping) Ltd
M. Moulin	P&O Cruises Ltd
C.R. Mundy	Blue Star Ship Management Ltd
H.J. Norton	C.M. Willie & Co. (Shipping) Ltd
A.K. Oliver	Natural Environment Research Council
D.E. Peers	Marine Management Services Ltd
L.C. Pink	F.T. Everard & Sons Ltd
D.L. Rattray	Scottish Office Agriculture & Fisheries Department
D.J. Robertson	P&O Containers Ltd
R.G. Savage	Shell Ship Management Ltd
J. Smith	Dorchester Maritime (I.O.M.) Ltd
W.A.E. Smith	Boston Putford Offshore Safety Ltd
P.G.H. Stapleton	Andrew Weir plc
K.F. Steven	Andrew Weir plc
D.C.J. Still	Shell Ship Management Ltd
A.P. Talbot	P&O Containers Ltd
R.W. Taylor	Souter Shipping Ltd
A. Tibbott	Blue Star Ship Management Ltd
P. Venvell	Kvaerner Shipping A/S
B. Wardman	Dorchester Maritime (I.O.M.) Ltd
J.B. Watson	P&O Containers Ltd
M. Watts	P&O Containers Ltd
J.W. Welch	P&O Containers Ltd
D.P. Worsnop	P&O Containers Ltd

Principal Observing Officer	Company
M.K. Alam	P&O Ship Management
F.H. Alrai	P&O Containers Ltd
R. Arenal	Logbridge Ltd
R.J. Atkins	Dorchester Maritime (I.O.M.) Ltd
R.M. Atkinson	Natural Environment Research Council
P.F. Baines	P&O European Ferries (Portsmouth) Ltd
C.A. Bates	James Fisher & Sons plc
A.S.T. Beveridge	Scottish Office Agriculture & Fisheries Department
C. Bingham	Boston Putford Ltd
B. Blythe	Shell Ship Management Ltd
Z. Borovina	Ropner Shipping Services Ltd

Excellent Awards *(contd)*

Principal Observing Officer	Company
K. Bradshaw	P&O Containers Ltd
P. Branagan	F.T. Everard & Sons Ltd
F. Brearley	Sealion Shipping Ltd
S. Bryans	P&O Containers Ltd
R.C. Burn	Seaboard Offshore Ltd
F.N. Cambra	P&O Containers Ltd
I.C. Campbell	Scottish Office Agriculture & Fisheries Department
M.M. Castillo	London Ship Managers Ltd
L.J. Cheesebrough	P&O Containers Ltd
R.R. Clunas	P&O Containers Ltd
T. Collins	Scottish Office Agriculture & Fisheries Department
D.S.J. Craig	Scottish Office Agriculture & Fisheries Department
P.W.R. Davidson	P&O Containers Ltd
G.P. Dawson	P&O European Ferries (Portsmouth) Ltd
M.P. Donnelly	Scottish Office Agriculture & Fisheries Department
D.P. Dospueblos	Logbridge Ltd
A. Edusah	Acomarit (U.K.) Ltd
W.C. Eleria	Marine Management Services Ltd
G. English	Shell Ship Management Ltd
E.M. Esinduy	P&O Containers Ltd
A.R. Farthing	P&O Containers Ltd
J. Farquhar	P&O Containers Ltd
S. Fish	P&O Containers Ltd
C.J. Foley	Bibby Line Ltd
J.R. French	Ministry of Agriculture, Fisheries & Food
P.D.J. Green	Dorchester Maritime (I.O.M.) Ltd
J. Greenspan	British Antarctic Survey
J.O. Greig	Souter Shipping Ltd
G.C. Harwood	F.T. Everard & Sons Ltd
N.G. Hawkes	Dorchester Maritime (I.O.M.) Ltd
A. Haynes	Andrew Weir plc
P.J. Heasman	F.T. Everard & Sons Ltd
A.P. Henry	Bibby Line Ltd
S. Hills	P&O Cruises Ltd
G.T. Hobbs	P&O Containers Ltd
A.C. Horncastle	Sealion Shipping Ltd
N.C. Horner	Jeppesen Heaton Ltd
B.E.N. Joseph	Bibby Line Ltd
K.C. Joshi	P&O Ship Management Ltd
M.O. Khan	Shell Ship Management Ltd
O. Krnski	Dorchester Maritime (I.O.M.) Ltd
T.T. Latto	Dorchester Maritime (I.O.M.) Ltd
W.T. Lawrie	Souter Shipping Ltd
P.J. Laycock	Scottish Office Agriculture & Fisheries Department
F.M. Leahy	P&O Containers Ltd
L.G. Mackenzie	P&O Containers Ltd
A.P. MacLean	C.M. Willie & Co. (Shipping) Ltd
J.A. Macleod	Caledonian MacBrayne Ltd
J.I.N. Marsham	James Fisher & Sons plc
A.P. McCarlie	Bibby Line Ltd
J.B. McGruer	P&O Containers Ltd
P.H. Mercenier	OOCL Ltd
R.C. Micheson	James Fisher & Sons plc
G.C. Morgan	British Antarctic Survey
H.D. Narvekar	P&O Ship Management Ltd
S. Nicholls	P&O Containers Ltd

Excellent Awards *(contd)*

Principal Observing Officer	Company
M.A. Pagente	Kvaerner Shipping A/S
N.P. Panganiban	Logbridge Ltd
S.L. Pradham	P&O Ship Management Ltd
B.G. Rajan	Barber Ship Management Ltd
M.D. Ramos	Blue Star Ship Management Ltd
T.K. Ramroop	Bibby Line Ltd
A.J. Richard	Andrew Weir plc
M. Roquid	Frigomaris (GmbH)
M.W.M. Samwell	Blue Star Ship Management Ltd
R.A. Shopland	P&O European Ferries (Portsmouth) Ltd
N. Siegue	V. Ships (U.K.) Ltd
N.B. H. Skinner	P&O Containers Ltd
C.A. Spain	P&O Containers Ltd
B. Standerline	Stephenson Clarke Shipping Ltd
D.S. Swain	Souter Shipping Ltd
W.G. Tait	C.M. Willie & Co. (Shipping) Ltd
D.J. Tejero	Blue Star Ship Management Ltd
H.B. Tenoso	Egon Oldendorff (H.K.) Ltd
W.E. Thompson	Acomarit (U.K.) Ltd
T. Van Hoeteghem	OOCL Ltd
D.J. Vickery	P&O Containers Ltd
N.J. Walker	Shell Ship Management Ltd
L.L. Wallace	Esso Petroleum Co. Ltd
C.W. Watson	Blue Star Ship Management Ltd
F. Watt	Seaboard Offshore Ltd
G.P. Watts	Shell Ship Management Ltd
M. Williamson	P&O Containers Ltd
C. Winterbottom	Dorchester Maritime (I.O.M.) Ltd
F.P. Wright	The Maersk Co. Ltd

Radio Officer	Company
L. Archer	F.T. Everard & Sons Ltd
E.G. Arciaga	Bibmark International Shipping
C. Astrero	London Ship Managers Ltd
R.O. Ball	Dorchester Maritime (I.O.M.) Ltd
F.T. Balondo	Columbia Ship Management Ltd
R.M. Banzon	Frigomaris Shipping (GmbH)
I. Beaton *	Scottish Office Agriculture & Fisheries Department
D.E. Beresford *	P&O European Ferries (Portsmouth) Ltd
C.P. Brockbank	James Fisher & Sons plc
J.A. Brogan	Dorchester Maritime (I.O.M.) Ltd
C.R. Brooks	P&O Containers Ltd
C. Brown	Shell Ship Management Ltd
R.A. Browne	P&O Containers Ltd
P. Candelaria	Blue Star Ship Management Ltd
C.S. Carver	P&O Containers Ltd
E.S. Cass	Blue Star Ship Management Ltd
A.P. Clarke	GEC Marconi Communications Ltd
B.M. Clarke *	Scottish Office Agriculture & Fisheries Departmen
P.J. Clemence	Dorchester Maritime (I.O.M.) Ltd
P.J. Clery	Austasia Line
C.Y. Constantinou	P&O Containers Ltd
A. Cordeiro	P&O Ship Management Ltd

Excellent Awards *(contd)*

Radio Officer	Company
M. D'Silva	P&O Ship Management Ltd
A. De Rama	Kvaerner Shipping A/S
M.D. Diosana	Columbia Ship Management Ltd
C. Dobbelar	OOCL Ltd
W. Dopheide *	F.T. Everard & Sons Ltd
F.A. Dunn	P&O Containers Ltd
C. Evans	Shell Ship Management Ltd
P.W. Ferguson	P&O Containers Ltd
D. Fernandez	Wallem Ship Management (I.O.M.) Ltd
J. Ferson	Dorchester Maritime (I.O.M.) Ltd
B.J. Foley	Bibby Line Ltd
A. Gamblin	Marr Vessel Management Ltd
K.J. Gaughan	P&O Containers Ltd
M.E.P. Gloistein	British Antarctic Survey
R.E. Goring	P&O Containers Ltd
A. Gregario	Blue Star Ship Management Ltd
G.S. Hannah *	Scottish Office Agriculture & Fisheries Department
R.E. Haviland	Shell Ship Management Ltd
J.H. Holmes *	Esso Petroleum Co. Ltd
S.C. Horne	P&O European Ferries (Portsmouth) Ltd
B.N. Iyengar	Wallem Ship Management (I.O.M.) Ltd
R.Z. Jacela	Columbia Ship Management Ltd
R.O. Jolliffe *	Ministry of Agr. Fisheries & Food
C.L. Keeble	Marconi International Marine Co. Ltd
G.E. Kelly	P&O Containers Ltd
K.S. MacKechnie *	Scottish Office Agriculture & Fisheries Department
R. Maestrado *	Jeppesen Heaton Ltd
M.A. Magee *	Scottish Office Agriculture & Fisheries Department
J.M. Manalo	A/S Havtor Management
G. Mangubat *	Jeppesen Heaton Ltd
P.V. Mansabdar	Barber Ship Management Ltd
S.J. Mee	British Antarctic Survey
J.G. Minogue	Dorchester Maritime (I.O.M.) Ltd
J.C. Mitten	P&O Containers Ltd
B. Neary	Guernsey Ship Management Ltd
P.H.J. Nicholas *	Sealion Shipping Ltd
P.C. Nottle	Shell Ship Management Ltd
S.C. Parambath	Wallem Ship Management (I.O.M.) Ltd
F.R. Patel	P&O Ship Management Ltd
P.I. Pegg	P&O Containers Ltd
Y. Rahbarshahir	OOCL Ltd
J. Ranasinghe	London Ship Managers Ltd
B.N.O. Rant	GEC Marconi Communications Ltd
B. Ravindran	P&O Ship Management Ltd
A.J. Rawlinson *	Sealion Shipping Ltd
D.W. Ray	P&O Containers Ltd
D.A. Richards	Dorchester Maritime (I.O.M.) Ltd
N. Ro	The Maersk Co. (I.O.M.) Ltd
V. Sabellano	Acomarit (U.K.) Ltd
W.R. Salandy	Bibby Line Ltd
I.V. Saquilayan	Pacific Ocean Manning, Manila
G. Scullion	P&O Containers Ltd
T. Searle	P&O Containers Ltd
S. Sech	Denholm (I.O.M.) Ltd
G.J. Simpson	Bibby Line Ltd
J.G. Smith	Dorchester Maritime (I.O.M.) Ltd
T.J. Smith	P&O Containers Ltd

Excellent Awards *(contd)*

Radio Officer	Company
M.D. Smyth	Dorchester Maritime (I.O.M.) Ltd
G.D. Sofio	P&O Containers Ltd
K. Sridhar	Pentmarine
V. Sriramulu	P&O Ship Management Ltd
D. Stewart	Natural Environment Research Council
A. Stuart	Bibby Line Ltd
D.J. Sweet *	Bibmark International Shipping
C.M. Taylor	Dorchester Maritime (I.O.M.) Ltd
J.C. Thompson	P&O Containers Ltd
E.P. Tipo	Egon Oldendorff (H.K.) Ltd
F. Turner	P&O Cruises Ltd
P.A. Whyley	P&O Containers Ltd
J.W. Wibberley	Shell Ship Management Ltd
B.G. Wilkinson	P&O Containers Ltd
F. Wilson	Ropner Shipping Services Ltd
K.S. Woodley	Ropner Shipping Services Ltd
A.W. Wortley *	P&O Containers Ltd

'MARID' SHIPS†

Observers	Company
Captain J. Davies; Deck Officers S. Reed, K. Tanner	Esso Petroleum Co. Ltd
Deck Officers M. Hustwith, M. Irwin, M. Elson *	Esso Petroleum Co. Ltd
Captain D.W. Brown; Deck Officers J. Norman, D. James *	British Dredging Aggregates Ltd
Captain D.J. Jones; Deck Officers K. Thomas, J. Newman *	British Dredging Aggregates Ltd

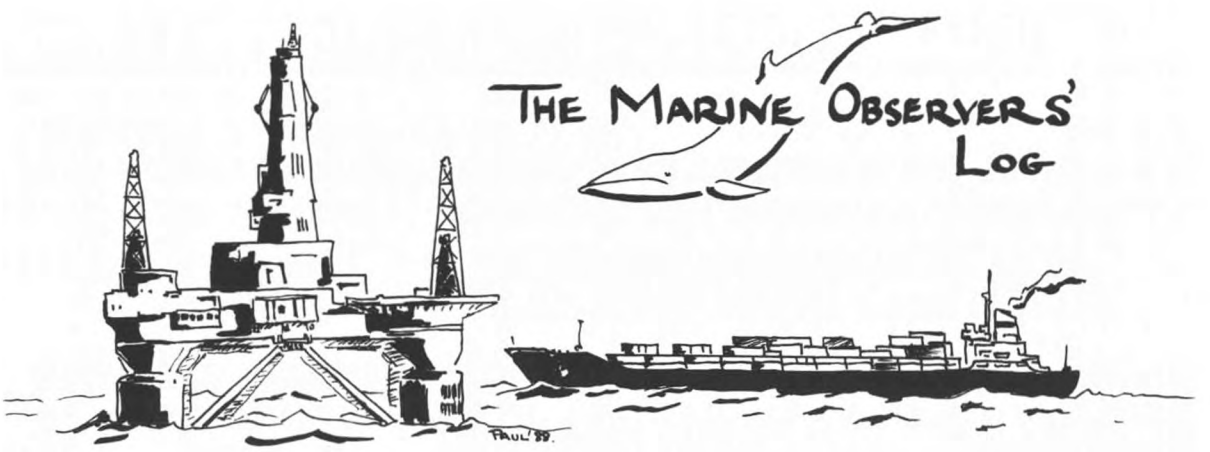
* Deck Officer carrying out duties of Radio Officer.
† Vessels recruited for the purpose of observing and transmitting sea temperatures with non-instrumental observations in the North Sea.

The following have still not claimed their Excellent Awards for the year 1992:

Captains: N.J. Barr, J.M. Campbell, B.A. Hall, L.K. Huat, I.C. Ligertwood, A. Lomas, D. Marr, O. Bin Ali, G.M. Railson, P.E.T. Robinson, A.R. Timbs, C.J.B. Trinnick.

Principal Observers: M.A. Afghani, J.S. Anderson, L. Bermejo, K. Bimpeh, R. Cyabyab, J. Dionio, J.F. Dobson, M. Dvornik, A.B. Escaner, R.J. Gabutin, R.B. Gonzales, E.I. Isla, T.D. Morrison, I.C. Oke, O.M. Power, D.J. Robinson.

Radio Officers: A. Adovas, A. Alaba, E.G. Arciaga, M. Bell, J.K. Bhadra, B. Casey, J.I. D'Souza, J.V. DeLacruz, B. Davies (MARID), D.W. Fletcher, M. Geti, C.J. Griffiths, S. Merin, B.C. Miller, D.D. Napa, U.K. Nyunt, W.N. Oo, E.L. Sevilla, R.P. Villejo, L.P. Yadav.



October, November, December

The Marine Observers' Log is a quarterly selection of observations of interest and value. The observations are derived from the logbooks of marine observers and from individual manuscripts. Responsibility for each observation rests with the contributor. 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).

HEAVY WEATHER

East China Sea

m.v. *Staffordshire*. Captain F.R.F. Martin. Ras Al Juaymah to Ulsan. Observers: the Master, Mr G. Young, Chief Officer, Mr D.I. MacKinnon, 2nd Officer, Mr A. MacLellan, 3rd Officer and ship's company.

12–15 December 1993. Whilst heading north-east off the east coast of Taiwan, the vessel started experiencing head seas and swell during the evening of the 12th, the wind being NE'ly, force 4. Throughout the 13th the wind increased to force 5, occasionally force 6, the direction remaining NE'ly. The following day saw a further increase in the wind speed, to force 9 at 0300 UTC, and this was maintained throughout the day, latterly becoming NNE'ly, force 8 at 1800. The wind slowly eased off during the evening, closing N'ly, force 6, and the atmospheric pressure peaked at 1300 on the 15th, at 1032.6 mb. Wind and pressure were constantly monitored and [a selection of] hourly readings follow.

Date and time	Wind		Pressure (mb)
	Dir'n	Force	
14th 0000	N×E	8/9	1022.0
0300	NNE	9	1023.4
0600	NNE	9	1022.0
0900	NNE	8/9	1024.3
1200	NExN	8	1025.7
1500	NE×N	8	1027.2
1800	NNE	8	1027.5
2100	NE×N	7	1028.9
15th 0000	N×E	7	1031.0

The sea state was obviously very rough and the vessel was pounding heavily while the seas were frequently exceptionally high. Structural damage was caused by one wave in particular when it submerged the whole fo'c'sle area. The foremost deckhouse leading to the fo'c'sle space was set back in places, and the forward bulkhead of this deckhouse was stove in. Vents for forward spaces were bent aft, a set of steps was forced backwards and numerous fire boxes along with other fittings were lost. Additionally, the maindeck catwalk was ripped from No.1 Tank Dome, and steelwork on the tank itself was ripped free. Taking into account that No.1 Tank Dome was 45 m aft of the fo'c'sle and 4 m high off the maindeck, the magnitude of the waves had to be imagined.

At 0000 on the 14th the Master decided to reduce the engine r.p.m. in order to minimise the pounding and, at 0700, it was decided to 'tack' so as to reduce it further. At 2200 the vessel was able to continue on the original course, at full speed. The visibility throughout was generally good, never less than 8 n.mile, and only intermittent precipitation occurred.

It was thought possible that such waves could have been caused by the wind being in direct opposition to the Kuro Shio which produced very high, steep-fronted waves into which the ship was effectively falling head-on.

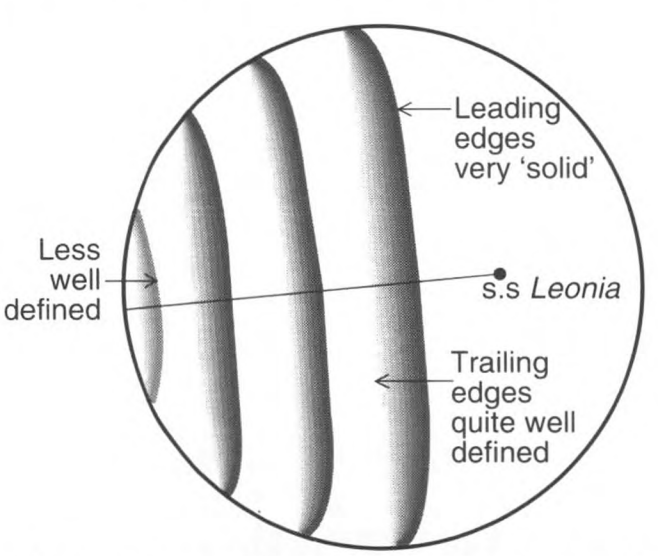
Position of ship at 0000 UTC on the 15th: approximately 27° 48′N, 124° 36′E.

TIDE RIPS

Indian Ocean

s.s. *Leonia*. Captain A.F. DeVanney. Singapore to Fujairah. Observers: the Master and Mr H.E. Boyce, AB.

4 November 1993. At about 2100 UTC when the vessel was rounding the island of Pu Rondo, line echoes were observed on the radar at a distance of roughly 12 n.mile ahead, the ship's heading and speed being 267° at 14.7 knots. On nearing the area, four distinct echoes became clearly visible. Shortly after crossing the shallow area in the vicinity of 06° 15′N, 94° 57′E, the lines of echo were showing very strong definition with very 'solid' leading edges, and the radar showed them to extend at least 7 n.mile on each bow.



Three were of very strong definition, as shown in the sketch, whilst the fourth was more moderate. Approximately 2 n.mile separated each line of echoes.

As the first tide race approached it was still clearly visible when some 300 m ahead of *Leonia*, even though the evening was cloudy and dark. As it arrived at mid-length a distinct rushing sound could plainly be heard above the whine of the pump-room fans, sounding almost as if the ship was 'shooting the rapids'. The final race passed somewhat less spectacularly than its predecessors, and the whole phenomenon lasted a little over 30 minutes before conditions returned to near normal.

At the time the wind was E×S'ly, force 4 and the sea temperature was 29.0°; the sea and swell conditions could not be accurately assessed.

Position of ship at 1400 UTC: 06° 15′N, 94° 54.5′E.

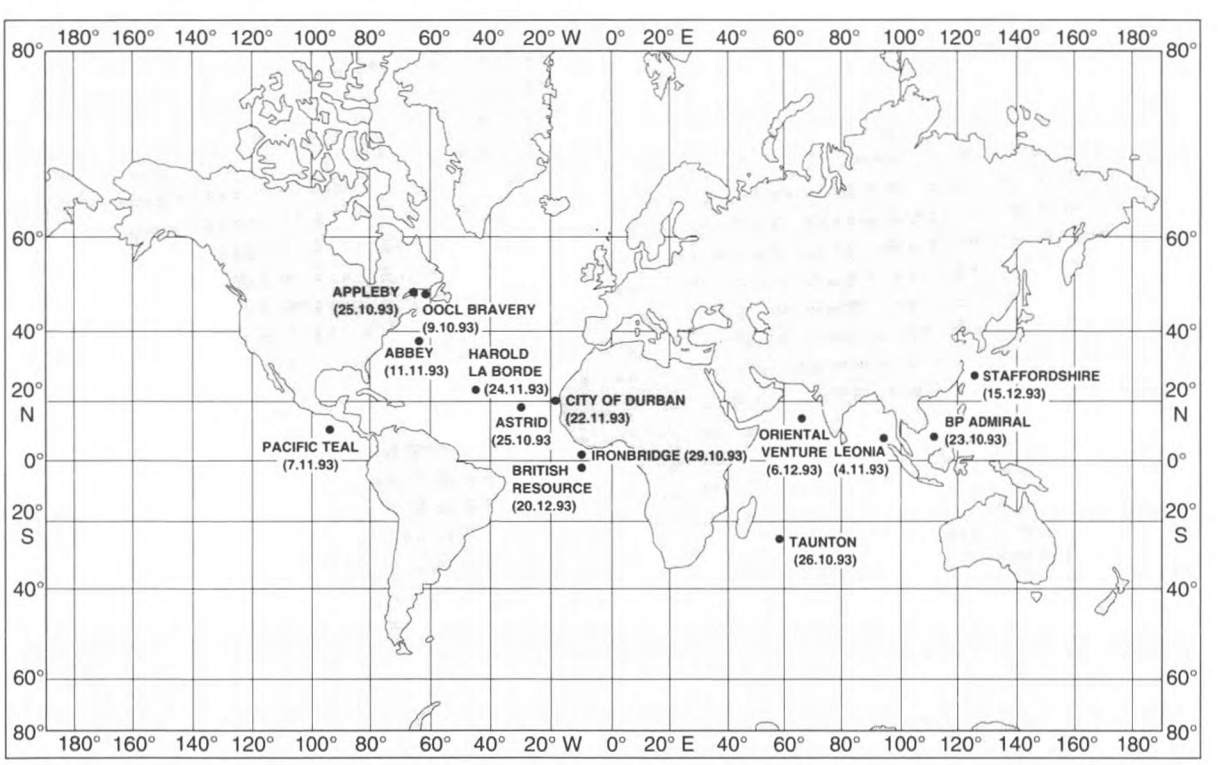
FISH

North Atlantic Ocean

s.t.s. *Astrid.* Captain F.J.M. Scott. Hierro to Barbados. Observers: the Master, Mr C.M. Toner, Chief Officer and Mr T. Ball, Chief Engineer Officer.

25–29 October 1993. Whilst on passage on the 25th the vessel 'picked up' a tuna fish that rode on the bow fairly consistently while the vessel was under power and the sea was smooth. When wind came up on the 29th the fish was more difficult to see but was still there. Crew members reported similar sightings on three previous crossings, in 1990, 1991 and 1992, but had made no real observations. On this occasion, the fish was observed regularly and appeared to sense when the vessel alarmed flying-fish and then darted out to pick them off before returning to its 'pouncer station' on the bow, about 3m off. The Chief Engineer reported that he had seen groups of skipjack behaving in a similar way with another vessel but never a singleton fish.

Position of ship: 19° 30′N, 29° 30′W.



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

BAT

Arabian Sea

m.v. *Oriental Venture*. Captain R.A. Jarrett. Persian Gulf to Singapore. Observers: Mr R. Coghlan, 2nd Officer, Mr C. Stewart, 3rd Officer and Mr R. Oliveros, AB.

6 December 1993. It was just after midnight on the ship and both the Third and Second Officers were in the ship's office on the bridge deck when the Third Officer cried, 'Watch out — it's a bat!' (or words to that effect), to which the Second Officer reacted with a reply with the meaning of, 'Cor, so it is, what a surprise', and both officers left the office so quickly that Linford Christie could not have caught them, as the bat concerned flew erratically around the office.

From the safety of an open doorway, both officers observed the bat flying about in a darting fashion while the duty AB was called to witness the occasion. It was decided to shut the office doors and leave the bat alone until morning but the bat had different ideas and flew into the navigation bridge, causing much consternation to the Second Officer as he still had to do the navigation watch.

The bat soon settled down and was then confined in an area where it could be partitioned off by the blackout curtains, and it was decided to delegate the job of removing it in the morning to someone else. It was unknown how long the bat had been on board but the vessel was on a course of 137° and had passed Ras Al Hadd some 36 hours before, so it must have arrived in the Gulf region.

The bat was dark-brown in colour with a wing-span of approximately 20 cm when in flight and, when in the 'stowed' position, its body was about 4 cm long and 2.5 cm wide. However, without any literature on board, proper identification was impossible.

The weather was fine and clear and the wind was NE'ly, force 3.

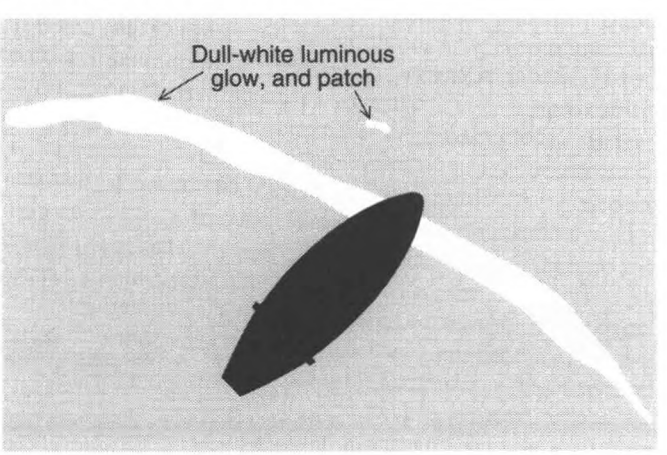
Position of ship: 16° 50′N, 66° 05′E.

BIOLUMINESCENCE

Eastern North Pacific

m.v. *Pacific Teal*. Captain D. Marr. Panama Canal to Karatsu. Observer: Mr P.J. Mahoney, 3rd Officer.

7 November 1993. At 0450 whilst the vessel was on a course of 283° at a speed of 15 knots, a dull-white glow was observed in the water at a distance of about 4 cables off the port bow. As the vessel drew closer the glow took the form as shown in the sketch whilst another isolated patch of luminescence about 5 m across was seen a little further ahead of the main area.



The sighting was the subject of much discussion but eventually it was concluded that the 'entity' was merely an unusual form of bioluminescence.

At the time of the observation the wind was light and variable, there were frequent rain showers and occasional sheet lightning.

Position of ship: 11° 38′N, 93° 48′W.

North Atlantic

m.v. *Abbey*. Captain R.J. Cropper. Hampton Roads to Redcar. Observers: Mr D.F. Black, 3rd Officer and Mr S.E. Harrison, Cadet.

11 November 1993. At 0300 UTC when the vessel was in rough seas, small amounts of bioluminescence were on the weather side and appeared to be glowing a whitish colour. However, most of the bioluminescence observed seemed to be blown on board amongst the spray, and was noted glowing on deck in small patches up to 30 cm across. The most interesting piece was a small particle which attached itself to the front of the bridge window; it was about the size of a pin head and was glowing a bright and very distinctive luminous green colour. It remained there for about one minute during which time the observers ruled out the possibility of any onboard light causing it; it was then blown off the window.

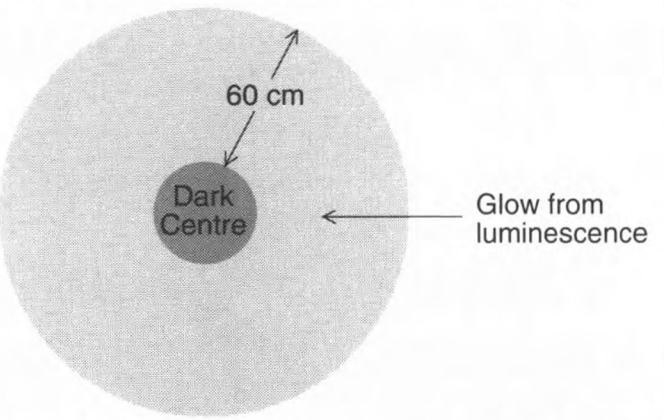
At the time the dry-bulb temperature was 14.1° and the sea temperature was 16.0°. The wind was N'ly, force 8 and the ship was spraying overall while pitching easily to a rough sea and moderate swell. The sky was completely overcast.

Position of ship: 38° 16.6′N, 66° 45.2′W.

Eastern North Atlantic

m.v. *City of Durban*. Captain R.M. Herring. Cape Town to Zeebrugge. Observers: Mr M. Rippon, 2nd Officer and Mr A. Miles, AB.

22 November 1993. At 0001 UTC the vessel was passing through patches of bioluminescence, identified as 'disturbed water luminescence' which ran down the port and starboard sides of the vessel as it broke water. The glow was very strong at times. A 0100 another glow appeared out on the port beam at a distance of about 1 n.mile, seeming as if something had come to the surface and lit up, and remained for several minutes. Twenty minutes later, six large rings appeared down the port side at a distance of about 200 m away. As shown in the sketch, they appeared to have dull centres surrounded by an outer glow of about 60 cm.



Some of the rings became elongated but none of them appeared to revolve, as in the 'phosphorescent wheels' phenomenon, so they were identified as discrete blobs or shapes. Patches of luminescence travelling more or less quickly over the

surface were also sighted a little later while the presence of 'disturbed water luminescence' continued in patches during the 12–4 watch.

The ship's course and speed was 000° at 18 knots in rippled seas, the sea temperature was 17.5°.

Position of ship: 20° 19′N, 17° 47′W.

METEORS

South China Sea

m.v. *BP Admiral*. Captain J. MacAlpine. Subic Bay to Singapore. Observers: Mr E.L. Zapata, 2nd Officer and Mr L. Palay, AB.

23 October 1993. At 1620 UTC whilst the vessel was on a course of 221° at 15 knots, a very bright light was seen falling from an altitude of about 15° bearing approximately 230°. The colour of the light was whitish but with a glow which was thought to have been caused by some high clouds that appeared to be in its path as it fell, the cloud cover being 4 oktas.

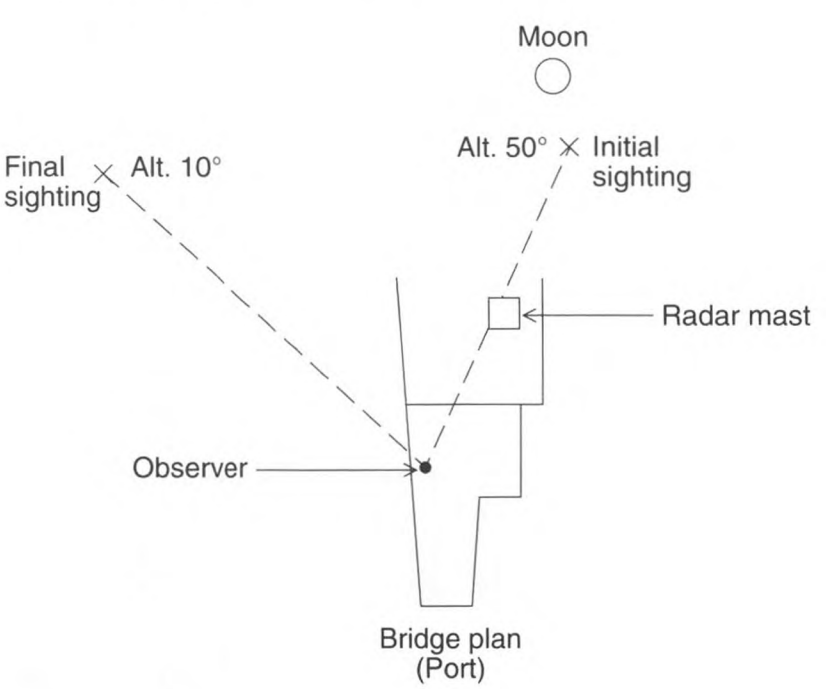
It continued to fall but after 2–3 seconds it seemed to stop glowing and moving only to reappear again at a lower altitude and with the same brightness as before until it disappeared below the horizon on a bearing of about 220°. The brightness of the light was similar to that of a planet but less than that of the moon which, at the time of the observation, was bearing 255° at an altitude of about 23°. The total duration of the sighting was 5–6 seconds.

Position of ship: 06° 32.6′N, 107° 34.1′E.

Equatorial Atlantic

m.v. *Ironbridge*. Captain J.O. Jubb. Saldanha Bay to Tees Bay. Observer: Mr D.M. Jack, 3rd Officer.

29 October 1993. At 2145 UTC whilst the vessel was on a course of 231° at 12.5 knots, a large body of light was observed travelling from about 080° to 360° at an altitude which dropped from 50° to 10° seemingly in a straight line. The object gave off a large amount of bright white light, and at the end of its track it became extremely bright, as in an explosion.

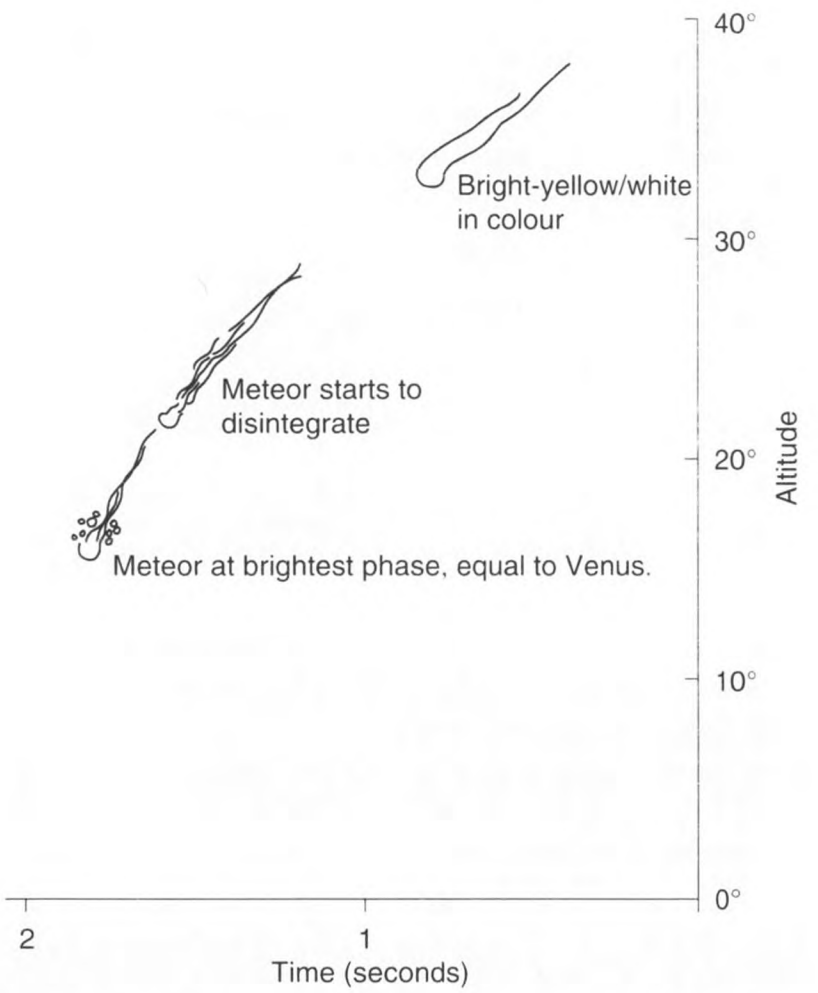


Its size was similar to that of the moon which had a diameter of 0° 31.5′ as measured by sextant, and it possessed a 'tail'. The total duration of the sighting was 1–2 seconds.

Position of ship: 02° 01′N, 11° 45′W.

m.v. *British Resource*. Captain M. Mansbridge. Ras Tannurah to Brofjorden. Observers: Mr A.A. Facey, 2nd Officer, Mr A. Largan, 3rd Officer and Mr R. Davies, AB.

20 December 1993. At 1916 UTC a bright object was seen to fall in an arched descent, blazing a trail 5–10° in length and was assumed to be a meteor, see sketch.



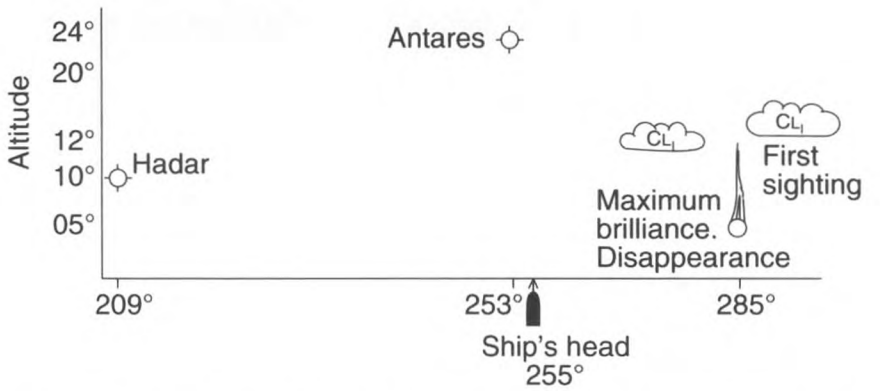
Although the phenomenon lasted only for an estimated 2 seconds, details of its trajectory were quite clear. Its point of appearance was at an altitude of 40°, it was yellowy-white in colour and disintegrated as it fell, finally culminating in a bright white light which was equivalent in magnitude to Venus, at which point it disappeared at an altitude of about 15°. So bright was it at this stage that the Second Officer saw it reflected on the sea surface at the horizon.

Unfortunately, owing to the combination of cirrostratus cloud and the high altitude of a gibbous moon, the stars in the background were not visible so a reference point was unattainable. There was also a cloud cover of 3 oktas of small cumulus but this did not hamper the observation in any way.

Position of ship: 00° 51.4′S, 10° 11.9′W.

m.v. *Taunton*. Captain C.J. Davies. Kakogawa to Richards Bay. Observers: Mr H. Narvekar, 2nd Officer and Mr K. Sridhar, Radio Officer.

26 October 1993. At 1510 UTC a greenish-blue coloured object as brilliant as, and about twice the size of the star Antares, was seen falling straight down on bearing of 285°, see sketch.



It was a moonlit night and this object was first observed at an altitude of 12°, between two patches of small cumulus clouds. The brilliance increased as it fell, and it disappeared with maximum brilliance at an altitude of about 5° leaving behind a fine trail. On initial appearance the declination of the object was 08°N and R.A. 16H 24M. The whole sighting lasted for about 1.5 seconds.

Position of ship: 23° 49′S, 59° 20′E.

Note: Mr Howard Miles, Director of the Artificial Satellite Section of the British Astronomical Association, comments:

'The observers involved with all four reports must be congratulated because they have provided all the basic data required for a positive identification. There is no doubt that all four incidents resulted from a fragment of natural rock entering the atmosphere at a high speed. Theoretically the entry speed can range from about 11 to 70 km per second, although most objects fall within the lower half of this range. There are two possible sources for these objects, the first being the minor planet belt lying basically between the orbits of the planets Mars and Jupiter. The gravitational field of Jupiter is so great that these small bodies can easily be placed into a new orbit which can pass near to the Earth. If conditions are suitable, they can be pulled into the Earth and we see them as brilliant fireballs as they burn up owing to friction with the air molecules. Normally, these objects are solid chunks of rock and, if large enough, can survive the passage through the atmosphere and land on the Earth's surface where they are then referred to as meteorites.

'The other source can be classed as cometary material; a loose agglomeration of small particles and ice of various kinds. They tend to be much larger in size than the first type and can produce exceptionally brilliant fireballs. Most of these are burned up completely in the upper atmosphere, quite often ending with a spectacular explosion. There is, however, some overlap between the two categories, and the fireballs produced as they cross the sky can be quite spectacular.

'A third source for fireballs is, of course, the decay of man-made material, satellites, rockets and fragments such as nose cones and even the occasional bolt. They produce a similar phenomenon but they travel much more slowly across the sky; whereas a natural object can cross the sky in just a few seconds, it will take well over a minute for man-made objects to transit the sky. That is why it is so important to report the length of time for which the object was seen.

'In the report from the *BP Admiral*, the disappearance of the light over part of the track and its reappearance later with the same brilliance suggests that the fireball was obscured by dense cloud, although it is unusual to observe a complete absence of light owing to high cloud. With low cloud this is quite a common phenomenon so it is possible that there existed a small patch of low cloud which was not seen by the observers. In the case of the report from the *Ironbridge*, the terminal explosion and the general appearance suggest that the object could have been similar to cometary material. The object

would not have been the apparent size of the moon; the size reported would have been due to the object dragging with it atmospheric molecules etc., which had formed an envelope round the body, and the whole was being heated up by friction. The excellent drawing which accompanied the written report gave a very good summary of the event witnessed by observers on board the *British Resource*. The disintegrations which took place along the track taken by the fireball indicate that the material had a friable nature, possibly a stony rock. The gradual brightening and subsequent fading suggest that the object burned out completely in the upper atmosphere. The fireball reported by the *Taunton* appears to have entered at a much higher speed than the others and at a much steeper angle of decent. Without further observations of this object it is impossible to say with certainty that it was a nearly vertical descent or that it travelled along the line of sight of the observers. The very brief time for which it was seen suggests the former. The high speed is suggested by the green colouration; this was due to ionisation of the gases in the upper atmosphere when the object penetrated this region.

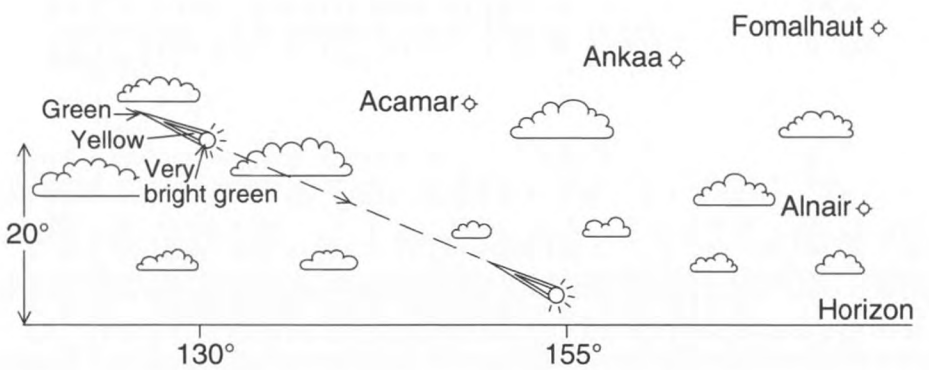
'The recording of azimuth and altitude when first seen and when lost from view and position where there were notable changes in appearance have made these reports extremely useful. The addition of a sketch however simple, adds much to the report. The visual appearance and the length of time the fireball was visible have turned the accounts into a comprehensive record of the events.

'It should be pointed out that, despite the above events appearing quite spectacular, they were in fact relatively minor episodes. If the incoming bodies had been larger the scale of the phenomena seen would have been sensational and any observers would never forget what they had seen.'

North Atlantic Ocean

m.v. *Harold La Borde*. Captain J.S. Gavin. Point Lisas to Bordeaux.Observers: the Master and Mr J.F. Heylen, 2nd Officer.

24 November 1993. At 2243 UTC whilst standing on the starboard bridge wing, looking at the moonlit wake, the observers saw a sudden, bright-green light which appeared in the lower altitudes of the sky (see sketch) forward of the starboard beam. The object was at about 20° altitude and was on a bearing of 130°, the ship's course being 061° at a speed of 10 knots.



Initially, the light seemed to be like a parachute rocket flare at very close range but this idea was almost immediately discounted. The green light moved rapidly across the sky leaving trails of yellow and green light, and was visible for 4 seconds before disappearing below the horizon, bearing 155°.

The size and brightness of the object were such that the rounded tip of a little finger, held upright at arm's length could not obscure the light or cover the spherical green ball.

At the time of the observation the cloud cover was 3 oktas of small cumulus, the visibility was good and there was a slight sea.

Position of ship: 23° 34.3′N, 44° 43.3′W.

Editor's note. Although this report did not reach us in time to be forwarded to Mr Miles for comment in this issue, we hope the observers on the *Harold La Borde* will find his remarks on the similar foregoing reports useful.

AURORA BOREALIS

North Atlantic Ocean

m.v. *OOCL Bravery*. Captain J.H. Huddleston. Antwerp to Montreal. Observer: Mr S. O'Mara, 2nd Officer.

9/10 October 1993. Between 0320 and 0335 UTC a rayed arc was sighted, the centre of which bore due north. The uppermost angle of elevation was approximately 15°, as viewed from a height of 22 m, and the arc itself ran from about 300° to 055°, its colour being a bright green which appeared to waver slightly. Unfortunately, owing to cloud coverage, the arc was visible for a short time only.

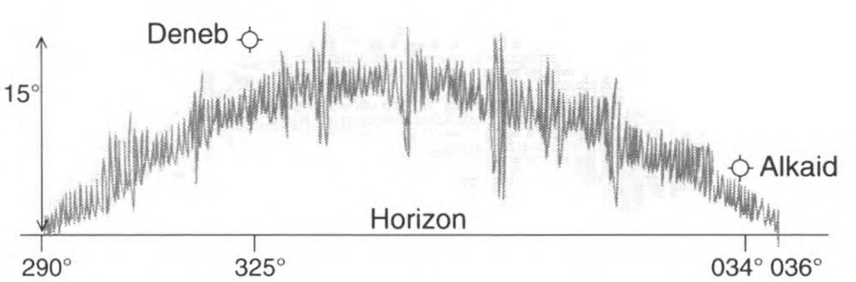
Position of ship: 55° 50.7′N, 43° 18.7′W.

Montreal to Felixstowe. Observers: Mr B. Dunleavy, 3rd Officer, and Mr W. Thompkins, Cadet.

6/7 November 1993. At approximately 0040 UTC a glow was sighted due north of the vessel. After further study it was observed to become a rayed arc which fluctuated in both brightness and form. The rayed arc, or curtains lasted for 5–10 minutes and the entire display was watched until 0115. The colour throughout was a pale blue-green.

m.v. *Appleby*. Captain K. Milburn. Sept Isles to Port Talbot. Observers: Mr M.R. Courtney, 2nd Officer and members of ship's company.

25/26 October 1993. During the night a display of the aurora was observed throughout the midnight–6 watch. At 0715 UTC the display appeared generally as a diffuse greenish-blue band extending in an arc from 290° to 036° with a maximum altitude of about 15°. 'Spears' of light were seen continually forming



and reforming, as shown in the sketch, and the intensity of the display varied such that at its brightest, a curtain effect could be seen joining the tips of the spears. The colour was consistent throughout.

At the time of the observation the ship was on a course of 117° at 12 knots. The sky was clear with excellent visibility.

Position of ship: 49° 41′N, 65° 27′W.

Editor's note. Between 2230 and 2245 UTC on the night of 26/27 October a brilliant auroral display was also noted by Captain P. Whitehouse, Master of the *Superiority*, whilst approaching The Skaw.

R.R.S. *Discovery* — Voyage 200*

BY T.J. BOULT

'It's an albinotross' exclaimed a senior photographer, caught up in the general excitement of seeing land for the first time in several weeks. The strange plumage of this particular Southern Giant Petrel was like a brilliant beacon amidst the coastal throng of its drab companions; as much a novelty to the eye as the smooth and angular outline of nearby McDonald Island. This diminutive outlier to the desolate and volcanic grandeur of adjacent Heard Island had become a significant, yet fleeting, focus for all aboard our Royal Research Ship. It re-affirmed that the Earth was not entirely sea-water; that terra firma was still our natural home, and that the Southern Ocean in autumn is a vast and isolated realm.

Chief Officer A.R. Louch recording bird observations for the RNBWS.

Across these waters, four generations of ships bearing the name R.R.S. *Discovery* have ventured. The present vessel recently returned south in a new guise, to continue the long tradition of her predecessors into the next century. She carries with her something of the spirit of her former self, despite a rebirth into a radically different form. This metamorphosis spanned many months; the product of much labour in the shipyard in Portugal that had become the workshops of her latest evolution.

Her hull has been significantly lengthened to carry a completely new superstructure and remodelled stern, facilitating modern requirements. New power plant serves the main propulsion and the many demands of marine science, not least in extended endurance.

In early 1993 the *Discovery* was approaching yet another notable milestone; her 200th scientific voyage. At its conclusion, six weeks into the future, the epic proportions brought a true sense of voyaging to the ship's company: to each a personal triumph of having equalled the endurance of their ship, and to share in the complete success of the venture.

*With acknowledgements to Research Vessel Services, Barry: Bob Dickson, MAFF, and John Gould, IOS.

To the Principal Scientist, a quote from Charles Darwin seemed fitting: 'Everyone must know the feeling of triumph and pride which a grand view communicates to the mind. In these little-frequented regions, there is also joined to it some vanity that you are the first man who ever admired this view.'

The unique mountain backdrop of Cape Town is one long-admired by many. At the start of this particular voyage, it held the gaze of hardened seafarer and first-trip scientist alike. All would carry very different expectations, yet were united by a common purpose.

The scientific complexities of the voyage were ably rendered to all whose many and varied skills would contribute vitally to the whole. It seemed pioneeringly appropriate that, in the midst of high technology, the briefing lecture should be chaired from the lounge carpet, an overhead projector beamed onto a screen improvised from a saloon tablecloth. To the officers and crew, this down-to-earth explanation added familiar meat to the intellectual bones of the animal we were set to study; ADOX — the Antarctic Deep Outflow Experiment.

On deck, in the scientific holds and covered work-spaces, the necessary hardware sat patiently awaiting assembly and use; spider-like structures whose feeble appearance is belied by their ability to suffer continual immersion at unspoken depths. Curious arrangements of cylinders, wires and elastic recover water samples from those depths, while huge knots of chain act as anchors against the ravages of bottom and ocean currents, holding arrays of monitoring instruments in vertical tentacles thousands of metres long.

Each of the different laboratories became inundated with their own particular families of processing equipment; a bewildering assortment to baffle the uninitiated, and occasionally to tax the technical minds of those who were their masters. The central computer was to be the sleepless but silent hub, absorbing results fed endlessly from the ship's Laboratories — the Main, Chemistry, Constant Environment and Deck Labs: a continuous work regime, once set in motion.

Sighting the first iceberg stirred the inevitable spectrum of emotions. As the fringe of the pack-ice edge would later become, this solitary and grand monolith was a collector's item to those new to the sea. The navigators viewed it with mixed feelings; for the following few weeks, the night watches especially would seem lengthened by the threat and reality of ice, wind-blown and borne by the whims of surface currents.

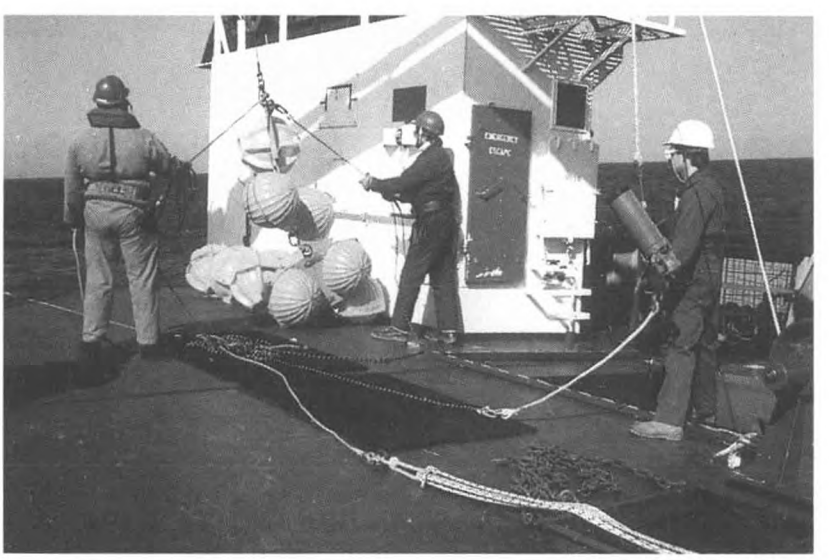
Approaching the ice edge. Approx. position 65°S, 85°E.

To the scientists, the movements of the deeper currents were their prime concern, the missing link in a world-wide conveyor belt of motion that influences climates by its critical temperatures and densities, and as a vital filter for the air we all must breathe. As the Principal Scientist had graphically explained, most new water that supplies the oceans derives from two sources; east of Greenland in the Northern Hemisphere, the other in the shallow shelf regions of Antarctica, particularly the Weddell Sea, From these two 'taps' dense streams of new water descend into the deep ocean, to renew all the ocean deeps everywhere. The mystery of the northern source has been fathomed. Not before time, its southern counterpart was now to be scrutinized. Such was the grand design of *Discovery*.

Across a thousand miles of the broad abyssal tract between Africa and the Antarctic continent, a probe was lowered through the water column to the sea bed, continuously measuring conductivity, temperature and depth, while also collecting water samples at specific levels. In these, critical analysis of infinitesimal amounts of trace material proved the theory to identify the illusive current from other red-herrings. To quantify such a broad current would be impossible.

Thousands of miles to the east, two constrictions helpfully confine The Weddell Sea outflow sufficiently for instruments to be effective. The scientists are grateful for the Princess Elizabeth Trough, close to the Continent, and its northern neighbour between Crozet and Kerguelen.

A tribute to the meticulous planning and teamwork, which utilized all the expertise accumulated over many years, eventually found both troughs spanned with suspended recording current meters. Each was a separate adventure of deployment, the product of many tedious hours.



Photos. by T.J. Boult

Preparing to deploy deep current-meter arrays with data-logger.

The Roaring Forties often proved a difficult arena, yet there was relative luxury on board *Discovery*, as she laboured her homeward way west to Cape Town. The yachts of the British Steel Round-the-World Challenge were of similar intent, *Discovery* assuming an honorary and distant mother-hen role, monitoring their daily progress, as we paralleled and eventually converged. The sight of arms waving in greeting, and boisterous banter on the radio were a mutual palliative. Unlike them, *Discovery* would return in a year, to recover hopefully all the moorings which had been laid.

At her berth once more in Cape Town, the ship was no longer a creature of the ocean, accepting the periodic upheaval of intense activity which emptied her. The cabins, laboratories, holds and decks became like a vacuum, poised to be refilled. Though empty, they still echoed with the voices of long and persevering occupancy. The scientists boarding next day would be oblivious to this. Their own venture had been planned many months in advance and to them the ship offered a vacant possession, to impose and leave their own mark, in their turn. Seasoned and enduring hands, or more new-joined beginners, all soon became caught up in the stir of departure. Another six-week epic had begun.

In harbour, all the racing yachts were clustered reassuringly together. Their crews enjoyed several weeks of celebration and recuperation, before they ventured northwards, away from a Southern Ocean little mellowed by a maturing autumn. This, once more, became domain for *Discovery*.

Icing — A winter hazard

BY CAPTAIN A.P. MAYTHAM

(Met. Office Sea Ice Unit)

Introduction

Icing is the process of water freezing onto a vessel. Icing occurs when a vessel is in open water but not in sea ice, with the correct meteorological conditions existing. Icing arises mainly from spray but rain, snow and shipping seas, usually over the bow, can also produce icing.

The degree of icing on a vessel is dependent upon two factors. Firstly, for the vessel, it is dependent upon the position of the superstructure, the loaded condition and the aspect of the wind and sea relative to the ship's head. Secondly, for the weather, it is dependent upon the wind speed and therefore height of seas, the height and period of swell and the temperatures of air and sea. Icing will nearly always occur with the air temperature at or below −2°C, and a sea temperature at or below 8°C. Usually, but not always, the wind has to be in the order of Beaufort force 6 or greater. A heavy swell causing water to be shipped on deck can produce the same results. These temperatures may vary, especially in the Baltic Sea, and icing may occur with sea temperatures higher than 8°C and/or wind speeds of less than force 6.

It should be realised that any form of icing is extremely hazardous, and in the case of small craft, the chance of turning over, with crew trapped inside and unable to escape because of doors and windows being iced up, is both high and likely. The effects on larger vessels may not be quite so dramatic, but the risks from increased keel depths due to listing may make coastal and pilotage passages uncertain. Icing may also affect the steering and manoeuvrability of the vessel and thus its general seaworthiness.

There are various degrees of icing and they should all be treated as serious events. The three categories of icing relate mainly to the thickness to be expected in 24 hours as follows:

Light Icing — 1 to 3 cms in 24 hours
Moderate Icing — 4 to 14 cms in 24 hours
Severe Icing — more than 15 cms in 24 hours

It must be reiterated that any icing, no matter how slight, should be considered a very serious occurrence.

Likely geographical areas of icing

Figure 1 shows the area where 'probability of superstructure icing, January to March' may occur in the Northern Hemisphere. The area defined should be treated with caution as the air and sea temperatures have been considerably lower than average on many occasions.

A typical shipping forecast issued in February contained a warning of icing for the sea areas shown in Figure 1, but January and March are also potential months for icing in varying degrees, dependent upon the conditions. The degree of icing will depend upon wind speed and air temperature: in air temperatures lower than −5°C, small craft should consider themselves at high risk from severe icing, and take all necessary precautions to reduce this risk.

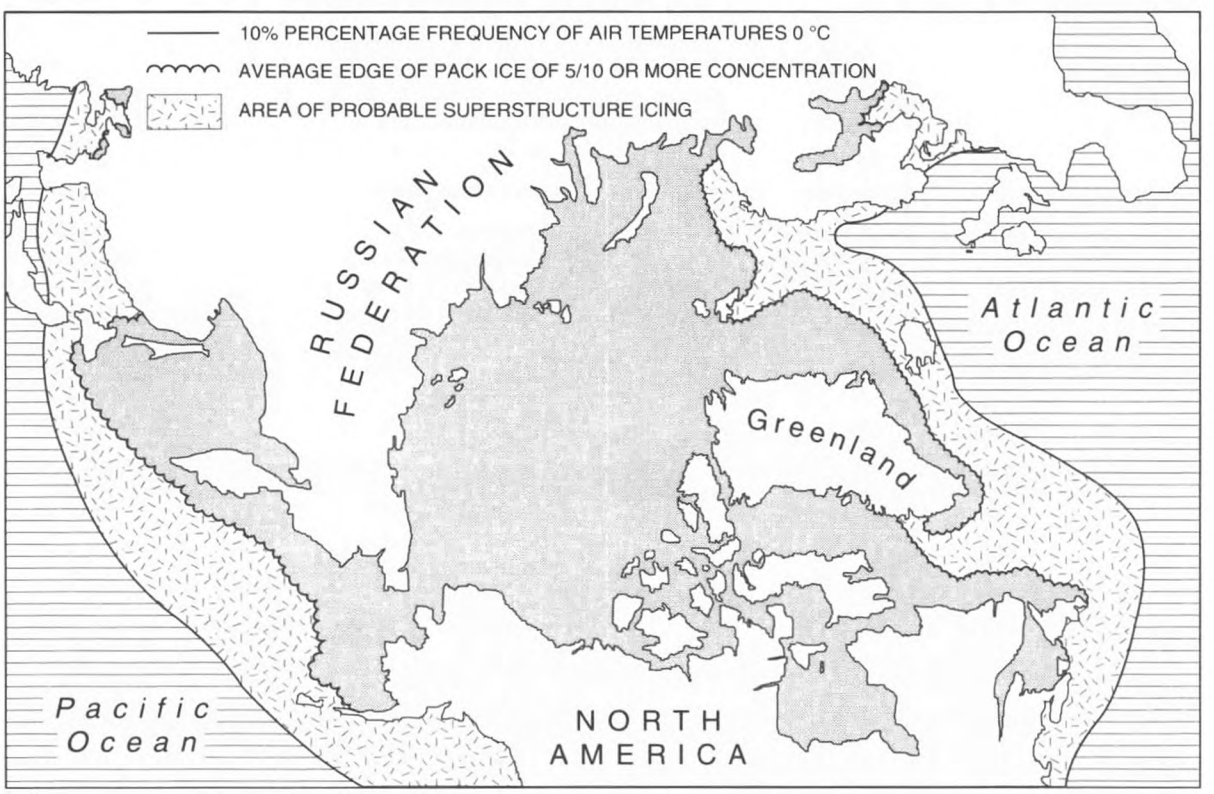


Figure 1. Probability of superstructure icing in the Northern Hemisphere, January to March.

Effects

There is as range of effects on any vessel, but it must be stressed that every icing situation should be considered an extremely hazardous occurrence.

The main effects of icing are:

Increase in topside weight and corresponding loss of GM.
Adjustment of draft, through list or trim.
Reduced visibility from obscured ports and bridge windows.
Increased risk to navigation from obscured sidelights.
Loss of manoeuvrability from forward weight, reducing stern trim.
Escape prevented from icing up of doors, ports and windows.
Loss of use of deck equipment.
Hazard to crew on deck from ice-coated decks and falling ice.

If a crew is unused to dealing with ice and extreme cold conditions, there is a high chance that crew members may be at risk from both the cold water and ice formed on the superstructure which may fall. The crew of small craft may not be aware that all stability is lost, and they cannot escape from the accommodation until the vessel starts to list critically, when emergency action may be too late. The vessel can ice up at an alarming rate, and unless the Master is aware of this fact, he may suddenly find his vessel in a particularly hazardous situation.

Precautions
There is a range of recommended precautions to be taken, both prior to sailing, and when at sea, when the most risk occurs.

i. **Prior to departure**
Trim by the stern to prevent shipping water.
Cover windlass and winches with canvas.
Keep hammers, crowbars and other equipment likely to be needed to clear ice, out of storerooms which may ice up.
Inform all hands where equipment is stowed.
Ensure all hands know the risks on deck.
Remove non-return valves from scuppers and unship freeing ports to prevent them icing up.
Obtain weather forecasts.
Rig safety lines.
List radio stations, frequencies and times of broadcasts.

ii. **At sea**
Make sure all hands know what to look for.
All required equipment available and out of danger areas.
Warm weather gear available.
Issue all hands with safety lines or harness and instruct in procedures for going on deck.
Lower gear (if topped for port arrival).
Drain deck service lines.
Keep light fittings clear of ice.
Ensure escape route clear of icing is available.
Monitor formation of ice.
Adjust vessel's course and speed to reduce spray.
Keep look-out points clear.
Monitor weather bulletins for shipping from all sources, including radio stations.
Monitor air and sea temperatures.
Prepare for the worst.
WHEN ICING STARTS, SEND A WARNING TO THE LOCAL COAST RADIO STATION

iii. **During icing**
Issue Sécurité warning and advise all authorities.
Monitor air and sea temperatures.
Ensure escape routes are known.
Maintain radio contact with shore.

Use high-pressure hoses to clear ice from windlass, walkways and doors if sea water temperature is high enough, i.e. 6°– 8°C.
Check all hands have safety lines or harness and adequate clothing.
Constantly observe and monitor ice on upper rigging and superstructure.
Monitor list and/or trim for stability.
Monitor other ships in area.
Monitor ice thickness if possible.
Maintain icing reports at regular intervals, including positions.

Conclusion

All icing on any vessel should be treated as serious. Ice build-up can be very rapid and stability severely reduced in a very short space of time. Attention should also be paid to the wind chill factor and effects of hypothermia, together with frostbite.

The Mariner's Handbook (NP100) has a section covering icing, and mariners are recommended to read all available information on the subject.

Owls on board ships at sea

By Commander M.B. Casement O.B.E., R.N.

(Royal Naval Birdwatching Society)

Reports of various owl species along with many other birds of prey, including Peregrine Falcons, Ospreys, Merlins and Kestrels, regularly feature in met. logbooks. These birds feed on other small migrants taking passage aboard, such as warblers, finches and swallows. Other land birds most readily noticed because of their size include members of the heron/egret family and conspicuous species such as Hoopoes and Bee-eaters.

The two most commonly reported owls are the Short-eared Owl (*Asio flammeus*) and the closely similar Long-eared Owl (*Asio otus*). Both are widely distributed throughout the Northern Hemisphere (Europe, Asia, North America) and both are long distance migrants, regularly crossing open oceans.

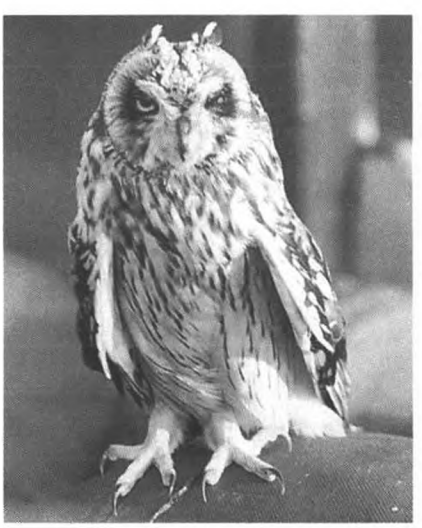


Photo. by Captain A.D.G. Bell

Short-eared Owl

Photo. by C.R. Pratt

Long-eared Owl

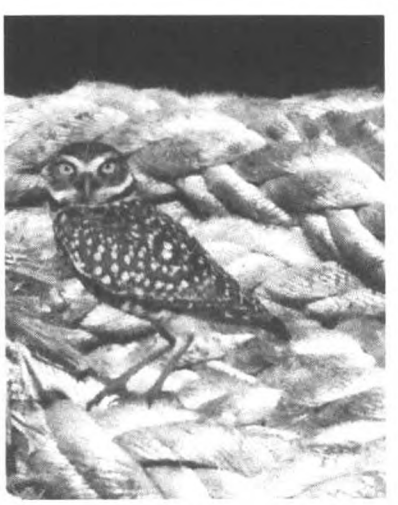
They both frequently take passage on board ships, and care needs to be taken to draw distinction between them since the 'ear tufts' are not always visible, especially in flight. The similar sized Tawny Owl (*Strix aluco*) has no 'ears', is mainly resident in western Europe and North Africa, and thus is very rarely reported on board ships.

The awesomely massive Eagle Owl (*Bubo bubo*) also has 'ears' but is very much larger, and I have no confirmed record of this on board a ship at sea. It is now fairly rare throughout its range (Europe, Asia, North Africa and the Middle East) and is mainly resident but there are many other, smaller, species of this family world wide. There have been a few examples of African species from off the coast of Africa and also off Aden.

The third most commonly reported owl is the Barn Owl (*Tyto alba*) which is mainly white, and has been reported far from land, from the North Pacific Ocean and many other areas in the Northern Hemisphere. Also white but very much larger is the Snowy Owl (*Nyctea scandiaca*); this is unmistakeable and very much less common. It breeds in the Arctic tundra, and has been reported only as a vagrant in the North Atlantic Ocean.

Photo. by Captain J.B. Nichols

Barn Owl



Photographer unknown

Burrowing Owl

Photographer unknown

Scops Owl

Other owls occasionally reported are the Burrowing Owl (*Athene cunicularia*) from the western Atlantic and the Caribbean, the much smaller Little Owl (*Athene noctua*), and various species of Scops Owl (*Otus scops*) usually from the Mediterranean and Middle Eastern waters.

I am always pleased to offer advice on the identification of owls, and many other species of land birds but sketches and photographs are invaluable for all unusual species. All identifiable sightings of land birds extracted from the met. logbooks of weather reporting ships are summarised annually in the RNBWS journal *Sea Swallow*, and regularly make a major contribution to our knowledge of land bird migration over the sea.

Editor's note.

ERRATA. Commander Casement points out two incorrect captions to photographs published in this journal. The cover photograph of the April 1994 issue shows a Short-eared Owl, not an Eagle Owl, as stated. Similarly, the 'Tawny Owl' shown on page 185 of the October 1992 issue is also a Short-eared Owl. We apologise for the misprints.

PRESENTATION OF BAROGRAPHS

Since its introduction in 1948 by the Met. Office Director of the day, the annual presentation of barographs to four long-serving Masters for their dedicated weather observing efforts has been enjoyed every year.

For the 1994 event, three of the four nominees, together with their wives, were able to attend the reception on 8 June at the now favoured venue of the Reading Room of the Meteorological Archive at Bracknell. Present to receive their long-service inscribed barographs from Dr Peter Ryder, Deputy Chief Executive, were Captain David Batchelor of P&O Containers Ltd, Captain Rodney Bilton of Blue Star Ship Management Ltd and MAFF's Captain Barry Chapman.

Before the assembled company of shipowners' representatives and other Met. Office staff from the branches most concerned with the reception and use of the weather data they so willingly provide, Dr Ryder made the presentations in the unavoidable absence on business of the Chief Executive, Professor Julian Hunt. Dr Ryder opened proceedings with a sincere vote of thanks to those being honoured, saying that the presentations were a way of thanking them, as well as the numerous other Captains and Officers who contributed so much to the voluntary observing cause. Whilst the use of weather data acquired by satellite may be on the increase, there was still no substitute for information from the surface, provided it was accurate and complete, particularly from the seas which covered such a large portion of the Earth, and from which we could yet afford to receive more assistance from an increased number of ships.

Presentation of barographs in the Met. Office Archive Reading Room at Bracknell on 8 June 1994. Standing, left to right: Captain G.V. Mackie (Marine Superintendent, Met. Office); Captain D.L. Batchelor (P&O Containers Ltd); Captain W.R. Houghton Boreham (Operations Manager, Blue Star Ship Management Ltd); Captain B.A. Chapman, (Ministry of Agriculture Fisheries and Food Research Vessels); Captain S.E. Bligh (Fleet Operations Manager, P&O Containers Ltd); Dr P. Ryder (Deputy Chief Executive, Met. Office); Captain A.R. Hill (General Manager, Fleet, P&O Containers Ltd); Captain R.K. Bilton, (Blue Star Ship Management Ltd); Mr J.M. Nicholls (Director Observations, Met. Office). Seated: Mrs Batchelor; Mrs Chapman; Mrs Bilton.

(Continued on page 195.)

Crown Copyright

Dr Ryder presents Captain Batchelor with his inscribed barograph.

Crown Copyright

Dr Ryder presents Captain Bilton with his inscribed barograph.

Crown Copyright

Dr Ryder presents Captain Chapman with his inscribed barograph.

Crown Copyright

Dr Ryder; Mr Nicholls; Captain S.M. Norwell (Deputy Marine Superintendent); Captain Hill.

Crown Copyright

Captain Mackie; Mrs Bilton; Captain E.J. O'Sullivan (Nautical Officer, Met. Office); Captain Bilton; Captain Houghton Boreham.

Allowing for the time and care it takes to receive and assess all meteorological logbooks and to evaluate the potential candidates for these awards, 18 months elapses between the year in question, 1992 in this case, and the selected day for the presentations. The candidates must have made observations during a minimum of 18 years and completed at least one logbook during the last year involved. Factors used in arriving at the final four selections for the year include length of service, the total number of logbooks submitted to the U.K. Met. Office and their quality as determined by assessment by Marine Division staff.

Thanks to the warm welcome given to the guests by the Head of the Met. Office Archive, Mr Michael Wood, and the two ladies in his staff, the guests were able to view many interesting historical exhibits. Not least of these were various synoptic and forecast charts for D-Day, 6 June 1944, as the guests were fortunate enough to visit us at about the time of the 50th Anniversary commemorations of that momentous event. Also on show were the visiting Captains' earliest and most recent offerings in the form of logs and reports.

Crown Copyright

Mr M.W. Stubbs, Head of Central Forecasting Office (left), and Mr M.J. Wood, Head of Met. Office Archive, studying the comparative British and German forecast charts for D-Day 1944.

Following the presentation ceremony, the guests were entertained to lunch at a Bracknell hotel, the well-known and aptly named Admiral Cunningham, the main hosts being Dr Ryder, Mr Michael Nicholls, Director of Observations, and Captain Gordon Mackie, Marine Superintendent. The shipping company officials present to see their Masters honoured were Captain Andrew Hill, General Manager, Fleet, and Captain Stephen Bligh, Fleet Operations Manager, both of P&O Containers, and Captain William Houghton Boreham, Operations Manager of Blue Star Ship Management. After lunch the Marine Superintendent conducted the visitors to the Central Forecasting Office where its Head, Mr Martin Stubbs, guided them on a comprehensive tour of the facilities, before bidding them farewell in the late afternoon.

AURORA NOTES OCTOBER TO DECEMBER 1993

By R.J. Livesey

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

In Table 1 are to be found the marine aurora reports that have been received for the period, to date. It is a reflection on the changes in merchant shipping that, at sunspot minimum in 1976, there were 71 marine auroral reports while at the next minimum in 1986 there were 48 reports but in the approach to the next minimum, possibly in 1994, there were only 22 reports in 1993.

Table 1 — Marine aurora observations October to December 1993

Date	Ship	Geographic Position	Time (utc)	Forms in Sequence
9/10 Oct.	*OOCL Bravery*	55° 50'N, 43° 19'W	0320	RA
19/20	*Cumulus*	56° 30'N, 22° 59'W	Not given	N
25/26	*Appleby*	49° 41'N, 65° 27'W	0715	aHB.aRB
6/7 Nov.	*OOCL Bravery*	49° 55'N, 61° 31'W	0040	G.RA.apRA
18/19	*Cumulus*	57° 08'N, 20° 52'W	2340–0345	M_4RB.G.V.HA.m_1RR. $ap_2(m_4P+HA)$

KEY: a = active, m = multiple (suffix gives number of units), p = pulsating, p_2 = flaming, A = arc, B = band, G = glow, H = homogeneous, N = unspecified form, P = patch, R = rays, V = veil.

First signs of the end of the current sunspot cycle have begun to show themselves as there were occasions when a 2½-inch refractor did not detect the presence of any sunspots on the solar disc. On the other hand, the coronal hole cycle that began in 1990 with extensions of the polar coronal holes has been active in this period with persistent equatorial coronal holes. These have led to recurrent magnetic storms and associated quiet high-latitude aurorae. Strong auroral activity was reported from America, particularly on the nights of 8/9 October, 3/4 November and 7/8 December. Quiet aurorae consisting of glows and quiet arcs were seen down to the latitude of the Forth and Clyde estuaries on 16/17, 25/26 and 27/28 October, 4/5 and 14/15 November (both including rays), 18/19 and 27/28 November. On 7/8 December rays were recorded as far south as the Tyne estuary. The most widely reported events were those of 14/15 and 18/19 November together with 7/8 December. The most evident recurrent magnetic storm periods were 8–10 October, 4–6 November and 1–3 December. Magnetic storms on 25 October, 18 November and 8 December were likely to have been caused by transient solar events.

In this day and age of the artificial satellite, rocket sounding, radar tracking and other methods of studying the aurora, why observe it at all from sea level? Some readers may recall that, when asked why he wanted to climb Mount Everest, Mallory replied, 'Because it is there'. And so it is with the aurora. Quite apart from being one of Nature's wonderful sights, the aurora and the magnetic storms associated with it have an impact on man's technology. However, the aurora also reflects the state of the sun, our nearest star, and what particles and magnetic fields it is throwing at us.

The aurora has been noted and recorded for thousands of years and references to it appear in the literature of the ancient civilisations so that our records today

maintain a long line of data from which useful information can be deduced. Comparison of the old Chinese, Japanese and Korean records with those of more recent times have led researchers to deduce the changing location of the north magnetic pole. It is claimed that similar results have been obtained by comparison with the old Viking sagas.

During the period from 1645 to 1715, now referred to as the Maunder Minimum, there was a dearth of auroral sightings and of sunspots. For example, John Flamsteed is known not to have seen any sunspots in a period of seven years and that the apparition of any sunspot was a notable event. It is worth remembering that Flamsteed was the first Astronomer Royal, who, together with the Greenwich Observatory was instituted to improve stellar navigation for mariners. The mini ice-age took place during the Maunder Minimum when the Thames froze over in winter, and fairs and markets were held on the ice. There have been debates as to whether or not the lack of sunspots and aurorae was an artifact of poor observing, especially in Europe in view of hostilities at that time.

However, Edmond Halley (who was commissioned a Captain in the Royal Navy), during his voyages in the Atlantic Ocean to make magnetic measurements, did not see his first aurorae until 5 March, 1716. Some think that had the aurora been around to any great extent during the period of the Maunder Minimum then Halley would surely either have seen it or heard about it. Thus, ground-based observations of the aurora have assisted in studies of variations in solar activity.

It was ground-based observations that initially determined the existence of the auroral oval of activity encircling the north magnetic pole, before it had been photographed by satellites. United Kingdom ground-based and marine observations have established the frequencies with which the auroral oval expands into mid-latitudes in British waters; these data can be compared with magnetic and solar records and earlier estimates improved. A similar exercise is being carried out using data from Canadian and American meteorological observatories.

The locations of auroral observations have been plotted in terms of the geometrically arranged lines of geomagnetic latitude and longitude, based on an axis through the notional magnetic poles as if a bar magnet had been placed at the centre of the Earth. Inspection of auroral observations made at Wick, Kirkwall and Sumburgh in comparison with those made on equal nights by ships in the Baltic and in Finland in particular, indicated that the storm aurora, when expanded southward, was not following the lines of dipole magnetic latitude as hitherto expected. A similar investigation compared Canadian, American and British observations and again led to the conclusion that the aurora was not related to the above magnetic latitudes.

The Earth's magnetic field in space is modified by the particle streams coming directly from the sun, leading to warping of the geomagnetic co-ordinates; physicists calculate the lines of the corrected geomagnetic latitude and it is then found that the auroral activity more clearly relates to these corrected values. Thus, an observatory in America may have a geomagnetic latitude of 56° North, Fair Isle (south of Shetland) may have a geomagnetic latitude of 62° North yet both have the same corrected geomagnetic latitude of 57° North. It should be pointed out that as the locations of the geomagnetic poles change with the centuries, so do geomagnetic latitudes at any given location.

A further investigation of solar activity using British land and marine data established the existence of two families of auroral activity, the one principally related to the transient or explosive type of solar particle emission while the other

was related to the coronal hole type of continuous particle emission, rotating with the sun and causing recurrent activity, just as we are experiencing at the present time.

Why observe and record the aurora? The above examples are intended to indicate what can be done given adequate data on which to work. One never knows how useful an observation might become in the future. At present, we are investigating the Flash Aurora, an aurora that appears for a matter of seconds in an otherwise empty sky, then disappears altogether. We are also investigating the simultaneous appearance of noctilucent cloud (NLC) and aurora, something that theorists thought ought not to happen, but it does. Sometimes an aurora appears then disappears to be replaced by NLC, that in turn disappears and aurora reforms. These observations are rare but when such occurrences take place there are physicists who want to know about them.

Much of the present research into the aurora is carried out at high latitudes in the auroral zone. Very little is made on the storm aurora at mid-latitudes as it expands equatorwards, and that is where the land and marine volunteer observers come in to maintain the record. The professional physicist is analogous to the modern mariner who navigates using every electronic gadget that man can give him, up in the auroral zone, while the mid-latitude observer is relying on star sights and a magnetic compass like the mariners of old. In fact, the land-based observer uses the cloud alidade like a sextant to measure auroral altitudes while his compass, in the form of a magnetometer, tells him what the magnetic field is doing.

The motto of the Royal Astronomical Society can be translated into 'Observe everything that shines!' If you see an aurora, enjoy it as one of Nature's wonders, but please tell us about it.

Mr R.J. Livesey, C Eng, FICE, FIWES, FRAS

Ron Livesey, Director of the Aurora Section of the British Astronomical Association, has been providing us with his stimulating tables and articles since the July 1978 edition of *The Marine Observer* and, although he has now retired from his full-time professional occupation as a Civil Engineer specialising in water engineering, he intends devoting as much, if not more time to the business of astronomy and the aurora. It will therefore be to our benefit that he has kindly committed himself to keep up his aurora commentaries for this journal.

Ron Livesey retired officially on his 65th birthday on 11 February last, after a career spent almost entirely with the Babtie Group of Consulting Engineers of Glasgow, since he qualified as a Chartered Civil Engineer in 1957. He started out with Babtie Shaw and Morton which is now a subsidiary company of the group, and he retired as an Associate and Technical Director, acting more as a consulting water engineer within the group, mainly giving advice and training to younger engineers. He has dabbled, as he puts it, in dockyard and lighthouse engineering, having been associated with marine works for the Old Clyde Lighthouse Trust and the Basses lighthouses off the south-east coast of Sri Lanka.

Recent projects he has worked on have included inspection and certification of the design of a 750 mm diameter high-pressure towns gas main in Hong Kong for clients in Kowloon: upgrading of the City of Oxford waterworks to enable it to

meet EC water quality standards: hydrological studies in connection with the spillway for reconstruction of a dam at Kagara in Nigeria: and investigations into control valve failures for various clients. Mr Livesey is amused to note that his last project was similar to his first, the design and construction of river intakes for hydro-electric schemes.

Ron Livesey says he originally wanted to go to sea but chance put him into the family business. He will now concentrate on astronomy and solar-terrestrial physics which is all relevant to engineering and to public interest generally. Last March he heard that the January 13 magnetic and solar particle storm knocked out for keeps a $300 million Canadian telecommunications and TV satellite. 'The old sun has a few tricks left in her yet'.

His message to observers at sea is to keep reporting the aurora, and especially to OWS *Cumulus* to keep going for she is about the only regular aurora observer reporting to him at sea these days in the northern hemisphere. He is certainly correct, but where have all the other observers of the heavenly displays gone? In his first summary for 1976, Ron Livesey listed no fewer than 71 reports of aurora received, of which 36 were from ordinary observing ships, the rest from the two Ocean Weather Ships in service at the time. In 1993 the total was 17, only 8 of which were from Selected Ships. He does not perceive any reduction in the annual displays of aurora, only in the number of reports of them recorded by ships.

Ron Livesey and his wife Ena, being keenly interested in languages, have some good laughs at the catch-phrases evolved by a number of TV weather presenters and meteorologists in their respective vocabularies. The phrases are unlikely to be found, they expect, in any glossary of meteorological terms published by the Met. Office, but they have added colour to the public presentation of the weather as viewed from their Edinburgh home.

LETTERS TO THE EDITOR

"Passenger pigeons"

The *Al Shuhadaa* is on the Great Circle track from the Gulf of Mexico to Gibraltar, passing through the Azores. For the moment a huge anticyclone stretches across the Atlantic, promising good, calm weather and the possibility of a record-breaking passage. I am hoping to save at least one day between LOOP* and Kuwait on the charter time of 29 days. The vessel's present trading pattern is unlikely to change, with voyages from Kuwait to the U.S. Gulf coast or northern Europe, via the Cape on the loaded passage, at a moderate speed of 13 knots; returning through the Mediterranean and the Suez Canal at full speed of approximately 15 knots overall.

Activities which help to pass the long weeks at sea include growing plants, and the tomatoes are coming on a treat but they will never be considered as a supplement to the ship's normal provisions. The Mate is convinced that as they are a second crop we won't even be able to use them for chutney; however, watching them grow is pleasure enough, especially as there are ample stocks in the ship's vegetable room.

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* Louisiana Offshore Oil Port (off the Mississippi delta).

Our resident pigeons have increased the size of their little flock. I am told that the parent birds arrived in dribs and drabs about a year ago. The Bosun clipped their wings, fed them and provided shelter in the form of a makeshift pigeon loft on the poop deck. There were two young birds ready to take flight when I came aboard, now a third chick has been added to their number which totals eight. As the Bosun is due to leave the vessel soon, the Chief Officer has wisely instructed him not to clip any of the birds' wings, giving them a chance to leave for pastures new, as and when. Perhaps it would have been wiser to have given the instruction when the latest chick had grown a few feathers, because while passing Florida, just days out from LOOP, seven of the eight birds disappeared one fine morning, and are no doubt sunning themselves on the Miami beaches as I write, and counting themselves jolly lucky too, with only the hen giving a thought to the little bird left 'Home Alone'! If the poor blighter survives, perhaps he will be joined by other birds blown off course when the ship is next off northern Europe.

Captain P.J. Ward, Master, *Al Shuhadaa*, Kuwait Oil Tanker Co.

Book Reviews

Lashing and Securing of Deck Cargoes by Captain John R. Knott, BA, FNI. 210 mm × 297 mm, 172 pp., *illus*. The Nautical Institute, 202 Lambeth Road, London SE1 7LQ. Tel: 071-928 1351. Fax: 071-401 2537. Price: £21.00 to Nautical Institute Members, £30.00 Non-members, Airmail £5.00 Europe, £7.50 World.

This is a book written by a Master Mariner for mariners who live in the real world of practical seafaring; operators, charterers and stevedores might also find reassurance that effective lashing need not cost the arm and a leg that could possibly be lost as a result of crew having to turn to in order to re-secure deck cargo that has come adrift in heavy weather. The general practice of seamen is, however, not forgotten where subsidiary effects are concerned, such as care and accessibility of sounding, air and ventilation pipes.

The seven chapters cover general guidelines and some of the international regulations for securing of deck cargoes, as well as sections on lashing of specific materials, the types and strengths of various materials and costs. There is a particularly useful chapter on securing of containers on ships not built for the purpose, information which may be much needed by crews of the many ships which fall into this category. The feeling of good seamanship prevailing throughout is enhanced by the many examples of how not to lash and the results of insufficient attention to correct securing, supported by many salutary photographs to prove the point.

The book is suitably bound in stiff waterproof paperback, making it ideal for dipping into for a quick reference 'on the job', and should cover the needs of those in the act of having to decide how to secure an unfamiliar deck cargo.

Captain Knott's experience in cargo ships and tankers, as harbour master in British Guiana and as a cargo surveyor, to name but a few of the positions he has held, has given him a special interest in ship structures and lashing and securing of deck cargoes, and it would be worth all those needing further help in his speciality to obtain a copy of this book.

Lloyd's Maritime Atlas (17th Edition). 215 mm × 305 mm, vi + 64 pp. maps + Geographic and Alphabetical indexes, *illus*. Lloyd's of London Press, Sheepen Place, Colchester, Essex CO3 3LP. Tel: 0206 772277. Fax: 0206 772118. Price: £40.00.

This edition includes two hundred new ports and shipping places and the whole now covers more than 3,000 ports throughout the world.

The numerous changes to country names, boundaries and borders occurring over the past four years since publication of the previous edition are also faithfully charted. Port facility coverage has been greatly expanded and the indexes carefully revised, together with all the ocean maps, world maps and the port and waterway statistic inserts.

With the inclusion of comprehensive distance tables between major world ports and maps showing the main weather hazards over the oceans, as well as International Load Line Zones, the *Lloyd's Maritime Atlas* remains a most useful guide.

The Ships Atlas, 5th Edition. 215 mm × 305 mm, 75 four-tone maps, mainly double-page, plus 50-page index, *illus*. Shipping Guides Ltd, Shipping Guides House, 75 Bell Street, Reigate, Surrey RH2 7AN. Tel: 0737 242255. Fax: 0737 222449. Price: £40.00 (£45.00 outside U.K.).

The Editors of this top-class publication have ceaselessly strived for improvement since they produced the first edition only ten years ago, in response to the suggestions of their extensive maritime clientele. This cross-fertilisation is also an aspect they would like to continue, such a useful exchange of ideas being justified to the full by the showing of this fifth edition.

Mainly on the advice of subscribers, the Editors have redrawn all the maps to improve areas of coverage, with justifiable results. This includes attention to both large and small scale maps with clear trading areas linked logically in an even better fashion than before, even to the extent that most of the coasts of Spain appear twice, each time in adequate scale. One map is in larger scale showing the Atlantic coasts only and the Azores inset, and another in smaller scale to include all of the western Mediterranean as far east as Monte Carlo in the north and C. Bougaroni in the south. Inset into the 70 large format maps are more than 30 handy-sized maps of what the Editors call the 'busy areas', again, very usefully.

The map of World Load Line and International Time Zones is very clearly produced and useful as a ready reference. However, the map of World Ocean Currents and Prevailing Winds is perhaps of too small a scale to be comprehensive enough to be of practical use to those who may need such information, and are likely to have more detailed information on currents and winds to hand already. Also to state that, during Northern Summer, the North Indian Ocean/China Sea currents run counter to those shown [for Northern Winter] is too broad a generalisation to be of practical use, and therefore this map could have been excluded from this otherwise excellent publication.

All recent political changes, affecting coasts and boundaries, such as in the former Soviet Union, Yugoslavia and Aruba, have been included, probably making this atlas the most up-to-date of its kind available, and thus to be a recommended holding in all ships' and shipping operators' libraries.

Charting the Sea of Darkness — the Four Voyages of Henry Hudson by Donald S. Johnson. 160 mm × 235 mm, 242 pp., *illus. Waterline* as an imprint of Airlife Publishing Ltd, 101 Longden Road, Shrewsbury SY3 9EB. Tel: 0743 235651. Fax: 0743 232944. Price: £21.95.

While sailing his schooner in the high latitudes near Hudson Bay, the American author became fascinated by the life of this mysterious explorer, generally ignored by historians in the past, and yet one who inspired tremendous admiration from his contemporaries. *Charting the Sea of Darkness* gives us an entertaining insight into Henry Hudson's world, making use of his logs and those of his mate, Robert Juet, and those of a passenger who sailed with him under the Dutch flag when Hudson explored America's east coast. The main interest in his life seems to be compressed into the four years 1607 to 1610, towards the end of the Age of Exploration, when he made four momentous voyages, principally in search of the elusive north-west passage to Asia.

Hudson's accounts of the richness and expanse of the land led to its colonization by the Dutch. As a result of this settlement, many American traditions and ideals were born. Whilst the explorer's beginnings remain shrouded in mystery, his untimely end is sufficiently well chronicled that we can be certain he died shortly after being set adrift in the icy waters of the bay which bears his name, by a mutinous crew in a small boat. This analogy with the fate of Captain Bligh, who no doubt survived his ordeal due to being in a less frigid environment, is the more remarkable for Hudson's end being so little publicised.

The book is well endowed with copies of old maps and drawings, linking the carefully researched narrative about this adventurous man to produce an historical account well worth looking into.

J.F.T.H.

Personalities

RETIREMENT — MR R.A. WILSON retired in 1992 as Senior Radio Officer on R.M.S. *St Helena*, having spent thirteen of his thirty years at sea serving on the two ships of that name.

Robert Wilson went to sea as a Radio Officer in the early 1960s and sent us the first of 66 meteorological logbooks in which he was involved from the *F.T. Everard* in November 1962. He was then appointed Radio Officer of the Furness Withy Group's *Sagamore*, an observing ship of 10,792 tons gross, in which he experienced a violent storm, more of which we recount below as it seems of particular interest. Between 1966 and 1976 Robert Wilson sent in logs from five different Union Castle Line ships, including *Windsor Castle* and *Good Hope Castle*.

In July 1979 we received the first of his 38 logs from the original *St Helena I*, which became *St Helena Island* in 1990 on the introduction of the new ship, to which he later transferred in order to provide a further four logs before his retirement. He received Excellent Awards on nine occasions for his efforts, all but one of these being presented for his radio co-operation on the two *St Helenas*.

Robert's wife, Christine, travelled with him on many of his voyages and some of her experiences were published in the article by her husband in the April 1992 edition of this journal under the title *Bottled messages from* R.M.S. St Helena. Since retirement from the Curnow Shipping Company, Managers of the *St Helena*, the couple have taken up full-time occupations of their own in ship modelling

('Shellback Shipmodels'), painting and writing. They operate from their home, 'Drumcliff', 53 Woodcroft Close, Penwortham, Preston, Lancs.

Robert Wilson has vivid memories of the violent storm he experienced on the *Sagamore* between 19 and 20 January 1965, on passage from Newport, Mon. towards Savona, Italy. He recalls that his ship was carrying a cargo of four thousand tons of coiled steel sheet as the seas started rising when they were steaming at 11.2 knots, half-way across the Bay of Biscay, as they passed the Liberian registered ship *Pegasus*, hove to and rolling heavily, at Noon on the 19th. By the early morning of the 20th the *Sagamore* was also hove to, with the Master, Captain W.F. Swann, estimating the seas at 40 to 50 feet in height. At about Noon the ship encountered a wave considerably higher than normal. The ship scended about three-quarters of the way up the wave and then the entire 400 feet of the foredeck, including the forecastle samson posts 52 feet above the waterline, was overwhelmed by the heavy seas. When the wave struck the ship was in hand steering with Second Officer Geoff Usher (now Captain Usher, Plymouth Polytechnic) at the wheel and the Captain and Wilson at the bridge windows.

The storm began to moderate the following day and passage was resumed, with assessment of the storm damage revealing the remarkable power of the sea. Eleven frames fractured, both forward derricks uprooted from their housings leaving holes in the forecastle head, one derrick with a 90°-bend in it, the other banana-shaped. The ship's bell was ripped off its bracket and squashed flat and some forecastle head rails were missing. Pounding had caused the cargo to shift aft, but more important to the Radio Officer was that several radio equipment valves had been pounded out of their sockets, and no meals were served for a time. Later, when Captain Swann inspected the ship in drydock, he noticed that the forward samson posts were bent aft, being about two feet out of true at the tops. Wilson kept in touch with Captain Swann almost until the latter's death in 1970, and he said he remembered the storm until the end, and he had been at sea since 1924.

The path of the storm was well recorded in the *Sagamore*'s logbook extracted from the Meteorological Archive, and it appears the officers did not miss one synoptic hour observation during the storm's passage. At 0600 GMT on 20 January 1965, the ship reported the wind as W'ly force 10 and pressure 977.7 mb. On the original shipping forecaster's chart for the same time, the central pressure of the depression over the southern Irish Sea was 960 mb.

We are very thankful to Mr Wilson for sharing this interesting experience with us, and we wish Robert and Christine success in their new ventures since retirement from the sea.

Notices to Marine Observers

APPOINTMENT OF PORT METEOROLOGICAL OFFICER, NORTH-EAST ENGLAND

Captain G. Young has been appointed as Port Met. Officer at Middlesbrough, in succession to Captain John Steel who has finally taken up residence at the Hull Port Met. Office.

Gordon Young was born in Edinburgh in January 1945 and received one year's pre-sea training at Leith Nautical College before joining Lyle Shipping Co. in 1961, remaining with that company until passing his First Mate's Certificate in

1967. He then served in various companies in oil tankers, gas carriers, general cargo and offshore supply vessels, before joining Stephenson Clarke Shipping in 1975. Shortly after obtaining his Master's Certificate in 1977 he was promoted to command. His first meteorological logbook was sent from Shell Tankers' *Hyala* and he has received three Excellent Awards for his keen observing work, which includes volunteering for recruitment the several Stephenson Clarke ships he has commanded.

Since coming ashore in 1985, Captain Young has worked as a Safety Officer with Santa Fe Offshore Construction Company and as a Quality Assurance/Safety Manager with a road transport company specializing in the carriage of dangerous liquids in containers world-wide.

GROUP BBXX TO PREFIX SHIP'S WEATHER MESSAGE

In addition to the code changes to be introduced on 2 November 1994, foreshadowed in the last two editions of this journal, it has been agreed with the World Meteorological Organization that United Kingdom VOF ships will begin prefixing their weather messages with the symbolic letters **BBXX** as the first group from that date. This group identifies the message as a SHIP report from a sea station, differentiating it from the many other code versions which exist for the use of the numerous types of reporting stations.

All observing ships are therefore asked to start their weather messages with this group, entered before the call sign, from the same time as the other changes, 0000 UTC on 2 November 1994.

The new version of the meteorological logbook, Metform 911A, containing all the changes, will be gradually entering circulation by the time of publication of this edition. Meanwhile, observers are requested to continue consumption of older logs, adding the new and changed groups as necessary.

CHANGE OF UNITED KINGDOM TELEPHONE AREA CODES

New area codes are being introduced into the U.K. telephone network, starting on 1 August 1994. The old codes will be switched off on 16 April 1995, after which it will only be possible to ring numbers using the new codes.

All area codes must have a figure '1' inserted after the initial '0', e.g., area code 0803 becomes 01803. Codes for London and other large cities also change, for instance 071 becomes 0171 and 081 becomes 0181.

The exceptions to this rule are for Bristol, Leeds, Leicester, Nottingham and Sheffield, which are given a new four-figure area code and an additional figure prefixing the telephone number, thus:

Bristol	0272 xxxxxx becomes 0117 9xxxxxx
Leeds	0532 xxxxxx becomes 0113 2xxxxxx
Leicester	0533 xxxxxx becomes 0116 2xxxxxx
Nottingham	0602 xxxxxx becomes 0115 9xxxxxx
Sheffield	0742 xxxxxx becomes 0114 2xxxxxx

The code for international dialling changes from 010 to 00, bringing the U.K. into line with the rest of Europe.

For further information, call Mercury FreeCall on 0500 04 1995.

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*United Kingdom telephone area codes are being changed from 1 August 1994 onwards by the addition of a figure 1 after the 0 prefix. The previous codes expire on 16 April 1995.

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