

THE METEOROLOGICAL MAGAZINE

No. 1278

January 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>The use of automatic weather stations in the observational network of the United Kingdom.</b> D. N. Axford .. .. .	1
<b>Micrometeorological characteristics of the 1976 hot spell.</b> C. J. Richards .. .. .	11
<b>Severe low level turbulence near Cross Fell.</b> F. D. Reece .. .. .	27
<b>Notes and news</b>	
The Meteorological Magazine .. .. .	32

---

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 595890 K 15 12/78

Annual subscription £16.74 including postage

ISBN 0 11 725361 8  
ISSN 0026-1149

THE METEOROLOGICAL MAGAZINE

No. 1279

February 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>The Royal Meteorological Society Exhibition 1978</b> .. .. .	33
<b>Visit of Her Majesty The Queen to the Meteorological Office, 14 July 1978</b> .. .. .	34
<b>Concerning general circulation models.</b> A Gilchrist.. .. .	35
<b>An eighteenth century rainfall record at Shirburn Castle, Oxfordshire.</b> C. G. Smith .. .. .	52
<b>Notes and news</b>	
The World Climate Conference, 12–23 February 1979 .. .. .	59
<b>Awards</b>	
Awards to the Director-General .. .. .	60
<b>Obituary</b> .. .. .	60

---

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out of print issues are obtainable from Joanson Reprint Co. Ltd, 24–28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06130, U.S.A.

---

*c. Crown copyright 1979*

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTYS STATIONERY OFFICE

£1.30 monthly

Dd. 595890 K15 2/79

Annual subscription £16.74 including postage

ISBN 0 11 725362 6  
ISSN 0026-1149

THE METEOROLOGICAL MAGAZINE

No. 1280

March 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>Performance of conventional operational forecasts of clear-air turbulence during the 1976 Turbulence Survey.</b> M. J. O. Dutton .. .. .	61
<b>AUTOPREP—the Meteorological Office data preparation and telecommunication terminal for use at Collecting Centres.</b> C. E. Goodison and R. J. Sowden .. .. .	77
<b>The effect of altitude on soil temperature.</b> F. H. W. Green and R. J. Harding .. .. .	81
<b>Awards</b>	
L. G. Groves Memorial Prizes and Awards .. .. .	92
<b>Reviews</b>	
Methods in Computational Physics, Volume 17, General Circulation Models of the Atmosphere. Julius Chang (editor). <i>P. Graystone</i> .. .. .	93
Water data 1976. Department of the Environment, Water Data Unit. <i>C. A. Nicholass</i> ..	95
The Guinness Book of Weather Facts and Feats. Ingrid Holford. <i>E. A. Spackman</i> .. ..	95

---

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Annual subscription £16.74 including postage

Dd. 595890 K 15 3/79

ISBN 0 11 725363 4  
ISSN 0026-1149

# THE METEOROLOGICAL MAGAZINE

No. 1281

April 1979

Vol. 108

## CONTENTS

	<i>Page</i>
<b>A spectral and filter analysis of long-period rainfall records in England and Wales.</b> R. C. Tabony	97
<b>The blizzard of 18-19 February 1978 in south-west England and South Wales.</b> Joyce Laing	119
<b>Notes and news</b>	
Dr P. M. A. Bourke	128
<b>Obituary</b>	128
<b>Corrections</b>	128

---

## NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heflers Printers Ltd, Cambridge  
and published by  
HER MAJESTYS STATIONERY OFFICE

£1.30 monthly

Dd. 586891 K15 4/79

Annual subscription £16.74 including postage

ISBN 0 11 725364 2  
ISSN 0026-1149

THE METEOROLOGICAL MAGAZINE

No. 1282

May 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>The First GARP Global Experiment.</b> A. Gilchrist .. .. .	129
<b>The northerly gales of 11–12 January 1978.</b> E. G. E. King .. .. .	135
<b>The storm surge of 11–12 January 1978.</b> J. Townsend .. .. .	147
<b>The International Conference on Meteorology and Oceanography in The Hague.</b> R. M. Morris	153
<b>Letter to the Editor</b> .. .. .	157
<b>Reviews</b>	
Remote sensing of the atmosphere: inversion methods and applications (Developments in Atmospheric Science 9). A. L. Fymat and V. E. Zuev (editors). <i>D. R. Pick</i> .. .. .	158
The Australian climatic environment. E. Linaere and J. Hobbs. <i>R. P. W. Lewis</i> .. .. .	159
<b>Notes and news</b>	
Snow Survey of Great Britain .. .. .	160
<b>Award</b> .. .. .	160
<b>Correction</b> .. .. .	160

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24–28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

*c. Crown copyright 1979*

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Annual subscription £16.74 including postage

Dd. 595890 K 15 5/79

ISBN 0 11 725365 0  
ISSN 0026-1149

# THE METEOROLOGICAL MAGAZINE

No. 1283

June 1979

Vol. 108

## CONTENTS

	<i>Page</i>
<b>The FRONTIERS plan: a strategy for using radar and satellite imagery for very-short-range precipitation forecasting.</b> K. A. Browning .. .. .	161
<b>Noctilucent clouds over western Europe during 1978.</b> D. H. McIntosh and Mary Hallissey ..	185
<b>Reviews</b>	
Microphysics of cloud and precipitation. H. R. Pruppacher and J. D. Klett. <i>B. J. Mason</i> ..	189
Scientific aspects of the 1975–76 drought in England and Wales—a Royal Society discussion. Royal Society of London. <i>R. Murray</i> .. .. .	190
<b>Letter to the Editor</b> .. .. .	192
<b>Notes and news</b>	
Appointment of the Director-General as Pro-Chancellor of the University of Surrey ..	192

---

## NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24–28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 595891 K15 6/79

Annual subscription £16.74 including postage

ISBN 0 11 725366 9  
ISSN 0026–1149

# THE METEOROLOGICAL MAGAZINE

No. 1284

July 1979

Vol. 108

## CONTENTS

	<i>Page</i>
<b>Forecasting for the construction and tow of the Ninian Field Platform.</b> O. M. Hull .. .. .	193
<b>The clearance of persistent fog.</b> A. A. Brown .. .. .	201
<b>The distinction between weather and climate.</b> B. J. Mason .. .. .	211
<b>Meteorological Office participation in exhibitions.</b> R. D. Hunt .. .. .	213
<b>Reviews</b>	
Climate and man's environment, an introduction to applied climatology. J. E. Oliver. <i>B. W. Atkinson</i> .. .. .	217
Water Data 1977. Department of the Environment, Water Data Unit. <i>C. A. Nicholass</i> ..	218
<b>Notes and news</b>	
Solar-cell experiments .. .. .	219
Meteorological services in Malta .. .. .	219
Reopening of forecasting office for the Royal Air Force .. .. .	219

---

## NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Annual subscription £16.74 including postage

Dd. 595891 K 15 7/79

ISBN 0 11 725367 7  
ISSN 0026-1149

THE METEOROLOGICAL MAGAZINE

No. 1285

August 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>Studies of residence times of chlorofluorocarbons using a two-dimensional model.</b> Mavis K. Hinds	221
<b>Memoirs of an Army Meteorologist (Part 1).</b> H. Cotton .. .. .	241
<b>Brief historical note on the formulation of Buys Ballot's Law</b> .. .. .	248
<b>Review</b>	
Turbulent fluxes through the sea surface, wave dynamics, and prediction. A. Favre and K. Hasselmann (editors). <i>B. W. Golding</i> .. .. .	249
<b>Honour</b> .. .. .	250
<b>Notes and news</b>	
The Ailsa Craig Experiment .. .. .	250
Dr Aksel C. Wiin-Nielsen appointed Secretary-General of the World Meteorological Organization .. .. .	251
Climatic variations: facts and causes, Erice, Sicily, 9–21 March 1980 .. .. .	252

---

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24–28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 586891 K15 8/79

Annual subscription £16.74 including postage

ISBN 0 11 725368 5  
ISSN 0026-1149

# THE METEOROLOGICAL MAGAZINE

No. 1286

September 1979

Vol. 108

## CONTENTS

	<i>Page</i>
<b>Aspects of tropospheric structure over the Bay of Bengal during active and break monsoon over India in August 1977.</b> M. G. Hamilton .. .. .	253
<b>Quality control of anemograph data.</b> G. W. Bryant .. .. .	260
<b>The lower boundary condition in the 10 level model.</b> A. J. Gadd .. .. .	267
<b>Memoirs of an Army Meteorologist (Part 2).</b> H. Cotton .. .. .	276
<b>Review</b>	
Boundary layer climates. T. R. Oke. <i>D. J. Carson</i> .. .. .	285
<b>Obituary</b> .. .. .	287

---

## NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 595891 K15 9/79

Annual subscription £16.74 including postage

ISBN 0 11 725369 3  
ISSN 0026-1149

CONTENTS

	<i>Page</i>
<b>Mesoclimatic studies in the Upper Don Basin, Aberdeenshire.</b> R. J. A. Jones, J. Tinsley and M. N. Court .. .. .	289
<b>Archiving and quality control of climatological data.</b> G. W. Bryant .. .. .	309
<b>Major K. G. Groves, O.B.E., J.P., M.A., LL.M.</b> .. .. .	316

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'. The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 595891 K 15 10/79

Annual subscription £16.74 including postage

ISBN 0 11 725370 7  
ISSN 0026-1149

CONTENTS

	<i>Page</i>
<b>The use of probabilities in forecasts of maximum and minimum temperatures.</b> R. L. Winkler and A. H. Murphy .. .. .	317
<b>On relationships between tropospheric circulation patterns and both the date of spring reversal of stratospheric winds and the strength of winter stratospheric flow.</b> Janina Pawłowska ..	330
<b>Memoirs of an Army Meteorologist (Part 3).</b> H. Cotton .. .. .	341
<b>Notes and News</b>	
Retirement of Mr G. A. Howkins, M.B.E. .. .. .	348

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24-28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 586891 K15 11/79

Annual subscription £16.74 including postage

ISBN 0 11 725371 5  
ISSN 0026-1149

THE METEOROLOGICAL MAGAZINE

No. 1289

December 1979

Vol. 108

CONTENTS

	<i>Page</i>
<b>Aircraft measurements in the GARP Atlantic Tropical Experiment.</b> J. M. Nicholls .. .. .	349
<b>Diurnal variations of temperature and wind in the 25–65 kilometre region of the equatorial stratosphere.</b> G. C. Bridge .. .. .	367
<b>International Conference on Climate and History, University of East Anglia, 8–14 July 1979.</b> D. E. Parker .. .. .	376
<b>Notes and news</b>	
Dr K. A. Browning, F.R.S.—Special merit promotion to Deputy Chief Scientific Officer .. .. .	379
Dr F. B. Smith—Transfer to special merit Senior Principal Scientific Officer .. .. .	379
European Association of Remote Sensing Laboratories (Council of Europe) .. .. .	380
Climatic variations: facts and causes, Erice, Sicily, 9–21 March 1980—change of title .. .. .	380
The Australian climatic environment. E. Linacre and J. Hobbs .. .. .	380
<i>Meteorological Magazine</i> —increase in price .. .. .	380

---

NOTICES

It is requested that all books for review and communications for the Editor be addressed to the Director-General, Meteorological Office, London Road, Bracknell, Berkshire RG12 2SZ, and marked 'For Meteorological Magazine'.

The responsibility for facts and opinions expressed in the signed articles and letters published in this magazine rests with their respective authors.

Complete volumes of 'Meteorological Magazine' beginning with Volume 54 are now available in microfilm form from University Microfilms International, 18 Bedford Row, London WC1R 4EJ, England.

Full size reprints of out-of-print issues are obtainable from Johnson Reprint Co. Ltd, 24–28 Oval Road, London NW1 7DX, England.

Issues in Microfiche starting with Volume 58 may be obtained from Johnson Associates Inc., P.O. Box 1017, Greenwich, Conn. 06830, U.S.A.

---

© Crown copyright 1979

Printed in England by Heffers Printers Ltd, Cambridge  
and published by  
HER MAJESTY'S STATIONERY OFFICE

£1.30 monthly

Dd. 586891 K 15 12/79

Annual subscription £16.74 including postage

ISBN 0 11 725372 3  
ISSN 0026–1149