

CHAPTER 1

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CHAPTER 1

METEOROLOGICAL OFFICE ORGANIZATION FOR COMMERCIAL AND PUBLIC SERVICES

1.1 Introduction

1.1.1 The Meteorological Office is the State Meteorological Service and forms part of the Ministry of Defence (MoD). Amongst its official functions is the provision of meteorological services to aviation, the merchant navy and fishing fleets, other Government Departments, public corporations, local authorities, the Press, television, radio, industry, commerce and the general public. The *Commercial and Public Services Handbook* (Met.O.868) is the regulatory manual concerning these services, except those relating to aviation which are covered in the *Handbook of Aviation Meteorological Procedures* (Met.O.544).

1.1.2 For the most part, weather forecasting and information services are provided by designated Services & Business (S&B) offices. A network of Weather Centres (WCs) has been set up in major commercial centres, many of which are devoted to commercial work, though they fulfil vital roles in the provision of the Public Met. Service (PMS) and in the provision of services to civil and general aviation. Services based on the processing or interpretation of historical data (including marine) are provided through HQ units of the Commercial Provision (CP) Branch. All designated commercial offices are advertised as such in Meteorological Office promotional literature, and their telephone numbers can be found in the appropriate British Telecom Phonebook.

1.1.3 It is government policy that the Office shall make available to the merchant navy and fishing fleets and to the general public a limited amount of basic weather forecasting and information services free of charge. Such services comprise part of the PMS, and are listed in Annex A, together with Met. Office policy for their provision. They are provided by the Central Forecasting Office (CFO) and by other designated S&B offices and are disseminated via British Telecom (BT) coastal radio stations, BBC Radio and the Press; limited public telephone access designated to S&B offices is also included.

1.1.4 All other services are provided on a repayment basis only. The Office is required to operate in a fully commercial manner recovering its costs and maximizing revenue to meet targets by setting charges the market will bear. Nevertheless the general public have access to a wide range of forecast information at low cost to themselves via various distributors; the Press, the media of television and radio, recorded telephone services, Teletext and Viewdata. In these cases the Office receives its revenue from the distributors.

1.1.5 D(S&B) holds overall responsibility for services to the public sector. Under his guidance, Branch Directors are responsible for Marketing, Sales, Production and Technical Development. Additionally, management boards with one of the S&B Directors as chairman exist for each designated Business Unit. A brief description of the organization and the main functions of each of these Branches or Units is given in the following sections of this chapter, although a great deal of cross-border liaison is, of course, essential.

1.2 Central Forecasting Office

1.2.1 CFO is a Regional/Specialized Meteorological Centre within the World Meteorological Organization (WMO) and is the National Meteorological Centre (NMC) of the United Kingdom. As such its primary task is the preparation of analyses and forecasts to give general guidance to operational outstations based on full use of numerical model products (chapter 4). It also plays a major role in the provision of services to civil aviation as a World, Regional and National Centre (and is also a Weather Analysis centre for NATO). It has special responsibilities, being the Principal Forecast Office (PFO) for commercial and PMS work. The forecast charts and associated Synoptic Reviews (SRs) form the basis for all public services forecasting and are especially important as the means of ensuring consistency between issues by individual S&B offices to radio, television, the Press, etc. The general guidance also includes advisory warnings of frost, icy roads, snow, thaw, fog, thunder and land gales.

1.2.2 In the PMS and commercial areas CFO is also responsible specifically for:

- a. Shipping forecasts and warnings for coastal sea areas around the British Isles (see chapter 18).
- b. Forecasts, analyses and storm warnings for the North Atlantic (see chapter 18).
- c. Responding to radio-telephone (R/T) enquiries from commercial ships at sea and shipping companies (see chapter 18).

- d. Meteorological advice to the ship-routeing service (MetROUTE), and providing out of hours cover for MetROUTE and the Sea Ice Unit.
- e. Meteorological advice for marine pollution and offshore emergencies (see chapter 23).
- f. The Storm Tide Warning Service (see chapter 23).
- g. The provision of commercial services worldwide (except the United Kingdom and Europe) including broadcasts on BBC Radio World Service as required.
- h. Warnings to MOD of adverse weather (severe inland gales, heavy and prolonged rain, heavy snow) which may create a need for military aid to the civil community (see chapter 24).
- i. Telephone conferences with media presenters at BBC WC and IWP concerning national presentations.
- j. Telephone conferences with senior forecasters at S&B Main Meteorological Offices (M Met O).
- k. Medium-range guidance to S&B offices including forecast charts to 120 hours ahead and associated text forecasts (chapter 4).

1.2.3 Full details of the charts and guidance material produced by CFO and its interaction with outstations are given in chapter 5.

1.3 Marketing

1.3.1 The Marketing Branch has as its prime function the favourable promotion of the Office to all its customers and is responsible for all marketing activity in the office. It advises on, and researches the application of, Office data and possible services in all relevant areas of economic activity by the systematic identification of the uses and benefits to customers of meteorological information in each sector of the market; encourages the development of suitable products to meet these needs, and support the effective promotion and subsequent sale of these products in close collaboration with other S&B and Office Branches. It is also responsible for the provision of professional Marketing, PR and publication services to all Meteorological Office management, not only the S&B Division. It also has the responsibility for data/product provision to the private sector.

1.3.2 The work of the Branch is divided into six main sections, (a) Corporate Communications, (b) Business Planning, (c) Market Information and Research, (d) Marketing Services, (e) International, and (f) Wholesaling.

1.3.2.1 Corporate Communications is responsible for all public relations and promotional matters affecting the Meteorological office. The Press Office deals with all enquiries received at Bracknell from media on a daily basis, together with the organization of visits from parties from schools, clubs, and scientific societies (further details in chapter 3). The Meteorological Office Enquiry Officer has first responsibility for dealing with external enquiries and complaints, including those received other than at Bracknell. The publications unit (comprising Editing Unit and the Studio) has responsibility for the preparation of displays including Exhibitions and WC windows, together with general publicity material, visual aids and all Office publications (both internal and external).

1.3.2.2 Business Planning has responsibility for the development of S&B marketing and business plans, both nationally and internationally, the co-ordination of S&B business and market sector plans.

1.3.2.3 Market Information and Research. This section is responsible for carrying out Market Research cost-effectiveness studies and the development/operation of marketing competitor commercial databases for the Office.

1.3.2.4 The Marketing Services unit is responsible for the preparation and implementation of promotional plans, the arrangement of advertising and co-ordination of Office participation in exhibitions, etc.

1.3.2.5 The International Marketing Unit has responsibility for the co-ordination, in association with Business Unit and Market Sector Managers, of the S&B (International) Marketing and Business Plans and the related components of the Market Information Databases. (It has overall responsibility for the provision of data and products to private meteorological companies.) It co-ordinates relationships with other NMSs and non-UK-based organizations.

1.3.2.6 Data Wholesaling has responsibility for provision of Met. Office 'core' data and products to research establishments, and under commercial licence to private-sector Service Providers. It also covers commercial use of EUMETSAT and ECMWF products and handles requests for data/products from the research community

1.4 Sales

1.4.1 Under Hd(S), the Sales team is made up of a network of Commercial Managers, and a number of Market Sector and Business Unit Managers; they are the normal point of contact for all matters relating specifically to services in the sector concerned. Some managers may be based at Weather Centres, but all will liaise with WCs, Headquarters and marketing consultants as appropriate. They are involved in the drafting of Office-wide market plans for those sectors, after consultation with other members of the Branch and the Directorate as necessary.

1.4.2 The National Sales Manager heads the team of Commercial Managers, co-ordinating their activities and ensuring consistency in the implementation of pricing and sales policies. He also acts as the main link between the Commercial Managers and the Market Sector Managers, and vice versa. Individually, he is the Key Account Manager.

1.4.3 Market Sector and Business Unit Managers are the focus for all activity, not just sales, in their sector, liaising as necessary with all other Branches in the S&B area. With S&B(Marketing), for example, they produce market sector plans and, through the National Sales Manager, they ensure that the Commercial Managers have all the relevant information on product and pricing policy (forecasts, data, advisory services).

1.4.4 Commercial Managers are responsible for the selling of all commercial services (forecast, data and advisory) in line with existing policy, and for maintaining customer links. This latter entails much direct contact and a good deal of travelling within the regions.

1.4.5 Headquarters maintain liaison regarding services with Government Departments and with national authorities and organizations, such as Her Majesty's Coastguard (HMCg), and are responsible for the negotiation, organization and billing of all centrally arranged services, in particular:

Department of Transport (Marine Directorate), BBC Radio	Shipping and inshore waters forecasts (see chapter 18). Forecasts and gale warnings.
Her Majesty's Coastguard	Strong Wind Warning Service (see chapter 18).
BBC Radio and Television	All services (details agreed locally, negotiation at Directorate level, see chapter 14).
IBA Television	ITN, regional, satellite, cable and international services (see chapter 14).
National Press	All services.
British Gas	All routine operational services — 'METGAS' (see chapter 11).
Electricity supply industry	Demand forecasting services, Lightning Risk, pressure-fall warnings (see chapter 11).
British Rail Operations	OpenRail, Railice (see chapter 17).
British Rail civil engineer	Continuous Welded Rail Service (see chapter 17).
Telephone Information Services Ltd.	Premium-rate telephone services, e.g. Weathercall(see chapter 16).
Forestry Commission	Fire warnings (see chapter 6).
ADAS (MAFF)	Services provided through the National Agriculture Meteorological Unit.
Teletext and Videotext	Services provided to BT, BBC and ITV teletext service.

1.4.6 The services described in para. 1.4.5 are supplied by CFO and/or other WCs/CS offices in accordance with

Headquarters instructions in this Handbook or elsewhere. Certain matters of detail may be settled locally by Officers in Charge and Commercial Managers, but proposals for significant variations to these national services should be referred to HQ. Allocation of responsibility for these, and other, services is shown in Annex B to this chapter. Areas of responsibility of each Weather Centre are shown in Annex C.

1.5 Business Units

1.5.1 Management Boards, each chaired by an S&B Head, control the running of Business Units. A Business Unit Manager (BUM) is in charge of each and, although set up as individual organizations, they call on the services and expertise of all sections of Commercial Services.

1.5.2 The Weather Initiative (TWI) is a unit set up to deal specifically with the needs of the retail and manufacturing industries, including commodity brokers and traders. A more detailed description of its aims and methods will be found in chapter 8.

1.5.3 International Weather Productions (IWP) is responsible for the development, sales and management of weather services to commercial television and radio (both national and regional). Products developed by IWP for the overseas television market are sold and marketed through UK-based external agencies. Specialists from outside the Office are brought together under IWP to produce weather presentation packages for television companies. The display facilities are based on products developed as part of the 'Weather-in-Vision' project.

1.5.4 Press and Distribution Focus of all activities in press and publishing — newspapers and magazines, telephone information services, videotext services, dial-up fax services. Responsible for commercial cross-market services. Incorporates Leisure and Tourism market sector.

1.5.5 BBC Unit This Unit is responsible for developing services of the BBC, including national TV and radio, regional TV and radio, News and Current Affairs, Enterprises, Sport and World Services. By making use of existing facilities, services are also developed with the BBC for sale to other companies.

1.5.6 Offshore and Marine Unit The Offshore and Marine Unit is responsible for developing all services to the offshore and sea markets. As such it covers Metroute and marine consultancy services, as well as services to offshore oil and support companies, the fishing industry and Coastguards. The Unit has been tasked in particular with developing international sales.

1.6 Commercial Provision

1.6.1 This Branch of S&B is itself made up of a number of smaller groups, each dealing with a particular range of the products the Office has to offer, both climatological and forecast. The groups, and their responsibilities, are laid out in paras 1.6.4 to 1.6.8.

1.6.2 Although much of the work relates to records of, or investigations into, past weather or to providing advice based on such records, it should be noted that Hd(OPR) is responsible for the collection, quality control, archiving and publication of climatological observations, including radiation and rainfall, made at land stations in the United Kingdom and at UK-controlled meteorological offices overseas. Hd(OM) has similar responsibilities in the management of marine observing networks including the ships of the Voluntary Observing Fleet (VOF), the UK Ocean Weather Ship *Cumulus*, buoys and the inshore network, for the quality control of sea surface observations from these networks and their archiving in the Marine Data Bank. He also oversees the Port Meteorological Offices and provides liaison with shipping and fishing industries on both observations and services.

1.6.3 Special responsibilities for advisory/climatological services in Scotland and Northern Ireland rest with Meteorological Office Glasgow and the Belfast Weather Office, under the control of (S&B). These offices assist with the data acquisition, quality control and archiving functions of (OPR) and normally deal with all climatological enquiries, including rainfall, concerning Scotland and Northern Ireland. These offices assist with the preparation and publication of Climatological and Hydrological Memoranda.

1.6.4 Agriculture Products Group

1.6.4.1 The Agriculture Products Group is responsible for the application of meteorology to agriculture, horticulture and forestry, providing scientific, technical and administrative support to the National Agrometeorological Officer, based at the Regional Office of the Agricultural Development and Advisory Service (ADAS) of the Ministry of

Agriculture, Fisheries and Food (MAFF) at Wolverhampton. He is in close contact with the other Regional Offices of ADAS at Leeds, Bristol, Reading and Cambridge. The group also provides support to the CS Agriculture Market Sector Manager and works closely with other scientific and agricultural institutions in the United Kingdom and overseas. Commercial services are provided to all sectors of the industry.

1.6.4.2 The group maintains a specialist agricultural database (FARMAID) which is accessible on-line by the NAMO and other ADAS staff. NAMO provides data, information and advice (but not forecasts) on all meteorological topics related to agriculture to ADAS officers and the farming community.

1.6.4.3 Agrometeorological research and modelling is carried out, both by the NAMO and Office HQ at Bracknell.

1.6.4.4 Arrangements are different for Scotland and Northern Ireland. The Belfast Weather Office serves the industry in Northern Ireland, taking advice from HQ. In Scotland, liaison is through the Scottish College of Agriculture, though initial enquiries should be made through Met. Office Glasgow.

1.6.5 Marine Consultancy Group

1.6.5.1 Marine Advisory, Consultancy and Data Services The Marine Advisory, Consultancy and Data Services (MACS) Section provides, on repayment, information and advice on all aspects of marine climatology (including sea surface temperature, winds, waves, sea ice and surface currents) over all oceans of the world. All enquiries concerning marine climatology, in particular those involving or likely to involve litigation, are to be referred to this group (see chapter 12).

1.6.5.2 Ship-Routeing Section The Ship Routeing Section is located in CFO and manned by master mariners and provides the comprehensive service known as METROUTE for the routeing of participating ships over all oceans of the world.

1.6.5.3 Sea Ice Unit The Sea Ice Unit is also located in CFO, and provides routine operational analyses of sea ice conditions in the northern hemisphere and deals with enquiries on a normal working hour basis. Cover for urgent enquiries is provided by the CFO medium-range or shipping forecasters.

1.6.6 Climate Consultancy Group — Building/Construction, Land Transport, Legal/Insurance, and Specialist Products

1.6.6.1 This group has teams dealing with two major market sectors, the Building and Construction Unit, providing specialist advice on matters related to that industry (see chapter 7), and the Legal and Insurance Unit which provides specialist information for civil and criminal cases and insurance applications (see chapter 12).

1.6.6.2 This group also gives professional advice on climatological and hydrometeorological matters, collaborating as necessary with Government Departments and other bodies such as the Building Research Establishment, Transport Research Laboratory and the Energy Conservation Unit. In addition this group represents the Office on various national and international committees concerned with climatological matters, in particular in connection with design and construction standards.

1.6.7 Standard Product, Education, and General Group

1.6.7.1 This group provides information and advice concerning the land-surface and upper-air climatology of the United Kingdom and overseas. Investigations are carried out to meet particular requirements on a repayment basis.

1.6.7.2 The Enquiry Bureau is manned continuously during normal working hours and deals with all types of land-based climatological enquiries including rainfall, evaporation and radiation.

1.6.7.3 The group maintains the Meteorological Office Rainfall and Evaporation Calculation System (MORECS) service (see chapter 6).

1.6.8 Climatology Group (Local Climate Investigations, e.g. Rainfall

1.6.8.1 The Climatology Group carries out investigations and development work in support of Enquiry Bureau Services, particularly into the development and use of the Processing and Archiving of Radar and Gauge data Offline and in Near real time (PARAGON) database which is a unified archive of radar rainfall data and conventional gauge data.

1.6.9 Systems Maintenance

1.6.9.1 One final group in this Branch deals with the maintenance, as opposed to the provision or development, of the systems, both hardware and software, involved in the preparation and transmission of the product, including forecasts, to the customer. These systems include word-processors and videotext equipment.

1.7 New Product Development

1.7.1 The Product Development Branch has two functions:

- a. The creation and development of new products and the refinement of existing products, and
- b. The development and exploitation of distribution and delivery systems for supply of products to customers from HQ, WCs and BUs.

1.8 Professional Training

1.8.1 Professional Training is the responsibility of the Meteorological Office College, under the Director of Finance and Administration D(F&A), and is provided largely by courses based at the College, together with less formal colloquia and discussion meetings. Many of the courses at the College have an international flavour with visitors from overseas taking advantage of the facilities and training services available. Requests for information from potential repayment customers should be forwarded to the Principal of the College.

1.9 Library Services

1.9.1 The Library started in the 1850s to meet the needs of the Meteorological Department of the Board of Trade. The National Meteorological Library is now a major repository of published meteorological information, located in the Headquarters of the Meteorological Office, but available to anyone, from any walk of life, with a genuine interest in the weather or climate. Managed by Hd(OPR) through the Librarian are the services described in Annex D, which should be photocopied for use as an information handout. Original records for Northern Ireland are in the archive in Belfast and those from Scotland in Edinburgh. Also available to the public is the on-line bibliographic service outlined in Annex E

1.9.2 The National Meteorological Library and Archives at Bracknell support not only the work of the Office but provide services to the public. A description of library facilities and services is given at Annex D, and of the archives at Annex E. The on-line bibliographic service, Meteorological Office Library Archive and Reference Service (MOLARS) is described at Annex F. Copies of these Annexes may serve as public information hand-outs; they should be duplicated locally or requested from the library. The public should be made aware that although basic library services are free, the Office reserves the right to charge for various specialized services such as lengthy searches for specific material, bibliographic lists, copies of extracts or rare items out of copyright. Staff are encouraged to discuss visual-aid requirements well before any talks or displays. Original records from Northern Ireland are archived in Belfast, and for Scottish records, the Meteorological Office, Edinburgh should be consulted.

1.10 Observing Network

1.10.1 Observational data are essential to all of our services. In particular, synoptic observations are required regularly at fixed times and in sufficient numbers to satisfy the needs of weather forecasting. The Working Group on United Kingdom Observational Networks (UKON) keeps under review the various aspects of the United Kingdom network of surface and upper-air observing stations to meet this requirement.

1.10.2 To meet the requirement for a network of surface weather reporting stations the United Kingdom is divided into a number of geographical areas, within which there are approximately homogeneous meteorological characteristics on the broad scale. The number of areas enable a distribution of observing stations to be specified which is intended to satisfy the observational needs of the Office and international commitments. The present areas and key and secondary stations are shown in Annex G.

1.10.3 Key stations are professionally manned and make hourly observations. They are located as far as possible so that their observations are broadly representative of the weather over the whole area. In addition each UKON area will have a number of secondary and supplementary stations to augment the key stations. The criteria for including

secondary stations and also supplementary stations are set out in the document UKON 1 — Land Stations, which is available from Headquarters.

1.10.4 Policy and locations of offshore stations in the United Kingdom area of interest are set out in the document UKON 4 — Offshore Stations, which is available from Headquarters.

THE PUBLIC METEOROLOGICAL SERVICE

1A.1 The following services form the Public Meteorological Service

- a. The National Severe Weather Warning Service (see chapter 24).
- b. The Storm Tide Warning Service (see chapter 23).
- c. Shipping forecasts and warnings for UK sea areas and the North Atlantic (see chapter 18).
- d. The Strong Wind Warning Service (see chapter 18).
- e. Navigation warnings of reduced tidal levels due to negative surges (see chapter 18).
- f. BBC Inshore Waters forecasts (see chapter 18).
- g. National radio 100-word scripts and 30-word summaries (see chapter 14).
- h. Some live broadcasts on BBC Radio 4 (see chapter 14).
- i. Some routine scripts/live broadcasts on local and regional radio (see chapter 14).
- j. Forecasts and advice to the Coastguard Agency (Marine Pollution Control Unit) and local authorities in the event of a marine pollution emergency (see chapter 23).
- k. Forecasts and advice provided under PACRAM procedures in the event of an accidental release of radioactive materials (see chapter 22).
- l. Forecasts and advice provided under CHEMET procedures in the event of an accidental release of toxic chemicals (see chapter 22).
- m. Access by the general public to Weather Centres by telephone, and to the Enquiries Office at Bracknell (see chapter 21).
- n. The National Meteorological Library and Archive (see chapter 1).

Notes

1. A number of the shipping forecasts in (c) are provided under the United Kingdom's commitment to the International Convention for the Safety of Life at Sea (SOLAS) 1974.
2. Services provided under the Public Meteorological Service are generally funded centrally by government departments and are provided free to the end user.

1A.2 Policy for provision and costing of the operational Public Meteorological Service

- (i) National PMS services will be carried out by the Central Forecasting Office. These comprise the Early Warnings of severe weather, composite FLASH messages, national 30/100-word scripts, international environmental emergencies, offshore marine pollution emergencies, the Storm Tide Warning Services, the shipping forecasts and gale warnings.
- (ii) A network of regional Weather Centres is required to provide the regional PMS services. These services comprise the FLASH messages, Motoring Weather Warnings, regional TV and local radio scripts, local chemical and nuclear emergencies, inshore marine pollution emergencies, strong-wind warnings to HM Coastguard, and public enquiries. Regional input is essential to sustain the quality of these services.
- (iii) Required tasks (including time allocations) will be specified at least annually by the Public Met. Service Manager, following consultation with the Hd(CFO), Hd(CP) and the Hd(DP).

- (iv) Work for the Public Met Service involving severe weather warnings, emergency services or amendment of existing forecasts will take precedence over commercial services (see Annex F to Chapter 2).
- (v) The Hd(CFO), Hd(CP) and the Hd(DP) will consult with the Public Met. Service manager in connection with manning (and other) changes at their offices affecting the delivery of the PMS.

KEY SERVICES OF WEATHER CENTRES+

SERVICE OFFICE	BBC		IBA		PREMIUM-RATE TELEPHONE SERVICE			Water Authorities	
	TV	National Regional Radio	Local Radio	TV	Local Radio	Weathercall	Marinecall		Other
London WC	BBC TV South and East	Radio 5 Live	Greater London Radio (GLR) Kent	Carlton London Weekend GMTV Teletext*	Capital 210 Classic FM Mellow	National Forecast 1-2 day & 3-5 day Greater London Kent, Surrey and Sussex Berks, Bucks and Oxon. Beds, Herts and Essex. SE, Norfolk Suffolk & Cambs		Carlton TV LWT LNN Meridian TV	Thames Water Utilities NRA (Thames Region)
Cardiff WC	Wales	Wales/Cymru		HTV (Wales) S4C		West, Mid & South Glamorgan & Gwent. Dyfed & Powys		Mountaincall (Snowdonia) Farncall Tele-tywydd	Welsh Water (except Dee) NRA Welsh Region
Glasgow WC	Scotland	Scotland	Dumfries Selkirk	Scottish	West Sound Scot FM	NW Scotland SW Scotland Central Scotland. Edinburgh, S Fife Lothian and Borders Caithness, Orkney & Shetland. Grampian & E Highland, E Central, Scotland to Berwick		Sticall Mountaincall West Mountaincall East	West of Scotland Water Authority East of Scotland Water Authority Tweed Rivers Purification Board
Leeds WC	North		Leeds Sheffield Humberside York	Yorkshire	Pulse Hallam Magic FM Viking	West & South Yorkshire, Yorkshire Dales, NE England, Lincs & Humberside			Yorkshire Water PLC. NRA Yorkshire Region
Manchester WC	Northwest		Clywd, GMR Merseyside Lancashire Stoke	Granada	Piccadilly City Red Rose Fortune	Northwest England Cumbria, Gwynedd, Clwyd			Northwest Water NRA Welsh Region NRA Northwest Region
Belfast M Met O	Northern Ireland	Ulster	Foyle	Ulster	Downtown Cool	Northern Ireland			Dept. of Agriculture (NI) Hydrometric Unit DOENI (Water Executive)

OFFICE	OpenRail Areas: see Annex F to Chapter 17 British Rail Regions	Other OpenRail Forecasts	NGC GCAs and Centres	Electricity Companies	British Gas Regions	Forestry Commission	SWWS areas	Police Forces	Offshore Industry Platforms Rigs	General Public Services see Note 1 & Annex C
London WC	GL M8 E6, E7 S1 S2 S3	Strong Wind Warnings National Hazard Summary Conductor Rail Icing	St Albans GCA	London (LEB) Southeast (SEEB)	North Thames South East Dorset			Metropolitan & City of London Kent Surrey Essex Beds Herts Thames Valley		Europe Gtr London Beds Berks Bucks Essex Herts Kent Surrey Oxfordshire
Cardiff WC	M1 GW3 GW4 GW5	None		South Wales	Wales Gloucester†		Sewern Bridge to Colwyn Bay	North Wales Dyfed- Powys South Wales Gwent		Dyfed Powys W. Mid & South Glamorgan Gwent Gwynedd
Glasgow WC	SC1 SC2 SC4 SC5	Heavy Rain Warnings		Scottish Power (SP)	Scottish Newcastle*	Dumfries Glasgow	Solway Firth to Cape Wrath (including W Isles)	Central Strathclyde Lothian & Borders Dumfries and Galloway		Borders Dumfries & Galloway Central Lothian Strathclyde
Leeds WC	NE4 NE5	None	Leeds, Beccahall, GCA	Yorkshire (YEB)	North Eastern Newcastle*	York	Whitby to Cleethorpes	W Yorkshire N Yorkshire S Yorkshire Humberside Lincolnshire		North, West & South Yorkshire Humberside Lincolnshire
Manchester WC	NW1 NW2 NW3 NW4	Conductor Rail Icing	Leeds GCA Rosenath	Merseyside and North Wales (MANWEB) Northwestern (NORWEB) Eatechnology	North western Newcastle*	York	Colwyn Bay to Morecambe Bay	Cheshire Lancashire Merseyside Greater Manchester North Wales (Clwyd Road Traffic)		Clwyd Cheshire Lancashire Merseyside Greater Manchester
Belfast M Met O	Northern Ireland Railways (warnings only)			Northern Ireland Electricity (NIE)		Northern Ireland	Lough Foyle to Carrlingford Lough	Royal Ulster Constabulary		Northern Ireland
Aberdeen WC	SC3 SC6 SC7	Heavy Rain Warnings		Scottish Hydro- Electric (HE)	Scottish (part) Newcastle*	Inverness	Cape Wrath to Berwick upon Tweed incl. Orkney & Shetland	Northern Grampian Tayside Fife		Highland Grampian Tayside Fife W. Isles (Orkney, Shetlands)

*October-December 1995 †Mid 1996

KEY SERVICES OF WEATHER CENTRES+

SERVICE OFFICE	BBC		IBA		PREMIUM-RATE TELEPHONE SERVICE			Water Authorities
	TV	Local Radio	TV	Local Radio	Weathercall	Marinecall	Other	
Aberdeen WC		(Shetland) (Orkney) Aberdeen Inverness	Grampian	Moray Firth North Sound Heathland FM		All Marinecall forecasts for Scotland and Northern Ireland		North of Scotland Water Authority North East Highland and Tay RFB
Birmingham WC	East Midlands West Midlands	West Midlands Derby, Leics, Lincs, Notts, East Midlands, Oxford, Shropshire, CWR, Hereford & Worce		Signal Radio Heart FM Sabras Sound Trent FM Merica Leicester Sound Ram	Shropshire Hereford and Worcester Central Midlands			Severn Trent Water NRA Severn Trent Region
Bristol WC	West Southwest	Bristol Taunton Gloucester Wiltshire	HTV West	GWR/Brunel Orchard FM Plymouth Sound Gemini	Wiltshire, Gloucs Avon and Somerset			Wessex Water Southwest Water NRA Southwestern Region
Newcastle WC	North East	Newcastle Cumbria Cleveland Furness	Tyne Tees Borders	Metro FM TFM GNR	NE England Cumbria incl. Lake District			Northumbrian Water (part) NRA Northumbrian & Yorkshire Region
Norwich WC	East	Norfolk Cambridgeshire Suffolk	Anglia	Hereward Broadland SGR FM KLFM	Norfolk, Suffolk and Cambridgeshire	Farmcall (Oxon, Bucks, Beds, Herts, Essex, Norfolk, Suffolk, Cambs) WeatherFax (Norfolk, Suffolk, W. Essex Coast)		Anglian Water Services NRA Anglian Region
Southampton WC	South	Solent Sussex Southern Counties Berkshire	Meridian	Two Counties Southern Radio Isle of Wight Radio	Dorset, Hants and Isle of Wight	All Marinecall forecasts for England & Wales	(Channel Crossing) (3-5 day Channel)	Southern Water Services NRA (Southern) Region
Sella Ness		Shetland						
Kirkwall		Orkney						

+ For FLASH messages see chapter 24

OFFICE	OpenRail Areas: see Annex F to Chapter 17 British Rail Regions	Other OpenRail Forecasts	NGC GCAs and Centres	Electricity Companies	British Gas Regions	Forestry Commission	SWWS areas	Police Forces	Offshore Industry Platforms Rigs	General Public Services see Note 1 & Annex C
Birmingham WC	M2 M3 M4 M5 M7	Leaf problem Outlook	Birmingham GCA Nottingham GCA	Midlands (MEB) East Midlands (EMEB)	[West Midlands] [East Midlands] Hinckley*			West Mercia Staffordshire W Midlands Warwicks Derbyshire Nottinghamshire Northants	W Midlands Shropshire Staffs Warwicks Hereford & Worcs Derbyshire Nottinghamshire Northants	
Bristol WC	M6 GW1 GW2 GW6 GW7	None	Bristol GCA	Southwest (part) (SWEB)	[South western] Gloucester*	Bristol	Hartland Point to Severn Bridge	Avon and Somerset Gloucs Wiltshire	Avon Somerset Gloucs Wiltshire	
Newcastle WC	NE1 NE2 NE3	None		Northern Electric (NEB)	[North] Newcastle†		Berwick upon Tweed to Whitby	Northumbria Tyne & Wear Cleveland Durham Cumbria	Cleveland Cumbria Durham Tyne & Wear Northumberland	
Norwich WC	EA1 EA2 EA3	None		Eastern (EEB)	[Eastern] Hinkley*	Cambridge	The Wash to N. Foreland	Norfolk Suffolk Cams	Norfolk Suffolk Cams	
Southampton WC	SW1 SW2 SW3 S4	Conductor Rail Icing		Southern	[Southern] Dorking†		North Foreland to Lyme Regis	Hampshire Isle of Wight Dorset Sussex	Hampshire E Sussex W Sussex Dorset Isle of Wight	
Sella Ness							Inshore Waters f/c to Shetland C/G	Shetland	Shetland	
Kirkwall								Orkney	Orkney	

1B 4

(A.I.6)

*October-December 1995

†Mid 1996

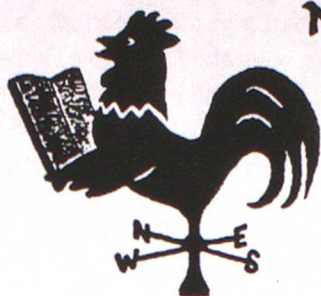
Notes

1. Responsibility for all services together with inshore waters forecasts and inshore pollution support for coastal counties.
2. Offices (or their M Met Os) are responsible for the provision of all services required by the authorities, organizations and companies listed against them in the table above. If necessary official arrangements can be made through CS to obtain advice from adjacent M Met Os.
3. M Met Os have overall responsibility for the services listed against their subsidiary offices and assume direct responsibility if and when the subsidiary office has no forecast watch. Exceptions are for Sella Ness for which technical control and night-time cover are provided by LWC, and Kirkwall where for the oil-terminal technical control rests with AWC.
4. Note the distinction between WCs for inshore and offshore pollution discussed in chapter 23.

WEATHER CENTRE AREAS OF RESPONSIBILITY

Weather Centre areas of responsibility

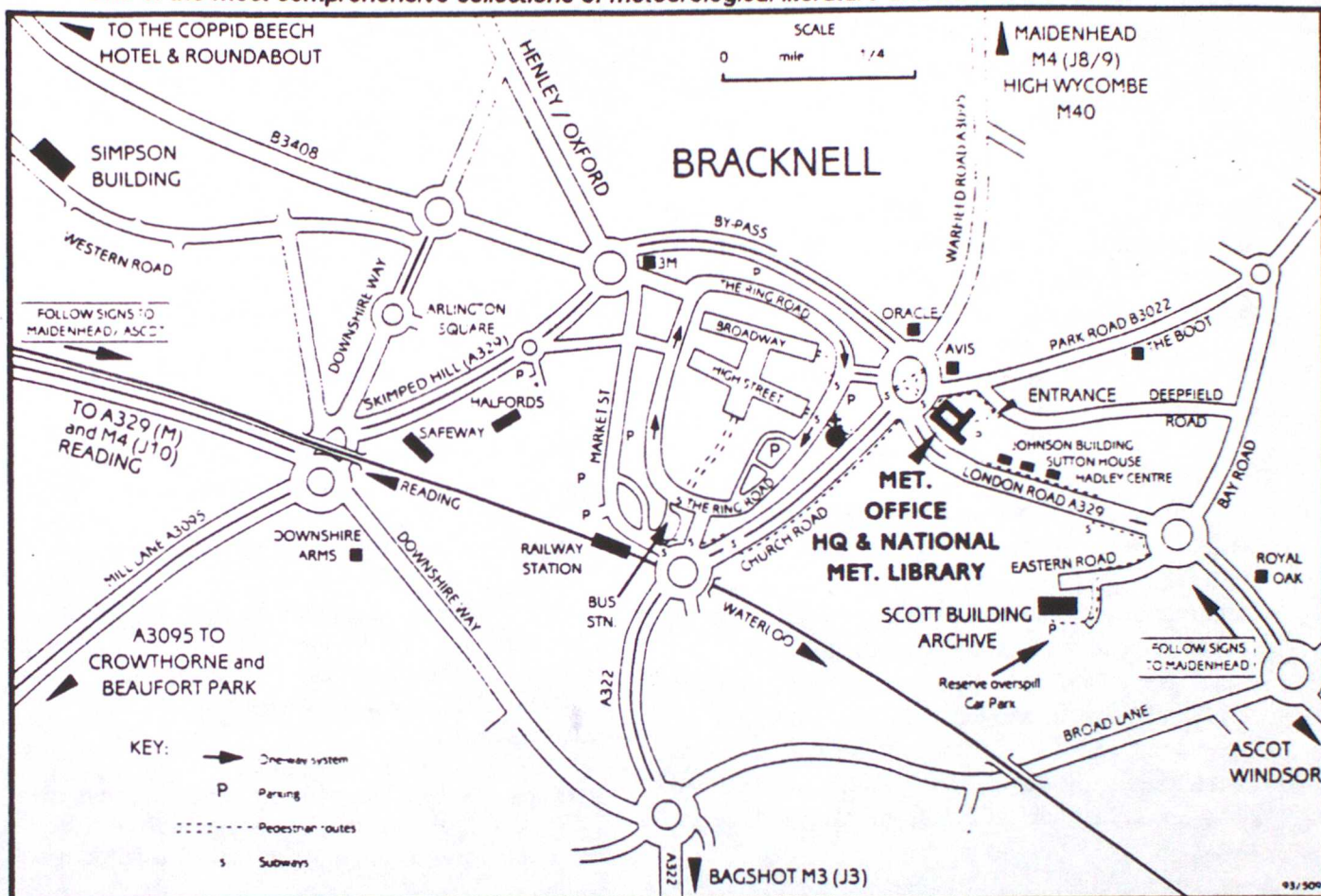




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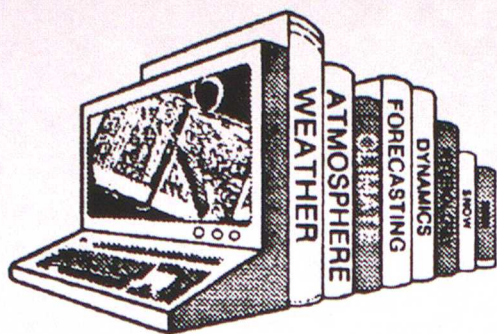
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THE LIBRARY

FUNCTION

The Library started in the 1850s to meet the needs of the Meteorological Department of the Board of Trade. The National Meteorological Library is now a major repository of published meteorological information, located in the headquarters of the Meteorological Office, but available to anyone, from any walk of life, with a genuine interest in the weather or climate.

HOLDINGS

Our collection contains books, journals, articles and scientific papers on meteorology and climatology, and we try to maintain as comprehensive a collection as resources allow. We also have limited collections on related subjects such as fluid dynamics, physical oceanography and hydrometeorology, plus a selection of general scientific and technical material.

Approaching 300,000 books, pamphlets, atlases and microfiche are available for study, plus a collection of published climatological data from many parts of the world.

Rare books. The collection of historical meteorological literature, maintained in co-operation with the Royal Meteorological Society, is one of the most comprehensive in the world. A Union Catalogue lists material from the 16th century through to about 1850. The collection may be studied but not borrowed.

Visual Aids. A collection of some 30,000 transparencies, photographs, VHS videos and a few films, illustrating most aspects of meteorology.

Public Records. Under the Public Records Act the Library is the approved place of deposit for technical reports of the Met. Office; most of which are not published.

SERVICES TO CUSTOMERS

MOLARS The Meteorological Office Library & Archive Reference Service provides the primary

source of up-to-date bibliographic information on a computer network based in the Library. This system partly replaces author cards and subject bibliographies which remain available for earlier material. The database is also available to the public internationally from the European Space Agency Information Retrieval Service (ESA-IRS). The UK agents are IRS-Dialtech (Tel 0171-323-7951). A printed Monthly Accessions List is available for sale or exchange.

LOANS. Parts of the collection are available for personal loan to registered borrowers (proof of identity required). Loans can also be arranged through your local library. Requests can be made by post or Docfax, but there may be a search fee and a handling surcharge. Customers wishing to publish pictures in any form must negotiate directly with copyright owners, whose names and addresses are supplied.

EQUIPMENT We will endeavour to maintain the software and hardware necessary to run the automation, IT, microfiche and visual aid facilities.

LIBRARY SEARCHING (in addition to MOLARS)

Subject Catalogues. Loose leaf files provide comprehensive lists of holdings from 1936 - 1985 subject classified under Universal Decimal Classification (UDC) numbers. Reference is also available to earlier classification schemes.

Author card index. Some 400,000 cards show personal names and issues from corporate bodies, with extensive cross references. Publications and individual articles are included.

Notes

Cards are filed in alphabetical order under place of publication e.g.:-

- London, Meteorological Office
- Washington, National Oceanic and Atmospheric Administration or NOAA
- Boston, Mass., American Meteorological Society
- or directly under the corporate author e.g.:-
- Conference on cloud physics,
- Royal Meteorological Society.

due to changes over the years it may be worth checking both.

Shelf marks normally appear on the right of the card. Some location marks refer to stock that is only available on request, e.g. 'STOCK', 'St', 'S.27', 'ID--Rare Books', 'Held in Archives for the RMS'.

An item marked "Duplicate also" or "Dup. also" is the main copy; the duplicate is the loan copy.

A card with a blue line across one corner refers you to the main entry for an item including work from several authors (e.g. a conference report).

ARCHIVE

FUNCTION

The Meteorological Office maintains the official public memory of the weather and stores meteorological records under the terms of the Public Records Act. The Technical Archive at Eastern Road holds the document collection of meteorological data and charts from England, Wales and British overseas bases including ship's weather logs. In addition there are many items of historical interest that were donated to both the Meteorological Office and the Royal Meteorological Society. Records from Scotland are stored in Edinburgh and those from Northern Ireland in Belfast. Departmental administrative records are kept elsewhere under Ministry of Defence arrangements for public records.

HOLDINGS

Meteorological records are held in the Technical Archive, mostly on paper or film. An increasing amount of data is handled only by electronic methods and such machine readable records are held in specialist departments.

Registers of meteorological observations. The earliest registers compiled by scientific staff are those from the King's Observatory at Kew from 1842 until 1980. Systematic observations from many locations became more organised in the 1920s. The network was most extensive during the Second World War, since when the number of stations at home and abroad has declined. Also held are a number of weather diaries compiled by private individuals, learned societies and institutions starting in the mid-eighteenth century. Some of these are held on behalf of the Royal Meteorological Society.

Charts. Working charts of the Central Forecast Office of the Meteorological Office are held, starting from 1867 with coverage of the British Isles and adjacent Europe and in recent years covering the globe. Observations are now plotted and the charts printed by computer but the final analysis of the weather systems is still the responsibility of the duty forecaster. Charts of the upper atmosphere became routine in 1943 and since then the area covered and the number of levels has increased.

Marine log books. Marine weather data have been collected systematically since 1854 but some earlier logs are held. The weather logs of ships are retained once they have been checked by specialists of the

Met. Office and the data transferred to computer. Over 150,000 volumes are now held covering most parts of the world. In addition to reports from the merchant marine there are logs from some ships of the Royal Navy, including various expeditions and colonial outposts.

Climatological returns. Returns of climatological records are held from about 1855, but since 1980 automated systems were also introduced. Data are available for parameters such as temperature, wind, rainfall, solar radiation, snow and sunshine, accompanied in many cases with a weather diary. For many years the manuscript returns have been checked and keyed into the computer so a considerable amount of data is available in machineable form from the Services & Business Division of the Meteorological Office on payment.

Autographic records. Continuous records of temperature, wind, rainfall etc. on charts are retained for some stations for varying periods.

Upper air data. Some tabulated data is retained from various radio-sonde and pilot balloon ascents.

Miscellaneous. Over the last 150 or so years a collection has accumulated of various, non-technical documents, diaries, papers and pictures related to meteorological matters, the Met. Office, and in particular archive material of the Royal Meteorological Society.

SERVICES

Access to records. Visitors must report to staff on arrival to order the records required. Self help is not permitted.

Private study. Facilities are available to visitors for private study of the material held.

Machineable Records and Processed Data. This may be available from the commercial and consultative services of the Met Office, and will require payment but may save you a lot of extraction and computation time.

Loans. The public records cannot leave the Meteorological Office Headquarters without the approval of a Divisional Director and the authority of the Lord Chancellor's Office.

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Much of the material in the Archive and some reports in the Library are held under the Public Records Act, and it is an offence to deface them. Please use pencil for taking notes; **DO NOT MARK ANY BOOKS OR RECORDS.**

No smoking, eating or drinking is allowed in the Library or Archive.

SEARCHING: Staff are available to advise about the stock of the Library and Archive.

REFERRAL. Customers requiring routine meteorological services, data printout or expert help, are referred to specialists in the Met Office who will advise on the costs that may be involved. Specialist meteorological advice is normally provided by the Services & Business Division of the Met Office, so if you expect to need technical advice please write and arrange an appointment with them.

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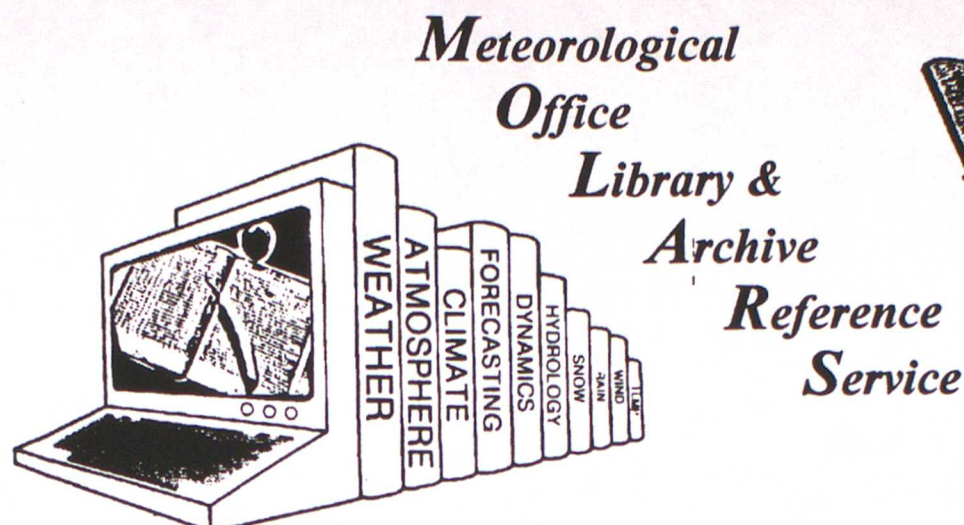
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Molars is the bibliographic database of books, papers and journal articles held by the National Meteorological Library (NML). Since 1972 over 9000 items a year have been catalogued covering meteorology, climatology and related atmospheric sciences. Since 1987 partial abstracts have been added if available.

On-line access to MOLARS is available on ESA-IRS, details from:- ESA INFORMATION RETRIEVAL SERVICE, ESRIN, VIA GALILEO GALILEI, 00044 FRASCATI (ROME), ITALY. Tel: (+39 6) 941801 Fax: (+39 6) 94180361 Telex: 610637 ESRIN I
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Access to the National Meteorological Library and Archive is free; they are places of deposit approved by the Public Record Office. The nearby Archive for weather records and official charts from the Central Forecasting Office is in:-
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Researchers visiting the NML may search MOLARS and earlier printed bibliographies and inspect material dating from the 16th century through to the latest journals. The rare book collection includes many held on behalf of the Royal Meteorological Society.

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