

DUPLICATE 1

METEOROLOGICAL OFFICE
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Meteorological Office Annual Report 1984

STATISTICS

| | | | |
|--------|------|---------|-------------------|
| 868 | 11) | 12) | 12 028 |
| 94 | 4123 | 1926 | 629 |
| | 1955 | 81 | 50 |
| | 83 | 30 | 477 |
| | 343 | | 259 |
| | 49 | | |
| | 33 | | |
| 86 | | | |
| | 147 | 1983/84 | £ |
| | 1098 | £000 | £000 |
| | 94 | | 52 309 |
| 971 | | 1) | 187 |
| | | 2) | 784 |
| | | 3) | 14 097 |
| | | 4) | 1539 |
| | | 5) | 73 |
| | | 6) | <u> </u> |
| | | | 16 680 |
| | | 7) | 18 833 |
| | | 8) | 15 189 |
| | | 9) | 1221 |
| | | 10) | <u>386</u> |
| | | | 35 |
| 2269 | | | |
| 211 | | | |
| 21 | | | |
| 56 | | | |
| 12 | | | |
| (2316) | | | |


3 8078 0003 0794 4

The 1984 Annual Report has been produced in a new style. The customary tables have been omitted from it and so to assist in the changeover it has been decided to publish them separately this year, on a trial basis, for use within the Office.

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| Number of offices of various types staffed by the Meteorological Office and operating on 31 December 1984 | 3 |
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TABLE I – NUMBER OF OFFICES OF VARIOUS TYPES STAFFED BY THE METEOROLOGICAL OFFICE AND OPERATING ON 31 DECEMBER 1984

| | Within UK | Overseas |
|--|-----------|----------|
| Principal Forecasting Offices ¹ associated with the RAF . . . | 1 | — |
| Main Meteorological Offices ² associated with the RAF . . . | 3 | 2 |
| Area Meteorological Offices ³ associated with the RAF . . . | 2 | 1 |
| Subsidiary offices ⁴ associated with the RAF | 29 | 5 |
| Subsidiary offices associated with the Army | 2 | 1 |
| Subsidiary offices associated with MOD(PE) | 3 | — |
| Observing offices ⁵ associated with the RAF | 5 | — |
| Observing offices associated with MOD(PE) | 3 | — |
| Principal Forecasting Offices associated with civil aviation . | 1 | — |
| Main Meteorological Offices associated with civil aviation . . | 3 | — |
| Subsidiary offices associated with civil aviation | 4 | — |
| Observing offices associated with civil aviation | 11 | — |
| Upper-air observing offices ⁶ | 8 | 1 |
| Main Meteorological Offices associated with public services ⁷ | 3 | — |
| Subsidiary offices associated with public services ⁷ | 8 | — |
| CRDF offices ⁸ | 4 | 1 |
| Port Meteorological Offices ⁹ | 7 | — |
| Offices associated with the Agricultural Development and Advisory Service, MAFF | 6 | — |
| Other offices ¹⁰ | 8 | — |

Notes

1. A Principal Forecasting Office (PFO) meets the needs of aircraft flying over long distances. A PFO operates throughout the 24 hours and provides technical guidance for Main, Area and Subsidiary Meteorological Offices.
2. A Main Meteorological Office operates throughout the 24 hours for the benefit of aviation and public services and normally supervises the work of subsidiary offices.
3. An Area Meteorological Office operates throughout the 24 hours for the benefit of military aviation and normally provides a forecasting and warning service for Defence locations where there is no Meteorological Office presence.
4. A Subsidiary Meteorological Office is open for that part of the day necessary to meet local requirements.
5. At an observing office no forecaster is available.
6. An upper-air observing office may be located with an office of another type if this allows common supporting resources to be used.
7. Public service offices are located in certain large cities.
8. Cathode Ray Direction Finding (CRDF) offices form the network for thunderstorm location.
9. Port Meteorological Offices are maintained at the bigger ports.
10. Other offices, outside Bracknell, include climatological offices in Edinburgh and Belfast and offices collocated with research establishments.

TABLE II – OCEAN WEATHER SHIPS

To meet the United Kingdom's obligations under the WMO Agreement for the Joint Financing of the North Atlantic Ocean Stations (NAOS), the Office operated one ocean weather ship. This was employed to man ocean station 'L' (57°00'N, 20°00'W), one of the four stations of the network, together with the Netherlands' ocean weather ship, each ship spending an average 30 and 26 days respectively on station each voyage. In 1984 the station was manned for a total of 169.9 days by the UK ocean weather ship which was also on passage for 28.3 days. Two ships from France, one from Norway and five from the USSR served at the other three stations.

TABLE III – MERCHANT SHIPS AND SEA STATIONS

A total of about 7690 ships of the merchant navies of the world make and transmit meteorological reports to the appropriate meteorological centres ashore under arrangements co-ordinated by the World Meteorological Organization. Most of them, including British ships, do this on a voluntary basis. Ships which report in full at four specified times daily are known as 'selected ships'; those which report at the same times daily, but in a less complete form, are known as 'supplementary ships'. A number of coasting vessels, lightships, distant-water trawlers, 'auxiliary ships', platforms, rigs and buoys also make and transmit meteorological observations.

On 31 December 1984 the numbers of British ships reporting were:

| | |
|--|-----|
| Selected ships (including 14 rigs) | 435 |
| Supplementary ships (including 3 rigs and 1 trawler) | 12 |
| Coasting vessels | 56 |
| Lightships (including 1 light-tower) | 13 |
| Trawlers | — |
| Auxiliary ships | 3 |
| Total | 519 |

The British Voluntary Observing Fleet includes ships of many shipping companies, and the numbers on the various routes are as follows:

| | |
|---|-----|
| UK to Australasia | 17 |
| UK to Far East | 23 |
| UK to Persian Gulf | 9 |
| UK to South Africa | 4 |
| UK to West Indies | 9 |
| UK to Atlantic coast of North America | 37 |
| UK to Pacific coast of North America | 4 |
| UK to South America | 5 |
| UK to European ports | 87 |
| UK to Falkland Islands and Antarctica | 3 |
| UK to distant-water fishing grounds | 1 |
| World-wide trading | 231 |
| Fixed stations | 17 |

During a typical 5-day period in June, the average daily numbers of reports from ships and sea stations received at Bracknell were as follows:

| | Reports | |
|--|---------|------|
| | 1983 | 1984 |
| Direct reception from: | | |
| British ships | 169 | 175 |
| Foreign ships | 133 | 162 |
| Rigs, platforms, buoys | 87 | 92 |
| Total | 389 | 429 |
| Total number of reports received by geographical location: | | |
| Eastern North Atlantic | 893 | 918 |
| Western North Atlantic | 541 | 653 |
| Mediterranean | 118 | 115 |
| North Sea | 312 | 329 |
| Arctic Ocean | 98 | 95 |
| North Pacific | 919 | 1055 |
| All other waters | 512 | 578 |
| Total | 3393 | 3743 |

TABLE IV – CLASSIFICATION OF STATIONS SUPPLYING CLIMATOLOGICAL INFORMATION

For climatological purposes, data are obtained not only from official sources but also from very many stations which are not part of the Meteorological Office. This table shows the distribution on 31 December 1984 of stations which supply climatological information, classified under the following headings:

- Met O Synoptic – stations manned by professional meteorologists.
- Auxiliary Synoptic – stations manned by non-Meteorological Office staff whose observations are used primarily in weather forecasting.
- Climatological – stations run by individuals or organizations co-operating voluntarily with the Meteorological Office and fulfilling the minimum requirements of reporting extreme temperatures and rainfall.
- Agrometeorological – climatological stations at establishments primarily concerned with agriculture.
- Holiday Resorts – stations participating in a scheme whereby information is sent daily to the Meteorological Office for communication to the press.

The areas and titles of the districts are those used in the *Monthly Weather Report*.

| | STATIONS SUPPLYING RETURNS | | | | | STATIONS SUPPLYING AUTOGRAPHIC RECORDS | | | |
|---|----------------------------|---------------------------|-----------------------|---------------------------|------------------------|--|-----------------|-----------------|-------------|
| | <i>Met O Synoptic</i> | <i>Auxiliary Synoptic</i> | <i>Climatological</i> | <i>Agrometeorological</i> | <i>Holiday Resorts</i> | <i>Rainfall*</i> | <i>Sunshine</i> | <i>Rainfall</i> | <i>Wind</i> |
| Scotland, north | 9 | 9 | 31 | 0 | 0 | 323 | 27 | 16 | 16 |
| Scotland, east | 5 | 6 | 42 | 10 | 1 | 440 | 32 | 22 | 15 |
| Scotland, west | 6 | 8 | 46 | 2 | 0 | 478 | 26 | 25 | 18 |
| England, east and north-east . . | 10 | 4 | 16 | 7 | 4 | 476 | 24 | 14 | 14 |
| East Anglia | 9 | 0 | 17 | 13 | 3 | 433 | 28 | 23 | 12 |
| Midland Counties | 6 | 2 | 29 | 15 | 0 | 690 | 40 | 25 | 18 |
| England, south-east and central southern | 19 | 10 | 27 | 21 | 12 | 723 | 53 | 28 | 24 |
| England, south-west | 10 | 11 | 25 | 5 | 11 | 596 | 39 | 19 | 16 |
| England, north-west | 6 | 4 | 13 | 1 | 2 | 416 | 21 | 23 | 13 |
| Isle of Man | 1 | 1 | 0 | 0 | 1 | 18 | 3 | 1 | 3 |
| Wales, north | 1 | 5 | 13 | 2 | 2 | 160 | 8 | 5 | 4 |
| Wales, south | 5 | 6 | 12 | 6 | 1 | 178 | 12 | 15 | 5 |
| Channel Islands | 2 | 0 | 1 | 0 | 2 | 17 | 5 | 2 | 2 |
| Northern Ireland | 2 | 13 | 44 | 8 | 0 | 243 | 28 | 49 | 10 |
| Total | 91 | 79 | 316 | 90 | 39 | 5191 | 346 | 267 | 170 |

* Includes stations in earlier columns.

TABLE V – HEIGHTS REACHED IN UPPER-AIR ASCENTS

The following table shows the number of upper-air ascents giving observations of (a) temperature, pressure and humidity and (b) wind, which have reached specified heights, and the height performance of the largest balloons.

| | Number of Observations | Percentage of all balloons reaching | | | | Percentage of largest balloons reaching |
|--|------------------------|-------------------------------------|-----------------------------|-----------------------------|-----------------------------|---|
| | | 100 mb (16 000 m approx.) | 50 mb (20 000 m approx.) | 30 mb (24 000 m approx.) | 10 mb (30 000 m approx.) | 10 mb (30 000 m approx.) |
| <i>(a) Temperature, pressure and humidity:</i> | | | | | | |
| 8 stations in the UK . . . | 5 814 | 95.10 | 88.72 | 72.02 | 20.55 | 41.96 |
| 1 station overseas | 730 | 97.53 | 92.88 | 81.51 | 46.30 | 57.12 |
| 1 Ocean Weather Ship . . . | 687 | 98.25 | 93.30 | 80.64 | 27.51 | – |
| <i>(b) Wind:</i> | | | | | | |
| 8 stations in the UK . . . | 11 638 | 98.07 | 92.08 | 65.44 | 10.16 | 41.93 |
| 1 station overseas | 1 460 | 97.19 | 94.52 | 80.14 | 22.53 | 55.76 |
| 1 Ocean Weather Ship . . . | 686 | 96.79 | 89.36 | 76.82 | 22.59 | – |

TABLE VI – THUNDERSTORM LOCATION

| | |
|---|--------|
| Number of thunderstorm positions reported by CRDF network in 1984 | 21 731 |
|---|--------|

TABLE VII – METEOROLOGICAL COMMUNICATION TRAFFIC

National and international exchanges of meteorological information are effected over land-line, satellite, and radio links. Observational and processed data provided by major analysis and forecast centres and carried in coded messages constitute the greater part of the traffic. Although there are wide variations in message length there are on average about 710 characters per message. Exchanges of pictorial information, principally analyses and forecast charts, are made by facsimile. Analogue transmission methods are still used for radio facsimile and the majority of land-line facsimile broadcasts but digital transmission over multiplexed links has been introduced on some of the main international connections of the Global Telecommunication System.

The following figures are taken from an analysis of the traffic handled by the Meteorological Telecommunication Centre, Bracknell, on a typical day (24 hours) in November 1984. Corresponding totals for 1983 are also shown.

| | <i>Number of messages/products in one day</i> | | | Total in 1983 |
|---|---|---------|---------|---------------|
| | In | Out | Total | |
| <i>Coded messages:</i> | | | | |
| Land-line teleprinter and data transmission | 28 873 | 156 971 | 185 844 | 155 240 |
| Radio transmission | 86 | 2 454 | 2 540 | 3 628 |
| <i>Facsimile products (pictorial format):</i> | | | | |
| Land-line transmission | 259 | 1 230 | 1 489 | 1 415 |
| Radio transmission | 38 | 133 | 171 | 172 |

Notes

The increase in the total for land-line teleprinter and data transmission messages is mainly due to the introduction of many new numeric model products in GRID or GRIB codes (mainly in connection with the World Area Forecast System). This increase in large bulletins of processed products has resulted in an increase of the average message length from 620 to 710 characters.

TABLE VIII – SPECIAL SEASONAL FORECASTS

There is a need for forecasts of a special type at certain seasons. These are described in *Met O Leaflet* No. 1. The numbers receiving such specialized services are as follows:

| | Year | Number of customers | Year | Number of customers |
|---|---------|---------------------|---------|---------------------|
| Consultancy services to farmers and growers | 1983 | 233 | 1984 | 375 |
| Weekend temperature forecasts (a winter service primarily for industrialists) | 1983/84 | 77 | 1984/85 | 77 |
| Winter road danger warnings (primarily for local authorities) | 1983/84 | 319 | 1984/85 | 316 |
| Consultancy or forecast services (concerning road conditions) | 1983/84 | 130 | 1984/85 | 134 |

TABLE IX – FORECASTS FOR AVIATION

Forecasting for aviation constitutes the primary function of many meteorological offices.

The following figures indicate the number of forecasts issued for aviation and the numbers of meteorological briefings that took place during 1983 and 1984. These do not include the numerical forecasts for civil aviation issued direct to Washington, Paris, Frankfurt, British Airways, Scandinavian Airline System, SITA, the CAA APOLLO computer unit and Eurocontrol Maastricht. Warnings and routine general forecasts are not included.

| | 1983 | 1984 |
|--|-----------|-----------|
| Number of meteorological briefings for aviation in the UK | 325 683 | 303 641 |
| aviation at overseas stations | 44 095 | 51 237 |
| Number of aviation forecasts issued for aviation in the UK | 1 878 027 | 2 021 749 |
| aviation at overseas stations | 212 735 | 275 340 |

TABLE X – NON-AVIATION ENQUIRIES

Non-aviation enquiries are handled by ten Weather Centres, in London, Manchester, Glasgow, Southampton, Newcastle, Nottingham, Bristol, Cardiff, Leeds and Norwich and the forecast unit at Sella Ness. The function of these offices is to meet the needs of the general public for forecasts for special purposes. Many other forecast offices, established primarily to meet the needs of aviation, also answer requests for forecasts and other weather information from the general public, Press, public corporations, commercial firms, etc. These enquiries, most of which refer to current or future weather, are listed below according to the purpose of the enquiry.

| | 1983 | 1984 |
|--|-----------|-----------|
| Total number of non-aviation enquiries | 1 655 146 | 1 642 230 |
| Percentage relating to: | | |
| agriculture | 13.1 | 10.0 |
| building | 3.9 | 3.2 |
| commerce, industry | 7.3 | 5.8 |
| holidays | 14.9 | 11.6 |
| marine matters | 12.0 | 15.7 |
| Press | 16.4 | 18.1 |
| public utilities | 10.7 | 10.7 |
| road transport | 4.1 | 4.3 |
| other known purposes | 8.0 | 10.2 |
| unknown purposes | 9.7 | 10.4 |

TABLE XI – FLASH WEATHER MESSAGES

FLASH messages are passed to the BBC and to most independent broadcasting companies for inclusion in their programs at a convenient break. They are, effectively, warnings of the actual occurrence of weather conditions which might cause considerable inconvenience to a large number of people. The following table shows the kind of weather and areas for which FLASH messages are broadcast and the number issued in 1984.

| | Dense fog | Moderate or heavy snow | Heavy rain | Glazed frost and icy roads | Severe inland gales | Blizzard | Strong winds |
|--|-----------|------------------------|------------|----------------------------|---------------------|----------|--------------|
| Edinburgh and south-east | | | | | | | |
| Scotland | — | — | 1 | — | — | 2 | — |
| Glasgow and south-west | | | | | | | |
| Scotland | — | — | — | — | 1 | 1 | — |
| Belfast and Northern | | | | | | | |
| Ireland | — | 1 | — | — | 4 | — | — |
| Industrial north-east | | | | | | | |
| England | — | — | 1 | — | 2 | — | — |
| Industrial Lancashire and | | | | | | | |
| Merseyside | — | — | — | — | 4 | — | — |
| Industrial Midlands | — | — | — | — | 1 | — | — |
| Bristol and Bath | — | — | — | 1 | — | — | — |
| South Wales | — | — | — | — | 1 | — | — |
| London and south-east | | | | | | | |
| England | — | — | 1 | 1 | 2 | — | — |
| Plymouth and south-west | | | | | | | |
| England | — | — | — | 1 | 4 | — | — |
| Yorkshire | — | — | — | — | — | — | — |
| Southampton and | | | | | | | |
| Portsmouth | — | — | — | — | — | — | — |
| Warnings covering more than one area or blizzards outside industrial areas | — | — | — | — | 12 | 4 | 1 |
| Total | 0 | 1 | 3 | 3 | 31 | 7 | 1 |

TABLE XII – 'WEATHERLINE' FORECASTS

This table will be found at the end of this leaflet. The figures were not available at the time of assembly.

TABLE XIII – CLIMATOLOGICAL ENQUIRIES

Met O 3, Met O 8, Edinburgh and Belfast receive a number of enquiries relating to past weather, to climatology and to the application of meteorological data to agriculture. The following figures give the total number of enquiries and the percentages of this number in various categories. It should be noted that the list below shows revised enquiry classes introduced into the Office with effect from 1 August 1984. Enquiries under the old classes have been consolidated into the new enquiry classes. Some new classes were introduced from 1 August.

| | 1983 | 1984 |
|--|---------|--------|
| Total number of climatological enquiries | 53 387* | 54 600 |
| Percentages: | | |
| Agricultural | | 32.2 |
| Building and construction | | 8.8 |
| Commerce, industrial and manufacturing | | 8.7 |
| ** Design and planning | | 0.6 |
| Drainage, flooding and water supplies | | 6.1 |
| Educational | | 6.3 |
| ** Energy | | 0.6 |
| Holiday, sports, hobbies and leisure | | 1.3 |
| Legal, insurance and loss adjustment | | 11.2 |
| ** Marine matters | | 0.1 |
| Medical and health | | 0.4 |
| Press, information centres and media items | | 3.5 |
| Research matters | | 3.5 |
| ** Telecommunications | | 0.0+ |
| Transport | | 0.5 |
| Ventilation and heating | | 1.6 |
| ** Videotex | | 0.0+ |
| Miscellaneous – purpose known | | 8.6 |
| Miscellaneous – purpose unknown | | 5.9 |

* This total now includes 9673 routine enquiries omitted in error from the total given in the Annual Report for 1983.

** These enquiry classes did not exist as separate categories prior to August 1984.

TABLE XIV – DATA PROCESSING

| | 1983 | 1984 |
|---|------------|------------|
| Computer installations: | | |
| Number of tasks run on the 3081 computer | 455 000 | 580 000 |
| Number of tasks run on the 370/158 computer | 145 000 | 115 000 |
| Number of tasks run on the Cyber 205 computer | 101 000 | 100 000 |
| Number of tasks run on the terminal system | 147 000 | 230 000 |
| Processor-controlled keying systems: | | |
| Number of characters keyed | 46 000 000 | 42 000 000 |
| Punched-card installation: | | |
| Number of computer cards punched | 155 000 | 62 000 |

TABLE XV – INSTRUMENT CALIBRATION AND ACCEPTANCE TESTING

| | Tests | Calibrations |
|--|---------|--------------|
| General meteorological instruments: | | |
| Wind measuring | 63 | 512 |
| Pressure measuring | 313 | 1 079 |
| Humidity measuring | 25 | 23 |
| Precipitation measuring | 217 | 169 |
| Radiation measuring | — | 167 |
| Sunshine recording | 19 | — |
| Temperature measuring | 776 | 3 418 |
| Balloons* | 14 820 | — |
| Miscellaneous | 5 754 | 254 |
| Electrical/electronic instruments: | | |
| Instruments and systems | 1 384 | 316 |
| Components | 386 | — |
| Radiosonde instruments: | | |
| Components accepted | 104 023 | — |
| Humidity elements skinned and seasoned | 5 700 | — |
| Pressure elements | — | 9 900 |
| Reference elements | — | 6 300 |
| Temperature elements | — | 150 |
| Balloons* | 28 289 | — |
| Radar reflectors* | 13 365 | — |
| Parachutes* | 31 698 | — |
| String unwinders* | 2 495 | — |
| Recovered sonde transmitters | 2 138 | — |

* Sample tested only

TABLE XVI – LIBRARY, ARCHIVES AND CARTOGRAPHIC SECTION

Library

| | |
|---|--------|
| Items received: | |
| Daily Weather Reports | 7 460 |
| Books, journals, etc. | 7 358 |
| Films, slides and photographs | 1 554 |
| Entries in MOLARS bibliographic database | 10 678 |
| Loans: | |
| Daily Weather Reports | 4 144 |
| Books, journals, etc. | 16 572 |
| Films, slides and photographs (251 occasions) | 8 073 |
| Number of exchange agreements with other institutions | 288 |
| Pages translated by MOD linguistic services | 210 |

Archives

| | |
|---|--------|
| Documents received from Headquarters Branches: | |
| Charts for permanent retention | 26 000 |
| Charts for limited retention | 30 000 |
| Ships' log-books | 790 |
| Rainfall cards (stations) | 4 400 |
| Climatological data (stations) | 500 |
| Documents received from outstations: | |
| Daily Registers | 1 800 |
| Autographic records (station-months) | 8 810 |
| Loans | 203 |
| Photocopies | 1 000 |

Cartographic Section

| | |
|---|-------|
| Number of diagrams, maps and charts completed | 4 147 |
| Number of reprographic jobs | 577 |

TABLE XVII – TRAINING

The following figures give details of courses completed during 1984 at the Meteorological Office training establishments at Shinfield Park and Beaufort Park.

| | Number of courses | Length in weeks | Met O staff | Others | Total |
|------------------------------------|----------------------|--------------------|----------------|--------|-------|
| Scientific Officers Part II (1983) | 1 | 24 | 11 | 2 | 13 |
| Scientific Officers Part I (1984) | 1 | 15 | 7 | 0 | 7 |
| Applied Meteorology Part II (1983) | | | | | |
| (Forecasters) | 1 | 8 | 20 | 10 | 30 |
| Applied Meteorology (Prep) | 1 | 3 | 22 | 5 | 27 |
| Applied Meteorology Part I | 1 | 10 | 29 | 5 | 34 |
| Applied Meteorology Part II | | | | | |
| (Support Scientists) | 1 | 1 | 25 | 0 | 25 |
| Applied Meteorology Part II | | | | | |
| (Forecasters) | 1 | 9 | 2 | 6 | 8 |
| Initial Forecasting (Prep) | 1 | 2 | 11 | 4 | 15 |
| Initial Forecasting | 1 | 15 | 19 | 7 | 26 |
| Advanced Forecasting | 3 | 7 | 10 | 11 | 21 |
| Extension Course | 3 | 4 | 31 | 2 | 33 |
| Senior Meteorologists | 1 | 3 | 14 | 2 | 16 |
| Meteorological Statistics | 1 | 4 | 2 | 0 | 2 |
| Initial Programmers | 3 | 4 | 24 | 0 | 24 |
| COSMOS Programmers | 2 | 2 | 23 | 0 | 23 |
| Basic Assistants | 2 | 4 | 15 | 0 | 15 |
| Initial Assistants | 7 | 4 | 72 | 0 | 72 |
| Advanced Assistants | 4 | 4 | 34 | 0 | 34 |
| Extension Assistants | 2 | 4 | 25 | 0 | 25 |
| Initial Supervisors | 3 | 3 | 28 | 2 | 30 |
| Auxiliary Observers | 4 | 1 | 0 | 57 | 57 |
| Co-operating Observers | 4 | 1 | 0 | 49 | 49 |
| Air Traffic Control Observers | 4 | 1 | 0 | 47 | 47 |
| Introduction to Meteorology for | | | | | |
| Non-Met Staff | 2 | 1 | 23 | 0 | 23 |
| ASO to R(M)T Conversion (1983) | 1 | 18 | 7 | 0 | 7 |
| ASO to R(M)T Conversion (1984) | 1 | 14 | 3 | 0 | 3 |
| Mufax Course | 1 | 2 | 12 | 7 | 19 |
| Mk V Wind System | 1 | 1 | 9 | 0 | 9 |
| Facsimile Transmitter K150 | 1 | 1 | 8 | 3 | 11 |
| Digital Anemograph Logging | | | | | |
| Equipment (DALE) | 1 | 2 | 8 | 0 | 8 |
| CDC Cyber Course | 1 | 1 | 5 | 7 | 12 |
| Met Office Data Logging Equipment | | | | | |
| (MODLE) | 1 | 1 | 7 | 0 | 7 |
| Totals | | | 506 | 226 | 732 |

Training in the United Kingdom during 1984 under the Voluntary Co-operation Programme of the World Meteorological Organization

| Institute | Training | Duration | Country |
|---|-----------------------------------|-----------|--------------------|
| University of Reading | MSc Meteorology | 2 years | Burma |
| University of Reading | MSc Meteorology | 2 years | Costa Rica |
| University of Reading | MSc Meteorology | 2 years | Ghana |
| Reading College of Technology and Meteorological Office | Basic Electronics/ Instruments | 21 months | Zambia (2) |
| Reading College of Technology and Meteorological Office | Basic Electronics/ Instruments | 21 months | Kenya (2) |
| Reading College of Technology and Meteorological Office | Basic Electronics/ Instruments | 21 months | Tanzania |
| Reading College of Technology and Meteorological Office | Basic Electronics/ Instruments | 21 months | Botswana |
| Meteorological Office | IFC + OJT | 9 months | Sri Lanka |
| Meteorological Office | IFC + OJT | 10 months | Dominican Republic |
| Meteorological Office | AMC + OJT | 9 months | Kenya |
| Meteorological Office | AMC + OJT | 9 months | Mauritius |
| Meteorological Office | Visiting Instructor | 2 years | China |

IFC = Initial Forecasting Course

OJT = On-the-Job Training

AMC = Applied Meteorology Course

External training – academic year 1983/84

| | Number of students |
|--|--------------------|
| Full time: | |
| First Degree | 4 |
| Part time: | |
| Higher Degree | 2 |
| First Degree | 1 |
| Block release HNC | 30 |
| Other HNC/HTEC | 17 |
| ONC/TEC/SCOTEC | 9 |
| A-level/HSCE | 37 |
| O-level/SCE | 2 |
| Miscellaneous | 6 |
| Day release (under 18 years) | 1 |
| Further education: | |
| Open University | 24 |
| Science and mathematics | 2 |
| Others | 3 |
| Field study courses | 4 |

PERSONNEL

Staff numbers

At the end of the year 1984 the total number of posts, of all grades, was 2714, a decrease of 42 over the year. The actual strength at the end of the year was:

| | |
|---|-----|
| Deputy Secretary | 1 |
| Under Secretary | 1 |
| Science Group | |
| Chief Scientific Officer | 2 |
| Deputy Chief Scientific Officer | 6 |
| Senior Principal Scientific Officer | 30 |
| Principal Scientific Officer | 103 |
| Senior Scientific Officer | 291 |
| Higher Scientific Officer | 465 |
| Scientific Officer | 464 |
| Assistant Scientific Officer | 710 |
| Administrative Group | |
| Assistant Secretary | 1 |
| Principal | 1 |
| Senior Executive Officer | 3 |
| Higher Executive Officer | 8 |
| Executive Officer | 18 |
| Clerical Officer | 43 |
| Clerical Assistant | 62 |
| Professional and Engineering Group (including Marine Superintendent staff) | |
| Superintending Engineer | 1 |
| Principal Professional and Technology Officer | 3 |
| Professional and Technology Officer Grade I | 6 |
| Professional and Technology Officer Grade II | 16 |
| Professional and Technology Officer Grade III | 4 |
| Professional and Technology Officer Grade IV | 4 |
| Telecommunications Staff | |
| Telecommunications Technical Officer Grade A | 1 |
| Telecommunications Technical Officer Grade I | 9 |
| Telecommunications Technical Officer Grade II | 26 |
| Telecommunications Technical Officer Grade III | 60 |
| Radio (Meteorological) Technician | 40 |
| Signals grades | 45 |
| Teleprinter grades | 57 |
| Typing and miscellaneous non-industrial grades | 125 |
| Security Officers | 11 |
| Ocean Weather Service | 2 |
| Industrial employees | 43 |
| Locally entered staff and employees overseas | 52 |

International co-operation

The following staff were released by the Office during 1984 for service with international and other organizations:

| | | |
|-------------------|---------|---|
| Mr P. R. Cockrell | PSO | Exploration Consultants Ltd |
| Mr J. Austin | SSO | National Aeronautics and Space Administration |
| Dr J. C. King | SSO | British Antarctic Survey |
| Mr G. C. Bridge | SSO | European Space Agency |
| Mr J. H. Convery | HSO | European Space Agency |
| Mr A. L. Dexter | HSO | International Aeradio Ltd |
| Mr J. E. Venables | HSO | British Aerospace |
| Mr G. D. Frost | TTO I | World Meteorological Organization |
| Mr M. A. Lane | TTO II | Pan Am World Services Inc. |
| Mr B. J. Mott | TTO III | Vanuatu Government |

Staff returning from international and other secondment appointments were:

| | | |
|--------------------|----------------|--|
| Mr D. B. Shaw | PSO | European Centre for Medium Range Weather Forecasts |
| Mr P. F. Emery | SSO | Vanuatu Government |
| Mr L. P. Stevens | HSO (T/SSO) | Overseas Administrative Development |
| Dr N. Butchart | HSO | University of Washington |
| Mr J. S. Campbell | HSO | European Space Agency |
| Mr P. F. Lavington | HSO | International Aeradio Ltd |
| Mr K. Sadler | HSO | International Aeradio Ltd |
| Mr P. L. Stewart | HSO | International Aeradio Ltd |
| Mr C. Lakeland | ASO | International Aeradio Ltd |

FINANCE

On a fully cost-accounted basis, the total cost of the Office in 1983/84 was £63M, compared with £55.7M in 1982/83. The net cost after earnings from services was £44M compared with £38.3M in 1982/83. This increase was due to the United Kingdom's participation in the European EUMETSAT which is to replace the METEOSAT series of geostationary meteorological satellites. In all other areas the cost of the Office decreased in real terms.

The increase in the proportion of costs attributed to Defence is primarily due to the cessation of public services previously undertaken by meteorological staff at RAF stations and other Defence offices. Since these services were performed in the margins of staff time that had to be available for operational purposes, all that time is now booked to Defence.

The Office's voted expenditure is borne on the Defence Budget to which all receipts from repayment services are credited. Details are shown in the Annual Statement of Defence Estimates. However, for costing purposes, a fully cost-accounted Memorandum Operating and Trading Account is also maintained and the details shown in the tables are drawn from this. The figures include non-voted costs which are not shown in the Defence Votes in Parliamentary Estimates such as pensions, notional insurance, interest on capital and depreciation. By the same token the cost of major items of equipment, which appear in Defence Votes for the year of acquisition, is excluded from the tables, being covered by annual interest and depreciation changes in the usual commercial accounting manner.

The tables include figures for the previous year 1982/83, for comparison, shown on the same basis as the current year figures. Charges for repayment services were increased by 8% on 1 January 1984.

STATEMENT OF THE COST OF METEOROLOGICAL SERVICES FOR THE YEAR ENDED
31 MARCH 1984

| | 1983/84 | | 1982/83 | |
|--|---------|--------|---------|--------|
| | £000 | £000 | £000 | £000 |
| Total meteorological services (cost accounted) | | 63 021 | | 55 684 |
| Receipts | | | | |
| Training and secondments | 230 | | 274 | |
| Exchequer Depts | 859 | | 817 | |
| Non-Exchequer bodies | 15 641 | | 14 566 | |
| Industry and Commerce | 2 159 | | 1 680 | |
| General public | 40 | | 83 | |
| | | 18 929 | | 17 420 |
| Net expenditure | | | | |
| Defence | 28 419 | | 19 887 | |
| Civil (General Public Services) | 13 063 | | 17 048 | |
| International | 1 410 | | 921 | |
| Exchequer Depts (Home Defence and Emergency Services) | 1 200 | | 408 | |
| | | 44 092 | | 38 264 |

METEOROLOGICAL OFFICE RECEIPTS 1983/84 (CASH RECOVERABLE)

| | 1983/84 | 1982/83 |
|--|---------|---------|
| | £000 | £000 |
| Services to: | | |
| Ministry of Agriculture, Fisheries and Food | 728 | 656 |
| Other Exchequer Depts (Department of Environment etc.) | 131 | 137 |
| Civil Aviation Authority | 14 264 | 13 304 |
| Natural Environment Research Council | — | 1 |
| Other Non-Exchequer Depts | 29 | 79 |
| EEC | 117 | 222 |
| Public Authorities etc. | 209 | 202 |
| Meteorological Office College (training of meteorologists) | 187 | 209 |
| Secondments to outside bodies | 43 | 65 |
| Comprehensive forecasting for the offshore oil industry | 1 314 | 1 077 |
| Forecasting and climatological services tailored to meet users' special needs: | | |
| Ship Routeing Service | 81 | 106 |
| Gas Boards | 185 | 152 |
| Central Electricity Generating Board | 170 | 174 |
| British Rail | 26 | 23 |
| Independent Broadcasting Authority | 293 | 127 |
| British Broadcasting Corporation | 275 | 105 |
| Press | 70 | 54 |
| Other customers' special services | 568 | 494 |
| Automatic Telephone Weather Services (British Telecom) | 239 | 233 |
| | 18 929 | 17 420 |

STATEMENT OF OPERATING EXPENSES FOR THE METEOROLOGICAL OFFICE FOR THE YEAR ENDED 31 MARCH 1984

| (1) Expenditure | (2) Defence services £000 | (3) Exchequer departments non-repayment £000 | (4) Public services £000 | (5) Inter- national £000 | (6) CAA £000 | (7) 1983/84 Total £000 | (8) 1982/83 Total £000 |
|--|------------------------------------|--|-----------------------------------|-----------------------------------|--------------------|---------------------------------|---------------------------------|
| Customer activity costs | | | | | | | |
| Direct labour | 3 439 | 180 | 2 543 | 388 | 2 421 | 8 971 | 8 093 |
| Other direct costs | 125 | 1 | 132 | 153 | 117 | 528 | 423 |
| Indirect costs | | | | | | | |
| Labour | 3 734 | 85 | 1 804 | 78 | 1 806 | 7 507 | 8 188 |
| Others | 1 459 | 40 | 938 | 1 370 | 379 | 4 186 | 4 117 |
| North Atlantic Ocean Stations (NAOS) receipts | | | | (1 162) | | (1 162) | (1 192) |
| Depreciation | 159 | 3 | 67 | 106 | 63 | 398 | 331 |
| General Meteorological Office costs | | | | | | | |
| Research | 4 377 | 135 | 1 723 | 124 | 1 690 | 8 049 | 8 182 |
| Observations | | | | | | 14 041 | 9 382 |
| Telecommunications | 7 778 | 505 | 6 531 | | 4 932 | 5 193 | 4 903 |
| Computing | | | | | | 512 | 1 341 |
| General services | | | | | | | |
| Central Forecasting Office | | | | | | 2 346 | 1 342 |
| Technical support | | | | | | 3 877 | 2 648 |
| Maintenance | | | | | | 1 216 | 1 680 |
| Training | 6 617 | 230 | 3 578 | 225 | 2 430 | 1 540 | 1 137 |
| Administration and personnel | | | | | | 3 188 | 2 479 |
| Others | | | | | | 913 | 1 071 |
| Total Meteorological Office management costs | 27 688 | 1 179 | | 1 282 | 13 838 | 61 303 | 54 125 |
| Full cost items | | | | | | | |
| Share of MOD HQ costs | | | | | | 508 | 466 |
| Insurance | | | | | | 74 | 69 |
| Interest on capital | 731 | 21 | 412 | 128 | 426 | | |
| Fixed | | | | | | 917 | 830 |
| Working | | | | | | 219 | 194 |
| Total Meteorological Office full costs | 28 419 | 1 200 | 17 728 | 1 410 | 14 264 | 63 021 | 55 684 |

TABLE XII - 'WEATHERLINE' FORECASTS

| Information Service Centre | Forecast area | Number of calls | |
|-------------------------------|---|-----------------|---------|
| | | 1983 | 1984 |
| Aberdeen | Aberdeen, Grampian and Great Glen* | 91987 | 140979 |
| Bangor, N.I. | Northern Ireland | 21449 | 39529 |
| Bedford | Herts, Beds and Inland Essex | 284058 | 277923 |
| Belfast | Northern Ireland | 480380 | 527587 |
| Birmingham | Birmingham and Warwickshire | 1020425 | 1027124 |
| Bishops Stortford | Herts, Beds and Inland Essex | 140334 | 123099 |
| Blackburn | North-west England | 330902 | 316805 |
| Blackpool | North-west England | 190068 | 196239 |
| Bournemouth | Dorset and Hants Coast and Isle of Wight | 585592 | 559779 |
| Bradford | West Yorkshire | 184146 | 185873 |
| Brighton | Sussex and South Kent Coast | 773986 | 695649 |
| Bristol | Somerset and Avon | 759813 | 643601 |
| Cambridge | Herts, Beds and Inland Essex† | 204752 | 285351 |
| Cardiff | Glamorgan Gwent and South Dyfed Coast* | 649719 | 614228 |
| Carlise | Lake District | — | 13243 |
| Canterbury | North Kent and Essex Coasts+ | 377696 | 414515 |
| Chelmsford | North Kent and Essex Coasts | 172812 | 141142 |
| Cheltenham | South-west Midlands | 152544 | 142180 |
| Chester | Anglesey and North Wales Coast | 148965 | 143853 |
| Colchester | North Kent and Essex Coasts | 265293 | 254547 |
| Colwyn Bay | Anglesey and North Wales Coast | 129093 | 136413 |
| Coventry | Birmingham and Warwickshire | 190061 | 231822 |
| Crewe | Staffordshire and Shropshire | — | 1846 |
| Derby | East Midlands | 189535 | 190607 |
| Doncaster | South Yorkshire and Peak District | 75277 | 66573 |
| Dundee | Dundee, Tayside, North Fife and Central Region* | 142802 | 148727 |
| Edinburgh | Edinburgh, South Fife and the Borders* | 335122 | 377123 |
| Exeter | Devon and Cornwall | 446572 | 353558 |
| Glasgow | Glasgow, Argyll and Clyde Valley* | 748384 | 840223 |
| Gloucester | South-west Midlands | 238938 | 250058 |
| Grimsby | Lincolnshire and Humberside | 93449 | 113947 |
| Guildford | London | 188079 | 204276 |
| Hastings | Sussex and South Kent Coast | 190315 | 192182 |
| Hereford | South-west Midlands | 114124 | 105920 |
| High Wycombe | Oxon, Bucks and Berks | 234141 | 213093 |
| Huddersfield | West Yorkshire | 119858 | 141742 |
| Ipswich | East Anglia | 293893 | 273959 |
| Kendal | Lake District | — | 18306 |
| Leeds | West Yorkshire | 500596 | 524269 |
| Leicester | East Midlands | 349524 | 348867 |
| Lincoln | Lincolnshire and Humberside | 249316 | 277454 |
| Liverpool | North-west England | 323081 | 339749 |
| Liverpool | Anglesey and North Wales Coast | 48378 | 75112 |
| London | London | 3440119 | 3308689 |
| London | North Kent and Essex Coasts | 241962 | 206022 |
| London | Sussex and South Kent Coast | 344189 | 342436 |
| London | Oxon, Bucks, and Berks | 197269 | 178181 |
| London | Herts, Beds and Inland Essex | 190612 | 171037 |
| London | North Downs and Weald | 15111 | 33476 |
| Lowestoft | East Anglia | 58735 | 63214 |
| Luton | Herts, Beds and Inland Essex | 301217 | 296134 |
| Manchester | North-west England | 808195 | 845490 |
| Manchester | Anglesey and North Wales Coast | 71667 | 90310 |
| Mansfield | East Midlands | 2197 | 11821 |
| Medway | North Kent and Essex Coast | 238555 | 246318 |
| Middlesbrough | North-east England | 260436 | 253892 |
| Milton Keynes | Herts, Beds and Inland Essex | 66136 | 63653 |

| Information Service Centre | Forecast area | Number of calls | |
|-------------------------------|--|-----------------|-----------------|
| | | 1983 | 1984 |
| Newcastle | North-east England | 583454 | 607607 |
| Newport, Gwent | Glamorgan, Gwent and South Dyfed Coast* | 134170 | 127820 |
| Northampton | East Midlands | 117890 | 120224 |
| Norwich | East Anglia | 440742 | 439557 |
| Nottingham | East Midlands | 585457 | 627641 |
| Oxford | Oxon, Bucks and Berks | 453685 | 360805 |
| Peterborough | East Anglia | 121962 | 121761 |
| Plymouth | Devon and Cornwall | 714364 | 791821 |
| Portsmouth | Dorset and Hants Coast and Isle of Wight | 500473 | 434474 |
| Reading | Oxon, Bucks and Berks | 500716 | 537054 |
| Sheffield | South Yorkshire and Peak District | 556990 | 486700 |
| Shrewsbury | Staffordshire and Shropshire | — | 23985 |
| Southampton | Dorset and Hants Coast and Isle of Wight | 757320 | 715114 |
| Southend | North Kent and Essex Coasts | 275256 | 216545 |
| Southport | North-west England | 60321 | 67504 |
| Stafford | Staffordshire and Shropshire | — | 6461 |
| Stoke on Trent | Staffordshire and Shropshire | — | 4019 |
| Swansea | Glamorgan, Gwent and South Dyfed Coast | 3522 | 24488 |
| Swindon | Avon and Somerset | 59217 | 58495 |
| Torquay | Devon and Cornwall | 166210 | 170468 |
| Tunbridge Wells | London | 130480 | 115202 |
| TOTAL | | 24434088 | 24337490 |

* Area extended during 1984

† Includes forecasts for East Anglia

+ Includes forecasts for Sussex and South Kent Coast