

*EUROPEAN CENTRE FOR  
MEDIUM-RANGE WEATHER FORECASTS*

*THE DESCRIPTION OF THE  
ECMWF OBSERVATIONAL DATA SET*

*(TIME SERIES OF VERTICAL SOUNDINGS  
FROM GROUND-BASED STATIONS)*

1994

**PART I**      **Description of the ECMWF Observational Data Set containing  
Time Series of Vertical Soundings from Ground-Based Stations**

ECMWF has created and maintains an archive of monthly time series of global observational data. The archive contains both surface and upper-air reports. Initially, a data service will be provided only for upper-air data, but the service will be extended later to include other data types, in particular surface observations (SYNOP). This document describes the data set containing upper-air reports.

The **Observational Data Set** (Time Series of Vertical Soundings from Ground-Based Stations) is comprised as follows:

- period supported: 1 December 1979 to current date;
- the data set includes all PILOT, TEMP and ROCOB observations (including ship observations) received by ECMWF via the WMO GTS.

The following information is relevant:

- this service is available to Member States meteorological services or other organisations for which the meteorological services have authorised the Centre to provide the data;
- this data set is supported by an extraction service enabling users to obtain sub-sets of data from the global data set (see Part II for further details);
- the data will be supplied as a number of separate files, one file for each whole or part month of data requested. Each file will contain the time series for each station, selected by whatever means, in WMO Station Number order;
- all ship observations are grouped together under a special station number, namely 00000, which is used internally for this purpose only;
- the archive is currently maintained using the FM 94 BUFR form of data representation;
- production of the archive has been made as automatic as possible using techniques which enable all data for the current month to be added to the archive at the beginning of the next month.

**PART II      Requests for Data**

In addition to providing the computer resources to set up and update this global data set, ECMWF provides a service in extracting reasonable sub-sets of the data (including sub-areas).

The data, together with software to unpack FM 94 BUFR will be supplied on IBM tapes or cartridges or Exabyte cartridges. A fee (in pounds sterling or US-Dollars) will be charged to cover the data extraction and data interpolation (if required), the provision of tapes/cartridges, the processing of the request, and the dispatch to the user by air mail.

The cost of supplying data from the ECMWF Observational Data Set (Time Series of Vertical Soundings) is based on the following maximum charges:

10 years of data	£3,000
9 " " "	£2,727
8 " " "	£2,448
7 " " "	£2,163
6 " " "	£1,872
5 " " "	£1,575
4 " " "	£1,272
3 " " "	£ 963
2 " " "	£ 648
1 " " "	£ 327
6 months of data	£ 180

plus an additional charge to users requesting data on tapes written at 1600 bpi of 90 pounds sterling for each additional tape required over and above the number of tapes that would have been required had 6250 bpi tapes been used. These charges are "marginal costs" and ECMWF does not accept any liability for errors or omission in the data, or for any loss or damage arising from its use. However, users may report back to ECMWF any problems they encounter reading or using the data.

Requests for global data will be charged as described above.

Since the exact cost of supplying a sub-area or sub-set of the global data set cannot be calculated in advance of data extraction, due to the variable nature of the data set, a quote will be given, on request, based on an estimate of the volume of data that will be extracted to fulfil the request.

However, we advise users to accept the charge corresponding to the number of years or part years of data required as an upper limit to the cost of supplying a sub-area or sub-set of the global data set. On completion of the order, the cost of supplying the data based on the actual volume of data extracted will be calculated and the user will be invoiced for either this amount or the maximum charge corresponding to the period requested, whichever is the lower amount.

The minimum charge for orders from this data set is £180. For this minimum cost the customer may receive up to 6 months of global data.

Large order discounts do not apply to this data set.

Requests for data have to be made using the standard order form, using one form for each request. An order form is included at the back of this brochure. All options are pre-defined and must be selected by marking the boxes on the form.

A user can define:

- \* dates
- \* observation times (explicitly or as a range)
- \* observation type
- \* either WMO station numbers (explicitly or as a range)  
or WMO block numbers  
or sub-area coordinates.

Data will be delivered on unlabelled IBM 3420 9-track magnetic tapes written at 1600 or 6250 bpi or on unlabelled IBM 3480 18-track magnetic cartridges written at 38,000 bpi or on Exabyte cartridge. Each request will be delivered on tapes/cartridges. BUFR decoding software will be supplied as the first file on at least one of the tapes/cartridges.

Whenever possible, and unless the user specifies otherwise on the order form, IBM 3420 tapes will be packed in transit cases to prevent the tapes being damaged during delivery. All customers are requested to return the blue security transit cases as soon as possible to the address given below. Any tapes that appear to be faulty or that cannot be read for any reason should be returned in the transit cases. A charge of £100 will be made for each transit case not returned unless special arrangements are made in advance. Transit cases should be returned to:

Tape Library  
E C M W F  
Shinfield Park  
Reading/Berks.  
RG2 9AX  
UNITED KINGDOM.

The BUFR decoding software will be supplied at no extra charge. The file containing the software, written in FORTRAN 77, will contain 80 byte records within 800 byte, fixed length blocks.

Data will be written to IBM tapes and cartridges with fixed length tape blocks of either 24,000 bytes, or a smaller value requested by the user which must be a multiple of 120 bytes.

Data will be written to 8mm Exabyte tapes as one or more archive files. Each archive file will contain one data file up to 50 Megabytes in size. Archive files will be written to tape sequentially using the UNIX 'tar' command so that individual files can be extracted as required.

The charges as described above will be applied. Tapes/cartridges will be dispatched to users by air mail only - no arrangements will be entered into with third party carriers.

To get a costing for the supply of data, the appropriate order form should be completed and returned to ECMWF. Extraction of data will commence as soon as confirmation of the order is received. An invoice will be sent shortly after the tapes containing the requested data have been dispatched. Requests for data should be addressed to:

The Director  
E C M W F  
Shinfield Park  
Reading/Berks.  
RG2 9AX  
UNITED KINGDOM.

Please note that, according to the ECMWF Council rules governing the provision of data, organisations within the Member States are requested to contact their national meteorological service, whose written approval is required before ECMWF can commence extracting data for the order.

The cost charged for the supply of ECMWF data to organisations within the Member States may vary from the costs given on page 2, depending on the charging policy of the national meteorological services.

The Member States are as follows: Belgium, Denmark, Germany, Spain, France, Greece, Ireland, Italy, Yugoslavia, The Netherlands, Norway, Austria, Portugal, Switzerland, Finland, Sweden, Turkey, United Kingdom.

**ORDER FORM FOR ECMWF OBSERVATIONAL DATA ARCHIVE**  
**(TIME SERIES OF VERTICAL SOUNDINGS**  
**FROM GROUND-BASED STATIONS)**

Name: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Facsimile Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Telex: \_\_\_\_\_

Please indicate which category given below nearest describes the organisation, and the users, which will use the data and give further information where appropriate:

Member State National Meteorological Service

Non-Member State National Meteorological Service.

Government body / institute active or with interests in the meteorological field.

Other non-profit seeking organisation; please state main source of funds below.\*

Commercial

International organisation; please state main agency below.\*


\* Specify main source of funds or main agency as appropriate: \_\_\_\_\_

\_\_\_\_\_

Please indicate which machine(s) you will be using to read and decode the data in order to help us determine which version of the software package to deliver:

CRAY

VAX

IBM RS6000

SUN

SGI

Other; please specify: \_\_\_\_\_


Please complete the remainder of the form according to your requirements:

OUTPUT FORMAT: All data will be supplied in FM 92 GRIB, on IBM tape or cartridge or 8mm EXA-BYTE tape. Data written to IBM tapes will be written with fixed length tape blocks, each GRIB message beginning with a new tape block. Tape block lengths will be 30,000 bytes or less.

Max. block length in bytes for IBM tapes /cartridges:

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MEDIA: IBM 3420 Tape (1600 bpi)\*

(select one option) IBM 3420 Tape (6250 bpi)\*

IBM 3480 Cartridge (18-track)

8 mm EXABYTE Cartridge


\* Unless an 'X' is entered in the adjacent box, IBM 3420 tapes will be dispatched in transit boxes to reduce the risk of damage to the tapes. ECMWF requires that these boxes be returned at the customer's expense.

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OBS TYPES: PILOT (Land)

PILOT (Ship)

TEMP (Land)

TEMP (Ship)

ROCOB (Land)

ROCOB (Ship)


DATES: Start date (YYMM)

End date (YYMM)


TIMES:

Select EITHER by observation times explicitly:

0000 UTC

0600 UTC

1200 UTC

1800 UTC


OR by ranges of observation times:

2101 - 0300 UTC

0301 - 0900 UTC

0901 - 1500 UTC

1501 - 2100 UTC


STATIONS:

Select EITHER by WMO Station Numbers (max. 30)\*

OR by WMO Block Numbers\*

OR by a range of WMO Station Numbers

from


to


OR by sub-area coordinates

northern latitude\*\*

			•				
--	--	--	---	--	--	--	--

western longitude\*\*

			•				
--	--	--	---	--	--	--	--

southern latitude\*\*

			•				
--	--	--	---	--	--	--	--

eastern longitude\*\*

			•				
--	--	--	---	--	--	--	--

\*\*For latitudes, + represents north, - represents south of the equator; for longitudes + represents east, - represents west of the 0 degree meridian.

\* List WMO Station Numbers or Block Numbers below:

Data are supplied by ECMWF subject to the following conditions:

1. The supplied data will not be supplied in whole or in part to any third party without the authorisation of ECMWF.
2. Articles, papers, or written scientific works of any form, based in whole or in part on data supplied by ECMWF, will contain an acknowledgement concerning the supplied data. The data may be cited as follows: "ECMWF 1994. The Description of the ECMWF/WCRP Level III-A Global Atmospheric Data Archive."
3. Although every care has been taken in preparing and testing the data, ECMWF cannot guarantee that the data are correct in all circumstances; neither does ECMWF accept any liability whatsoever for any error or omission in the data, or for any loss or damage arising from its use.
4. Access to the data is restricted to the scientists within the organisation of the data recipient, working on the same computer installation.
5. The recipient of the data will accept responsibility for informing all data users of these conditions.

This is to certify that I/we agree to the above conditions with respect to the supply of data by ECMWF.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Payment is preferred in pounds sterling. The invoice will be in £ sterling, with the equivalent in US\$.

Please note that according to the ECMWF Council rules governing the provision of data, organisations within the Member States are requested to contact their national meteorological service, whose written approval is required before ECMWF can commence extracting data for the order.

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For ECMWF internal use only

Date of order received/confirmed

Number of IBM tapes/cartridges supplied

Number of Exabyte tapes supplied

Amount charged for order

Invoice number

Budget reference

a) Authorised \_\_\_\_\_  
Department Head Date

b) Approved \_\_\_\_\_  
Financial Comptroller Date