

The Interpretation of a Facsimile Weather Map

There is considerable interest in facsimile weather maps and charts and in this article Philip C Mitchell explains how to decode these fascinating signals.

The considerable variety of decoding equipment and decoding computer software that is now available has enabled accurate reception of radio facsimile broadcasts, the majority of which are used for the transmission of world-wide weather information as part of the World Meteorological Organisation (WMO) communication network. Weather maps and charts are one of the end products from the Global Observation System (GOS) within the WMO.

Decoding equipment linked with a dot matrix or the superior definition laser printer is capable of producing high resolution weather maps and weather data, and providing a good, selective short wave receiver capable of receiving s.s.b. is at hand, this operation presents no great difficulty for the average short wave listener. Those DXers who also have an interest in the weather have, therefore, a vast mine of comprehensive

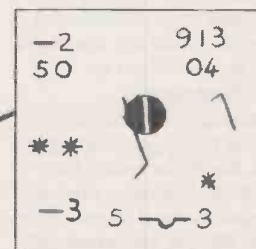
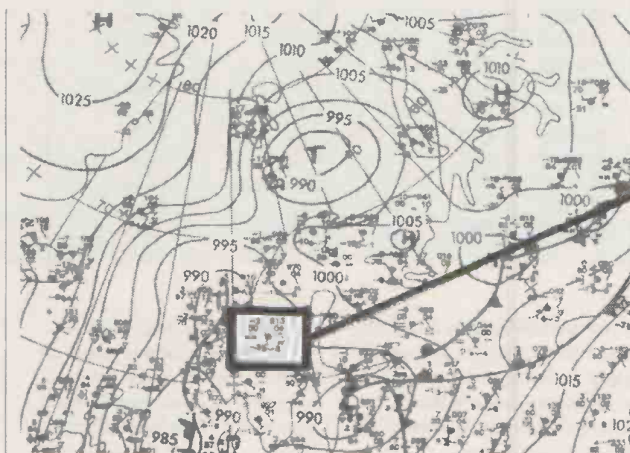


Fig. 1: sample of AS type weather map with enlarged portion of plotted data.

information readily obtainable from the various facsimile radio stations concerned with the broadcast of weather maps and charts.

The identification of these FAX stations, their frequencies and broadcast schedules is essential and this information can be found in several appropriate reference books, amongst them the Klingenfuss

Guide to Facsimile Stations is probably the most helpful. Another is the *Pocket Guide to RTTY and FAX Stations* by Bill Laver, both of which are obtained from the *SWM Book Service*.

Surface Analysis

A good starting point for a detailed weather map is one of

the surface analysis type and coded AS which are broadcast from several stations at regular intervals. These show a current graphical picture of surface weather conditions existing at a particular area of the globe at a specific time and in this respect those maps originating from Offenbach, Germany are very detailed and informative.

Maps described as including 'plotted data' contain specific weather details which, when interpreted, give information relative to present and past weather at the many reporting points of the map.

A good example of this map is the one broadcast from Offenbach on 134.2kHz daily at 1000UTC codes ASEU (surface analysis - Europe) with plotted data, indicating conditions existing at 0600UTC. Reception of this station appears to be at best in the earlier hours of the day, as it is prone to some interference in the afternoon and evening. Being in the i.f. band below 1MHz the signal is remarkably steady and does not therefore suffer from the vagaries of propagation problems that the higher frequencies are prone to. Due to the narrow shift of

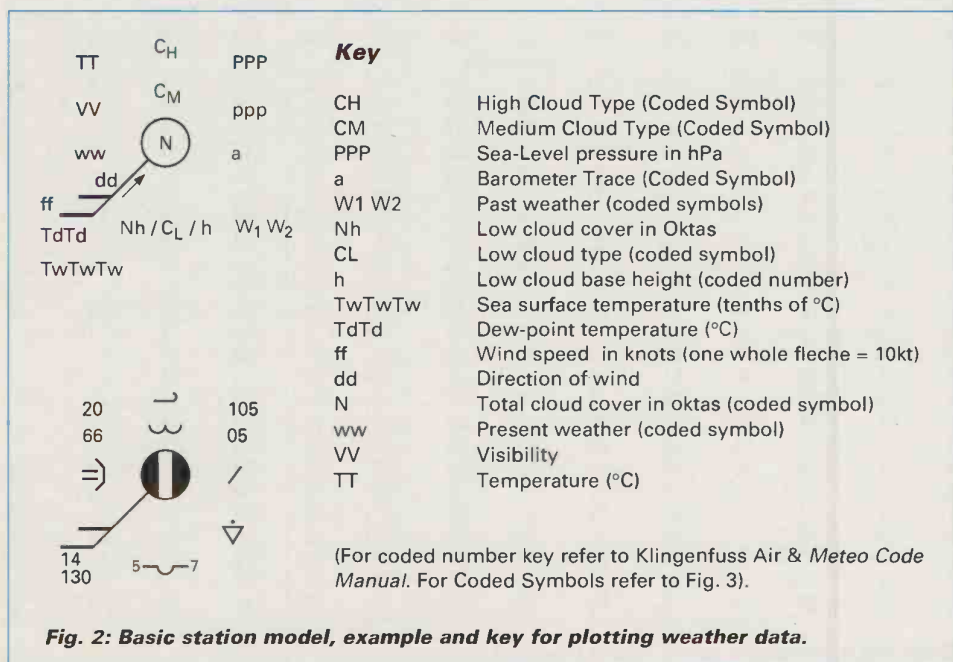


Fig. 2: Basic station model, example and key for plotting weather data.

this station, fairly accurate tuning is required to enable a good definition map to be printed.

A sample of this type of map is given in **Fig. 1**, together with an enlarged portion of individual plotted data and it can be seen that these plots cover both land and sea areas, the latter being obtained from ships at sea and manned and unmanned maritime weather stations. Some method of interpretation of this data should be adopted and it is better to work around the data in say a clockwise direction commencing with temperature (TT). Ensure that each symbol is identified accurately from **Fig. 3** and subsequently cross referenced and matched with the key as given in *Klingenfuss Air & Meteo Code Manual* or the *Weather Observers Handbook* published by HMSO. Data from the plots can also be confirmed by reference to the isobars and fronts appearing on the map,

e.g. barometric pressure, speed and direction of wind. Thus an accurate assessment will emerge of the past and present weather at that particular point on the map.

Other AS (surface analysis) maps that include plotted data are broadcast from Moscow Meteo on 4.2025MHz and 12.165MHz at 1420UTC covering Northern Siberia and 1500UTC for Western Siberia. Some most interesting weather data originates from these intensely cold, permafrost regions.

Assistance in compiling this article is acknowledged with thanks to Education Services, The Met Office, Bracknell, Berks.

Equipment Used

ICS FAX-1 Demodulator
Lowe HF 225 Receiver
30m random wire antenna
Maplin a.t.u.
Amstrad DMP300 dot matrix printer.

Abbreviations

a.t.u.	antenna tuning unit
AS	surface analysis
ASEU	surface analysis Europe
DXer	listener who looks for 'long distance' stations
FAX	facsimile
GOS	Global Observation System
HMSO	Her Majesty's Stationery Office
kHz	kilohertz
l.f.	low frequency
m	metres
MHz	megahertz
RTTY	Radio TeleTYpe
s.s.b.	single side-band
UTC	Universal Co-ordinated Time (=GMT)
WMO	World Meteorological Organisation

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Code figure	N	W ₁ W ₂	C _L	C _M	C _H	C	a	I ₃	E'	F'
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Fig. 3: Internationally agreed symbols for plotting past (W₁W₂) and present (WW) weather data read in conjunction with Klingenfuss Air & Meteo Code Manual.

First Aid

I am looking for an interconnection diagram from the PTR175 to the control box. Also I want the interconnecting sockets and control box itself.

Mr Paul Allberry. Tel: (0225) 703024.

I have a Redifon GR674 Marine Band v.h.f. transceiver, which I use in receive mode only. Could anyone suggest a circuit to build a converter to use with the above to receive an s.s.b. signal of about 5.6MHz. Alternatively recommend a commercial unit.

Also, I have a PK232MBX for decode listening, is there anyone in the N. Wales area who would like to swap information?

Ralph Foyx, The Moorings, Waterloo Port, Caernarfon, Gwynedd LL55 1LP.

Having purchased the latest PRO-37 hand-held scanner from Tandy. This is an excellent buy at £230, especially being 9V making for longer use between charges, it will compete with most others on the market.

Unfortunately, friends and I are having problems with bleep over unwanted pips and the loss of very good airband channels. The frequencies from 154-156 are interfering with 132-133 channel and 154 to 155 channels are coming across distorted. This does not happen on our 2006 Realistic home base. Are other readers experiencing this?

Letters to the Editorial Office for this one and we'll forward them.