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N° W/OIS

Geneva, 15 July 1983

Annexes: 4

Subject: Monthly letter on the operation of the World Weather Watch (WWW) and Marine Meteorological Services (MMS) (July 1983)

Action required: To be noted and brought to the attention of appropriate operational units

Dear Sir/Madam,

As you are aware, all the information on changes to the operation of the World Weather Watch (WWW) and Marine Meteorological Services (MMS) is being assembled and distributed by the Secretariat on a monthly basis to facilitate updating and follow-up action.

In this connection, please find attached the annexes providing the latest operational information on WWW and MMS. Those items and sub-items for which information is provided are listed below:

Annex 1 - Global Observing System

- A. GOS regulatory or guidance material
  - 2. International identifier system for environmental data buoy stations
- C. Information on operational status of elements of the surface-based sub-system
  - 1. Publication No. 9, Volume A - Stations
    - 1.1 New stations
    - 1.2 Deleted stations
    - 1.3 Changes to existing stations
  - 3. Automatic marine stations
  - 4. ARGOS monthly status report

To: Permanent Representatives (or Directors of Meteorological or Hydro-meteorological Services) of Members of WMO (PR-3582)  
Directors of Meteorological Services of non-Member countries (MC-2264)  
Presidents and Vice-Presidents of Regional Associations (P.RA-1038)  
Presidents and Vice-Presidents of Technical Commissions (P.TC-1108)  
Chairmen of CBS Working Groups  
Secretary-General of ICAO  
Secretary of IOC  
Director-General of ASECNA  
Director of ECMWF

Annex II - Global Data-processing System

B. Information on operational status of GDPS including changes to WMO Publication No. 9 - Volume B

2. RMC output products

2.1 New products

Annex III - Global Telecommunication System

C. Information on the operation of the GTS

1. Catalogue of Meteorological Bulletins (Publication No. 9, Volume C, Chapter I)

1.3 Changes to bulletins

2. Transmission schedules (Publication No. 9, Volume C, Chapter II)

2.3 Changes in schedules

Annex IV - Codes

B. Manual on Codes

1. Global practices

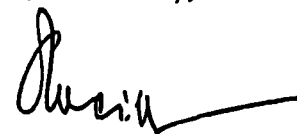
1.1 New codes

1.3 Changes to codes

2. Regional practices

Your co-operation in ensuring that the above information reaches the appropriate operational units of your service is greatly appreciated. If you wish to receive additional copies of the monthly circular letter, please inform me accordingly.

Yours faithfully,



for the Secretary-General  
(G.K. Weiss)  
Director  
World Weather Watch Department

Annex I - Global Observing System

Date: 15 July 1983

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A. GOS regulatory or guidance material

2. International identifier system for environmental data buoy stations

List of allocated identifiers

2.1 With the increasing number of drifting buoy data distributed on the Global Telecommunication System, it has become very important for recipients of data to identify these buoys. With a view to facilitating their interpretation of data and eventual enquiry with Members concerned the list of international buoy identifier numbers so far allocated (as of 1 July 1983) is as follows:-

AUSTRALIA		NORWAY	
55011	- 55060	63001	- 63035
56001	- 56050	64001	- 64010
		71001	- 71005
CANADA		PORTUGAL	
14001	- 14010	62031	- 62050
16001	- 16010		
32001	- 32010	UNITED KINGDOM	
44131	- 44160	62026	- 62030
45131	- 45160	64041	- 64045
46131	- 46160		
47031	- 47060	USA	
48001	- 48010	13001	- 13020
54001	- 54010	15001	- 15010
55001	- 55010	31001	- 31060
65031	- 65060	41001	- 41100
FRANCE		42001	- 42100
13031		43001	- 43100
43101	- 43105	44001	- 44100
61001	- 61011	45001	- 45100
62001	- 62022	46001	- 46100
62081		47001	- 47010
62091	- 62093	48031	- 48060
64021	- 64023	51001	- 51020
JAPAN		63040	- 63050
21001	- 21010	64031	- 64040
22001	- 22010	65001	- 65010
		73131	- 73170

Particulars of an identifier

2.2 The international identifier system for environmental data buoy stations (or commonly called: international buoy identifiers) was first adopted by Recommendation 8 (CBS-Ext. (76)). The primary objective of the system is to provide buoy stations with an identifying number in a way similar to the "station index number" of land meteorological stations for both operational and storage and retrieval purposes.

2.3 The symbolic form of the identifier is  $A_1 b_w n_b n_b n_b$  and is used in FM 13-VII SHIP and FM 14-VIII DRIBU. Specifications of symbolic letters are as follows:-

- $A_1$  WMO Regional Association area in which buoy has been deployed
- $b_w$  Sub-area belonging to the area indicated by  $A_1$
- $n_b n_b n_b$  Type and serial number of buoy

2.4 Serial numbers to buoys within each maritime sub-area identified by  $A_1$  and  $b_w$  shall be allotted from the series 000 up to 499 but in the case of drifting buoys and other mobile platforms, 500 shall be added to the original  $n_b n_b n_b$  number.

Examples

- 14015 = No. 15 buoy, deployed in sub-area 4 in Region I, stationary
- 46673 = No. 173 buoy, deployed in sub-area 6 in Region IV, drifting.

Procedures for the use and allocation of identifiers

- 2.5 The identifier may be allocated to fixed as well as drifting buoy stations, mobile ship stations and, in some cases, land-based remote stations. In the case of drifting buoys (and similarly other mobile platforms), a buoy will retain the original identifier applicable to the WMO Region and sub-area in which it was set adrift.
- 2.6 The allocation of identifier numbers is carried out by the WMO Secretariat, as necessary, in consultation with the IOC Secretariat:
  - (a) On request by interested Members, the WMO Secretariat allocates a block or blocks of identifier numbers. When submitting requests, the geographical positions and nature of platforms should be specified (the position of initial deployment in the case of drifting buoys);
  - (b) Members register with the WMO Secretariat platforms deployed together with identifier numbers actually assigned to them. It is also recommended that parameters measured and transmitted be notified. Stations thus registered will be included in the monthly letter on the operation of the WWW and Marine Meteorological Services.

C. Information on operational status of elements of the surface-based sub-system

1. Publication No. 9, Volume A - Stations

1.1 New stations

60507	MASCARA/GHRISS	3513N	0009E	512	511	X X X X X X X	H00-24	. . . . /
62008	YEFREN	3204N	1232E	691	691	. . X X X X X	.	. . . .
	(EFFECTIVE 1 SEPTEMBER 1983) /							
04242	SIORALIK	6501N	5233W	-	-	X X X X X X X		. . . . (AUT) /

1.2 Deleted stations

02084 LANNAVAARA /

1.3 Changes to existing stations

87860	COMODORO RIVADAVIA AERO	RW	. RW	.	/
08140	VALLADOLID/VILLANUBLA	X X X X X X X X	X X X	X X X	/
08141	VALLADOLID	.	.	.	/

3. Automatic marine stationsNORWAY

List of drifting and moored buoys and other stations, deployed or planned to be deployed by Norway, whose reports are to be transmitted on the GTS in the DRIBU code.

<u>WMO buoy Identifier</u>	<u>Argos Identifier</u>	<u>Position at the beginning of July</u>	<u>Type of ODAS/buoy</u>	<u>Parameters transmitted</u>
63001	09400	80°41'N 20°52'E	platform*	PPPP,dd,ff,TTT,app
63005	09401	78°51'N 29°18'E	platform*	PPPP,dd,ff,TTT
63512	03067	66°17'N 09°31'E	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,dd,ff,TTT
63513	03071	65°02'N 07°32'E	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,dd,ff,TTT
63515	03060	60°30'N 02°47'E	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,TTT
63519	03723	72°44'N 01°58'E	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>
63522	03725	72°07'N 37°10'E	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,TTT
63523	03724	72°39'N 27°01'E	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,TTT
63524	03696	76°13'N 09°38'E	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,app
63525	03727	69°49'N 08°49'E	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,TTT
63526	03726	72°58'N 34°08'E	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,TTT
63527	03696	76°49'N 00°31'W	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,app
64501	03698	69°01'N 05°17'E	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,app
64502	03697	67°49'N 08°30'W	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,app
64503	05060	81°48'N 04°50'E	platform**	PPPP,TTT,app
64504	05061	81°17'N 07°13'E	platform**	PPPP,TTT,app
64505	05062	81°19'N 07°19'E	platform**	PPPP,TTT,app
64506	03710	62°08'N 38°21'W	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>
64509	03714	69°01'N 05°49'W	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>
64514	04050	61°52'N 14°03'W	moored	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,dd,ff,TTT,app
64516	03699	67°16'N 03°55'W	drifting	PPPP,T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> ,app

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\*) landbased

\*\*\*) icedrift

## Deployment planned July/August:

<u>WMO buoy Identifier</u>	<u>Argos Identifier</u>	<u>Position</u>	<u>Type of buoy</u>	<u>Parameters to be transmitted</u>
64507	03720	approx. 64°N 01°W	drifting	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>
64508	03690	approx. 64°30'N 06°W	drifting	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> , TTT, appp
64510	03691	approx. 71°N 06°W	drifting	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> , TTT, appp
63511	03693	approx. 72°N 02°E	drifting	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> , TTT, appp
63-		approx. 74°30'N 29°E	moored	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> , TTT, appp
63-		approx. 73°N 16°E	moored	PPPP, T <sub>w</sub> T <sub>w</sub> T <sub>w</sub> , TTT, appp

3 buoys north of Spitzbergen

#### 4. ARGOS monthly status report

As of 24 June 1983, the ARGOS service was handling reports from 258 drifting buoys, 29 moored buoys, 0 balloons, 2 ships, 77 fixed stations and 38 miscellaneous platforms. On the same date, during a period of 24 hours, 619 DRIBU reports from 86 drifting buoys were transmitted to RTH Paris for insertion into the GTS.

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Date: 15 July 1983

B. Information on operational status of GDPS including changes to WMO Publication No. 9 - Volume B

2. RMC output products

2.1 New products

The RMC Bracknell has introduced operationally new forecast models (15 levels) for use on its Cyber 205 computer. Thus new forecast products can be made available every day:

- (a) from a limited area fine-mesh model (grid length approximately 75 km) at about 0330 and 1530 GMT;
- (b) from a global coarse-mesh model (grid length approximately 150 km) at about 0500 and 1700 GMT

Since 1 February 1983, the new products are available for distribution on the GTS in GRID code form. The RMC Bracknell also makes available, for distribution by facsimile, subjective forecast charts based on numerical guidance.

The table below shows the series of new products that the RMC Bracknell has been distributing since 3 May 1983. Should any further products be required, RMCs and NMCs in Region VI are invited to make known their requirements to the following address with a copy to the WMO Secretariat (WMO circular letter EUR-462 of 14 January 1983 refers):

Mr. C. R. Flood  
AD Met O (CF)  
Meteorological Office  
London Road  
Bracknell  
Berkshire RG12 2SZ  
England

List of Forecast Products available from RMC Bracknell

Legend: \* represents a field currently broadcast as at 3 May 1983  
x represents a field which could be made available if required

1. FINE-MESH

Field	Level	Validation Times						
		0	6	12	18	24	30	36
Pressure	Surface	*	*	•	*	*	•	*
Precipitation	Surface		•	•	*	*	•	•
Height	850 hPa	*	*	•	*	*	*	*
	500	*	*	*	*	*	*	•
Wind	850 hPa	*	*	•	*	*	•	•
	500	*	*	*	*	*	•	•
Temperature	850 hPa	*	*	*	*	*	*	•
	500	*	*	•	*	*	•	•

Coded bulletins will cover two areas spanning 32.5°N to 75°N, from 35°W to 0° (area X) and from 0° to 35°E (area Y), on a latitude-longitude grid with a resolution of 2.5°.

## 2. COARSE-MESH

		Validation Times									
Field	Level	0	12	18	24	30	36	48	72	96	120
Pressure	Surface	*	*	*	*	*	*	*	*	*	*
Height	850 hPa	*	*	x	*	x	*				
	700	*	*	x	*	x	*				
	500	*	*	x	*	x	*	*	*	*	*
	400			x	x						
	300	*	*	*	*	*	*	*			
	250	*		*	*						
	100	*	*	*	*	*	*				
Wind/Temperature (combined)	850 hPa	x	*	*	*	*	x				
	700	x	*	x	*	*	x				
	500	x	*	x	*	*	x				
	400			x	x						
	300	*	*	*	*	*	*	*			
	250			*	*						
	100	*	*	*	*	*	*				

Coded bulletins cover two areas spanning 25°N to 75°N, from 45°W to 0° (area N) and 0° to 45°E (area O), on a latitude-longitude grid with a resolution of 2.5°.

## 3. SUBJECTIVE FORECAST CHARTS

## (a) 24-hour forecasts

	Data Time	Validation Time
	GMT	24
Surface pressure	0000	*
	0600	*
	1200	*
	1800	*

## (b) Longer period forecasts

	Data Time	Validation Times			
	GMT	48	72	96	120
Surface pressure and 1000-500 hPa thickness	0000	*	*		
	1200	x	x	x	x

Charts cover Europe, the North Atlantic, Greenland and eastern Canada.



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C. Information on the operation of the GTS

i. Catalogue of Meteorological Bulletins (Publication No. 9, Volume C, Chapter 1)

1.3 Changes to bulletins

As from 1 July 1983:

(i) Replace the two bulletins:

SMZW1 FRSB 11902 06,12  
SMZW1 FRSB 11902 18

by the one bulletin:

SMZW1 FRSB 11902 06,12,18 67765 67775 67853 67861 67867 67881  
67965 67969 67975 67983 67991

(ii) Replace the two bulletins:

SIZW20 FRSB 21912 03,15  
SIZW20 FRSB 21912 09

by the one bulletin:

SIZW20 FRSB 21912 03,09,15 67765 67775 67853 67861 67881 67975  
67983

2. Transmission schedules (Publication No. 9, Volume C, Chapter 11)

2.3 Changes in schedules

III-ii MARACAY regional broadcast

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B. Manual on codes

1. Global practices

1.1 New codes

The following code form FM 50-VIII WINTEM-Forecast upper-wind and temperature data for aviation was adopted by Resolution 5 (EC-XXXV) and will come into force on 1 November 1983:

CODE FORM

Section 0

WINTEM Y<sub>F</sub>Y<sub>F</sub>G<sub>F</sub>G<sub>F</sub>g<sub>F</sub>g<sub>F</sub>

Section 1

L <sup>1</sup> <sub>a</sub> L <sup>1</sup> <sub>a</sub> L <sup>1</sup> <sub>a</sub> L <sup>1</sup> <sub>a</sub> A	L <sup>1</sup> <sub>o</sub> L <sup>1</sup> <sub>o</sub> L <sup>1</sup> <sub>o</sub> L <sup>1</sup> <sub>o</sub> B	L <sup>2</sup> <sub>o</sub> L <sup>2</sup> <sub>o</sub> L <sup>2</sup> <sub>o</sub> L <sup>2</sup> <sub>o</sub> B	.....	L <sup>i</sup> <sub>o</sub> L <sup>i</sup> <sub>o</sub> L <sup>i</sup> <sub>o</sub> L <sup>i</sup> <sub>o</sub> B
(TROP	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub>	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub>	.....	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub> )
(MAXW	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub>	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub>	.....	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub> )
<u>F</u> <sub>1</sub> n <sub>1</sub> n <sub>1</sub>	ddfffSTT	ddfffSTT	.....	ddfffSTT
<u>F</u> <sub>2</sub> n <sub>2</sub> n <sub>2</sub>	ddfffSTT	ddfffSTT	.....	ddfffSTT
⋮	⋮	⋮		⋮
<u>F</u> <sub>k</sub> n <sub>k</sub> n <sub>k</sub>	ddfffSTT	ddfffSTT	.....	ddfffSTT
L <sup>2</sup> <sub>a</sub> L <sup>2</sup> <sub>a</sub> L <sup>2</sup> <sub>a</sub> A				
(TROP	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub>	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub>	.....	n <sub>t</sub> n <sub>t</sub> n <sub>t</sub> )
(MAXW	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub>	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub>	.....	n <sub>m</sub> n <sub>m</sub> n <sub>m</sub> d <sub>m</sub> d <sub>m</sub> f <sub>m</sub> f <sub>m</sub> f <sub>m</sub> )
<u>F</u> <sub>1</sub> n <sub>1</sub> n <sub>1</sub>	ddfffSTT	ddfffSTT	.....	ddfffSTT
<u>F</u> <sub>2</sub> n <sub>2</sub> n <sub>2</sub>	ddfffSTT	ddfffSTT	.....	ddfffSTT
⋮	⋮	⋮		⋮
⋮	⋮	⋮		⋮

$\underline{F}n_k n_k n_k$	ddfffSTT	ddfffSTT	. . . . .	ddfffSTT
:	:	:		:
:	:	:		:
:	:	:		:
$\underline{L} \begin{matrix} J \\ a \end{matrix} \underline{L} \begin{matrix} J \\ a \end{matrix} \underline{L} \begin{matrix} J \\ a \end{matrix} J A$				
( <u>TROP</u>	$n_t n_t n_t$	$n_t n_t n_t$	. . . . .	$n_t n_t n_t$ )
( <u>MAXW</u>	$n_m n_m n_m d d m m m m m m$	$n_m n_m n_m d d m m m m m m$	. . . . .	$n_m n_m n_m d d m m m m m m$ )
$\underline{F}n_1 n_1 n_1$	ddfffSTT	ddfffSTT	. . . . .	ddfffSTT
$\underline{F}n_2 n_2 n_2$	ddfffSTT	ddfffSTT	. . . . .	ddfffSTT
:	:	:		:
$\underline{F}n_k n_k n_k$	ddfffSTT	ddfffSTT	. . . . .	ddfffSTT

NOTES

- (a) WINTEM is the name of the code used to provide forecast upper-wind and temperature data for aviation.
- (b) The forecast data are valid at the points of a rectangular geographical grid.
- (c) A WINTEM message is identified by the word WINTEM.
- (d) The code form is divided in two sections as follows:

Section number	Contents
0	Identification and time of validity of forecast data
1	Grid point co-ordinates and data groups for tropopause height, level of maximum wind and specified flight levels..

REGULATIONS

50.1

General

50.1.1

The code name WINTEM shall always be included in the message.

50.1.2

When in printed form, the format of the WINTEM message shall present the characteristics of a direct reading data table.

50.2

Section 0

The groups of this section shall constitute the first line of the message.

50.3

## Section 1

50.3.1

The geographical grid used shall be rectangular, i.e. that its boundaries shall be delineated by means of two meridians and two parallel circles.

50.3.2

In the message, the latitude of grid points shall always be included at the beginning of a line and they shall follow each other in a regular sequence, starting with the northernmost grid point latitude.

50.3.3

The longitudes of the grid points shall be included only in the first line of Section 1 and they shall be ordered from left to right in a continuous sequence corresponding to an eastward direction.

50.3.4

The  $n^{\text{th}}$  figure group of a given line of the message, which contains forecast data, shall always refer to the grid point determined by:

- (a) the latitude included in the nearest preceding line of the data group;
- (b) the  $n^{\text{th}}$  longitude included on the first line of Section 1.

50.3.5

The maximum number of grid point longitudes included in the first line of Section 1 (i.e. index  $i$  of  $L_0^i L_1^i L_2^i L_3^i L_4^i L_5^i L_6^i L_7^i$ ) shall not exceed 7.

NOTE: There is no limitation to the number of grid point latitudes included in the message, except for telecommunication reasons.

50.3.6

Whenever the need arises to include more than 7 grid point longitudes in the first line of Section 1, the message shall be split up in parts, each one satisfying Regulation 50.3.5 above.

50.3.7

The data associated with a given grid point shall be included in the following order:

- (1) Tropopause height.
- (2) Maximum wind level.
- (3) Specified flight levels arranged in decreasing order.

50.3.8

Tropopause height and/or maximum wind level data shall be omitted whenever these data are not required for operational purposes.

50.3.9

The number of specified flight levels to be included shall be determined by the issuing centre on the basis of operational requirements.

Specifications of symbolic letters

$Y_F Y_F$  Day of the month (GMT) on which the WINTEM message is valid.

$G_F G_F g_F g_F$  Time in whole hours (GMT) on which the WINTEM message is valid. As a result  $g_F g_F$  shall always be equal to 00.

$$\left. \begin{array}{l} L_a^1 L_a^1 L_a^1 \\ \cdot \\ \cdot \\ \cdot \\ L_a^j L_a^j L_a^j \end{array} \right\}$$

Latitude co-ordinates of grid points, where  $L_a^j$  is tenths of degree of latitude ( $L_a^j$  = zero (0) or five (5)).

A Direction of latitude (N = North  
(S = South

$$\left. \begin{array}{l} L_o^1 L_o^1 L_o^1 L_o^1 \\ \cdot \\ \cdot \\ \cdot \\ L_o^i L_o^i L_o^i L_o^i \end{array} \right\}$$

Longitude co-ordinates of grid points. NOTE: i may not exceed 7. See Regulation 50.3.5, where  $L_o^i$  is tenths of degree of longitude ( $L_o^i$  = zero (0) or five (5)).

B Direction of longitude (E = East  
(W = West

TROP Indicator word: the forecast flight levels that follow on the same line refer to the tropopause height.

MAXW Indicator word: the flight levels and the wind data that follow on the same line refer to the forecast maximum wind level.

F Indicator letter for flight levels numbers nnn , nnn , .... nnn .

$n_t n_t n_t$  Tropopause flight level number. The last figure shall always be zero.

$n_m n_m n_m$  Maximum wind flight level number. The last figure shall always be zero.

$$\left. \begin{array}{l} n_1 n_1 n_1 \\ \cdot \\ \cdot \\ \cdot \\ n_k n_k n_k \end{array} \right\}$$

Flight level numbers for specified levels. The last figure shall always be zero.

dd Wind direction and speed forecast data for the relevant grid point.  
fff

S Sign of temperature (P = positive or zero  
(M = negative

TT Forecast temperature at the relevant grid point.

1.3 Changes to codes

FM 20-V RADOB

The following amendments to Section I, Part B, of code form FM 20-V RADOB was adopted by Recommendation 12 (CBS-VII) and approved by Resolution 4 (EC-XXXV) and will come into force on 1 November 1983 as code form FM 20-VIII.

1. Amend Section I, Part B, of code form RADOB (Manual on Codes, Volume I, p. I-A-41) as follows:

"Part B

SECTION I	M <sub>i</sub> M <sub>i</sub> M <sub>j</sub> M <sub>j</sub>	YYGGg	[	IIIII or 99L <sub>a</sub> L <sub>a</sub> L <sub>a</sub>	]	Q <sub>o</sub> L <sub>o</sub> L <sub>o</sub> L <sub>o</sub> L <sub>o</sub>
	N <sub>e</sub> N <sub>e</sub> W <sub>e</sub> H <sub>e</sub> I <sub>e</sub>	.....	.....	.....	.....	N <sub>e</sub> N <sub>e</sub> W <sub>e</sub> H <sub>e</sub> I <sub>e</sub>
	/555/	N <sub>e</sub> N <sub>e</sub> a <sub>e</sub> D <sub>e</sub> f <sub>e</sub> e	.....	.....	.....	N <sub>e</sub> N <sub>e</sub> a <sub>e</sub> D <sub>e</sub> f <sub>e</sub> e"

2. Amend Regulation 20.3 to read as follows:

"20.3

Part B

20.3.1

In part B, one series of groups N<sub>e</sub>N<sub>e</sub>W<sub>e</sub>H<sub>e</sub>I<sub>e</sub> shall be used to report the location of phenomena and/or clouds and their characteristics. Group N<sub>e</sub>N<sub>e</sub>W<sub>e</sub>H<sub>e</sub>I<sub>e</sub> shall be repeated as necessary for a full description of the spatial distribution of the echo on the radar scope in 60x60 km squares.

20.3.2

Group N<sub>e</sub>N<sub>e</sub>W<sub>e</sub>H<sub>e</sub>I<sub>e</sub>

20.3.2.1

Characteristics concerning the location, type of phenomena and/or clouds and the elevation and intensity of their echoes shall be reported by group N<sub>e</sub>N<sub>e</sub>W<sub>e</sub>H<sub>e</sub>I<sub>e</sub>.

20.3.2.2

Group N<sub>e</sub>N<sub>e</sub>W<sub>e</sub>H<sub>e</sub>I<sub>e</sub> shall be included in the report in the rising order of the squares' sequential numbers N<sub>e</sub>N<sub>e</sub>.

20.3.2.3

If several weather phenomena were observed in a single 60x60 km square, the most dangerous phenomenon shall be reported in W<sub>R</sub>, the highest echo elevation in H<sub>e</sub> and the greatest echo intensity in I<sub>e</sub>.

20.3.2.4

Cloud type data (W<sub>R</sub>) shall be reported only if no weather phenomena were observed in the 60x60 km square.

20.3.2.5

Data on stratiform cloud without precipitation shall be reported if it occupies no less than 1/4 of the 60x60 km square's area.

20.3.2.6

Data on convective cloud shall be reported irrespective of the centres' dimensions within the limits of the 60x60 km square.

20.3.2.7

If, in the 60x60 km square, convective and stratiform clouds were observed, only data on the convective cloud shall be reported.

20.3.2.8

Cloud echo intensity ( $I_e$ ) shall be coded as /.

20.3.3

Group  $N_e N_e a_e D_e f_e$   
-----

20.3.3.1

Characteristics concerning change and movement of the echo pattern shall be reported by group  $N_e N_e a_e D_e f_e$ , followed by the identifier group /555/.

20.3.3.2.

Group  $N_e N_e a_e D_e f_e$  shall be used to report the evolutionary characteristics of no more than three echo patterns. The identifier group /555/ shall not be repeated.

20.3.3.3

$N_e N_e$  shall be used to report the number of the 60x60 km square in which the radar operator placed the origin of the speed vector characterizing the direction of movement  $D_e$  of the echo pattern. If only the tendency of the echo pattern  $a_e$  has been estimated, the number of any square covered by the pattern shall be reported in  $N_e N_e$ .

20.3.3.4

The tendency of the echo pattern  $a_e$  shall be estimated over a period of approximately one hour, but not longer than 90 minutes and not shorter than 30 minutes. The echo area shall be considered as increasing or diminishing if it changed by more than 25 per cent over a period of time not exceeding 90 minutes.

20.3.3.5

If no information is available on the change and movement of the echo, groups /555/ and  $N_e N_e a_e D_e f_e$  shall not be included in the report.

20.3.3.6

The movement of individual echoes in the echo pattern shall not be reported.

20.3.4

Reporting of inoperative equipment, anomalous propagation and absence of an echo.

In the case of inoperative equipment, anomalous propagation or absence of an echo on the radar scope, groups  $N_e N_e W_e H_e I_e$ , /555/, and  $N_e N_e a_e D_e f_e$  shall be replaced by one of the following groups, as appropriate:

- 0/0/0 - Radar inoperative, or
- 0//// - Anomalous propagation, or
- 00000 - No echo visible on radar scope."

3. Amend the List of symbolic figures and figure groups (Manual on Codes, Volume I, p. 1-3-4) as follows:

3.1 Add:

"/555/ Data on characteristic change and movement of the echo pattern(s) follow."

3.2 Delete:

"/999/ Ends a significant feature".

4. Amend Section C of the Manual on Codes, Volume I (Specifications of symbolic letters (or groups of letters)) as follows:

4.1 Add:

"D<sub>e</sub> Direction (true) towards which an echo pattern is moving (Code table 0700)  
(FM 20-VIII)

f<sub>e</sub> Speed of movement of echo pattern (Code table 1236)  
(FM 20-VIII)

N<sub>e</sub>N<sub>e</sub> Sequential number of the 60x60 km square in the radar coordinate grid  
(Code table 2776)  
(FM 20-VIII)

W<sub>R</sub> Type of weather phenomenon or cloud in the 60x60 km square detected  
by radar (Code table 4530)  
(FM 20-VIII)".

4.2 Delete:

"bbb, e<sub>+</sub>, rr and W<sub>e</sub>" and their specifications.

5. Amend section D of the Manual on Codes, Volume I (Code tables) as follows:

5.1 Add the following code tables:

1236

f<sub>e</sub> - Speed of movement of echo pattern

Code  
figure

0	0 to 9 km/h
1	10 to 19 km/h
2	20 to 29 km/h
3	30 to 39 km/h
4	40 to 49 km/h
5	50 to 59 km/h
6	60 to 69 km/h
7	70 to 79 km/h
8	80 to 89 km/h
9	90 km/h or more
/	Undetermined



2776

$N_e N_e$  - Sequential number of the 60x60 km square in the radar coordinate grid

					N							
	00	01	02	03	04	↑	05	06	07	08	09	
	10	11	12	13	14		15	16	17	18	19	
	20	21	22	23	24		25	26	27	28	29	
	30	31	32	33	34		35	36	37	38	39	
W	40	41	42	43	44	+	45	46	47	48	49	E
	50	51	52	53	54		55	56	57	58	59	
	60	61	62	63	64		65	66	67	68	69	
	70	71	72	73	74		75	76	77	78	79	
	80	81	82	83	84		85	86	87	88	89	
	90	91	92	93	94	↓	95	96	97	98	99	
					S							

NOTE: The cross indicates the radar's location

4530

$W_R$  - Type of weather phenomenon or cloud in the 60x60 km square detected by radar

Code  
figure

1	Stratiform cloud without precipitation
2	Convective cloud without phenomena
3	Continuous precipitation
4	Showers
5	Showers and continuous precipitation
6	Thunderstorm or thunderstorm and showers
7	Thunderstorm and continuous precipitation
8	Hail
9	Hail and other phenomena
/	Undetermined

5.2 Delete Code tables 1052 and 4535.

2. Regional practicesRegion II:FM 35-V TEMP and FM 36-V TEMP SHIP

- (1) The following editorial amendment has been approved by the president of Regional Association II:

2/35.2 Part B, Section 9

Section 9 shall be used in the Region in the following form:

52525 92h<sub>g</sub>h<sub>g</sub>h<sub>g</sub> T<sub>g</sub>T<sub>g</sub>T<sub>ag</sub>D<sub>g</sub>D<sub>g</sub> d<sub>g</sub>d<sub>g</sub>f<sub>g</sub>f<sub>g</sub>f<sub>g</sub>

- (2) USSR

As from 1 July 1983 upper-air stations in USSR transmit data on 925 hPa surface with identification digits 52525. However due to technical reasons some stations, on an interim basis, will continue to transmit these data with the previous identification digits.

Region VI:Regional code for general aviation forecasts in Europe - GAFOR

NOTE: The group LLL refers to ICAO standard abbreviations in ICAO Doc. 8400/3 a selection of which is used to describe spatial variations in ARFOR and ROFOR Codes (see Note under code table 1864)

Implementation with effect from 1 July 1983, as contained in WMO circular letter no. W/SY/CO of 7 April 1983 (EUR-466).

Specifications of zone number(s) of sub-areas/route segments for which GAFOR forecasts will be provided, as notified by Members

AUSTRIASpecification of route segments

<u>a a</u> <u>g g</u>	<u>specific routes</u>		<u>reference height</u>	
10	Hohenems	-	Landeck	6000 ft msl
11	Landeck	-	Innsbruck	2700 ft msl
12	Innsbruck	-	Kufstein	2000 ft msl
13	Kufstein	-	Salzburg	2000 ft msl
14	Salzburg	-	Linz	2000 ft msl
15	Linz	-	St. Pölten	1400 ft msl
16	St. Pölten	-	Wien	1000 ft msl
17	Linz	-	Passau	1500 ft msl
18	Linz	-	Freistadt	3000 ft msl
20	Jenbach	-	Zell am See	5000 ft msl
21	Zell am See	-	Radstadt	3200 ft msl
22	Radstadt	-	Liezen	2900 ft msl
23	Liezen	-	Bruck	2800 ft msl
24	Bruck	-	Wr. Neustadt	3300 ft msl
25	Wr. Neustadt	-	Wien	900 ft msl
30	Mauterndorf	-	Bruck	3600 ft msl
40	Mittersill	-	Lienz	8200 ft msl
41	Lienz	-	Spittal	2500 ft msl
42	Spittal	-	Klagenfurt	2200 ft msl
43	Klagenfurt	-	Wolfsberg	2500 ft msl
44	Wolfsberg	-	Graz	3900 ft msl

45	Graz	-	Pinkafeld	2000 ft msl
46	Pinkafeld	-	Wr. Neustadt	3300 ft msl
49	Landeck	-	St. Moritz	5600 ft msl
50	Innsbruck	-	Bozen	4600 ft msl
55	Kufstein	-	Zell am See	3300 ft msl
56	Salzburg	-	Zell am See	2500 ft msl
60	Salzburg	-	Radstadt	3200 ft msl
61	Radstadt	-	Spittal	5800 ft msl
62	Villach	-	Udine	3600 ft msl
65	Salzburg	-	Aigen	3300 ft msl
70	Linz	-	Kirchdorf	1500 ft msl
71	Kirchdorf	-	Liezen	3200 ft msl
75	Murtal/N.	-	Klagenfurt	3300 ft msl
81	St. Pölten	-	Mariazell	3500 ft msl
82	Mariazell	-	Bruck	4200 ft msl
83	Bruck	-	Graz	1700 ft msl
84	Graz	-	Laibach	ft 80

DENMARKSpecification of sub-areas

A map showing these areas will be published later.

GERMANY, FEDERAL REPUBLIC OFSpecification of sub-areas

<u>area no.</u>	<u>geographical designation</u>	<u>area no.</u>	<u>geographical designation</u>
11	Ostfriesland	51	Oberrheinische Tiefebene
12	Nordfriesland-Bithmarschen	52	Kraichgau
13	Nordliches Schleswig-Holstein	53	Neckar-Jagst-Gebiet
14	Nordwestliches Niedersachsen	54	Mainfranken und Unterfranken
15	Niederelbegebiet	55	Mittelfranken
16	Ostholstein	56	Oberfranken
		57	Frankenwald und Fichtelgebirge
21	Westliches Niedersachsen		
22	Lüneberger Heide	61	Schwarzwald
23	Teutoburger Wald	62	Schwabische Alb
24	Weser-Leine-Bergland	63	Frankische Alb
25	Hannover-Braunschweig	64	Oberpfälzer Wald
31	Niederrheinisches Tiefland	71	Hochrhein- und Bodenseeraum
32	Munsterland	72	Schwabische Hochebene
33	Ruhrgebiet	73	Westliche Donauniederung
34	Kolner Bucht	74	Sudbayerisches Hügelland
35	Bergisches Land	75	Ostliche Donau- und Naabniederung
36	Sauerland	76	Bayerischer Wald
37	Eifel		
38	Neuwieder Becken	81	Westliches Alpenvorland
39	Westerwald	82	Ostliches Alpenvorland
		83	Allgauer Alpen
41	Hunsrück	84	Ostliches Bayerisches Albengebiet
42	Taunus		
43	Nordhessisches Bergland mit Vogelsberg		
44	Rheinpfalz und Saargebiet		
45	Rhein-Main-Gebiet und Wetterau		
46	Odenwald und Spessart		
47	Rhon		

NOTE: A map showing these areas will be published later.

ITALYSpecification of route segments

10	( 11	Torino - Milano/Linate
	( 12	Milano/Linate - Verona Villafranca
	( 13	Verona V. - Venezia Tessera
	( 14	Venezia T. - Ronchi dei Legionari
20	( 22	Milano/L. - Parma
	( 23	Parma - Bologna
	( 24	Bologna - Rimini
30	( 31	Monte Bisbino - Milano/Linate
	( 32	Milano/L. - Voghera
	( 33	Voghera - Genova Sestri
40	( 42	Bolzano - Garda
	( 43	Garda - Milano/Linate
50	( 51	Volghera - Albenga
	( 52	Albenga - Ventimiglia
60	( 61	Voghera - Passo della Cisa
	( 62	Passo della Cisa - Pisa

SWITZERLANDSpecification of route segments

<u>ag</u>	<u>routes</u>	<u>reference height</u>
01	Basel-Schaffhausen	1600 ft
02	Schaffhausen-Altenrhein	1600 ft
11	Geneve-Morges-Grenchen	1900 ft
12	Grenchen-Bremgarten-Zurich	1900 ft
13	Zurich-Attikon-Altenrhein	1900 ft
21	Montreux-Romont-Fribourg-Neuenegg-Bern	2900 ft
22	Bern-Moosee-Sursee-Bremgarten-Zurich	2900 ft
32	Spiez-Meiringen	1900 ft
33	Meiringen-Brunig-Kussnacht-Goldau	3600 ft
41	Geneve-Montreux	1600 ft
42	Montreux-Sion	1600 ft
43	Sion-Brig	2300 ft
44	Brig-Simplon-Domodossola	6800 ft
45	Domodossola-Laveno-Lugano	1600 ft
51	Basel-Langenbruck-Grenchen	2600 ft
52	Grenchen-Bern-Spiez	1900 ft
53	Spiez-Gemeni-Sion	8200 ft
61	Meiringen-Grimsel-Brig	7200 ft
71	Zurich-Bremgarten-Goldau	1900 ft
72	Goldau-Gotthard-Biasca	7200 ft
73	Biasca-Lugano	1900 ft
81	Zurich-Horgen-Weesen	1600 ft
82	Weesen-Ragaz	1600 ft
83	Ragaz-Lukmanier-Biasca	6500 ft
91	Altenrhein-Ragaz	1600 ft
92	Ragaz-Lenzerheide-Julier-Samedan	7500 ft
93	Samedan-Maloja-Menaggio-Lugano	6200 ft

groups of routes

00	Basel-Schaffhausen-Altenrhein	1600 ft
10	Geneve-Grenchen-Zurich-Altenrhein	1900 ft
20	Montreux-Bern-Zurich	2900 ft
30	Spiez-Meiringen-Brunig-Goldau	3600 ft
40	Geneve-Simplon-Lugano	6800 ft
50	Basel-Gemmi-Sion	8200 ft
70	Zurich-Gotthard-Lugano	7200 ft
80	Zurich-Lukmanier-Biasca	6500 ft
90	Altenrhein-Julier-Maloja-Lugano	7500 ft
99	Toutes les routes	8200 ft

NOTE: A map showing these areas will be published later.

YUGOSLAVIASpecification of route segments

10	Dobra Ves	-	Zagreb
11	Zagreb	-	Slavonski Brod
12	Slavonski Brod	-	Beograd
13	Beograd	-	Topola
14	Topola	-	Kursumlija
15	Kursumlija	-	Skopje
16	Skopje	-	Valandovo
17	Maribor	-	Zagreb
18	Zagreb	-	Kostajnica
19	Kostajnica	-	Drvar
20	Drvar	-	Split
21	Kostajnica	-	Jajce
22	Jajce	-	Sarajevo
23	Sarajevo	-	Gacko
24	Gacko	-	Dubrovnik
25	Gacko	-	Titograd
26	Sarajevo	-	Sjenica
27	Sjenica	-	Pristina
28	Pristina	-	Skopje
29	Skopje	-	Ohrid
30	Dravograd	-	Ljubljana
31	Ljubljana	-	Ilirska Bistrica
32	Ilirska Bistrica	-	Portoroz
33	Ratece	-	Ljubljana
34	Ljubljana	-	Metlika
35	Ludbreg	-	Zagreb
36	Zagreb	-	Metlika
37	Metlika	-	Ilirska Bistrica
38	Ilirska Bistrica	-	Pula
39	Pula	-	Zadar
40	Zadar	-	Split
41	Split	-	Ploce
42	Ploce	-	Dubrovnik
43	Dubrovnik	-	Tivat
44	Ilirska Bistrica	-	Rijeka
45	Rijeka	-	M. Losinj
46	Zadar	-	Vrlika
47	Split	-	Livno
48	Livno	-	Sarajevo
49	Sarajevo	-	Valjevo
50	Valjevo	-	Topola
51	Topola	-	Krusevac
52	Krusevac	-	Dimitrovgrad
53	Valjevo	-	S. Mitrovica
54	S. Mitrovica	-	Subotica
55	Beograd	-	Vrsac
56	Borovlje	-	Ljubljana
57	Metlika	-	Kostajnica