

UPPER-LEVEL PRESSURE, TEMPERATURE, HUMIDITY AND WIND REPORT

I. GENERAL

The WMO upper-level pressure, temperature, humidity, and wind report is called FM 35-IX Ext. TEMP for reports from land stations; FM 36-IX Ext. TEMP SHIP for reports from sea stations; FM 37-IX Ext. TEMP DROP for sondes released by a carrier balloon or an aircraft; and FM 38-IX Ext. MOBIL for mobile land stations.

The code form is divided into four parts (i.e., Parts A, B, C, and D) for coding purposes. The coding procedures provide for coding each part as a separate message suitable for transmission. Each part can be transmitted separately but the complete report actually consists of four separate messages which may be collected individually in a bulletin, or in combinations.

A. TIME OF OBSERVATION

The standard times of upper-air soundings taken for synoptic purposes are 0000, 0600, 1200, and 1800 UTC. If only two upper-air soundings are taken per day for synoptic purposes, they shall be taken at 0000 and 1200 UTC.

In the case of upper-air observations, the *actual time* of observation is the time the balloon is actually released to the nearest minute. The *standard time* of observation is the synoptic time, to the nearest whole hour, to which the sounding applies. International agreement specifies that the time of regular upper-air sounding observations should be as close as possible to (H-30) and should not fall outside the time range (H-45) to (H), with H referring to one of the four standard synoptic times of observations. Thus, the actual time of release of a balloon might be 1130 UTC, but the observation applies to 1200Z. It should be noted that the time required for a radiosonde balloon to reach 90,000 feet is approximately 1 1/2 hours. Thus measurements of elements from high elevations may be an hour to 1 1/2 hours after the actual time of observation. Special observations may be made outside these specified release times when authorized.

II. FORMAT OF THE UPPER-AIR REPORT

The upper-air report message is composed of five-figure groups. Each figure in each group has significance according to its position in the group and according to its position in the message following the section indicator. Thus, when data is not available for an element, or position, the missing position will be filled with a solidi (/). The code form is divided into ten sections as follows:

Section number	Indicator figures or symbolic figure groups	Contents	
1	—	Identification and position data.	
2	—	Data for standard isobaric surfaces.	
3	88	Data for tropopause level(s).	
4	66 or 77	Data for maximum wind level(s) and data for vertical wind shear.	
5	—	Data for significant levels, with respect to temperature and/or relative humidity.	
6	21212	Data for significant levels, with respect to wind.	
7	31313	Data on sea-surface temperature and sounding system.	
8	41414	Cloud data.	
9	51515 } 52525 } } 59595 }	Code groups to be developed regionally.	
10	61616 } 62626 } } 69696 }		Code groups to be developed nationally.

The code form is as follows:

PART A	[Data up to and including 100 mb]	
[Section 1] M _i M _j AA YYGGI _d I _{iiii}	[Identification-Position]	
	99L _a L _a L _a Q _c L _o L _o L _o L _o MMMU _{1a} U _{1o} h _o h _o h _o h _o i _m	
[Section 2] 99P _o P _o P _o T _o T _o T _{ao} D _o D _o d _o d _o f _o f _o f _o	[Surface Data]	
00hhh	TTT _a DD ddfff	
92hhh	TTT _a DD ddfff	
85hhh	TTT _a DD ddfff	
70hhh	TTT _a DD ddfff	
50hhh	TTT _a DD ddfff	
40hhh	TTT _a DD ddfff	[Standard Isobaric Surfaces]
30hhh	TTT _a DD ddfff	
25hhh	TTT _a DD ddfff	
20hhh	TTT _a DD ddfff	
15hhh	TTT _a DD ddfff	
10hhh	TTT _a DD ddfff	

[Section 3] 88P_tP_tP_t T_tT_tT_{at}D_tD_t d_td_tf_tf_tf_t [Tropopause Data]
 or 88999

[Section 4] 77P_m P_m P_m }
 or
 66P_m P_m P_m } d_md_mf_mf_mf_m (4v_bv_bv_av_a) [Maximum Wind Data]
 or 77999

[Section 9] 51515 A_{df}A_{df} }
 52525 } [Code groups developed regionally.]
 } [Included in part A of U.S. reports.]
 59595 }

PART B [Data up to and including 100 hPa]

[Section 1] M_iM_iBB YYGGa4 Iiii [Identification-Position]
 99L_aL_aL_a Q_cL_oL_oL_oL_o MMMU_{la}U_{lo} h_oh_oh_oh_oim

[Section 5] 00P_oP_oP_o T_oT_oT_{ao}D_oD_o [Surface Data]
 11PPP TTT_aDD [Significant levels with respect to]
 22PPP TTT_aDD [temperature and/or humidity]
 33PPP TTT_aDD
 etc.

[Section 6] 21212 00PPP d_od_of_of_of_o [Significant levels with respect to]
 11PPP ddfff [wind]
 22PPP ddfff
 33PPP ddfff
 etc.

[Section 7] (31313 s_rr_ar_as_as_a 8GGgg 9s_nT_wT_wT_w) [Data on sounding system,]
 [launch time, and sea-surface]
 [temperature]

[Section 8] 41414 N_hCLhCMCH [Cloud data]

[Section 9] 51515 A_{df}A_{df} }
 52525 } [Code groups developed regionally.]
 }
 59595 }

[Section 10] 61616 }
 62626 } [Code groups developed regionally.]
 }
 69696 }