

DAILY SYNOPTIC UPPER-AIR REPORTS

The upper-air reports are derived in the same general manner as the surface data. For the most part, these observations have been for 0300Z, especially in Canada, Alaska, and the United States, with some additional observations at other hours when the station does not report at or near 0300Z. In the U.S.S.R. observations for all available hours have been included. Stations using the 1945 Radiosonde Code use the convention of adding 50 to the Greenwich time to indicate that part of the observation above 400 millibars of pressure, commonly known as the "second transmission." Many stations outside North America indicate the time of observation other than on-the-hour by adding to the Greenwich hour 25, for 15 minutes past the hour; 50, for 30 minutes; and 75, for 45 minutes. Although this has not been "subtracted out" of the reports, the data have been listed chronologically by hour within station.

Assignment of Index Numbers:

The same method used in assigning station numbers in surface reports has been employed.

Station Lists:

The upper-air numerical station index which precedes the upper-air data is presented in the same form as the surface index. The alphabetic index following the charts includes all stations, both surface and upper-air. Stations for upper-air only are designated with a single asterisk; those for both upper-air and surface, with two asterisks; while those for surface only are merely listed.

Method of Presentation:

The upper-air data are presented in the same general way as the surface data. Stations are listed numerically within certain geographical areas according to their International Index Numbers. The teletype data have been edited for obvious errors, garbled data, etc.; but no attempt has been made to present the various winds aloft and radiosonde codes in a standard-level form. To the right of each line of the listed observations is a code number which indicates the type of code used for that report, as follows:

- | | |
|------------------|-----------------------------------|
| 1. PIBAL | 5. TEMPS |
| 2. RAWIN | 6. PRAWT |
| 3. RABAL | 7. PRAT |
| 4. Russian PIBAL | 8. CORAC and 1945 Radiosonde Code |
| 9. Russian RAOBS | |

While the upper-air observations usually have more than one line to an observation, the station number and hour appear only on the first line.

All land stations are listed first, and are followed by ship reports.

Description of Codes:

1. Winds Aloft
 - a. IIIGG Hddvv Hddvv Hddvv
 - b. IIIGG Hddvv Hddvv 9999n Hddvv
 - c. IIIGG Hddvv Hddvv Hddvv C_LC_MHHM
 - d. IIIGG HHddv₅ HHddv₅ HHddv₅
 - e. IIIGG 8ddvv 9ddvv Oddvv M H H H C
(Russian)

The meaning of symbols in above codes, whose values will be found in tables of international codes and symbols, is as follows:

- | | |
|----------------|---|
| C | International cloud code. |
| C _L | Form of low cloud (International code). |
| C _M | Form of middle cloud (International code). |
| dd | Wind direction in tens of degrees. |
| GG | Greenwich hour or Moscow time. |
| H | Height in thousands feet/meters. |
| HH | Height of last observation. |
| HH | Height in hectometers. |
| H H H
x x x | Height at which observations were discontinued in tens of meters. |
| III | Station index number. |
| M | Reason for ceasing upper wind observation (International code). |

M_x Reason for ceasing upper wind observation (Russian code).

- | | |
|---------------------------|-------------------------|
| 0 - Entering cloud | 5 - Lost behind cloud |
| 1 - Lost in fog | 6 - Lost in background |
| 2 - Lost in mist | 7 - Lost in distance |
| 3 - Lost accidentally | 8 - Lost, balloon burst |
| 4 - Lost in precipitation | 9 - Lost, other causes |

v₅ Wind speed (International code).

vv Wind speed in miles per hour/knots.

vv Wind speed in meters per second (Russian code).

8,9,0,1 etc. Height levels (Russian code).

- | |
|------------------|
| 8 - Surface |
| 9 - 200 meters |
| 0 - 500 meters |
| 1 - 1000 meters |
| 2 - 2000 meters |
| . |
| . |
| . |
| . |
| 0 - 10000 meters |

9999_n Change in decade of thousands, the figure for n to give the tens of thousands digit for levels following.

Code "a" is generally used in North America and from stations controlled by United States. Code "b" is readily identified by group, 9999_n, and is used mainly in Europe. Code "c" may be identified by its last group and is also used in some European reports. Code "e" is identified by its height indicators and by the code number 4 at the extreme right-hand column of each line of the observation.

Only when a station designates its winds-aloft observation by the word RAWIN or RABAL have the codes 2 and 3 been listed in the right-hand column.

2. RAOBS

a. 1945 Radiosonde Code.

IIIGG P₀P₀P₀T₀T₀ U₀U₀x₁x₂x₃ OOHHH TTU_mm_r
(Oddvv) 85HHH TTU_mm_r 70HHH TTU_mm_r
50HHH TTU_mm_r nnPPP TTU_mm_r
IIIG₅₀G₅₀ 30HHH TTU_mm_r (Oddvv) 20HHH
TTU_mm_r 10HHH TTU_mm_r nnPPP TTU_mm_r
101A_{df}A_{df}

b. TEMPS

IIIGG H_dH_dPPP TTTUU 00000
H_dH_dH_dH_d TTTUU

c. PRAWT

IIIGG P₀P₀P₀T₀T₀ U₀U₀DDV n₀n₉n₈n₇n₆ n₅n₄n₃n₂n₁
HHTTU Uddvv 95TTU Uddvv HHTTU Uddvv 85TTU
Uddvv 77788 P₁P₂P₃P₄P₅ PPTTU Uddvv
.....

d. PRAT

IIIGG P₀P₀P₀T₀T₀ U₀U₀KK- n₀n₉n₈n₇n₆ n₅n₄n₃n₂n₁
HHTTU 95TTU HHTTU 85TTU HHTTU 77788
P₁P₂P₃P₄P₅ ...PX PPTTU

e. CORAC

IIIGG P₀P₀P₀T₀T₀ U₀U₀x₁x₂x₃ (Oddvv) P₁P₁h₁h₁h₁
T₁T₁U₁U₁U₁ P₂P₂h₂h₂h₂ T₂T₂U₂U₂U₂
a. 11199 nnPPP TTUuu
or
77788 P₁P₁T₁T₁U₁ 10171
1u₁u₁u₂u₂ 3u₃u₃u₄u₄ etc.

