

DAILY SYNOPTIC UPPER-AIR REPORTS

Though the surface reports have been limited to one observation per day (1230Z), upper-air reports have been listed for all hours made available from the teletype data. For the most part these observations have been for 0400Z, especially in Canada, Alaska, and the United States, with some additional observations at other hours. 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 "2nd transmission". Many stations outside North America indicate the time of observation other than on-the-hour, by adding to the Greenwich hour 25 to 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 date has 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 follows the upper-air data is presented in the same form as the surface index. The alphabetic index at the end of the volume 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 is presented in the same general way as the surface data. Stations are listed numerically within certain geographical areas according to their International Index Number. The teletype data has 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. RAOBS |
| 2. RAWIN | 6. PRAWT |
| 3. RABAL | 7. PRAT |
| 4. Russian PIBAL | 8. CORAC |
| 9. Russian RAOBS | |

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

All land stations are listed first, and are followed by reports from ships at assigned positions and then by ships reporting octant, latitude, and longitude. Beginning in April 1946, the practice of using a station number for patrol ships at assigned positions was discontinued and these ships report position in International Code form (YQLLL 11166).

Description of Codes:

1. Winds Aloft

- | |
|---|
| a. IIIGG Hddvv Hddvv Hddvv |
| b. IIIGG Hddvv Hddvv 9999n Hddvv |
| c. IIIGG Hddvv Hddvv Hddvv C _L C _M H H M |
| d. IIIGG 8ddvv 9ddvv 1ddvv M _x H _x H _x H _x C
(Russian) |

- CC 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 - Local mean solar time (Russian code).

H Height in thousands feet meters.

HH Height of last observation.

H_xH_xH_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 |

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

9999n 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, 9999n, and is used mainly in Europe. Code "c" may be identified by its last group and is also used in some European reports. Code "d" 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 00hhh TTU_m_r_m_r
 (Oddvv) 85hhh TTU_m_r_m_r 70hhh TTU_m_r_m_r
 50hhh TTU_m_r_m_r nnPPP TTU_m_r_m_r
 IIIG₅₀G₅₀ 30hhh TTU_m_r_m_r (Oddvv) 20hhh
 TTU_m_r_m_r 10hhh TTU_m_r_m_r nnPPP TTU_m_r_m_r
 101A_{df}A_{df}

b. IIIGG H_dH_dP₁P₁P₁ TTTUU 00000 H_dH_dH_dH_dH_d
 TTTUU

c. PRAWT

IIIGG P₀P₀P₀T₀T₀ U₀U₀DDv n₀n₉n₈n₇n₆ n₅n₄n₃n₂n₁ HHTTU
 Uddvv 95TTU HHTTU Uddvv 85TTU Uddvv 77788
 P₁P₂P₃P₄P₅ PPTTU Uddvv

DAILY SYNOPTIC UPPER-AIR REPORTS (CONT.)

d. PRAT	IIIGG P ₀ P ₀ P ₀ T ₀ T ₀ U ₀ U ₀ KK- n ₀ n ₉ n ₈ n ₇ n ₆ n ₅ n ₄ n ₃ n ₂ n ₁ HHTTU 95TTU HHTTU 85TTU HHTTU 77788 P ₁ P ₂ P ₃ P ₄ P ₅ ...PX PPPTU	U ₁ U ₁ , U ₂ U ₂ vv X x ₁ x ₂ x ₃ 0 00000 00,85,70,50 etc	Moisture values indicated by x ₃ . Wind speed. Used to make a five digit group. Indicator figures to show units used, x ₁ for heights, x ₂ for wind, x ₃ for moisture values. (International code). Indicator figure for wind group. Indicates that temperatures and humidities are for fixed pressures, 1,000, 900, 800 mbs. etc. (1945 Radiosonde) Indicator figures for 1,000, 850, 700 mb. levels.
e. CORAC	IIIGG P ₀ P ₀ P ₀ T ₀ T ₀ U ₀ U ₀ x ₁ x ₂ x ₃ (Oddvv) P ₁ P ₁ h ₁ h ₁ h ₁ T ₁ T ₁ U ₁ u ₁ u ₁ P ₂ P ₂ h ₂ h ₂ h ₂ T ₂ T ₂ U ₂ u ₂ u ₂ a. 11199 nn PPP TTUuu or 77788 P ₁ P ₁ T ₁ T ₁ U ₁ 10171 1u ₁ u ₁ u ₂ u ₂ 3u ₃ u ₃ u ₄ u ₄ etc.		
f. Russian RA0B	IIIGG H ₁ H ₁ H ₁ T ₁ T ₁ H ₂ H ₂ H ₂ T ₂ T ₂ 98765 H _a H _a PPP T _a T _a T _a UU QQQEE H _b H _b PPP T _b T _b T _b UU QQQEE A _{df} A _{df} Form of additional data follows (1945 Radiosonde code.) dd Wind direction in tens of degrees. EE Equivalent potential temperature in °C. GG Greenwich hour - Local mean solar time in Russian. HH (PRAT and PRAWT) Height in tens of feet or while meters dependent on KK. H _a H _a , H _b H _b Height in hectometers. H _d H _d Height in hundreds of geodynamic meters. H ₁ H ₁ H ₁ , H ₂ H ₂ H ₂ (Russian code) Height at pressure levels as follows: 1 - 1000 mb. 3 - 400 2 - 900 7 - 300 3 - 700 8 - 200 etc. 4 - 500 h ₁ h ₁ h ₁ , h ₂ h ₂ h ₂ Height in tens of feet or whole meters. III Station index number. KK Indicator of form of report in PRAT code. m _r m _r Mixing ratios in grams of water vapor per kilogram of dry air. nn Gives significant levels given consecutively. hh Gives height of level in 100's of feet or tens of meters according to regional agreement. n ₀ n ₉ n ₈ n ₇ n ₆ n ₅ n ₄ n ₃ n ₂ n ₁ Thousands figure in heights above M.S.L. of the 1000 mb, 900 mb, etc. PP Pressure in tens of millibars. PPP Pressure in whole millibars. P ₀ P ₀ P ₀ Station level pressure. P ₁ P ₁ , P ₂ P ₂ Pressure in tens of millibars of 1st, 2nd, etc. levels. P ₁ P ₂ P ₃ P ₄ P ₅ Units figure of pressures for following levels which report in tens of millibars. QQQ (Russian code) Mixing ratio in grams and tenths. Temperature of air in whole degrees. TT Temperature of air in whole degrees. T ₀ T ₀ Temperature of air at surface. T ₁ T ₁ , T ₂ T ₂ Temperature at certain levels. TTT Temperature in degrees and tenths. U Relative humidity (International code). UU Relative humidity in percent. U ₀ U ₀ Relative humidity in percent at surface.		