DAILY SYNOPTIC UPPER-AIR REPORTS

The surface reports have been limited to one observation per day (1200Z), 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 time 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-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. PIROB 5. RAARS
2. RAWIN 4. PRANT
3. RAWIN 7. PRAT
4. Russian PIROB 8. CORAC
9. Russian RAARS

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 oceanic latitude, longitude and other details. Beginning in April 1944, the practice of using a station number for patrol ships at assigned positions was discontinued and these ships report position in International Code Form (YULL 1104).

Description of Codes:

1. Winds Aloft:
   a. IIIGG Hddv Hddv ....... Hddv
   b. IIIGG Hddv Hddv ....... 9999' Hddv
   c. IIIGG Hddv Hddv ....... Hddv CgCyH ....
   d. IIIGG Hddv Hddv ....... WJH .... HD (Russian)

   CC International cloud code
   Cg Form of low cloud (International code).
   Cg Form of middle cloud (International code).
   dd Wind direction in tens of degrees.
   6G Greenwich hour - Local mean solar time
   W Height in thousands feet meters.
   WH Height of last observation.
   W... Height at which observations were discontinued in tens of meters.

   III Station index number.
   W Reason for ceasing upper wind observation
   (International code).
   W 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
   .......

9999 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', 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 RAARS have the codes 2 and 3 been listed in the right hand column.

2. RAARS
   a. 1945 Radiosonde Code.
      IIIGG P.P.P.T. O.0.T.T. 3000h TTUMT, (0404) 1000h TTUMT,
      3500h TTUMT, mPP PPUMT, ...... 1014h
   b. IIIGG W.R.P.1.P. TTTUU ...... 00000 W R P R T R T
      TTTUU ......
   c. PRANT
      IIIGG P.P.P.T. O.0.T.0. 00000 00000 00000 00000 00000 HNTTU
      Hddv 95TU HNTTU Hddv 85TU Hddv ...... 77777
DAILY SYNOPSTIC UPPER-AIR REPORTS (CONT.)

a. PRAT

IIIGG P0, P1, T0, T1, U1, U2, kk

9TTT TTTT TTTT TTTT TTTT TTTT TTTT TTTT

7778 P1 P2 P3 P4 P5

PPPTT

b. CORAC

IIIGG P0, P1, P2, T1, T2, U1, U2, x1, x2, x3 (Oddly)

T1 T2 U1 U2 T1 T2 U1 U2

x1 x2 x3

1100 PPPP TTTT

or

7778 P1 P2 T1 T1 U1

1100 PPPP 00000

11111 00000

00, 85, 70, 50 etc

(c1945 Radiosonde) Indicator figures for 1,000, 850, 700 mb levels.

f. Russian RAOR

IIIGG U1, U2, U3, T1, T2, U4, U5, PPP

T0 T1 T2 T3 T4 T5 T6 T7 T8

A0 A1 A2 Form of additional data follows (1945 Radiosonde code.)

dd Wind direction in tens of degrees.

KK Equivalent potential temperature in °C.

GG Greenwich hour - Local mean solar time in Russian.

HH Height in hectometers.

ll Height in hundreds of geodynamic meters.

(004) Height at pressure levels as follows:

1 - 1000 mb. 4 - 400

2 - 900 7 - 300

3 - 700 8 - 200 etc.

4 - 500

h1 h2 h1, h2 h2 Height in tens of feet or whole meters.

III Station index number.

KK Indicator of form of report in PRAT code.

b0 b1 Mixing ratio 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.

U1 U2 U3 U4 U5 U6 U7 U8

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.

P0 Station level pressure.

P1 P2 P3 P4 Pressure in tens of millibars of 1st, 2nd, etc. levels.

P1 P2 P3 P4 P5 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.

TT Temperature of air at surface.

T0 T1 T2 T3 T4 Temperature at certain levels.

TTT Temperature in degrees and tenths.

U Relative humidity (International code).

UU Relative humidity in percent.

U'U' Relative humidity in percent at surface.