TABLE OF UPPER-AIR CODES

Code No. 1--Radiosonde Code (1945)

First Transmission

(YQLLL 111GG or) IIIGG PPPTT UUUO_{x_2}O OOhhh TTU$m_r m_r$ (Oddvv)* 85hhh TTU$m_r m_r$ (Oddvv) 70hhh TTU$m_r m_r$ (Oddvv) 50hhh TTU$m_r m_r$ (Oddvv) nnPPP TTU$m_r m_r$ nnPPP TTU$m_r m_r$ etc.

Meaning of Symbols:

- Y - Day of the week (G.C.T.).
- Q - Octant of the globe.
- LLL - Latitude in degrees and tenths.
- 111 - Longitude in degrees and tenths.
- III - International Index Number of observing station.
- GG - Time of balloon release to the nearest whole hour in Greenwich Civil Time (G.C.T. or Z).
- $P_0P'_0P''_0$ - Barometric pressure at the surface in whole millibars (P_0 = hundreds, P'_0 = tens and P''_0 = units).
- T_0T_0 - Temperature of the air at surface in whole degrees Centigrade (in tens and units).
- U_0U_0 - Relative humidity at surface in whole percent.
- O - Indicator figure specifying units of height and temperature used.

Code Figure	Units of Height and Temperature
0	Feet and degrees C.
1	
2	Feet and degrees F.
3	
4	Meters and degrees C.
5	
6	Meters and degrees F,
7	Heights not reported and degrees C.
8	Heights not reported and degrees F.
9	

x_2 - Indicator figure specifying inclusion or omission of wind group and units used in reporting wind data.

Code Figure	Indicator for Wind Group
0	Winds not reported
1	
2	Winds reported in miles per hour
3	
4	Winds reported in knots
5	
6	Winds reported in kilometers per hour
7	
8	Winds reported in meters per second
9	

0 - Indicator figure specifying the unit used in reporting moisture content of the air.

Code Figure	Specifications for Moisture Values Reported
0	Mixing ratio ($m_r m_r$, in grams and tenths)
1	
2	Temperature of wet bulb (T_wT_w, in whole degrees C. or F.)
3	
4	Temperature of dewpoint (T_sT_s, in whole degrees C. or F.)
5	
6	Depression of wet bulb (t_nt_n, in half degrees C. or F.)
7	
8	
9	

O - Indicator figure for wind data group.

dd - Wind direction (from which wind is blowing), to the nearest tens of degrees.

vv - Wind speed in units indicated by x_2. Weather Bureau uses miles per hour.

OO - Indicator figures for the 1000 millibar level in hundreds and tens of millibars. The data given in the five-figure group identified by 00 and the following groups (00hhh TTU$m_r m_r$ Oddvv) are for the 1000 millibar level.

85 - Indicator figures for the 850 millibar level in hundreds and tens of millibars.

70 - Indicator figures for the 700 millibar level in hundreds and tens of millibars.

50 - Indicator figures for the 500 millibar level in hundreds and tens of millibars.

hhh - Height in "tens" of feet above mean sea level of a specified pressure level.

TT - Temperature of air at a specified level in whole degrees Centigrade (in tens and units).

U - Relative humidity at a specified level.

$m_r m_r$ - Mixing ratio at a specified level in grams of water vapor per kilogram of dry air (in units and tenths of grams per kilogram).

nn - Level indicator. Identification figures for significant level data in the form nnPP'P" TTU$m_r m_r$.

PP'P" - Barometric pressure at a significant level in whole millibars (P = hundreds, P' = tens and P" = units).

$G_{50}G_{50}$ - Time of balloon release to the nearest whole hour in Greenwich Civil Time (G.C.T.) plus 50. The twenty-four hour clock is used.

Code 2.--U.S. Weather Bureau PIBAL Code

$1_1 1_1 (1_1)$GG $H_a$ddvv ddvv $H_a$ddvv ddvv---

Meaning of Symbols:

- $1_1 1_1 (1_1)$ - Station call letters.
- GG - Greenwich time.
- H_a - altitude.
- dd - wind direction, 36-point compass.
- vv - velocity in m.p.h.

Code 3.--PRAWT Code

IIIGG $P_oP_oP_oT_oT_oU_oU_o$---HHH PPTTU U'ddV5m (Repeat for each level reported)

Meaning of Symbols:

- III - International Station Number.
- GG - Time in GMT to nearest hour.
- $P_oP_oP_o$ - Surface pressure.
- T_oT_o - Surface temperature.
- V_oV_o - Relative humidity.
- HHH - Height above M.S.L. of 1000 mb. surface: unit 10 feet.
- PP - Pressure (unit 10 mb) Standard pressure (mb) 950, 900, etc.
- TT - Temperature in whole degrees F.
- UU' - Relative humidity.
- dd - Wind direction; unit 10 degrees.
- V_5 - Wind speed. (International code).
- m - Index figure relating simultaneously to V_5 and to the accuracy of the wind measurement.

Code 4.--Combined Radiosonde Code (CORAC)

(YQLLL 111GG) (IIIGG)

$P_oP'_oP''_oT_oT_o$ $U_oU_ox_1x_2x_3$ (Oddvv)
$P_1P'_1h_1h_1h_1$ $T_1T_1U_1u'_1u'_1$ (Oddvv)
$P_2P'_2h_2h_2h_2$ $T_2T_2U_2u'_2u'_2$ (Oddvv) etc. as required.

a. 11199 ^{nn}PP'P" TTUu'u" (Oddvv) etc.

b. 77788 $P_1P'_1T_1T_1U_1$ (Oddvv) $P_2P'_2T_2T_2U_2$ (Oddvv) etc.

Meaning of Symbols:

- III - International index number of station.
- GG - Time of beginning of ascent, nearest whole hour G.C.T.
- $P_oP'_oP''_o$ - Pressure at surface, whole millibars. Note - The convention of writing P for hundreds place, P prime (P') for tens place and P double prime (P") for units place has been adopted.
- T_oT_o - Temperature at surface, whole degrees C. or F.
- U_oU_o - Relative humidity at surface, whole percent.
- $x_1x_2x_3$ - Indicator figures to show units used and inclusion of wind groups, x_1 for heights and temperatures, x_2 for wind and x_3 for u'u'.
- O - Indicator figure for wind group (RAWIN). Data in the wind group always apply to the level immediately preceding.
- dd - Wind direction, tens of degrees.
- vv - Wind speed.
- $P_1P'_1$, $P_2P'_2$, etc. - Pressure (10's of millibars).
- $h_1h_1h_1$, $h_2h_2h_2$, etc. - Height of $P_1P'_1$, $P_2P'_2$, etc. in tens of feet or whole meters. When meters are used they will be reported to whole meters for levels up to 300 mb. and to tens of meters at 300 mb. and higher.
- T_1T_1, T_2T_2, etc. - Temperature at P_1P_1, P_2P_2, etc. in whole degrees C. or F.
- $U_1u'_1u'_1$, $U_2u'_2u'_2$, etc. - Moisture values at P_1P_1, P_2P_2, etc. according to units selected. May be Um_rm_r, UT_wT_w, UT_sT_s or Ut_nt_n.
- 11199 - Indicator, additional levels follow in form CORAC.
- PP'P" - Pressure of selected point in whole millibars.
- TT - Temperature at selected point whole degrees C. or F.
- Uu'u' - Moisture values at selected point in units according to x_3.
- Oddvv - Wind direction and speed.
- 77788 - Indicator, additional levels follow in form CORAC.
- $P_1P'_1$, $P_2P'_2$, etc. - Pressure in tens of millibars.
- T_1T_1, T_2T_2, etc. - Temperature in whole degrees C. or F.
- U_1, U_2, etc. - Relative humidity of 10's of percent.

Code Tables

1. x_1 - Indicator for units of height and temperature.
   - 0 - Feet - C°.
   - 2 - Feet - F°.
   - 4 - Meters - C°.
   - 6 - Meters - F°.
   - 7 - Heights not reported - C°.
   - 8 - Heights not reported - F°.

2. x_2 - Indicator for wind group.
   - 0 - Winds not reported.
   - 2 - Winds reported in miles per hour.
   - 4 - Winds reported in knots.
   - 6 - Winds reported in kilometers per hour.
   - 8 - Winds reported in meters per second.

3. x_3 - Indicator for u'u'.
   - 0 - m_rm_r (Mixing ratio, grams and tenths, tens figure omitted).
   - 2 - T_wT_w (Temperature of wet bulb, whole degrees C. or F.).
   - 4 - T_sT_s (Temperature of dewpoint, whole degrees C. or F.).
   - 6 - t_nt_n (Depression of wet bulb in hald degrees C. or F.).

Code 5.--European MESRAN

1
2
PPPOO OYYGG 7III3 HHHTT DDVVV
4
5
$m_rm_rm_r$77
2
LLLLC OYYGG LLII3 HHHTT DDVVV
4
5
$m_rm_rm_r$77

Meaning of Symbols:

- 0 - Filler (time group indicator).
- YY - Day of the month.
- GG - Time of data (GMT).
- PPP - Pressure in whole millibars (700, 500, 300 etc.).
- 00 - Filler for pressure indicator indicator group.
- III - Station index number.
- HHH - Height in tens of feet (Initial 1 or 2 omitted when over 1,000 feet.)
- TT - Temperature in whole degrees Centigrade.
- DD - Wind direction in 10's of degrees.
- VVV - Wind velocity in m.p.h.
- $M_rM_rM_r$ - Mixing ratio in 10's, units and tenths of grams.
- 7 - Index number indicator.
- 77 - Temporary indicator & filler (replaced by data later.).
- 1 - Height, Temperature, Wind, Mixing Ratio.
- 2 - Height, Temperature, Wind.
- 3 - Height, Temperature.
- 4 - Wind.
- 5 - Height, Temperature, Mixing Ratio.

Code 6.--Russian RAOB

111tt $H_1H_1T_1T_1T_1$ $H_1H_1T_1T_1T_1$ .... 98765 HHPPP TTTUU QQQEE HHPPP TTTUU QQQEE

Meaning of Symbols:

- 111 - Station Indicator.
- tt - Time (GMT).
- H_1H_1 - Height in geodynamic meters of standard levels of 1000, 900, 700, 500, 400, 300, 200 millibars.
- $T_1T_1T_1$ - Temperature of standard levels in degrees and tenths C.
- 98765 - Separator group.
- HH - Height in hectometers.
- PPP - Pressure in millibars.
- TTT - Temperature in degrees and tenths centigrade.
- UU - Relative humidity in whole percent.
- QQQ - Mixing ratio.
- EE - Equivalent potential temperature in degrees centigrade.

Code 7.--Russian PIBAL

IIIZZ 8DDFF 9DDFF 0DDFF 1DDFF 2DDFF

Meaning of Symbols:

- III - Station designator.
- ZZ - Local Russian time.
- DD - Direction to tens of degrees.
- FF - Velocity, meters per second.
- 8 - Surface.
- 9 - 200 meters.
- 0 - 500 meters.
- 1 - 1,000 meters.
- 2 - 2,000 meters.

Code 8.--Russian MESRAN

OYYtt IIIxx HHHTT HHHTT

Meaning of Symbols:

- 0 - Indicator.
- YY - Day of month.
- tt - Russian time.
- III - International Station Index Number.
- xx - Difference between 1,000 mb. and 500 mb. heights.
- $H_1H_1H_1$ - Height of 700 mb. pressure level.
- TT - Temperature.
- $H_2H_2H_2$ - Height of 500 mb. pressure level.