DAILY SYNOPTIC SURFACE REPORTS

The daily synoptic reports are accumulated primarily from the teletype reports of all the collectives which are regularly available to Headquarters, Air Weather Service. The teletype reports are supplemented insofar as possible by use of available original records of the United States weather services and mailed-in daily weather bulletins of foreign countries. For most stations the report for the 1230Z observation is given. However, some stations do not prepare synoptic reports at this particular hour, and in these cases a report is listed if it is filed within a period which reasonably approximates the synoptic observation time. The hour of the reports is shown with the observation itself. Stations whose reports appear only sporadically have not been included in the daily listings; in order to be included, a station must report with a fair degree of regularity. The data are subject to observation and transmission errors which have been corrected insofar as personnel and time considerations would permit.

Assignment of Index Numbers:

Insofar as possible the index numbers used to identify stations in the original teletype sequences have been retained in the presentation of data. However, where alphabetic call letters have been used in place of station numbers in the teletype reports, and the station has had no primary or supplementary index number assigned by an authorized agency, then, for the purpose of furnishing these reports in strict numerical form, the station has arbitrarily been assigned the same number as the nearest station with a primary number and the station is listed as "ARBITRARY."

Station Lists:

Station lists are furnished in two forms for all stations which report with a moderate degree of frequency during the month. An over-all alphabetic listing of both surface and upper-air stations and a blank map for convenience in locating stations appear immediately following the charts. 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. Immediately preceding the station name is its 3-digit index number. Following the station name appears a 4-digit code number that has arbitrarily been assigned to the area group in which the station belongs. This 4-digit code figure furnishes the means of cross-reference to the second station list or, if preferred, directly to the body of synoptic data.

The numerical station lists, which immediately precede the presentation of the surface and upper-air data, respectively, present the stations in order by index number within the area group to which the stations are assigned. Following the area-group title is the 4-digit number which identifies the group, and which corresponds to the 4-digit numbers following the station names in the alphabetic station list. The order in which stations appear in the numerical list is the same as that of the listings of synoptic data. In both the station lists and the synoptic data, the city and country are listed as they appear in the *International Index* publications of the United States Weather Bureau: e.g., Messina, Sicily, is listed as Messina, Italy, because it appears with the Italian stations in *International Index Numbers for Stations in Europe*.

Method of Presentation:

In preparing the data for publication, the entire collection of teletype reports for the 1230Z synoptic map are sorted and edited. The reports are sorted numerically within areas according to their index number and the geographical collective into which they fall. Thus, except where a station fails to file a synoptic report, the reports appear in the same order each day. All land observations have been edited into a single numerical code which is explained below. Ship observations take more than one form. Those which take observations from fixed positions report in a code similar to land stations. This code is given below. Moving ships, however, report in international ship code. These ships have been grouped by octant; they appear in numerical order by latitude within octant and are reported in a ship-code form which is explained below.

Description of Codes:

Data from various sections of the world are received in greatly varied codes. For the purpose of presenting synoptic data in a consistent code the reports have been edited, and the data for all land stations are presented in a single code form in this publication. In addition, the ships which operate at or near a fixed position and report in a land code are reported in this same single code and are clearly indicated as weather ships. Moving ships which report their positions in code have been treated separately and appear in this publication in one of the codes enumerated below. Where complete 5-digit groups were garbled or missing in the teletype reports at the end of a message, these groups have been left blank. Where a 5-digit group was garbled or missing in the text of a message, or portions of a 5-digit group were missing, garbled or unreported, diagonals (///) have been used to indicate the missing elements. For reports from countries using Centigrade scale the temperatures have been converted to Fahrenheit; also, if the country reports only the first five groups, the temperature of the dew point in degrees Fahrenheit has also been calculated. In this calculation, the temperature being given, a value of relative humidity was assumed equal to the midpoint of the relative humidity range reported by the single-digit code.

The form of code used for land stations is as follows:

$$\text{IIIC}_1\text{C}_m \quad \text{wwVhN}_h \quad \text{DDFWN} \quad \text{PPPTT} \quad \text{UC}_h\text{app} \quad \text{T}_s\text{T}_s\text{D}_c\text{RR} \quad \text{R'RRRR} \quad \text{F>9} \quad \text{GG}$$

The code used for weather ships is as follows:

$$\text{LLL111} \quad \text{000C}_1\text{C}_m \quad \text{wwVhN}_h \quad \text{DDFWN} \quad \text{PPPTT} \quad \text{UC}_h\text{app} \quad \text{T}_s\text{T}_s\text{D}_c\text{KD}_k \quad \text{GG}$$

Codes used for the other ships are as follows:

$$\text{LLL111} \quad \text{DDFww} \quad \text{PPVTT} \quad \text{3C}_1\text{C}_m\text{C}_h\text{N} \quad \text{T}_d\text{KD}_k\text{WN}_h \quad \text{d}_s\text{v}_s\text{app} \quad \text{h}_c\text{h}_c\text{MT}_s\text{T}_s \quad \text{GG}$$

$$\text{LLL111} \quad \text{DDFww} \quad \text{PPVTT} \quad \text{hC}_1\text{C}_m\text{C}_h\text{N} \quad \text{T}_d\text{KD}_k\text{WN}_h \quad \text{d}_s\text{v}_s\text{app} \quad \text{h}_c\text{h}_c\text{MT}_s\text{T}_s \quad \text{GG}$$

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

- a — Characteristic of the barometric tendency in preceding three hours.
- C_1 — Form of low cloud.
- C_m — Form of middle cloud.
- C_h — Form of high cloud.
- D_c — Direction of cloud (8-point scale).
- DD — Wind direction.
- D_k — Direction from which swell comes (8-point scale).
- d_s — Direction toward which the ship is moving (8-point scale).
- F — Wind speed on Beaufort scale, 0-9.
- F>9 — Amount of wind speed over Beaufort scale 9.
- GG — Hour in Greenwich time (12 noon; 13 1 P.M., etc.).
- h — Height of the lowest clouds.
- h_ch_c — Height of ceiling in hundreds of feet.
- III — International index number.
- K — State of swell in open sea.
- LLL — Latitude in degrees and tenths.
- 111 — Longitude in degrees and tenths, with initial hundreds digit omitted.
- M — Method of determining ceiling.
- N — Total amount of sky covered by clouds.
- N_h — Amount of sky covered by clouds whose height is reported by h.
- PP — Pressure in whole millibars, first figure (9 or 10) omitted.
- PPP — Pressure in millibars and tenths, first figure (9 or 10) omitted.
- pp — Amount of barometric tendency for preceding three hours in fifths of millibars.
- RR — Amount of precipitation in 6-hour period preceding time of observation.
- R' — Amount of precipitation over ninety-nine in the 6-hour period preceding the time of observation.
- RRRR — Amount of 24-hour precipitation in inches and hundredths.
- T_d — Temperature difference between air and water.
- TT — Temperature in whole degrees.
- T_sT_s — Temperature of the dew point in whole degrees.
- U — Relative humidity.
- V — Horizontal visibility.
- v_s — Speed of the ship.
- W — Past weather.
- ww — Present weather.
- 3 — Group indicator in certain ship codes.

The following symbols, not used in the data section, are listed here to explain the symbols in the station models printed at the lower left corner of each sea level map:

- C — Type of clouds (aircraft code).
- hhh — Altitude of aircraft in hundreds of feet above MSL.
- N_1 — Amount of low cloud (aircraft code).
- N_2 — Amount of middle cloud (aircraft code).
- N_3 — Amount of high cloud (aircraft code).
- R_t — Time precipitation began or ended.
- T_WT_W — Water temperature in whole degrees.
- vv — Wind speed in knots; half barb = 5 knots, whole barb = 10 knots, pennant = 50 knots (aircraft code).