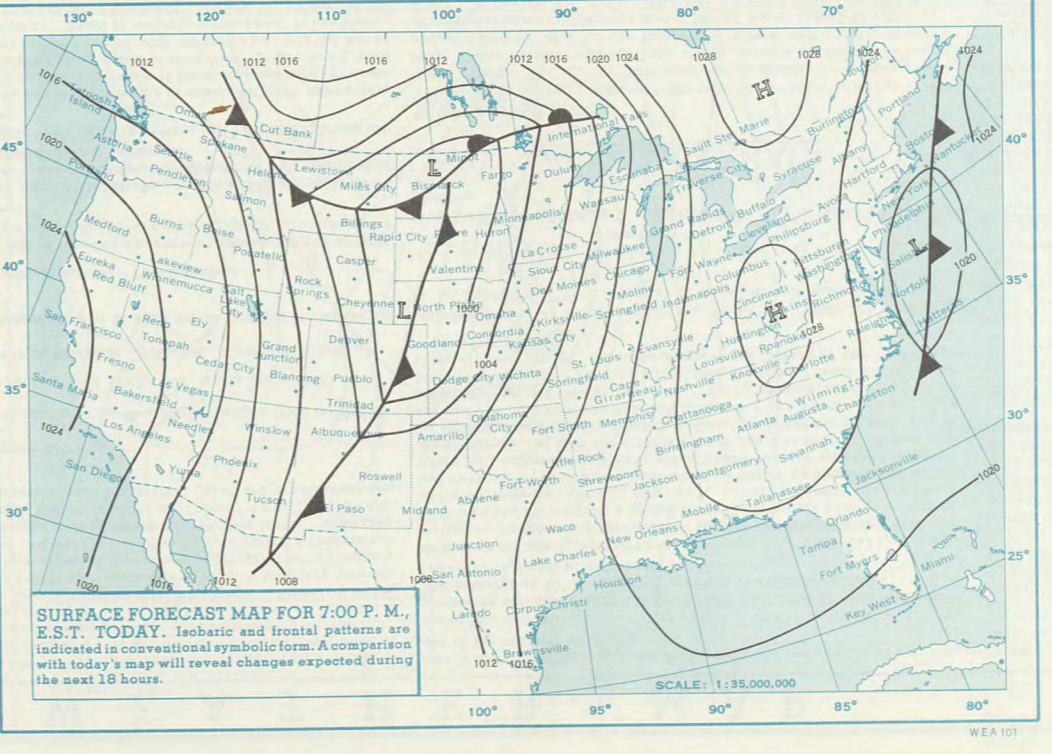
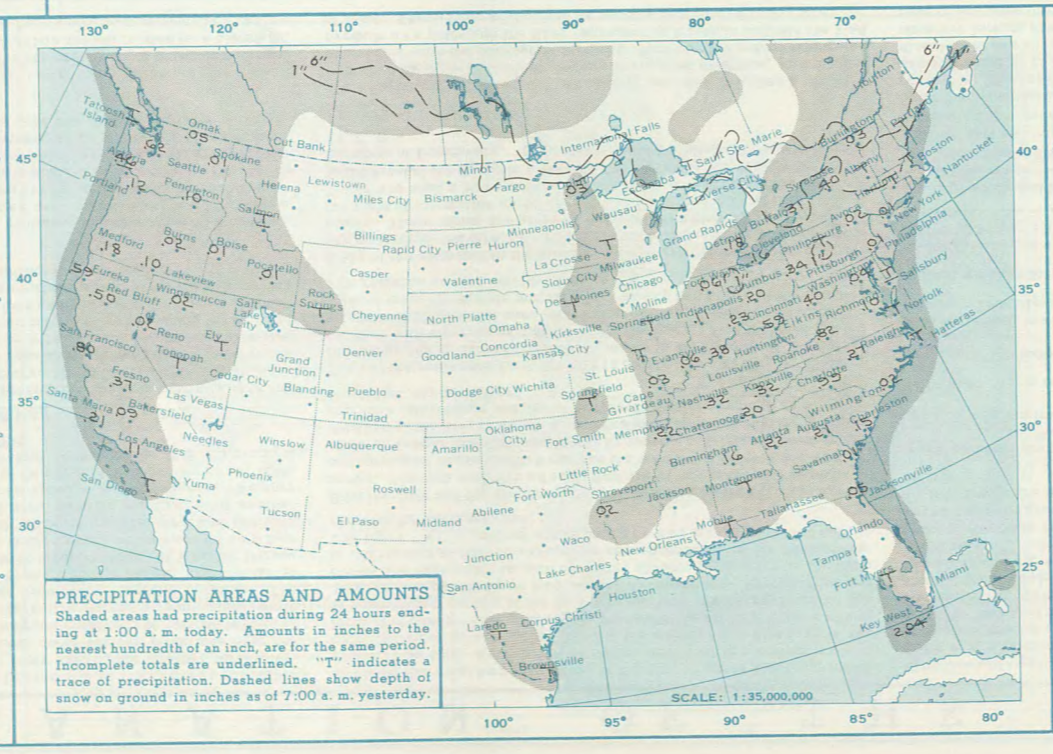
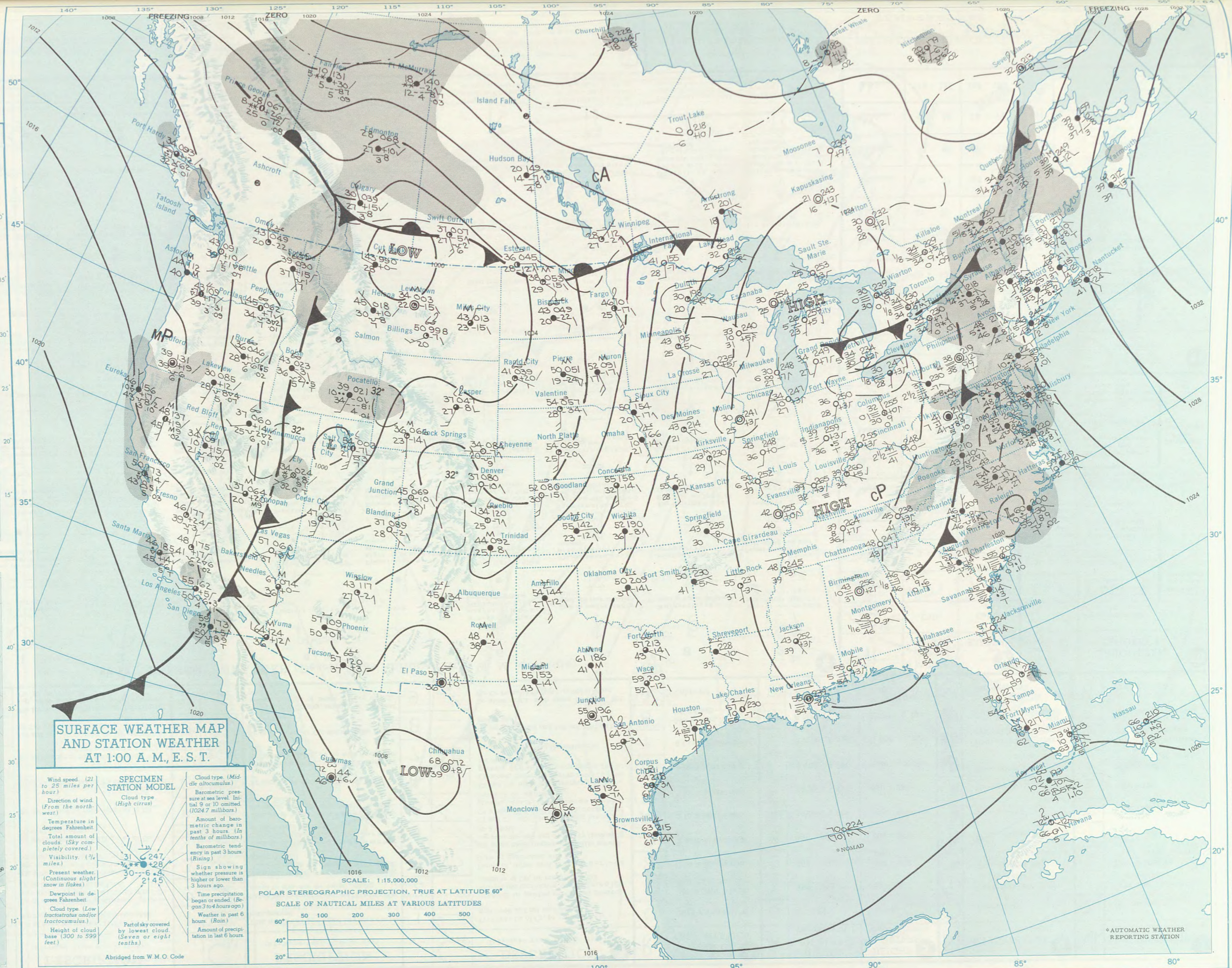
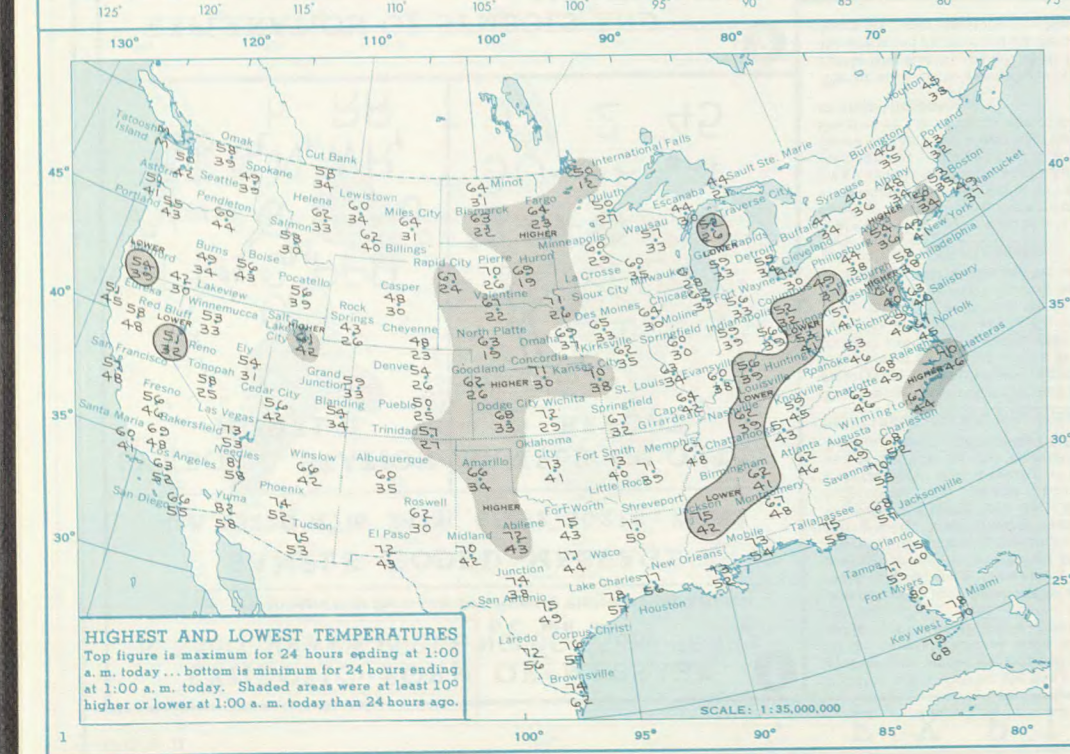
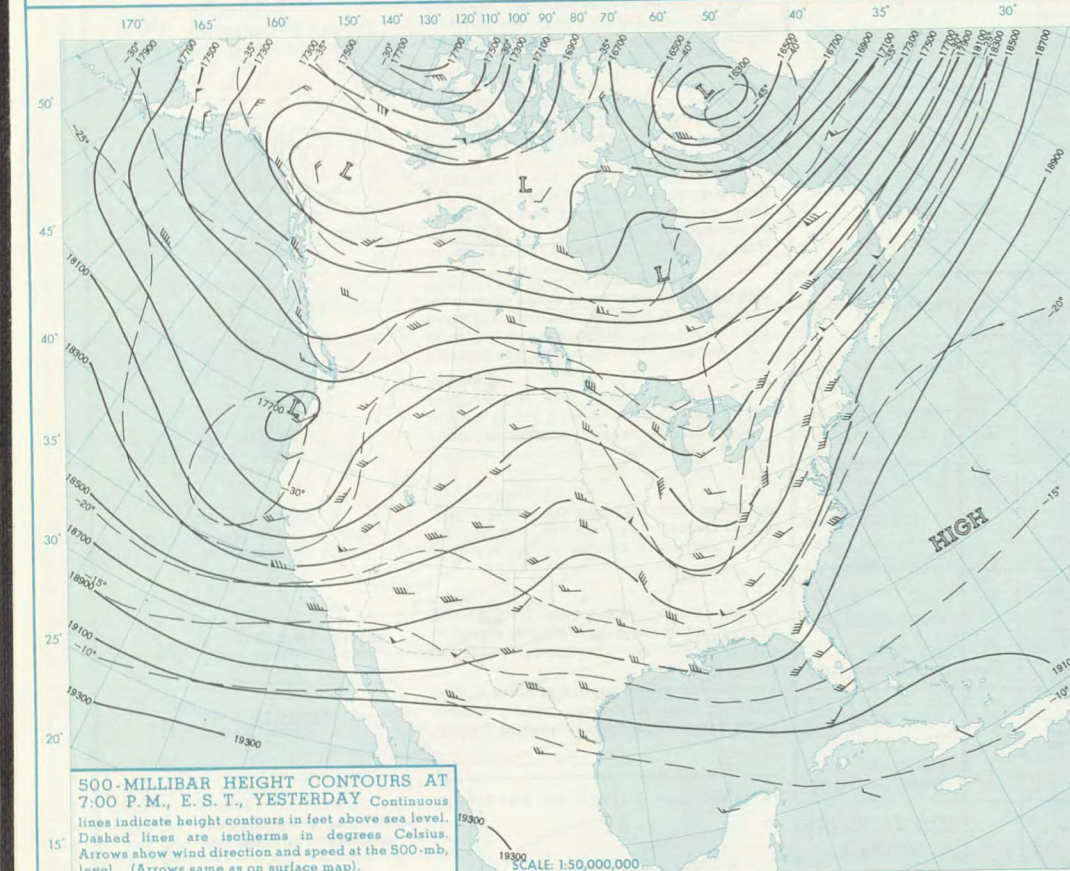
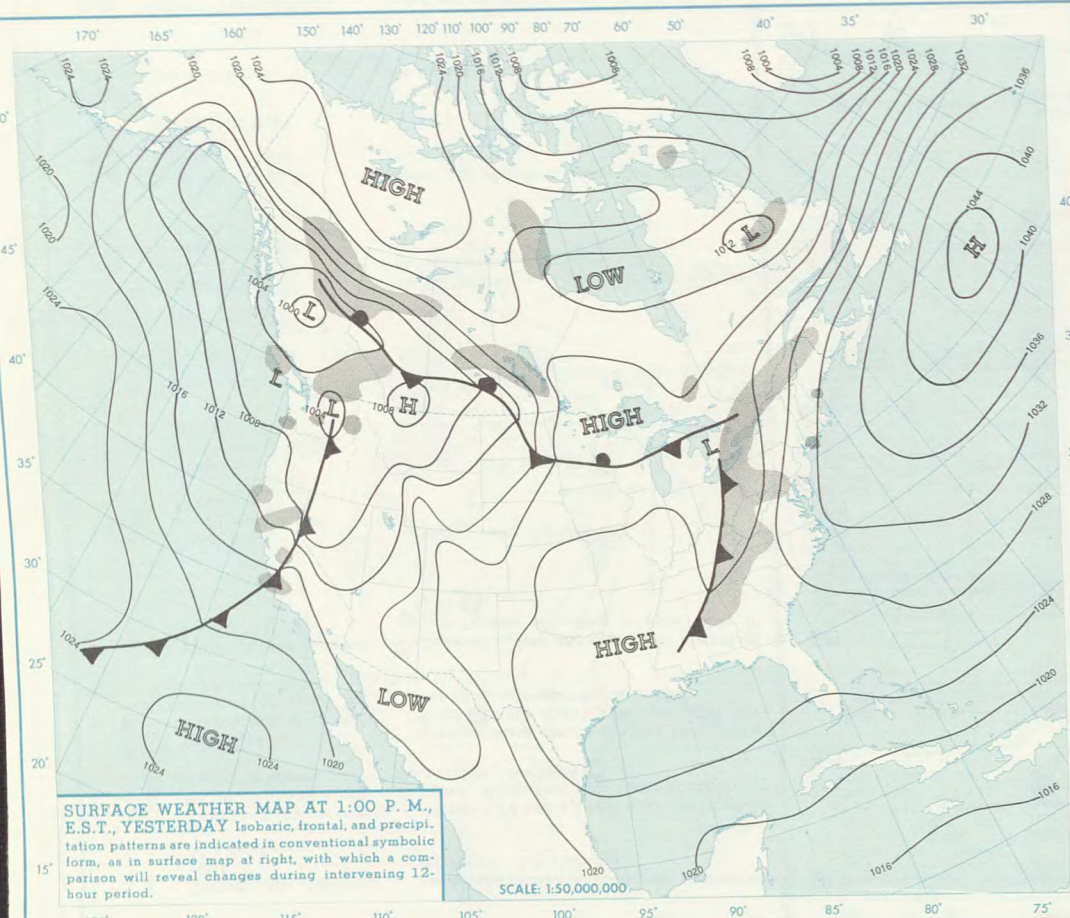




DAILY WEATHER MAP
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
WEATHER BUREAU

SUNDAY, MARCH 17, 1968

Maps prepared by National Meteorological Center, Washington, D. C.



Subscription rate: \$9.60 per year; minimum 3 months, \$2.40. This is daily rate including Sunday and Holiday. Send remittance to Superintendent of Documents, Government Printing Office, Washington, D. C. 20540. Expansion of weather symbols appears on Sunday Map only.

FIRST CLASS MAIL

U. S. Weather Report

U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION WEATHER BUREAU SILVER SPRING, MD. 20910

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SUNDAY, MARCH 17, 1968

SYMBOLIC FORM OF MESSAGE

iii Nddff VVww PPPTT NChCC TOpp 7RRRt

SAMPLE CODED MESSAGE

405 83220 12716 24731 67292 30228 74542

SYMBOLIC STATION MODEL

ff T T dd C M PPP VV ww N ± ppa T d d C L N h WR h RR

SAMPLE PLOTTED REPORT

31 247 3/4 * * +28 30 --- 6.4 2 45

Weather maps showing the development and movement of weather systems are among the principal tools used by the weather forecaster.

PRINCIPAL SURFACE WEATHER MAP To prepare the surface map and present the information quickly and pictorially, two actions are necessary: (1) Weather observers at many places must go to their posts at regular times each day to observe the weather and send the information by wire or radio to the offices where the maps are drawn; and (2) the information must be quickly transcribed to the maps.

CODES AND MAP PLOTTING A great deal of information is contained in a brief coded weather message. Each item was named and described in plain language, a very lengthy message would be required; and it would be confusing to read and difficult to transfer to a map.

circle on the weather map, many of the code figures are transcribed exactly as sent. Entries in the station model which are not made in code figures or actual values found in the message are usually in the form of symbols which graphically represent the element concerned.

Both the code and the station model are based on international agreements. Through such standardized use of numerals and symbols, a meteorologist of one country can use the weather reports and weather maps of another country even though he does not understand the language.

The international code form for surface reports used by the Weather Bureau beginning January 1, 1955, is shown in abridged form in block 1 together with a corresponding sample message. Also included are the symbolic station model used on the printed map, a sample station model entered from the sample message, and an explanation of the symbols with remarks on map entries in block 2.

Many of the elements in the plotting model are entered in values which can be interpreted directly. However, some require reference to code tables. These tables are given in the numbered blocks 3 through 11 to the right of the station model and explanation of symbols and map entries. Those who wish a more complete explanation of the code are referred to the Manual for Synoptic Code (WBAN) which is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

FRONTS AND AIR MASSES The boundary between two different air masses is called a "front." Important changes in weather, temperature, wind direction, and cloud conditions, occur with the passage of a front. High cirrus and/or triangular symbols are placed on the lines representing fronts to indicate the kind of front. The side on which the symbols are placed indicates the

direction of frontal movement. The boundary of relatively cold air of polar origin advancing into an area occupied by warmer air, often of tropical origin, is called a "cold front." The boundary of relatively warm air advancing into an area occupied by colder air is called a "warm front." The line along which a cold front has overtaken a warm front at the ground is called an "occluded front." A boundary between two air masses, which shows at the time of observation little tendency to advance into either the warm or cold areas, is called a "stationary front." Air mass boundaries are known as "surface fronts" when they intersect the ground, and as "upper air fronts" when they do not. Surface fronts are drawn in solid black, fronts aloft are drawn in outline only.

Front symbols are given below: Cold front (surface), Stationary front (surface), Warm front (surface), Warm front (aloft), Occluded front (surface), Cold front (aloft)

A front which is disappearing or is weak and decreasing in intensity is labeled "Frontolysis."

A front which is forming is labeled "Frontogenesis."

A "squall line" is a line of thunderstorms or squalls usually accompanied by heavy showers and shifting winds, and is indicated as follows: ---

The paths followed by individual disturbances are called storm tracks and are shown as ---. The symbols 8 and 9 indicate past positions of the low pressure center at 6-hour intervals. "HIGH" (H) and "LOW" (L) indicate the centers of high and low barometric pressure. Solid lines are isobars and connect points of equal sea level barometric pressure. The spacing and orientation of these lines on weather maps are an indication of speed and direction of wind flow. In general, wind direction is parallel to these lines with low pressure to the left of observer looking downwind. Speed is directly proportional to the closeness of the lines (termed pressure gradient). Isobars are labeled in the

metric unit, millibars, and may be converted to inches of mercury by use of the scale in block 12. Isotherms are lines connecting points of equal temperature. Two isotherms are drawn on the large surface weather map when applicable. The freezing or 32° F. isotherm is drawn as a dashed line (---), the 0° F. isotherm is drawn as a dash-dot (---) line. Masses of air are classified to indicate their origin and basic characteristics. For example, the letter P (Polar) denotes relatively cold air from the northern regions, and the letter T (Tropical) denotes relatively warm air from the southern regions. Letters placed before P and T indicate air of maritime characteristics (m) or continental characteristics (c). Letters placed after P and T show that the air mass is colder (k) or warmer (w) than the surface over which it is moving. A plus sign (+) between two air mass symbols indicates mixed air masses, and an arrow between two symbols indicates a transitional air mass changing from one type to the other. Two air mass symbols, one above the other and separated by a line, indicate one air mass aloft and another at lower levels. Air mass symbols are formed by combinations of the following letters:

m - Maritime; c - Continental; A - Arctic; P - Polar; T - Tropical; E - Equatorial; S - Superior (a warm, dry air mass having its origin aloft); k - colder, and w - warmer than the surface over which the air mass is moving.

Areas where precipitation is occurring at the time of observation are shaded.

AUXILIARY MAPS

TEMPERATURE MAP Temperature data are entered from selected weather stations in the United States. The figures entered above the station dot denote maximum temperatures reported from these stations during the 24 hours ending 1:00 a.m., E.S.T.; the figures entered below the station dot denote minimum temperature during the 24 hours ending at 1:00 p.m., E.S.T., of the previous day. The letter "M" denotes missing data.

Shaded areas labeled "HIGHER" or "LOWER" indicate the areas where temperatures recorded at 1:00 a.m., E.S.T., are at least 10° warmer or colder than 24 hours ago.

PRECIPITATION MAP Precipitation data are entered from selected weather stations in the United States. When precipitation has occurred at any of these stations in the 24-hour period ending at 1:00 a.m., E.S.T., the total amount, in inches and hundredths, is entered above the station dot. When the figures for total precipitation have been compiled from incomplete data and entered on the map, the amount is underlined. "M" indicates a trace of precipitation, and the letter "M" denotes missing data. The geographical areas where precipitation has fallen during the 24 hours ending at 1:00 a.m., E.S.T., are shaded.

CONTINENTAL MAP The insert map of nearly the entire North American continent shows the surface pressure pattern and frontal analysis twelve hours earlier than the principal map. Areas of precipitation at maptime are shaded.

SURFACE FORECAST MAP The insert map portrays surface pressure and frontal patterns expected at 7:00 p.m., E.S.T. today, or 18 hours after the principal map. Comparison of this map with the principal map will show forecast movements and changes in the surface pressure and frontal patterns.

500-MILLIBAR MAP Contour lines, isotherms, and wind arrows are shown on the insert map for the 500-millibar contour level. Solid lines are drawn to show height above sea level and are labeled in feet. Dashed lines are drawn at 5° intervals of temperature, and labeled in degrees Celsius. A temperature conversion table is shown in block 13. True wind direction is shown by "arrows" which are plotted as flying with the wind. The wind speed is shown by flags and feathers, each flag representing 50 knots, each full feather 10 knots, and each half-feather 5 knots. For conversion to miles per hour, refer to block 9.

INQUIRIES Inquiries regarding these maps may be addressed to Chief, U. S. Weather Bureau, Washington, D. C., 20235.

EXPLANATION OF SYMBOLS AND MAP ENTRIES

Table with 2 columns: Symbol and Explanation. Includes entries for station number, cloud cover, wind speed, visibility, present weather, barometric pressure, current air temperature, fraction of sky covered, cloud type, height of base of cloud, cloud type, cloud type, temperature of dewpoint, characteristic of barograph trace, pressure change in 3 hours preceding observation, indicator figure, amount of precipitation, time precipitation began or ended, and depth of snow on ground.

Table with 7 columns: Cloud Abbreviation, Description, Cloud Abbreviation, Description, Cloud Abbreviation, Description, and Sky Coverage. Includes entries for various cloud types like Cirrus, Cirrostratus, Altostratus, etc.

PRESENT WEATHER (Descriptions Abridged from W. M. O. Code) Table with 10 columns: Symbol, Description, Symbol, Description, Symbol, Description, Symbol, Description, Symbol, Description. Includes a temperature scale at the bottom.