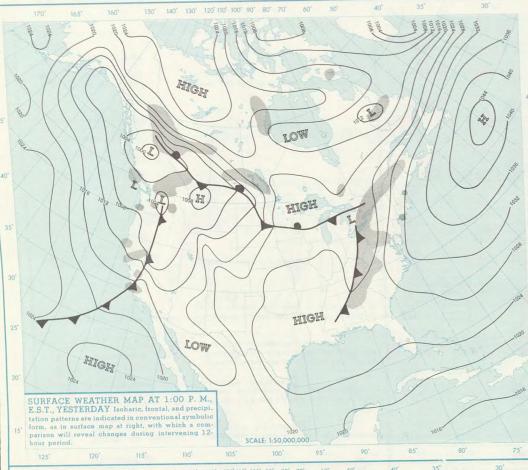
DAILY WEATHER MAP

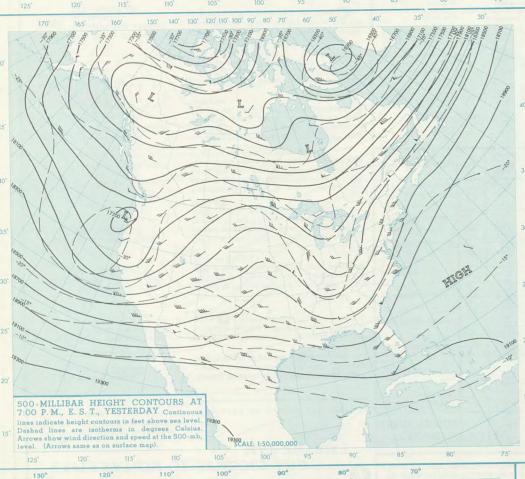
U.S. DEPARTMENT OF COMMERCE

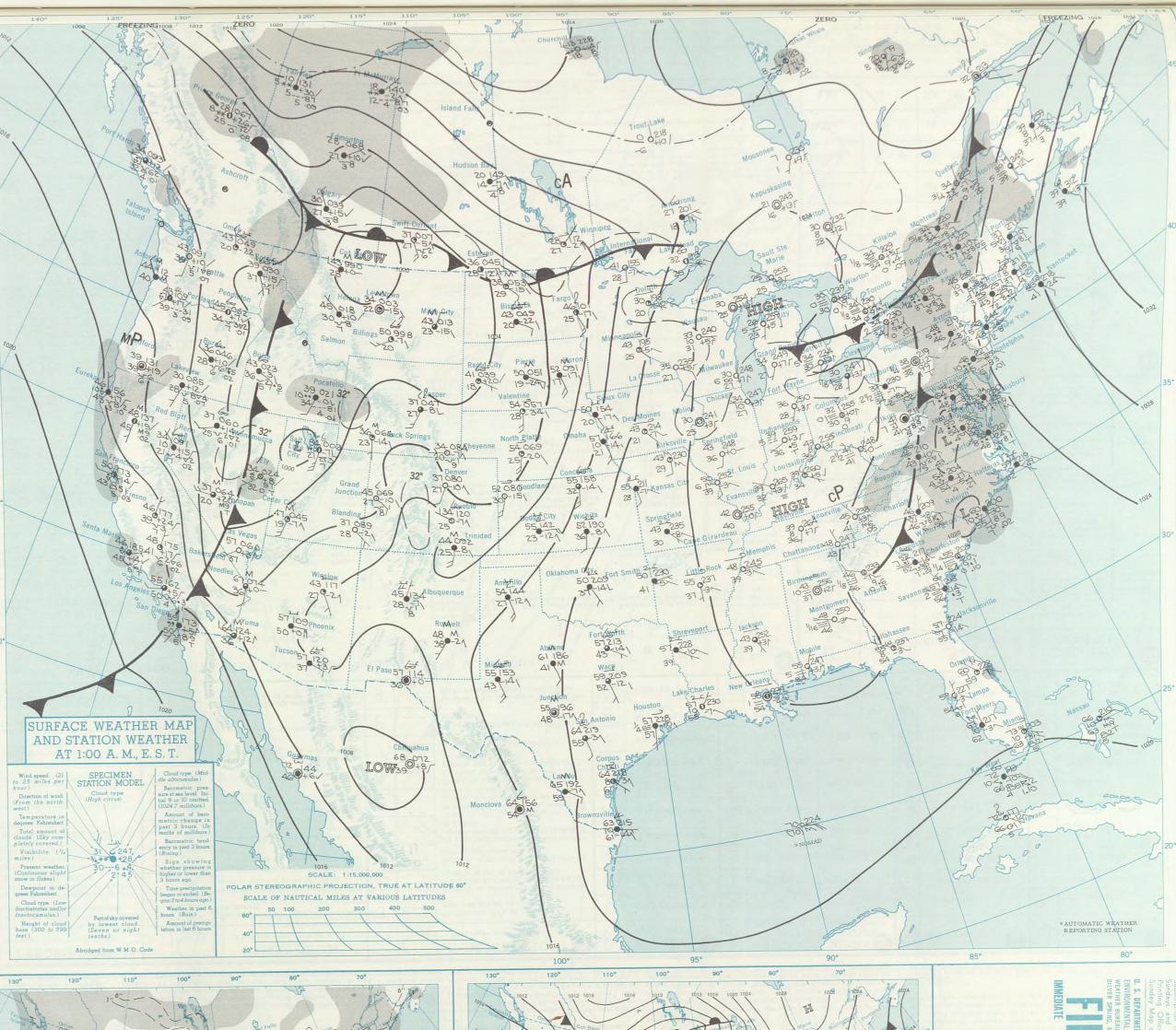
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION WEATHER BUREAU

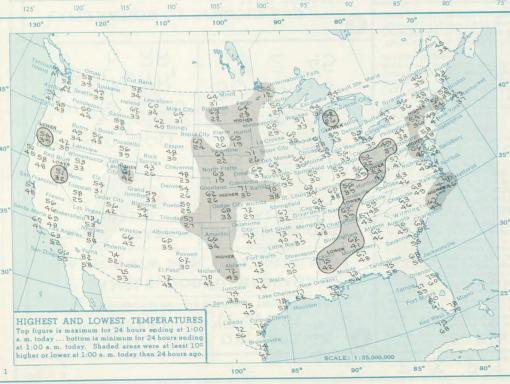
SUNDAY, MARCH 17, 1968

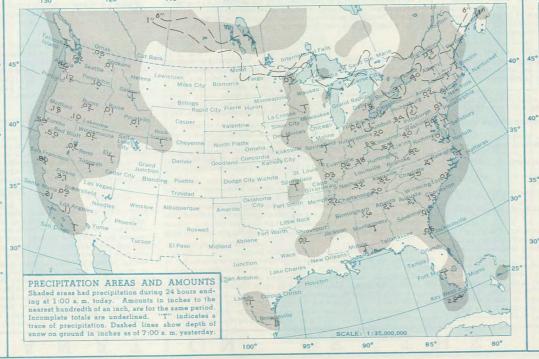
Maps prepared by National Meteorological Center, Washington, D. C.

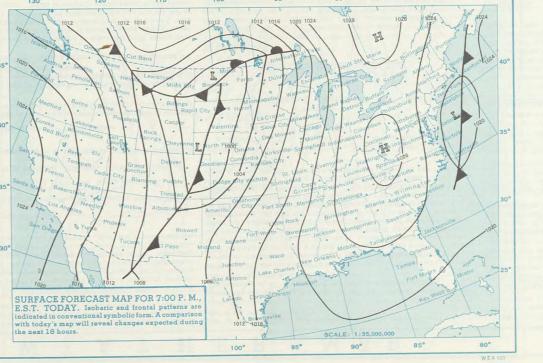












SAMPLE CODED MESSAGE 405 83220 12716 24731 67292 30228 74542

Note: This Abridged Code Shows Only Data Normally Plotted on Printed Maps

SYMBOLIC STATION SAMPLE PLOTTED MODEL

TTda CMPPP VVww ® ±ppa ToTo CLNhWR h RR

VV fraction

W Past weather 6 = rain

TT Current air temper-

Fraction of sky covered

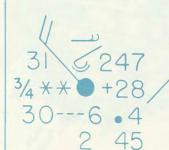
by low or middle cloud 6 = 7 or 8 tenths

Cloud type
7 = Fractostratus and/
or Fractocumulus of

bad weather (scud)

 $31 = 31^{\circ} F$ .

REPORT



EXPLANATION OF SYMBOLS AND

MAP ENTRIES Explanation of symbols and decode of example above Remarks on coding and plotting Station number 405 = Washington station circle. Omitted on Daily Weathe Map in favor of printed station names N Total amount of cloud
8 = completely covered Observed in tenths of cloud cover and coded in Oktas (eighths) according to code table in block 6. Plotted in symbols shown in same dd True direction from which wind is blowing 32 = 320° = NW Coded in tens of degrees and plotted as the shaft of an arrow extending from the station circle toward the direction from which the wind is blowing. Wind speed in knots 20 = 20 knots Coded in knots (nautical miles per hour) and plotted as feathers and half-feathers representing 10 and 5 knots, respectively, on the

> block 👩. Decoded and plotted in miles and fractions up to 3 1/8 miles. Visibilities above 3 1/8 miles but less than 10 miles are plotted to the nearest whole mile. Values higher than 10 miles are omitted from the map. Visibility in miles and 12 = 12/16 or 3/4 miles

the wind direction arrow. See

Coded in figures taken from the "ww" table (block 3) and plotted in the corresponding symbols same block. Entries for code W W Present weather 71 = continuous slight igures 00, 01, 02, and 03 are omitted fro

> Coded in figures taken from the "W" table (block 1) and plotted in the corresponding symbols same block. No entry made for code figures 0, 1, or 2.

Coded and plotted in tens, units, and tenths of millibars. The initial 9 or 10 and the decimal point are omitted. See block (2). Barometric Pressur (in millibars) reduced to sea-level 247 = 1024.7 mb.

Coded and plotted in actual value in whole degrees F. See block 3.

Observed and coded in tenths of cloud cover. Plotted on map as code figure in message. See block 7.

Predominating clouds of types in  $C_L$  table (block 3) are coded from that table and plotted in corresponding symbols.

h Height of base of cloud 2 = 300 to 599 feet Observed in feet and coded and plotted as code figures according to code table

C<sub>M</sub> Cloud type 9 = Altocumulus of See C<sub>M</sub> table in block 3. chaotic sky

CH Cloud type 2 = Dense cirrus in See C H table in block 3.

Td dewpoint dewpoint 30 = 30° F. Temperature of Coded and plotted in actual value in whole

Coded according to table in block and barograph trace 2 = rising steadily or plotted in corresponding symbols.

Pressure change in Coded and plotted in units and tenths of pp 3 hours preceding

28 - 2.8 millibars 7 Indicator figure Not plotted.

Coded and plotted in inches to the neares hundredth of an inch. Amount of precipitation 45 = 0.45 inches Coded and plotted in figures from table in block 3.

Time precipitation began or ended 4 = 3 to 4 hours ago

S Depth of snow on ground

Weather maps showing the development and movement of weather systems are among the principal tools used by the weather forecaster. of the several types of maps used, some portray conditions near the surface of the earth, while others depict conditions at various heights in ffices, maps showing conditions at the earth's surface are drawn four re prepared twice each day. A more detailed explanation of weather

EXPLANA

PRINCIPAL SURFACE WEATHER MAP

To prepare the surface map and present the information quickly and 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. In order that the necessary speed and economy of space and transmission time may be realized, codes have been devised for sending the information and for plotting it on the maps.

CODES AND MAP PLOTTING A great deal of information is contained in a brief coded weather message. If each item were 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. Use of a code per mits the message to be condensed to a few five-figure numeral groups, each figure of which has a meaning depending on its position in the message. Persons trained in the use of the code can read the message as easily as plain language.

The location of the reporting station is printed on the map as a small circle (the station circle). A definite arrangement of the data around the station circle, called the station model, is used (see block 1). When the report is plotted in these fixed positions around the station

The international code form for surface reports used by the Wes The international code form for Suriace 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

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. In some cases, certain of the data may or may not be reported by the observer, depending on local weather conditions. Precipitation and clouds are examples. In such cases the absence of an entry on the map is interpreted as non-occurrence or non-observance of the phenomena

is interpreted as non-occurrence or non-observance of the phenomena. The letter "M" is entered where data are normally observed but not

Both the code and the station model are based on international agreements. Through such standardized use of numerals and symbols, meteorologist of one country can use the weather reports and weath maps of another country even though he does not understand the languag Weather codes are, in effect, an international language making possib

omplete interchange and use of worldwide weather reports so essentia

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, through 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. The State of Wealth of the Code of the Manual for Synoptic Code (WBAN) which is for sale by the Superintendent of Documents. intendent of Documents, U.S. Government Printing Office, Washington FRONTS AND AIR MASSES

ON

received by teletypewriter.

in present-day activities.

The boundary between two different air masses is called a "front." Important changes in weather, temperature, wind direction, and clouds, often occur with the passage of a front. Half circles 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 "warm front." The line along which a cold front has overtaken a warm "warm front." The line along which a cold front has overtaken a warm "warm front." The line along which a cold front has overtaken a warm "cold front line along which a cold front has overtaken a warm "warm front." The line along which a cold front has overtaken a warm "cold front line along which a cold front line along which a cold front line along the front line along which a cold front line along the front 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

Front symbols are given below:

Cold front (surface) Stationary front (surface)

Warm front (surface) OOOO Warm front (aloft) Occluded front (surface) AAAA Cold front (aloft)

A front which is disappearing or is weak and decreasing in intensity is

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

A "eas where precipitation is occurring at the time of observation are

The paths followed by individual disturbances are called storm tracks and are shown as  $\rightarrow$  . The symbols  $\boxtimes$  indicate past post the low pressure center at 6-hour intervals.

"HIGH" (H) and "LOW" (L) indicate the centers of high and low

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

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 rom northern regions, and the letter T (Tropical) denotes relative from northern regions, and the letter T (Tropical) denotes relatively warm air from southerly 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 movings. 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 adoft and an other at lower levels. Air mass expedies are found to see the content of the second of ther at lower levels. Air mass symbols are formed by com 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.

AUXILIARY MAPS

TEMPERATURE MAP

metric unit, millibars, and may be converted to inches of mercury by use of the scale in block 2. Shaded are as 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

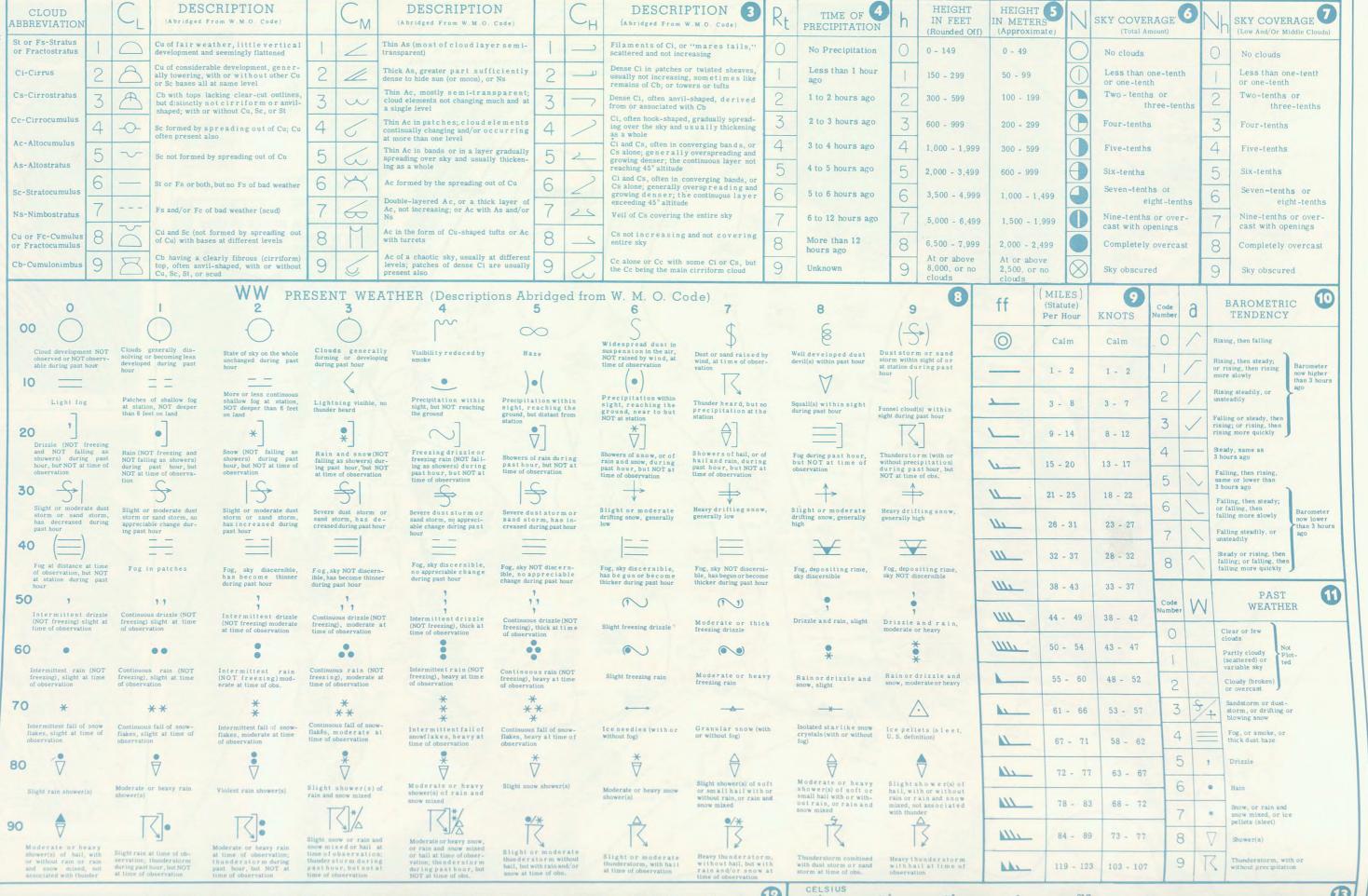
inches and hundredths, is entered above the station dot. When the figures for total precipitation have been compiled from incomplete data and entered on the map, the amount is underlined. "T" indicates a trace of precipitation, and the letter "M" denotes missing data." The geographical areas where precipitation has fallen during the 24 hours ending at 1:00 a.m., E.S.T., are shaded.

CONTINENTAL MAP

SURFACE FORECAST MAP he insert map portrays surface pressure and frontal patterns ex-cted at 7:00 p.m., E.S.T. today, or 18 hours after the principal map sumparison of this map with the principal map will show forecas ovements and changes in the surface pressure and frontal patterns

00-MILLIBAR MAP 10-MILLIBAR MAP ontour lines, isotherms, and wind arrows are shown on the insert map ir the 500-millibar contour level. Solid lines are drawn to show eight above sea level and are labeled in feet. Dashed lines are drawn neight 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. 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

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



992 995 1000 1004 1008 1012 1016 1020 1024 1028 1032 CNUS - 28.2 28.3 28.4 28.5 28.6 28.7 28.8 28.9 28.0 29.1 29.2 29.3 29.4 29.5 29.6 29.7 28.8 29.9 30.0 30.1 30.2 30.3 30.4 30.5 30.6 30.7 30.8 30.9 31.0 31.1 31.2 PRESSURE

PREEZING

DAILY WEATHER MAP

B

TEMPERATURE 1028 FREEZING