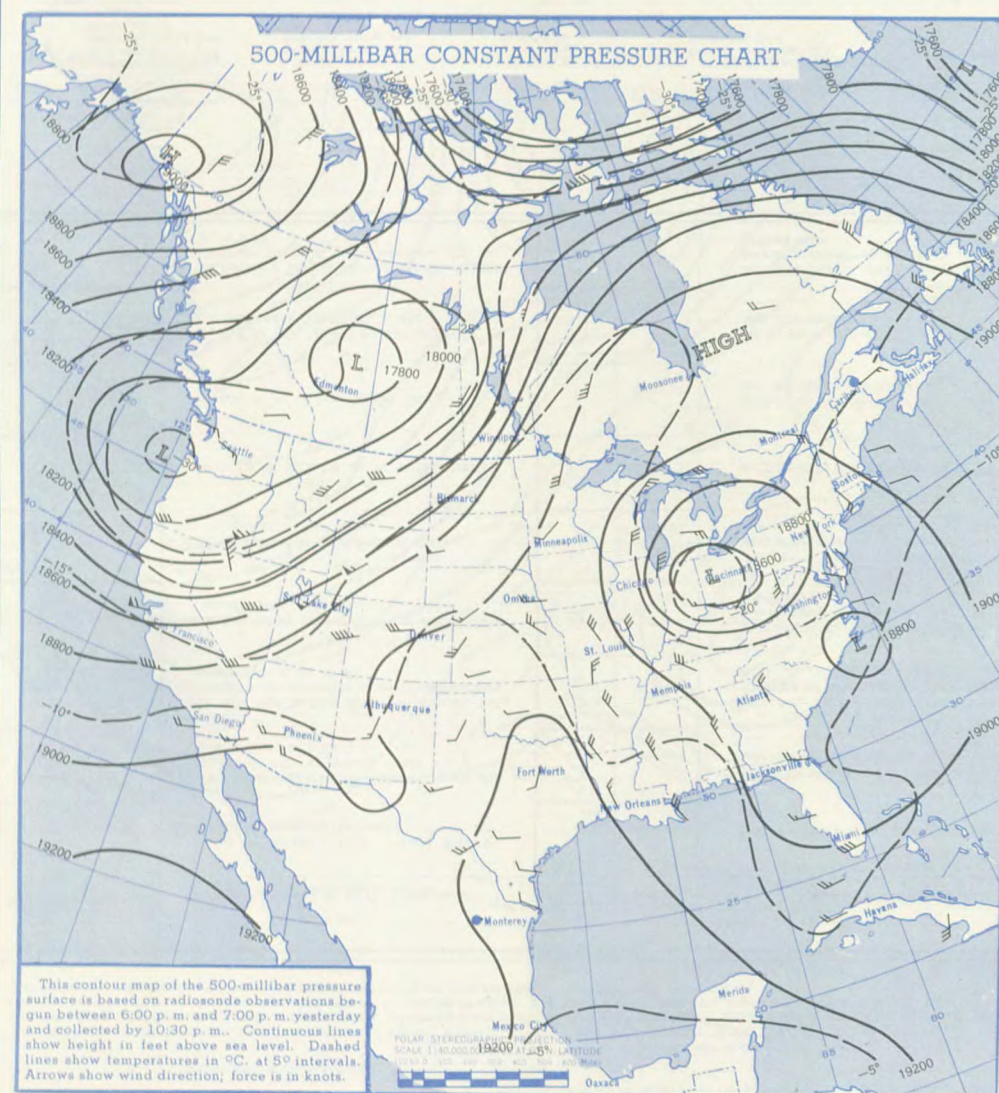
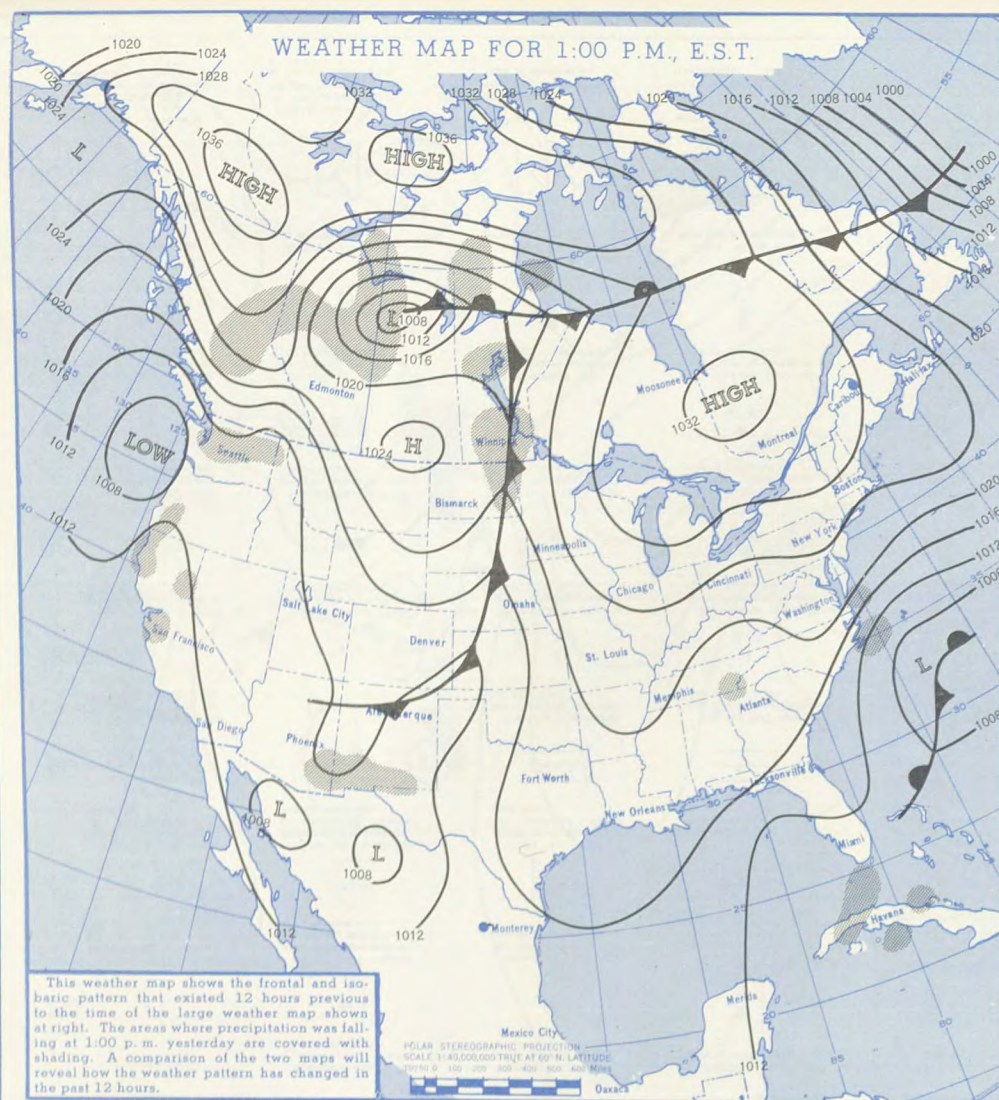




WEATHER FORECASTS

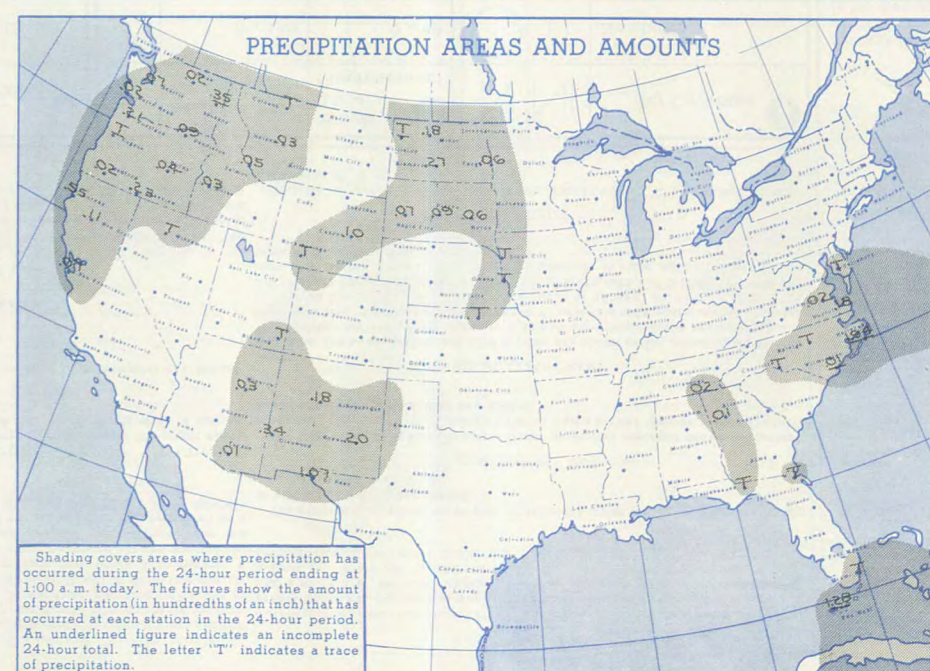
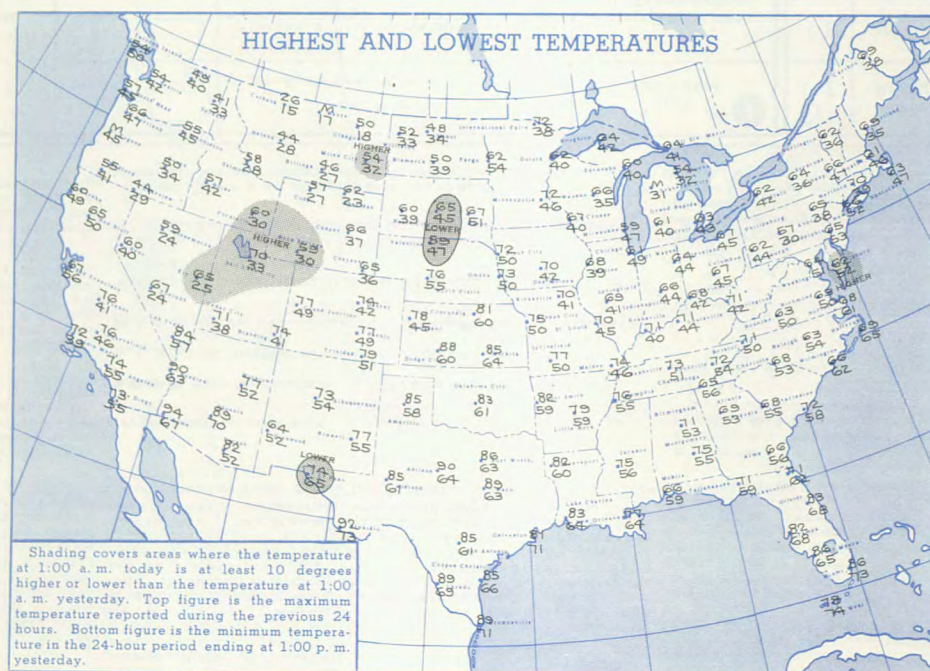
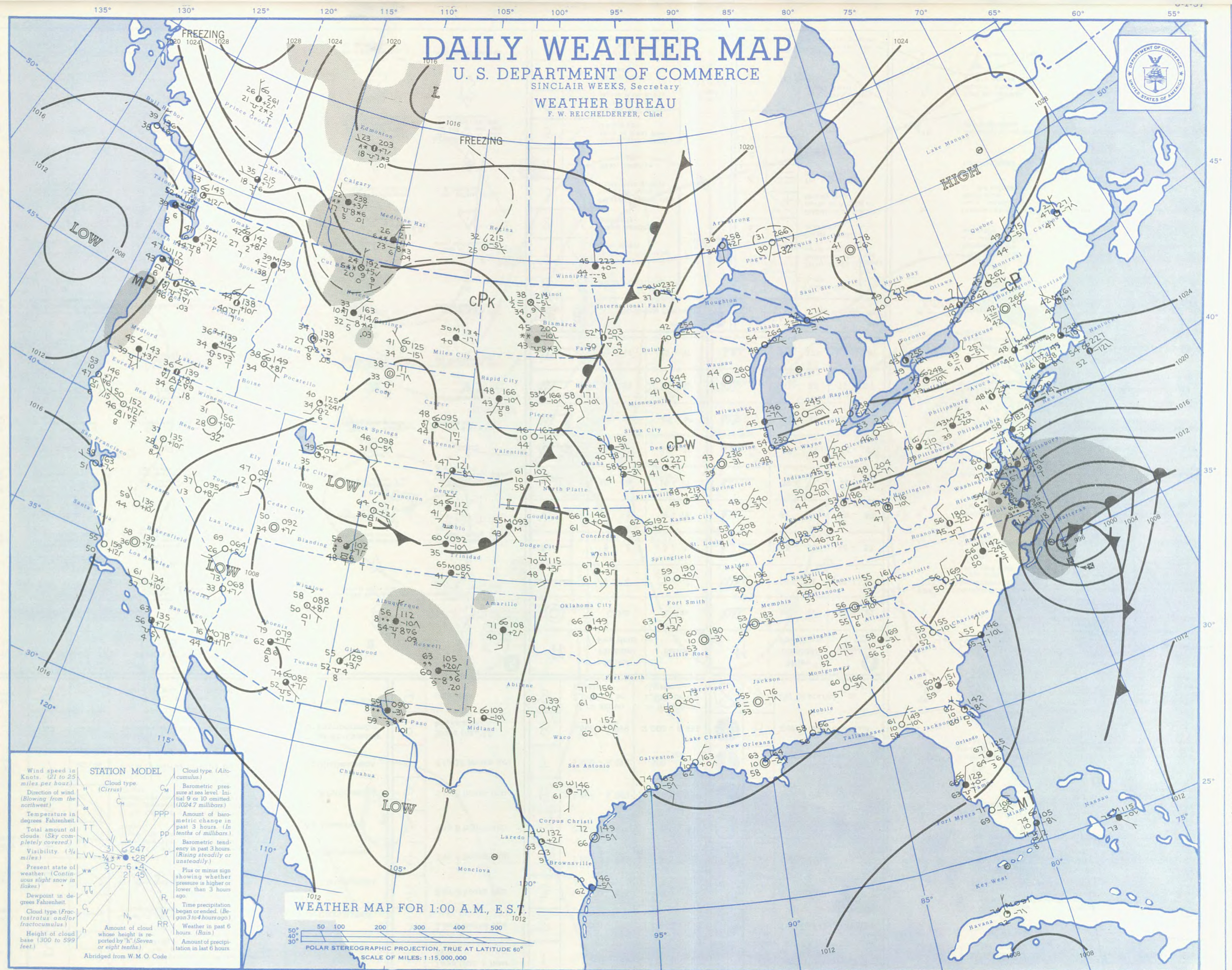
U. S. WEATHER BUREAU, WASHINGTON, D. C.
SUNDAY, OCTOBER 6, 1957

DISTRICT OF COLUMBIA AND VICINITY
Today... rain and windy with the highest around 60°.
Tonight... windy with rain ending during the night, lowest 52°.
Monday... partly cloudy and warmer.

MARYLAND, cloudy with rain and increasing winds today, except increasing cloudiness in the extreme west portion, high temperatures today in the 60's; rain and quite windy at times tonight, low temperatures in the 50's, except in the lower 60's along the eastern shore; Monday gradual clearing and decreasing winds; small craft warnings displayed, above normal tides along the coast and in the bay.

VIRGINIA, cloudy and windy with rain, mostly over the eastern half, highest around 60° today; rain ending tonight, but windy with the lowest around 50°; Monday partly cloudy and warmer; tides will run about 3 feet above normal on the Chesapeake Bay and ocean beaches with heavy seas and minor flooding at times of high tide today, storm warnings displayed on the coast and lower bay.

DELAWARE, cloudy with rain and increasing winds today, high temperatures near 60°; rain and quite windy at times tonight, low temperatures near 60°; Monday gradual clearing and decreasing winds; small craft warnings displayed, above normal tides along the coast.



THE MAPS shown here are prepared from observations taken daily at hundreds of stations throughout North America. The observations taken at 1:00 a.m. E. S. T. at approximately two hundred selected stations are inscribed on the large surface map of the United States, southern Canada, northern Mexico, and Cuba.

A complete explanation of these maps (including all symbols and tables) is printed on the reverse side of each week. Periodically, during each month, climatological charts, graphs, and, occasionally, illustrated articles of special meteorological interest are published.

To subscribe to this publication, address application with Post Office money order or check, payable to Superintendent of Documents. Mail to the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price daily including Sundays and holidays, 60 cents a month, \$7.20 a year.



EXPLANATION OF THE WEATHER MAP

Nearly all weather forecasting is based on weather maps which show the weather and its development and movement from place to place. Several different types of maps are used. Some portray conditions at the earth's surface and others show conditions in the upper air. Some cover the entire Northern Hemisphere while others cover only local areas as required for special purposes. Most of the maps used for daily forecasting by the Weather Bureau are similar to this printed daily weather map. At Weather Bureau offices, maps showing conditions at the earth's surface are drawn four times daily or oftener. Maps of upper level temperature, pressure, and humidity are drawn twice a day.

PRINCIPAL SURFACE CHART

To prepare the surface maps 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 transferred 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 brief code 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. One code permits the message to be condensed to a few five-figure numeral groups.

each figure of which has a meaning depending upon 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. When the report is plotted in these fixed positions around the station circle on the weather map, many of the code figures are transferred 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 upon 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-observation of the phenomena.

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. Weather codes are in effect an international language making possible complete interchange and use of worldwide weather reports so essential in present-day activities.

The international code form for surface reports used by the Weather Bureau beginning January 1, 1955, is shown in abridged form in the column at the right together with a corresponding sample message. 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 entry are also given.

Many of the elements in the plotting model are entered in values which can be interpreted directly. Some however require reference to code tables. These tables are given in the boxes following the station model and example. Those which are a more complete explanation of the code are referred to the Manual for Synoptic Code, First Edition, 1955.

FRONTS AND AIR MASSES

The boundary between two different air masses is called a "front." Important changes in weather and temperature often occur with the passage of a front. Half circle 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 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 little tendency at the time of observation to advance into either the warm or the 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:



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

A front which is forming or increasing in intensity is labeled "Frontogenesis."

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

The paths followed by individual disturbances are called storm tracks and are shown as follows. The symbols indicate past positions of the low pressure center at 6-hour intervals.

Masses of air are classified to indicate their origin and basic characteristics. For example, the letter P (Polar) denotes relatively cold air from northern regions and the letter T (Tropical) denotes relatively warm air from 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 from 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 CHARTS

TEMPERATURE MAP

Temperature data from about 175 stations in the United States are entered. The figures entered above the station dots 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 dots denote minimum temperatures during the 24 hours ending at 1:00 p.m., E.S.T., of the previous day.

Light gray shading, labeled "Higher" or "Lower" indicates the areas where current temperatures recorded at 1:00 a.m., E.S.T., are at least 10° higher or lower than 24 hours earlier.

PRECIPITATION MAP

Precipitation data from about 175 stations in the United States are entered. 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 near the station dot. When the figures for total precipitation have been compiled from incomplete data the amount on the map is underlined.

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 chart. Areas of current precipitation are shaded.

500-MILLIBAR CHART

Contour lines, isotherms, and wind arrows are shown on the insert chart for the 500-millibar surface. 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 Centigrade. Wind direction is shown by arrows, and wind speed by flags and feathers. Each flag representing 50 knots, each full feather 10 knots, and each half-feather 5 knots. This chart corresponds in time approximately to the large U. S. surface map.

INQUIRIES

Inquiries regarding this map may be addressed to Chief, U. S. Weather Bureau, Washington 25, D. C.

SYMBOLIC FORM OF MESSAGE

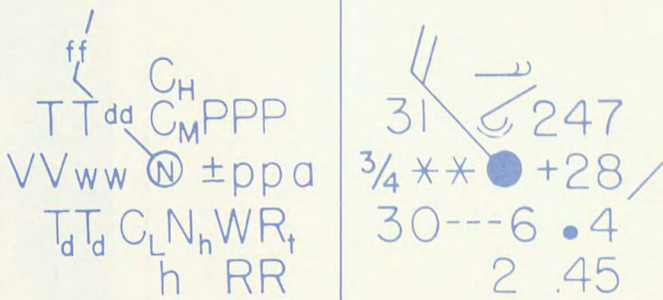
iii Nddff VVww PPPT NChQC TTopp 7RRRr
Note: This Abridged Code Shows Only Data Normally Plotted on Printed Maps.

SAMPLE CODED MESSAGE

405 83220 12716 24731 67292 30228 74542

SYMBOLIC STATION MODEL

SAMPLE PLOTTED REPORT



EXPLANATION OF SYMBOLS AND MAP ENTRIES

Symbols in order as they appear in the message Explanation of symbols and decode of example above Remarks on coding and plotting

iii Station number 405 = Washington Usually printed on manuscript maps below station circle. Omitted on Daily Weather Map in favor of printed station names.

N Total amount of cloud 8 = completely covered Observed in tenths of cloud cover and coded in Octas (eighths) according to code table in block 6. Plotted in symbols shown in same table.

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.

ff 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 shaft of the wind-direction arrow. See block 6.

VV Visibility in miles and fractions 12 = 12/16 or 3/4 miles Coded in sixteenths of miles up to 10 miles and plotted in miles and fractions. Values higher than 10 miles are omitted from the map.

ww Present weather 71 = continuous slight snow Coded in figures taken from the "ww" table (block 5) and plotted in corresponding symbols same block. Entries for code figures 00, 01, 02, and 03 are omitted from this map.

W Past weather 6 = rain Coded in figures taken from the "W" table (block 5) and plotted in the corresponding symbols same block. No entry made for code figures 0, 1, or 2.

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

TT Current air temperature 31 = 31° F Coded and plotted in actual value in whole degrees F.

Nh Amount of cloud whose height is reported by "h" 6 = 7 or 8 tenths Observed and coded same as N. Plotted as code figure given in message. See block 4.

CL Cloud type 7 = Fractostratus and/or Fractocumulus of bad weather (scud) Predominating clouds of types in CL table (block 4) 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 in block 4.

CM Cloud type 9 = Alto-cumulus of chaotic sky See CL above and table in block 4.

CH Cloud type 2 = Dense cirrus in patches See CL above and table in block 4.

T, T, d, d Temperature of dewpoint 30 = 30° F Coded and plotted in actual value whole degrees F.

a Characteristic of barograph trace 2 = rising steadily or unsteadily Coded according to table in block 7 and plotted in corresponding symbols.

pp Pressure change in 3 hours preceding observation 28 = 2.8 millibars Coded and plotted in units and tenths of millibars.

7 Indicator figure Not plotted.

RR Amount of precipitation 45 = 0.45 inches Coded and plotted in inches and hundredths.

Rt Time precipitation began or ended 4 = 3 to 4 hours ago Coded and plotted in figures from table in block 5.

s Depth of snow on ground Not plotted.

Code Number	CL	Description (Abridged From W.M.O. Code)	Code Number	CM	Description (Abridged From W.M.O. Code)	Code Number	CH	Description (Abridged From W.M.O. Code)	Cloud Abbreviation	Rt	Time of Precipitation	h	Height in Feet (Rounded Off)	Height in Meters (Approximate)	N	Nh	Sky Coverage
1		Cu of fair weather, little vertical development and seemingly flattened.	1		Thin As (most of cloud layer semitransparent).	1		Filaments of Ci, or "mares tails," scattered and not increasing.	St or Fs-Stratus or Fractostratus	0	No Precipitation	0	0 - 149	0 - 49	0	0	No clouds
2		Cu of considerable development, generally towering, with or without other Cu or Sc bases all at same level.	2		Thick As, greater part sufficiently dense to hide sun (or moon), or Ns.	2		Dense Ci in patches or twisted sheaves, usually not increasing, sometimes like remains of Cb; or towers or tufts.	Ci-Cirrus	1	Less than 1 hour ago	1	150 - 299	50 - 99	1	1	Less than one-tenth or one-tenth
3		Cb with tops lacking clear-cut outlines, but distinctly not cirriform or anvil-shaped; with or without Cu, Sc, or St.	3		Thin Ac, mostly semi-transparent; cloud elements not changing much and at a single level.	3		Dense Ci, often anvil-shaped, derived from or associated with Cb.	Cs-Cirrostratus	2	1 to 2 hours ago	2	300 - 599	100 - 199	2	2	Two and three-tenths
4		Sc formed by spreading out of Cu; Cu often present also.	4		Thin Ac in patches; cloud elements continually changing and/or occurring at more than one level.	4		Ci, often hook-shaped, gradually spreading over the sky and usually thickening as a whole.	Cc-Cirrocumulus	3	2 to 3 hours ago	3	600 - 999	200 - 299	3	3	Four-tenths
5		Sc not formed by spreading out of Cu.	5		Thin Ac in bands or in a layer gradually spreading over sky and usually thickening as a whole.	5		Ci and Cs, often in converging bands, or Cs alone; generally overspreading and growing denser; the continuous layer not reaching 45° altitude.	Ac-Alto-cumulus	4	3 to 4 hours ago	4	1,000 - 1,999	300 - 599	4	4	Five-tenths
6		St or Fs or both, but no Fs of bad weather.	6		Ac formed by the spreading out of Cu.	6		Ci and Cs, often in converging bands, or Cs alone; generally overspreading and growing denser; the continuous layer exceeding 45° altitude.	As-Altostratus	5	4 to 5 hours ago	5	2,000 - 3,499	600 - 999	5	5	Six-tenths
7		Fs and/or Fs of bad weather (scud)	7		Double-layered Ac, or a thick layer of Ac, not increasing; or Ac with As and/or Ns.	7		Veil of Cs covering the entire sky.	Sc-Stratocumulus	6	5 to 6 hours ago	6	3,500 - 4,999	1,000 - 1,499	6	6	Seven and eight-tenths
8		Cu and Sc (not formed by spreading out of Cu) with bases at different levels.	8		Ac in the form of Cu-shaped tufts or Ac with turrets.	8		Cs not increasing and not covering entire sky.	Cu or Fc-Cumulus or Fractocumulus	7	6 to 12 hours ago	7	5,000 - 6,499	1,500 - 1,999	7	7	Nine-tenths or overcast with openings
9		Cb having a clearly fibrous (cirriform) top, often anvil-shaped, with or without Cu, Sc, St, or scud.	9		Ac of a chaotic sky, usually at different levels; patches of dense Ci are usually present also.	9		Cc alone or Cc with some Ci or Cs, but the Cc being the main cirriform cloud.	Cb-Cumulonimbus	8	More than 12 hours ago	8	6,500 - 7,999	2,000 - 2,499	8	8	Completely overcast
										9	Unknown	9	At or above 8,000, or no clouds	At or above 2,500, or no clouds	9	9	Sky obscured

Code Number	0	1	2	3	4	5	6	7	8	9	ff	Miles (Statute) Per Hour	Knots	ff	Miles (Statute) Per Hour	Knots
00												Calm	Calm		44 - 49	38 - 42
10												1 - 4	1 - 2		50 - 54	43 - 47
20												5 - 8	3 - 7		55 - 60	48 - 52
30												9 - 14	8 - 12		61 - 66	53 - 57
40												15 - 20	13 - 17		67 - 71	58 - 62
50												21 - 25	18 - 22		72 - 77	63 - 67
60												26 - 31	23 - 27		78 - 83	68 - 72
70												32 - 37	28 - 32		84 - 89	73 - 77
80												38 - 43	33 - 37		119 - 123	103 - 107
90																