Daily Series SYNOPTIC WEATHER MAPS Part I

HISTORICAL BACKGROUND

The first series of historical sea-level weather maps for the Northern Hemisphere began with January 1899 and extended through June 1957. Upper-air maps of the 500-millibar pressure surface were added beginning with the month of December 1944 and also extended through June 1957.

A special series of sea-level and 500-millibar maps was prepared for the period July 1957 through December 1958 in connection with the International Geophysical Year. The analyses were based on checked data on microcards prepared by the World Meteorological Organization as a primary data source, and were coordinated with similar maps for the remainder of the world. Together they resulted in a set of IGY World Weather Maps. The Northern Hemisphere sea-level and 500-millibar maps were published for this period under the title of "International Geophysical Year World Weather Maps, Part I, Northern Hemisphere."

The next series of Northern Hemisphere Weather Maps covers the period from January 1959 through December 1963, and is similar to the maps of the series during the period of January 1949 through June 1957. Beginning with January 1961, the 500-millibar charts were prepared from computer-analyzed charts produced at the National Meteorological Center (NMC), except for a few of the earlier issues where only hand-drawn charts were available. During the months of January through April 1961, isotherms were not included on the machine-analyzed charts, so they were added by reference to observations and comparisons with other hand-drawn charts.

Starting with January 1964, with the exception of the sea-level map for May 1964, whose preparation was identical with the maps in the 1959-1963 series, each map was prepared for publication directly from the maps drawn daily for operational use at the NMC. Each volume consists of Northern Hemisphere charts for one month, with one sea-level and one 500-millibar map for each day.*

From January 1964 through October 1967, additional data were plotted and analyzed at the National Climatic Center (NCC) in areas of sparse or no coverage. An area in the eastern half of the Northern Hemisphere was added to the original area covered by the NMC analysis of the 500-millibar map. This area covered that part of the globe equatorward from the straight line connecting the points at 10°N. Latitude, 5°W. Longitude; 56°N. Latitude, 70°E. Longitude; and 15°N. Latitude, 130°E. Longitude. In cases where additional data were plotted, these data were gathered from every available source: special forms or listings furnished for this publication by cooperating National Meteorological Services, data and charts published by those Services, weather logs of commercial ships, and collections of radio and teletypewriter reports.

Additional or sparse area data entries made at the NCC ended with the October 1967 charts. From November 1967 to the date of the maps in this volume, each chart is prepared for printing directly from the maps drawn daily at the NMC. No modifications of analysis were made at the NCC.

PLOTTING AND ANALYSIS CHANGES

On the sea-level maps, isobars were drawn at 5-millibar intervals from the beginning of the earliest series through December 1963 and at 4-millibar intervals from January 1964 onward, except for the May 1964 volume in which a 5-millibar interval was used. Height contours on the 500-millibar map were drawn at intervals of 200 feet from the beginning of the earliest series through June 1957. After that, an 80-meter interval was used from July 1957 through December 1958; an interval of 200 feet was again used from January 1959 through February 1963; and a 60-meter interval from March 1963 onward. Dew point temperatures were plotted on the 500-millibar chart through December 1967. From January 1968 onward, the dew point depression was plotted in the place of the dew point. Representation of troughs by a double solid line was discontinued with the June 1953 volume.

DATA TABULATIONS

Data tabulations were added to the synoptic map series beginning with the October 1945 issue. Except for two gaps--November through December 1945 and January 1954 through June 1955--these monthly data listings are available in the following formats:

(a) In published form through December 1963.
(b) Either on 35-millimeter microfilm, or 5 by 8 inch microfiche cards from January 1964 through June 1971.
(c) On 35-millimeter microfilm from July 1971 onward.

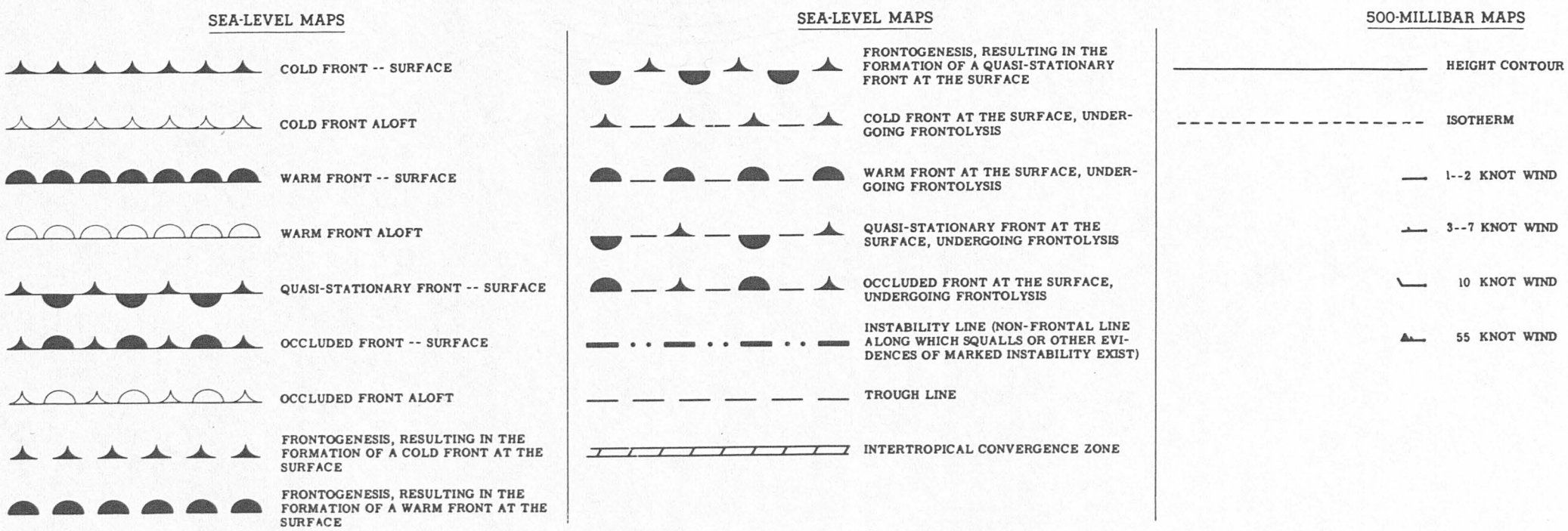
Data tabulations of the following are also available: synoptic surface reports for 1200 GMT for selected stations; radiosonde and rawinsonde reports for 0000 GMT and 1200 GMT for North America (WMO Region IV), the Atlantic and Pacific Ocean Weather Stations, and for stations outside Region IV for which data are available, such as Greenland and the North Pacific Ocean; radiosonde and rawinsonde reports for 0000 GMT for the remainder of the Northern Hemisphere; and upper wind reports for 0000 GMT for selected stations.

DOCUMENTATION - PART I

(a) U.S. Weather Bureau. Daily Synoptic Series Historical Weather Maps, Northern Hemisphere Sea-Level, January 1899 to June 1939, inclusive.
(b) U.S. Weather Bureau. Daily Series Synoptic Weather Maps. Northern Hemisphere Sea-Level Charts, July 1939 to November 1944, inclusive.
(c) U.S. Weather Bureau. Daily Series Synoptic Weather Maps, Northern Hemisphere Sea-Level and 500-Millibar Charts, December 1944 to September 1945, inclusive.
(d) Headquarters, Air Weather Service, AAF, Northern Hemisphere Historical Weather Maps, Sea-Level and 500-Millibars, October 1945 to December 1948, inclusive.
(e) U.S. Weather Bureau. Daily Series Synoptic Weather Maps, Northern Hemisphere Sea-Level and 500-Millibar Charts, January 1949 to June 1957, inclusive.
(f) U.S. Weather Bureau. IGY World Weather Maps, Part I, Northern Hemisphere, Sea-Level and 500-Millibar Charts, July 1957 to December 1958, inclusive.
(g) U. S. Weather Bureau. Daily Series Synoptic Weather Maps, Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, January 1959 to January 1960, inclusive.
(h) Environmental Science Services Administration, Daily Series Synoptic Weather Maps, Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, February 1960 to September 1962, inclusive.
(i) National Oceanic and Atmospheric Administration. Daily Series Synoptic Weather Maps, Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, October 1962 to December 1963, inclusive.
(j) Environmental Science Services Administration. Daily Series Synoptic Weather Maps, Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, January 1964 to December 1964, inclusive.
(k) National Oceanic and Atmospheric Administration. Daily Series, Synoptic Weather Maps, Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, January 1965 to October 1967, inclusive.
(l) National Oceanic and Atmospheric Administration. Daily Series, Synoptic Weather Maps. Part I, Northern Hemisphere Sea-Level and 500-Millibar Charts, November 1967, et seq.

DOCUMENTATION - PART II

(a) U.S. Weather Bureau. Daily Series Synoptic Weather Maps, Part II, Northern Hemisphere Data Tabulations, July 1955 to September 1964, inclusive.
(b) Environmental Science Services Administration. Daily Series Synoptic Weather Maps, Part II, Northern Hemisphere Data Tabulations, October 1964 to November 1969, inclusive.
(c) National Oceanic and Atmospheric Administration. Daily Series Synoptic Weather Maps, Part II, Northern Hemisphere Data Tabulations, December 1969, et seq.

* Beginning with the maps for April 1, 1957, all observations are 1200 GMT except those for stations operated by Canada and the United States. Time of these observations changes from 1230 GMT for sea-level and 1500 GMT for 500-millibars, to 1200 GMT for both levels on June 1, 1957, unless otherwise indicated.

LIST OF SYMBOLS USED ON MAPS