this sort on the maps will be found occurring between: Two cold fronts, two occluded fronts, one cold and one occluded front, or two warm fronts.

(*b*) Transformation of occluded fronts. In numerous instances, an occluded front on one map was changed to a cold front or to a warm front on the subsequent map. In performing this transformation it has been assumed that one or the other of the frontal surfaces of the occlusion was destroyed and the remaining surface was intensified by renewed frontogenetical processes.

(*c*) Transition of cold fronts to occlusions. A number of cases will be found on these maps where a cold front has apparently been transformed into an occluded front for a part of its extent. In most of these cases it is believed that a true occlusion process has taken place, but the warm front or possibly two or more warm frontal surfaces were not distinguishable on the map as surface discontinuities and could have been indicated only in an arbitrary manner. Accordingly, although it was necessary to indicate the occlusion process to satisfy the existing weather phenomena, it was deemed best in such cases to omit the doubtful warm fronts entirely from the analyses.

ISOBARIC ANALYSIS

GENERAL REMARKS

Special care has been given to the drawing of the isobars on the Northern Hemisphere maps, particularly in regions where the data were scarce or unreliable. In doubtful or uncertain cases the analysis was based on continuity from the preceding pressure pattern. Frequent reference was made to the topography of the land areas to secure the correct interpretation of orographical effects on the isobaric patterns.

USE OF SHIP PRESSURE DATA

The isobaric analysis over the oceans has presented a constant source of difficulty because of the lack of reliable and consistent pressure observations from ships. This is particularly noticeable in the earlier years when it is not uncommon to find ships' barometer readings deviating 5 to 10 millibars from their correct value. In the course of the analysis certain ships have become identified as being more consistently accurate than others, and where present these were given a greater weight than the less reliable reports. However in the larger number of cases it was not possible to decide directly between the correct and the incorrect ship pressures. The other elements in the ships' observations are not subject to the same degree of error as the pressure.

Generally speaking, winds above force two Beaufort are representative of the pressure field at sea. Consequently the technique was adopted of drawing the isobars in conformity with the wind pattern and velocity field, using the pressure values given in the observations as a rough guide to the pressure value of the isobars. In the case of isolated ship reports, pressure values which may at first have appeared to be out of line with the development expected from the preceding map were not disregarded without making a serious attempt to fit them into a logical analysis. Moreover no ship observation has been completely disregarded unless it was found to have been plotted erroneously. In this case the observation was crossed out and reported to the map plotting unit for correction.

USE OF DASHED ISOBARS

Dashed isobars were used in regions where there were insufficient data from which to draw a completely reliable pressure pattern, although a reasonable extrapolation of the pressure field was still possible.

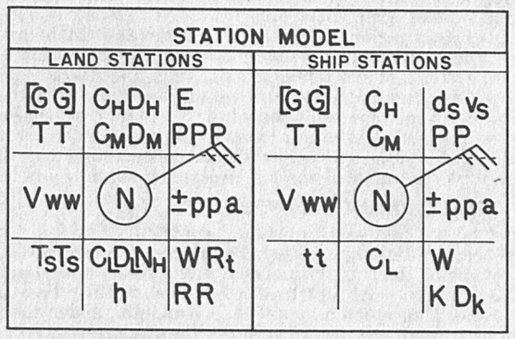
DOT AND DASH ISOBARS

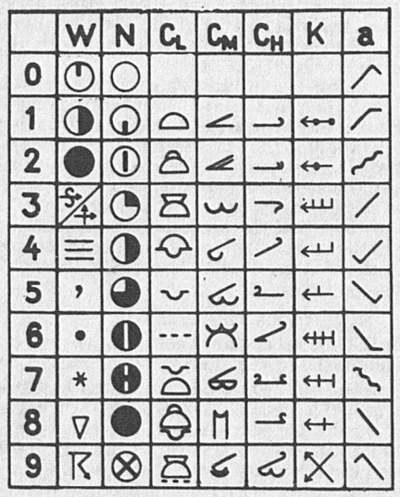
In some regions of weak isobaric gradient such as in the Tropics, supplementary isobars have been drawn for the 2½-millibar interval where these might be helpful in determining the pressure field. These supplementary isobars have been drawn with a line consisting of alternate dots and dashes. (See "Table of Symbols.")

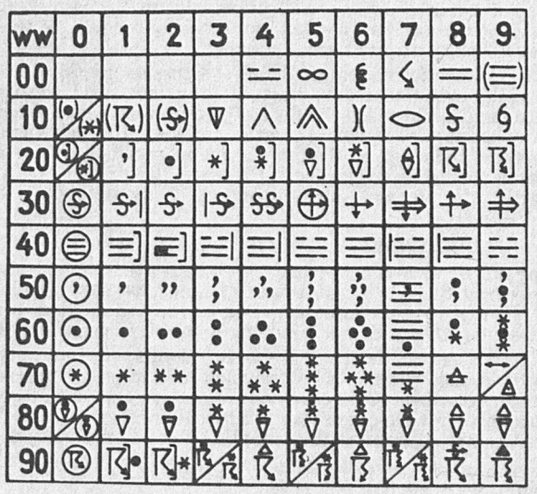
ISOBARS IN TROPICAL CYCLONES

Due to the small scale of the map it has not always been possible to draw isobars in tropical cyclones down to the lowest pressure; furthermore these minimum pressures are frequently unknown. On some maps the lowest pressure has been indicated even though all the isobars have not been drawn.

TABLE OF SYMBOLS







SYMBOL a—BAROMETRIC TENDENCY

(Characteristic of tendency during 3-hour period ending at observation.)

Code figure	Description	
0	Rising, then falling	Barometer now higher than, or the same as, 3 hours ago.
1	Rising, then steady; or rising, then rising more slowly.	
2	Rising unsteadily, or unsteady	
3	Rising steadily, or steady.	
4	Falling or steady, then rising; or rising, then rising more quickly.	
5	Falling, then rising.	Barometer now lower than 3 hours ago.
6	Falling, then steady; or falling, then falling more slowly.	
7	Falling unsteadily, or unsteady.	
8	Falling steadily.	
9	Steady or rising, then falling; or falling, then falling more quickly.	

SYMBOL C_L—FORM OF LOW CLOUD

Code figure	Form of cloud
0*	No low clouds.
1	Cumulus of fine weather.
2	Cumulus heavy and swelling, without anvil top.
3	Cumulonimbus.
4	Stratocumulus formed by the flattening of cumulus.
5	Layer of stratus or stratocumulus.
6	Low broken up clouds of bad weather.
7	Cumulus of fine weather and stratocumulus.
8	Heavy or swelling cumulus, or cumulonimbus, and stratocumulus.
9	Heavy or swelling cumulus (or cumulonimbus) and low ragged clouds of bad weather.

*Also indicates an obscured sky when "9" is reported for N_h or N.

SYMBOL C_M—FORM OF MIDDLE CLOUD

Code figure	Form of cloud
0*	No middle clouds.
1	Typical altostratus, thin.
2	Typical altostratus, thick (or nimbostratus).
3	Altocumulus, or high stratocumulus, sheet at one level only.
4	Altocumulus in small isolated patches; individual clouds often show signs of evaporation and are more or less lenticular in shape.
5	Altocumulus arranged in more or less parallel bands, or an ordered layer advancing over sky.
6	Altocumulus formed by a spreading out of the tops of cumulus.
7	Altocumulus associated with altostratus or altostratus with a partially altocumulus character.
8	Altocumulus castellatus, or scattered cumiform tufts.
9	Altocumulus in several sheets at different levels, generally associated with thick fibrous veils of cloud and chaotic appearance of the sky.

*Also indicates an obscured sky when "9" is reported for N_h or N.

SYMBOL C_H—FORM OF HIGH CLOUD

Code figure	Form of cloud
0*	No high clouds (no cirrus).
1	Cirrus, delicate, not increasing, scattered and isolated masses.
2	Cirrus, delicate, not increasing, abundant, but not forming a continuous layer.
3	Cirrus of anvil clouds, usually dense.
4	Cirrus, increasing, generally in the form of hooks ending in a point or in a small tuft.
5	Cirrus (often in polar bands) or cirrostratus advancing over the sky, but not more than 45° above the horizon.
6	Cirrus (often in polar bands) or cirrostratus advancing over the sky and more than 45° above the horizon.
7	Veil of cirrostratus covering the whole sky.
8	Cirrostratus, not increasing and not covering the whole sky.
9	Cirrocumulus predominating, associated with a small quantity of cirrus.

*Also indicates an obscured sky when "9" is reported for N_h or N.

SYMBOL D_L, D_M, D_H—DIRECTION OF CLOUD MOVEMENT

Direction of movement of low, middle and high cloud, respectively, is indicated by a small arrow in the direction of movement.

SYMBOL DD—DIRECTION OF WIND

Wind direction is represented by the shaft of an arrow which has the station circle as its head. This shaft extends away from the circle in the direction from which the wind the wind is blowing.

SYMBOL Dk—DIRECTION OF SWELL

In the open sea, the direction in which swell is moving is given by the arrow in the symbol "K."

SYMBOL ds—DIRECTION OF SHIP'S MOVEMENT

A small arrow indicates the direction in which the ship is moving at the time of observation.

SYMBOL F—WIND FORCE, BEAUFORT SCALE

Code figure	Explanatory title	Miles per hour (statute)	Beau. No.
0	Calm	Less than 1	0
1	Light air	1–3	1
2	Slight breeze	4–7	2
3	Gentle breeze	8–12	3
4	Moderate breeze	13–18	4
5	Fresh breeze	19–24	5
6	Strong breeze	25–31	6
7	High wind	32–38	7
8	Gale	39–46	8
9	Strong gale	47–54	9
9	Whole gale	55–63	10
9	Storm	64–75	11
9	Hurricane	Above 75	12

Wind force is represented by the number of feathers on the wind arrow, each short feather having a value of one, and each long feather having a value of two.

Calm is indicated by a concentric circle around the station circle: ◎

Wind force zero with direction given is shown as an arrow without feathers:

Variable winds are indicated by feathers placed directly on the station circle:

Wind force missing is indicated by an "x" placed at the end of the arrow. When both force and direction are missing, the wind arrow is omitted entirely.

SYMBOL (GG)—GREENWICH MEAN TIME

When the time of the report differs from the synoptic time of the area by more than one hour, it is recorded to the nearest hour.

SYMBOL h—HEIGHT OF LOWEST CLOUDS

Code figure	Height in meters	Height in feet
0	0 to 49	0 to 163
1	50 to 99	164 to 327
2	100 to 199	328 to 655
3	200 to 299	656 to 983
4	300 to 599	984 to 1,967
5	600 to 989	1,968 to 3,280
6	1,000 to 1,499	3,281 to 4,920
7	1,500 to 1,999	4,921 to 6,561
8	2,000 to 2,499	6,562 to 8,201
9	Above 2,500*	Above 8,202*

*Or no low clouds.

SYMBOL K—STATE OF SWELL IN OPEN SEA

Code figure	State of swell	Code figure	State of swell
0	No swell.	5	Long, moderate swell.
1	Short, low swell.	6	Short, heavy swell.
2	Long, low swell.	7	Average, heavy swell.
3	Short, moderate swell.	8	Long, heavy swell.
4	Average, moderate swell.	9	Confused swell.

SYMBOL N—TOTAL AMOUNT, ALL CLOUDS

SYMBOL N_h—AMOUNT OF CLOUDS WHOSE HEIGHT IS GIVEN BY "h"

Code figure	Proportion of sky covered by clouds	Code figure	Proportion of sky covered by clouds
0	Absolutely no clouds.	6	Nine-tenths.
1	Less than one-tenth.	7	More than nine-tenths, but with openings.
2	One-tenth.	8	Sky fully covered.
3	Two or three-tenths.	9	Sky obscured by fog, dustorm, etc.
4	Four, five, six-tenths.		
5	Seven or eight-tenths.		

Symbol 2 is used when 1 or 2 is reported; symbol 6 is used when 6 or 7 is reported.

A missing value for N is indicated by an "M" in the station circle, unless an indication for N is obtainable from the present weather. In general, when N is not reported, sky cover is taken as overcast when precipitation is reported, three quarters' covered when showers or thunderstorms are reported, and missing in all other cases.

SYMBOL PPP (PP)—ATMOSPHERIC PRESSURE

Pressures are plotted in tens, units, and tenths of millibars, with the initial 9 or 10 omitted. All pressures are reduced to sea level, standard gravity, and corrected for temperature. Pressure for ship stations are plotted to the nearest whole millibar.

SYMBOL pp—AMOUNT OF BAROMETRIC CHANGE

The net change during the three hour period ending at time of observation is entered in tenths of millibars, decimal point omitted.

SYMBOL TT—AIR TEMPERATURE

SYMBOL T_sT_s—DEWPOINT TEMPERATURE

All temperatures are entered in whole degrees of the Fahrenheit scale. Missing air temperatures are indicated by "M" only if T_sT_s is also reported; otherwise no indication is made.

SYMBOL tt—WATER TEMPERATURE

Water temperatures are entered in whole degrees of the Fahrenheit scale and are obtained directly from T_d, the coded difference between air and water temperature. The following values are used for T_d:

Code No. T_d	Difference, °F	Code No. T_d	Difference, °F
0	−10	5	+1
1	−8	6	+2
2	−5	7	+5
3	−2	8	+8
4	−1	9	+10

The difference is applied to air temperature to obtain water temperature.

SYMBOL V—HORIZONTAL VISIBILITY

Code figure	Visibility in meters		Visibility in miles
	Objects are visible at	Objects not visible at	Objects not visible at
0	----------	50	1/32 (55 yds.)
1	50	200	1/8 (220 yds.)
2	200	500	5/16 (550 yds.)
3	500	1,000	5/8 (1,100 yds.)
4	1,000	2,000	1 1/4 (2,200 yds.)
5	2,000	4,000	2 1/2 miles
6	4,000	10,000	6 miles
7	10,000	20,000	12 miles
8	20,000	50,000	30 miles
9	50,000	----------	----------

SYMBOL V_s—SHIP'S SPEED

The speed of ship's movement is entered in knots near the arrow indicating ship's direction (ds). The symbol ϕ indicates no movement, or "hove to."

SYMBOL W—PAST WEATHER

Code figure	Weather	Code figure	Weather
0	Clear or scattered clouds.	4	Fog, or thick dust-haze (visibility less than 1,000 meters, 1,100 yards.)
1	Broken clouds or variable sky,	5	Drizzle.
2	Overcast.	6	Rain.
3	Sandstorm or dust-storm, or storm of drifting snow.	7	Snow or sleet.
		8	Showers.
		9	Thunderstorm.

(0, 1, 2: not entered)

SYMBOL ww—PRESENT WEATHER

Note.—In coding present weather the highest code figure in complete table applicable to weather at time of observation is used.

Figures 00 to 19: Abbreviated description of sky and special phenomena

00 Cloudless (from no clouds up to but not including 1/10).
01 Partly cloudy (from exactly 1/10 to exactly 5/10).
02 Cloudy (over 5/10 up to and including exactly 9/10).
03 Overcast (over 9/10).
04 Low fog, whether on ground or at sea.
05 Haze (but visibility 1,000 meters, 1,100 yards or more).
06 Dust devils seen.
07 Distant lightning.
08 Light fog (visibility 1,000 meters, 1,100 yards or more).
09 Fog at a distance, but not at station (or ship).
10 Precipitation within sight.
11 Thunder, without precipitation at station (or ship).
12 Duststorm within sight, but not at station (or ship).
13 Ugly, threatening sky.
14 Squally weather.
15 Heavy squalls in last 3 hours.
16 Waterspouts seen in last 3 hours.
17 Visibility reduced by smoke.
18 Blowing dust (visibility 1,000 meters, 1,100 yards or more).
19 Signs of tropical storm or hurricane.

Figures 20 to 29: Precipitation in last hour (But not at time of observation)

20 Precipitation in any form.
21 Drizzle.
22 Continuous or intermittent rain.
23 Continuous or intermittent snow.
24 Continuous or intermittent rain and snow, mixed.
25 Rain showers.
26 Snow showers.
27 Hail, or rain and hail, showers.
28 Light or moderate thunderstorm.
29 Heavy thunderstorm.

Figures 30 to 39: Duststorms and storms of drifting snow (Visibility less than 1000 meters, 1100 yards)

30 Duststorm or sandstorm.
31 Duststorm or sandstorm has decreased.
32 Duststorm or sandstorm, no appreciable change.
33 Duststorm or sandstorm has increased.
34 Line of duststorms.
35 Storm of drifting snow.
36 Light or moderate storm of drifting snow } generally low.
37 Heavy storm of drifting snow } generally low.
38 Light or moderate storm of drifting snow } generally high.
39 Heavy storm of drifting snow } generally high.

Figures 40 to 49: Fog (Visibility less than 1,000 meters, 1,100 yards)

40 Fog.
41 Moderate fog in last hour } but not at time
42 Thick or dense fog in last hour } of observation.
43 Fog, sky discernible } has become thinner during last hour.
44 Fog, sky not discernible } has become thinner during last hour.
45 Fog, sky discernible } no appreciable change during last hour.
46 Fog, sky not discernible } no appreciable change during last hour.
47 Fog, sky discernible } has begun or become thicker during last hour.
48 Fog, sky not discernible } has begun or become thicker during last hour.
49 Fog in patches.

Figures 50 to 59: Drizzle

50 Drizzle.
51 Intermittent } light drizzle.
52 Continuous } light drizzle.
53 Intermittent } moderate drizzle.
54 Continuous } moderate drizzle.
55 Intermittent } heavy drizzle.
56 Continuous } heavy drizzle.
57 Drizzle and Fog.
58 Light or moderate drizzle and rain.
59 Heavy drizzle and light rain.

Figures 60 to 69: Rain

60 Rain.
61 Intermittent } light rain.
62 Continuous } light rain.
63 Intermittent } moderate rain.
64 Continuous } moderate rain.
65 Intermitient } heavy rain.
66 Continuous } heavy rain.
67 Rain and fog.
68 Light or moderate } rain and snow, mixed.
69 Heavy } rain and snow, mixed.

Figures 70 to 79: Snow

70 Snow.
71 Intermittent } light snow in flakes.
72 Continuous } light snow in flakes.
73 Intermittent } moderate snow in flakes.
74 Continuous } moderate snow in flakes.
75 Intermittent } heavy snow in flakes.
76 Continuous } heavy snow in flakes.
77 Snow and fog.
78 Snow grains.
79 Ice crystals; or sleet.

Figures 80 to 89: Showers

80 Showers.
81 Showers of light or moderate } rain.
82 Showers of heavy } rain.
83 Showers of light or moderate } snow.
84 Showers of heavy } snow.
85 Showers of light or moderate } rain and snow.
86 Showers of heavy } rain and snow.
87 Showers of snow pellets.
88 Showers of light or moderate } hail, or rain and hail.
89 Showers of light or moderate } hail, or rain and hail.

Figures 90 to 99: Thunderstorm

90 Thunderstorm, with precipitation falling.
91 Rain and thunder in last hour, with rain.
92 Precipitation and thunder during last hour, with snow, or rain and snow mixed.
93 Light thunderstorm, without hail, but with rain or snow.
94 Light thunderstorm, with small hail.
95 Moderate thunderstorm, without hail, but with rain or snow.
96 Moderate thunderstorm, with small hail.
97 Heavy thunderstorm, without hail, but with rain or snow.
98 Thunderstorm, combined with duststorm.
99 Heavy thunderstorm with hail.

Not all sources report present weather. When regularly reported, a missing value is indicated by "M" in the ww position.

SYMBOL RR—PRECIPITATION

The amount of precipitation is given in inches, to hundredths, for the 11 to 13-hour period ending at time of observation. Some sources report for other periods, as indicated in the description of specific sources.

ADDITIONAL SYMBOLS

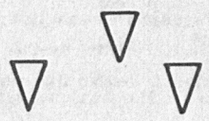
1. Parentheses enclose pressures or temperatures obtained by interpolation from isopleths drawn on previously prepared maps.

2. Brackets enclose pressure values for stations above 100 meters for which reduction to sea-level was made in the plotting unit.

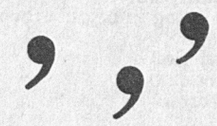
3. The symbol (Ra) indentifies reports from Cavite messages or similar wireless reports.

4. On ship reports the abbreviated name of the ship is entered below the report.

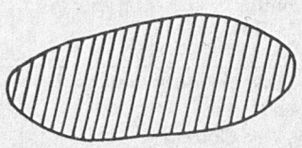
PRECIPITATION SYMBOLS



SHOWERS



DRIZZLE

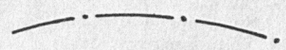


HATCHING DENOTES AREA OF PRECIPITATION (other than drizzle) OR GENERAL AREA OF MIXED PRECIPITATION TYPES.

ISOBARS

SOLID ISOBARS FOR EACH 5 MILLIBAR INTERVAL WHERE PRESSURE VALUES ARE REASONABLY CERTAIN.

DASHED ISOBARS FOR EACH 5 MILLBAR INTERVAL WHERE PRESSURE FIELD IS UNCERTAIN.

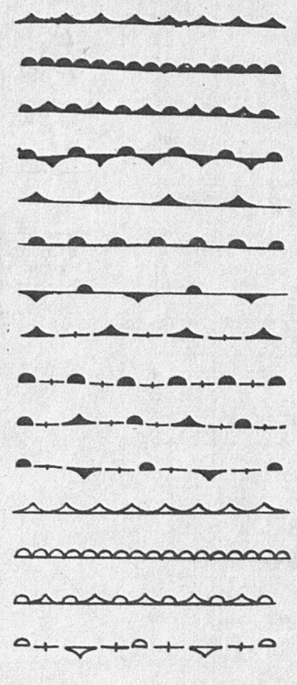


ALTERNATE DASH AND DOT FOR INTERMEDIATE VALUES OF 2.5 MILLIBARS IN REGIONS OF EXTREMELY FLAT PRESSURE FIELDS.

AIR MASS DESIGNATORS

mP	POLAR MARITIME
cP	POLAR CONTINENTAL
mT	TROPICAL MARITIME
cT	TROPICAL CONTINENTAL
cA	ARCTIC CONTINENTAL

SYMBOLS USED FOR DESIGNATING FRONTS:



COLD FRONT
WARM FRONT
OCCLUDED FRONT
STATIONARY FRONT
COLD FRONTOGENESIS
WARM FRONTOGENESIS
STATIONARY FRONTOGENESIS
COLD FRONTOLYSIS
WARM FRONTOLYSIS
OCCLUDED FRONTOLYSIS
STATIONARY FRONTOLYSIS
COLD FRONT ALOFT
WARM FRONT ALOFT
OCCLUDED FRONT ALOFT
OCCLUDED FRONTOLYSIS ALOFT

OUTLINE OF DATA SOURCES, JULY 1933

LAND AREAS

Area	Source No.	Special Code	Period of precipitation
Africa:			
French North Africa	1	A, C	No report
Egypt	2	B, D	24 hours
Asia:			
China	5	B, D	No report
India and Burma	4	G	24 hours
Indo China	5	B, D	No report
Japan and Korea, Pelew, Saipan and Ponapi	6	B,C,F‡	24 hours
Philippines and Yap	7	B	No report
Siberia	8	A	12 hours†
Asia Minor:			
Turkey	9	J	No report
Europe:			
England	10	H	No report
France	11	A	No report
Greece	9	A	No report
Norway	20*, 12	A	No report
Russia	8	A	12 hours
Spain	21*, 12	A,B,C	No report
Other European Countries	12	A	No report
Atlantic Islands §	12	A	No report
The Americas:			
North America	13	E	No report
South America	13	E	No report
Central America	13	E	No report
United States Island Possessions	13	E	No report
Greenland	14*	B, C	24 hours
Julianhaab, Godthaab, and Godhavn	22	B, D	No report
Angmagsalik and Scoresbysund	22	C, D, F, I	No report

OCEAN AREAS

Ocean		
Atlantic and Mediterranean	12, 13, 15	C, E, F, H
Pacific	13, 15	C, E, F, H

SINGLE STATION SOURCES

Station	Source	Special Code	Period of precipitation
Beirut, Syria	16	B, C	No report
Belgrade, Yugoslavia	17	B, C	No report
Georgetown, British Guiana	18	B, C	No report
Nanking, China	3	B, C	24 hours
Lisbon, Ponta Delgada, Funchal	19*, 12	A, B, C	No report
Zagreb, Yugoslavia	23*, 12	A, B, C	No report

*Used only when report missing from regular source.
†Reports at 19 hour local time only.
‡A few stations only.
§Iceland, Tenerife, Horta, Sao Vicente, San Tiago.

SOURCES OF DATA

1 Bulletin de l'Afrique du Nord, *Office National Meteorologique de France.*
2 Daily Weather Report, *Egypt.*
3 Monthly Meteorological Bulletin, *Nanking Institute of Meteorology, National Research Institute.*
4 Indian Daily Weather Report.
5 Daily Weather Charts, *Zi-ka-wei Observatory, Shanghai.*
6 Monthly Report, *Central Meteorological Observatory, Tokyo.*
7 Annual Report of the Weather Bureau, *Department of Agriculture and Commerce, Commonwealth of the Philippines.*
8 Moscow Daily Meteorological Bulletin.
9 Bulletin Quotidien du Temps. *Service Meteorologique National, Greece,*
10 Daily Weather Report, British Section, *Meteorological Office, London.*
11 Bulletin Quotidien d' Etudes de l'Office National Meteorologique de France.
12 Deutsche Seewarte Wetterbericht, *Hamburg.*
13 Forecasters' Manuscript Maps, *United States Weather Bureau.*
14 Meteorologiske Aarbog, Part II, *Meteorologiske Institut, Denmark.*
15 Ship Weather Observations, *United States Weather Bureau Forms 1201 and 1210.*
16 Monthly Bulletin of the Observatory, *American University of Beirut.*
17 Bulletin Meteorologique de l'Observatoire de Beograd.
18 Report on Meteorology, *British Guiana.*
19. Anias do Observatorio Central Meteorologico, Lisbon.
20 Vaerkart, *Norske Meteorologiske Institut.*
21 Boletin del Servicio Meteorologico Espanol, *Instituto Geografico, Catastral y de Estudistica, Madrid.*
22 Vejrberetning, *Meteorologiske Institute, Denmark,*
23 Meteorologischer Monatsbericht, *Geofizicki Institut, Zagreb.*

SPECIAL CODES

Code A

REGULAR INTERNATIONAL CODE REPORTS

The following coverages are used when N is not specifically given, but when present weather is reported:

ww given	N used	ww given	N used
00	0	04–49	Missing
01	4	50–79	8
02	5	80–99	5
03	8		

Code B

Plain language description translated to International Code symbols.

PRESENT WEATHER

Description	ww
Ground fog	04
Haze or sand haze	05
Lighting	07
Mist	08
Fog over sea	09
Thunder	11
Yellow dust	18
Thunderstorm within the last hr.	28
Rain and drizzle	58
Rain and snow	68
Sleet	79
Hail	88

Other descriptions which fit exactly International Code descriptions are used with the proper symbols.

Code C

SKY COVERAGE

Tenths of sky covered with clouds	N or N_h	Tenths of sky covered with clouds	N or N_h
0	0	4, 5, or 6	4
0, but cloud types given	1	7 or 8	5
		9	6
1	2	10	8
2 or 3	3		

Code D

SKY COVERAGE

Description	N
Clear	0
¼ or partly cloudy	3
½ or cloudy	4
¾ or very cloudy	5
4/4 or overcast	8

Code E

Forecasters' Manuscript Maps

PRESENT WEATHER

Base map description	ww used	N used when coverage missing
=	08	Missing.
q, ∧	14	Missing.
F, ≡	40	Missing.
M, ≠	50	8
R, •, ••, ∴	60	8
:∇, ∇:, ∇·		
(Land stations)	60	8
(Ship stations)	80	5
R& F, ≡̣	67	8
S, ✱	70	8
△ (with dot)	79	8
P, ✱∇	80	5
T, ⌈̣ (thunderstorm symbol)	90	5
V	(Visibility = 9)	

SKY COVERAGE

Symbol given	N used	Symbol given	N used	Symbol given	N used
○	0	⦶	4	●	8

Code F

CLOUD TYPES

Description	Cloud form used
Cu or K	L 1
Cu NB or KN	L 3
St or S / St Cu or Sk	L 5
Nb or N	L 6
Cu and St Cu or K and SK / Cu and St or K and S	L 7
Cu NB and St Cu or Kn and SK / Cu Nb and St or KN and S	L 8
Cu Nb and Nb or KN and N	L 9
A St or SC	M 1
Nb St or NS	M 2
A Cu or KC	M 3
A St and ACu or SC and KC	M 7
Ci or C	H 1
Ci St or CS	H 8
Ci Cu or CK	H 9

Code G

INDIAN PRESENT AND PAST WEATHER

Description	ww used	W used
Low ground fog.	04	4
Haze. / Dust haze. / Dust fog.	05	
Lightning.	07	
Fog at sea. / Fog at a distance.	09	
Thunder.	11	
Squally.	14	
Duststorm.	30	3
Fog. / Foggy.	40	4
Moderate fog in last hour.	41	
Drizzle. / Drizzling	50	5
Rain. / Raining.	60	6
Snow. / Snowing.	70	7
Thunderstorm. / Thunderstorm and drizzling. / Thunderstorm with hail.	90	9

Code H

PRESENT WEATHER; BEAUFORT WEATHER NOTATION

Description	ww Used
b–blue sky (not more than a quarter of the sky covered.)	(N–3)
bc–sky partly cloudy (one-half covered.)	(N–4)
c–generally cloudy (three-quarters covered.)	(N–5)
o–overcast sky.	(N–8)
v–unusual visibility.	visibility=9
z–dust haze; the turbid atmosphere of dry weather.	05
l–lighting.	07
m–mist, visibility 1000–2200 yds.	08
fs–fog over sea (coast station.)	09
jp–precipitation within sight of station	10
t–thunder.	11
u–ugly threatening sky.	13
q–squalls.	14
kq–line squall.	15
ks–storm of drifting snow.	35
f–fog, visibility 220–1100 yds.	40
fe–thick, damp fog.	40
F–thick fog, visibility less than 220 yds.	40
fg–fog on lower ground (inland station).	49
d–drizzle or fine rain.	50
r–rain.	60
s–snow.	70
rs–sleet.	79
p–passing showers..	80
h–hail.	88
h(r)–hail, or rain and hail.	88

Capital letters indicate intense, suffix "o" indicates slight, and repetition of letters indicates continuity. More specific present weather symbols are applied when sufficiently descriptive combinations are applicable.

A "solidus" divides actual existing weather from preceding conditions thus:

bc/r=fair weather after rain.

Symbols given with a solidus are plotted as past weather (W).

Code I

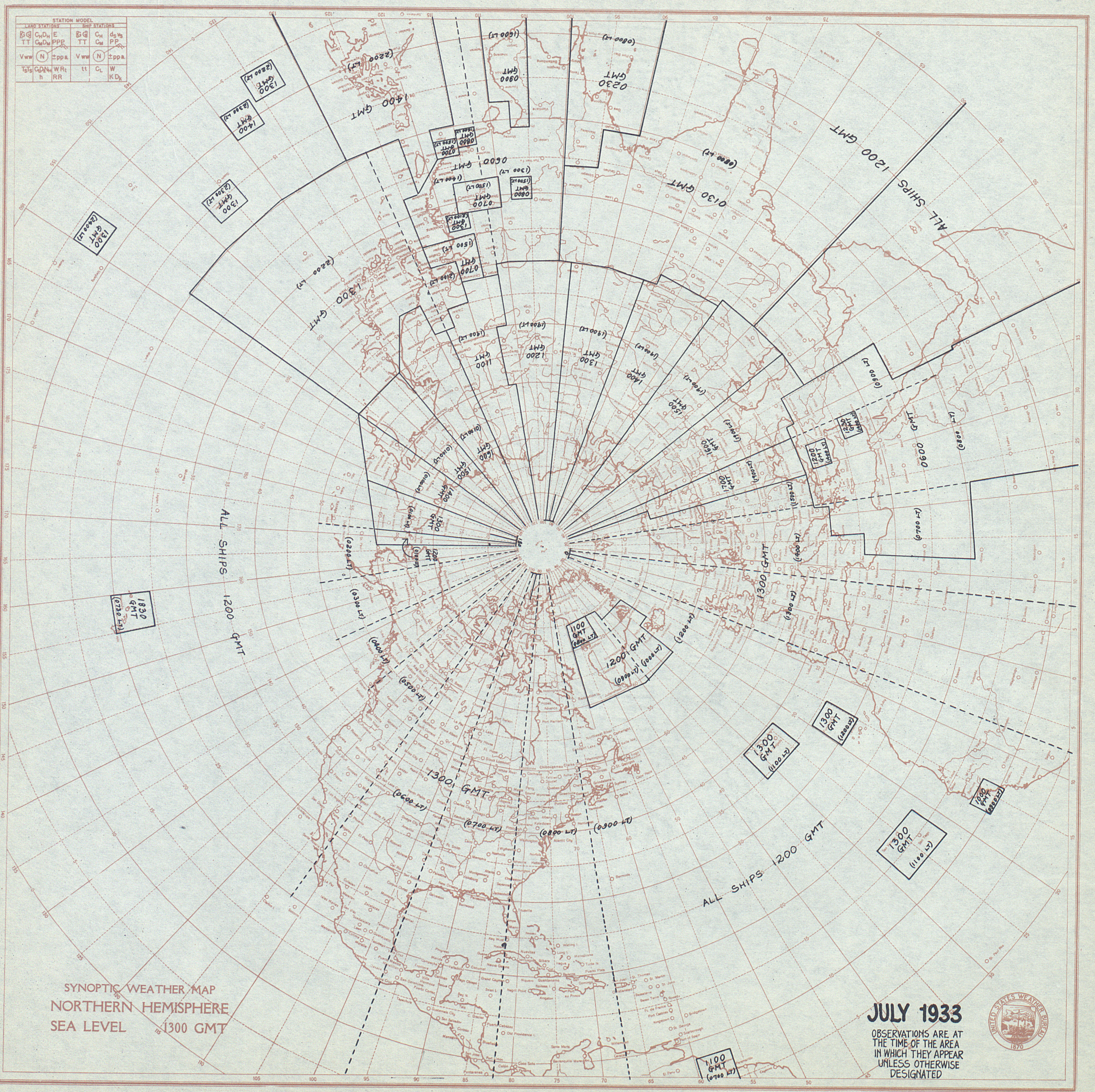
"OLD" INTERNATIONAL WEATHER CODE

Description	ww used
Precipitation within sight.	10
Thunder and lightning in neighborhood.	11
Fair to overcast:	
after rain or drizzle	22
after snow, sleet or hail	23
after thunderstorm.	28
Fog or mist.	40–49*
Passing showers.	80–89*
Drizzle.	50–56*
Rain.	61–66*
Snow, or snow and hail.	71–76*
Sleet, or rain and snow.	79
Hail, or rain and hail.	88,89*
Thunderstorm.	93–99*
Line squall.	90

*The proper symbol is determined by further qualfication in the description.

Code J

Reports are entered from previously prepared weather maps. Pressures are interpolated from the isobaric analysis.


STATION MODEL
ALL SHIPS 1200 GMT
ALL SHIPS 1200 GMT
ALL SHIPS 1200 GMT
1300 GMT
1400 GMT
0130 GMT
0600 GMT
SYNOPTIC WEATHER MAP
NORTHERN HEMISPHERE
SEA LEVEL 1300 GMT
JULY 1933
OBSERVATIONS ARE AT THE TIME OF THE AREA IN WHICH THEY APPEAR UNLESS OTHERWISE DESIGNATED
UNITED STATES WEATHER BUREAU
1870