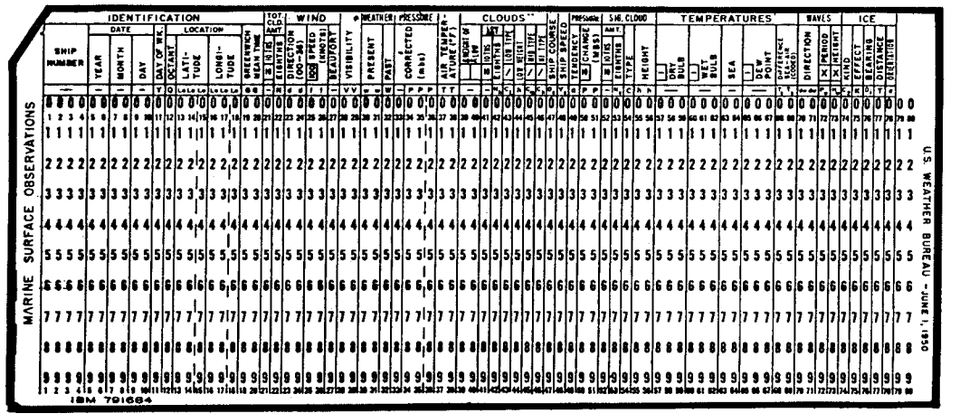
186 U.S.S.R. ICE STATION SYNOPTIC OBSERVATIONS



AREA COVERAGE

The data included in this deck are for Russian Ice Islands (NP 1, 2, 4, 6, 7, 8, 9) adrift in the Arctic Ocean. Details of the area covered by each of the seven stations should be obtained from Track Maps provided with this manual on pages 3-5.

PERIOD OF RECORD

With the exception of North Pole station #1 during the years of 1937 and 1938, the data contained in this deck are confined to the period 1950 through 1960. Each station has a separate period of record and there are some overlapping periods. North Pole station #6 has a break in record from 1 Jan 57 through 30 Jun 57. See Track Maps for approximate positions by date. NP-1, NP-2 and NP-6 on Page 3.

OBSERVATION TIME

Observation times are generally for the regular synoptic hours of 0000, 0600, 1200, and 1800 G.M.T. Exceptions to these hours are found for NP-1 and NP-2 as indicated in Station List and Information Table provided with this manual on page 2.

CODE

The WMO 1955 Synoptic Code is the form punched for these observations. Certain elements for NP-1, NP-2, and NP-4 are in earlier code forms as indicated in the Station List and Information Chart.

SOURCE

Data for these stations have been obtained through publications, microfilm, and micro-cards. For specific information as to sources used for each station see the Station List and Information Table.

MISSING DATA INDICATION

All missing data or missing observations are left blank and no identification cards are punched for missing observations.

COLUMNS AND ELEMENTS PUNCHED

Columns punched for NP-1 are 1-20, 22-26, 28-38, 42-43, 45-46 and 79
" " " NP-2 " 1-20, 22-26, 28-38, 42-43, 45-46 and 79
NP-3 No Data Available
" " " NP-4 " 1-20, 22-26, 28-38, 42-46, 49-51 and 79
NP-5 No Data Available
" " " NP-6 " 1-20, 22-26, 28-38, 42-46, 49-51, 65-67, and 79
" " " NP-7 " 1-20, 22-26, 28-38, 42-46, 49-51, 65-67, and 79
(Exception: Column 22, 28-29, 32, 66-67 not punched 1 Jan 59-31 Mar 59)
" " " NP-8 are same as NP-7 (Exception: Column 22, 28-29, 32, 66-67 not punched 1 Jun 59-31 Dec 59)
" " " NP-9 are same as NP-6

Elements reported are:

Total cloud amount
Wind Direction
Wind Speed
Visibility
Present Weather
Past Weather
Pressure
Air Temperature
Amount, Type, and Height of Low Cloud
Middle Cloud
High Cloud
Pressure Tendency
Amount of Pressure Change
Dew Point Temperature

ADDITIONAL REMARKS

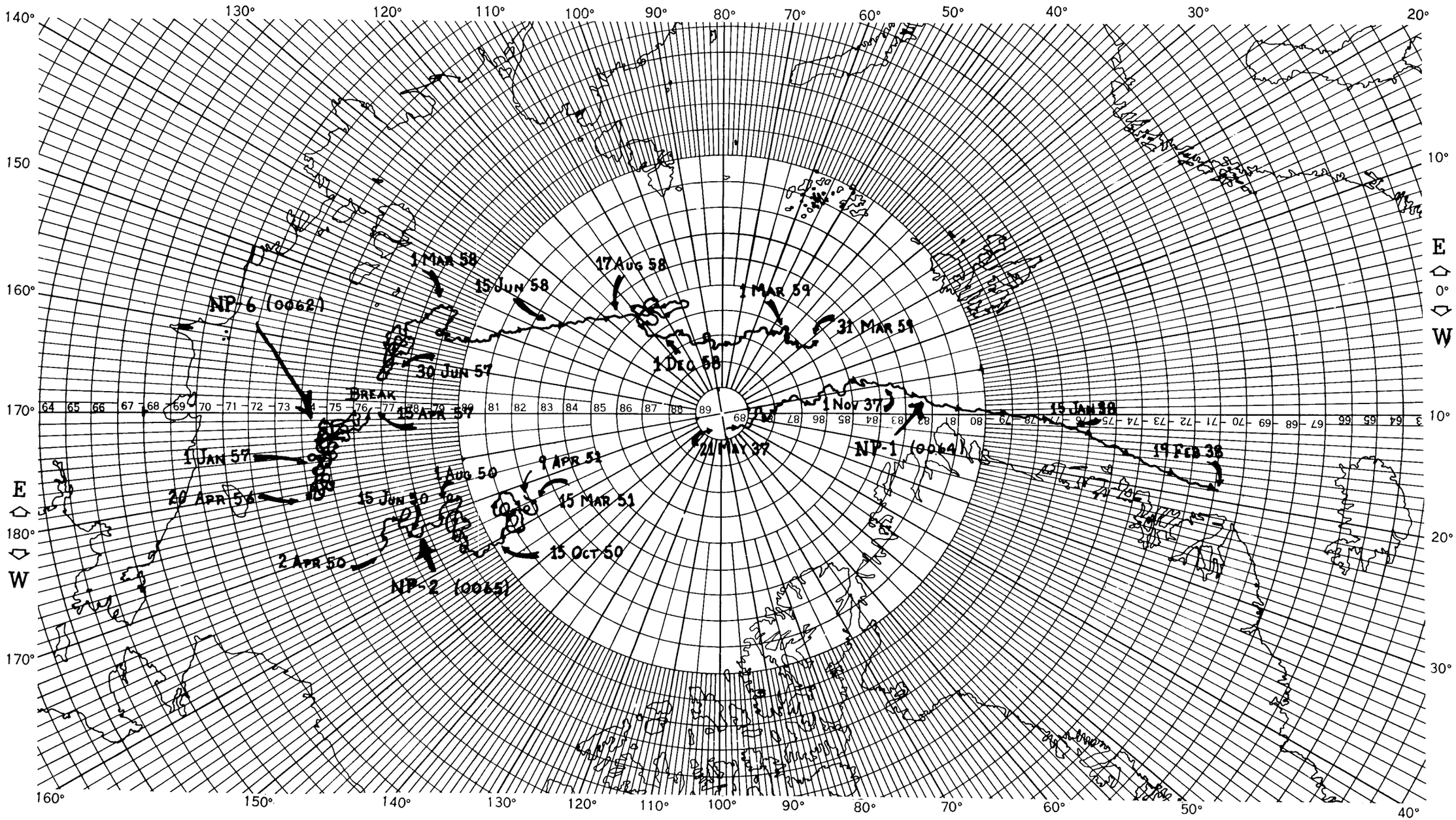
1. Times of observations which were in Moscow Time have been converted to Greenwich Meridian Time for all stations.
2. Positions which were reported in degrees (with or without tenths) for Longitude from 0° to 360°, without reference to East or West Longitude or Octants were converted to degrees Longitude, East or West, and assigned proper octant numbers.
3. Missing positions were adjusted by a time-space (distance) method.
4. All temperatures were converted from degrees Centigrade to degrees Fahrenheit.
5. All wind speeds were converted to knots.
6. The hundreds unit of pressure was entered by editing personnel.
7. An "8" is punched in column 79 to identify these cards as Russian Ice Island Observations.
8. See Station List and Information Table on page 2, Track Maps on pages 3-5, and Supplementary Notes on page 11 for individual station information.

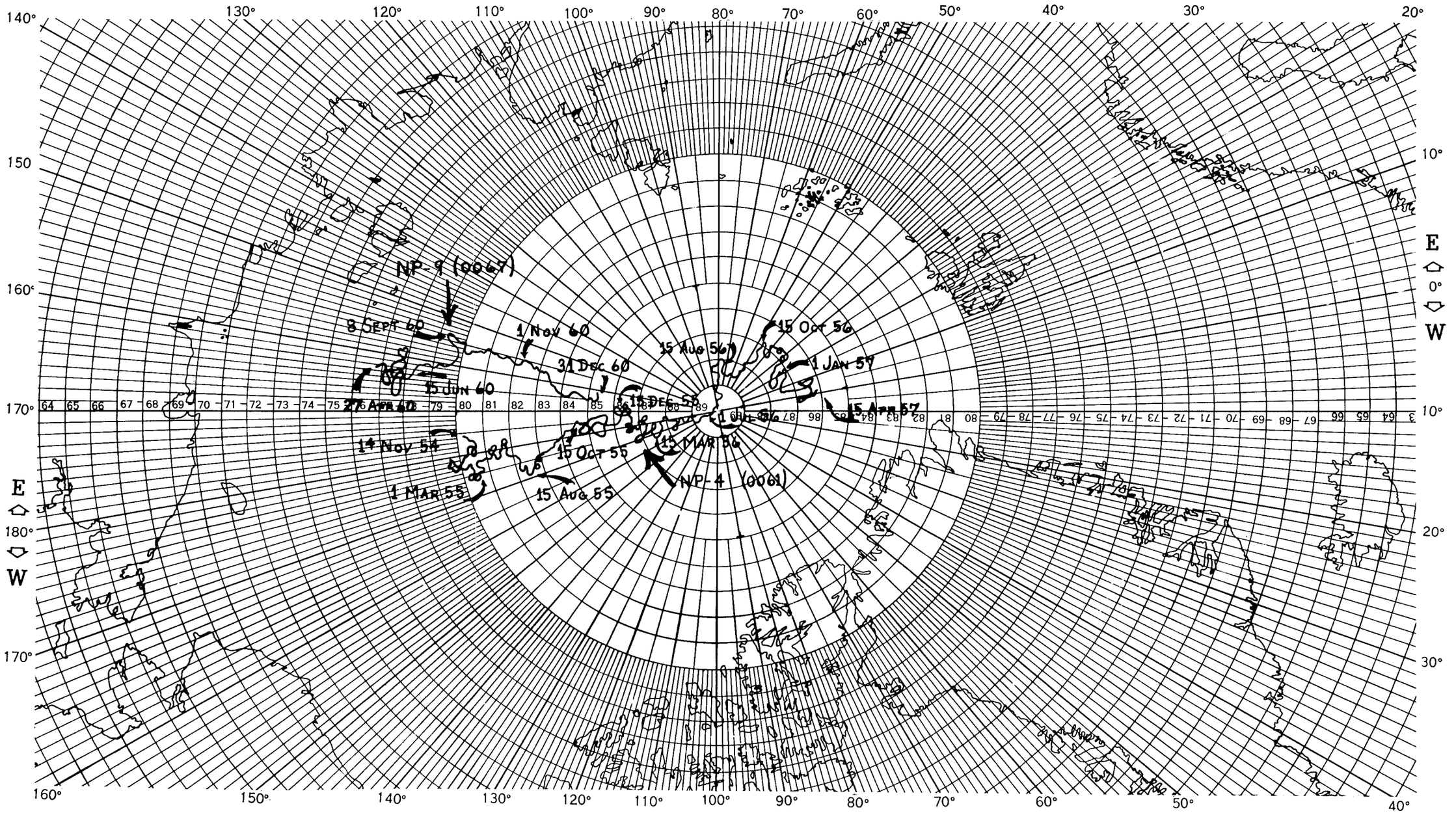
CORRECTIONS

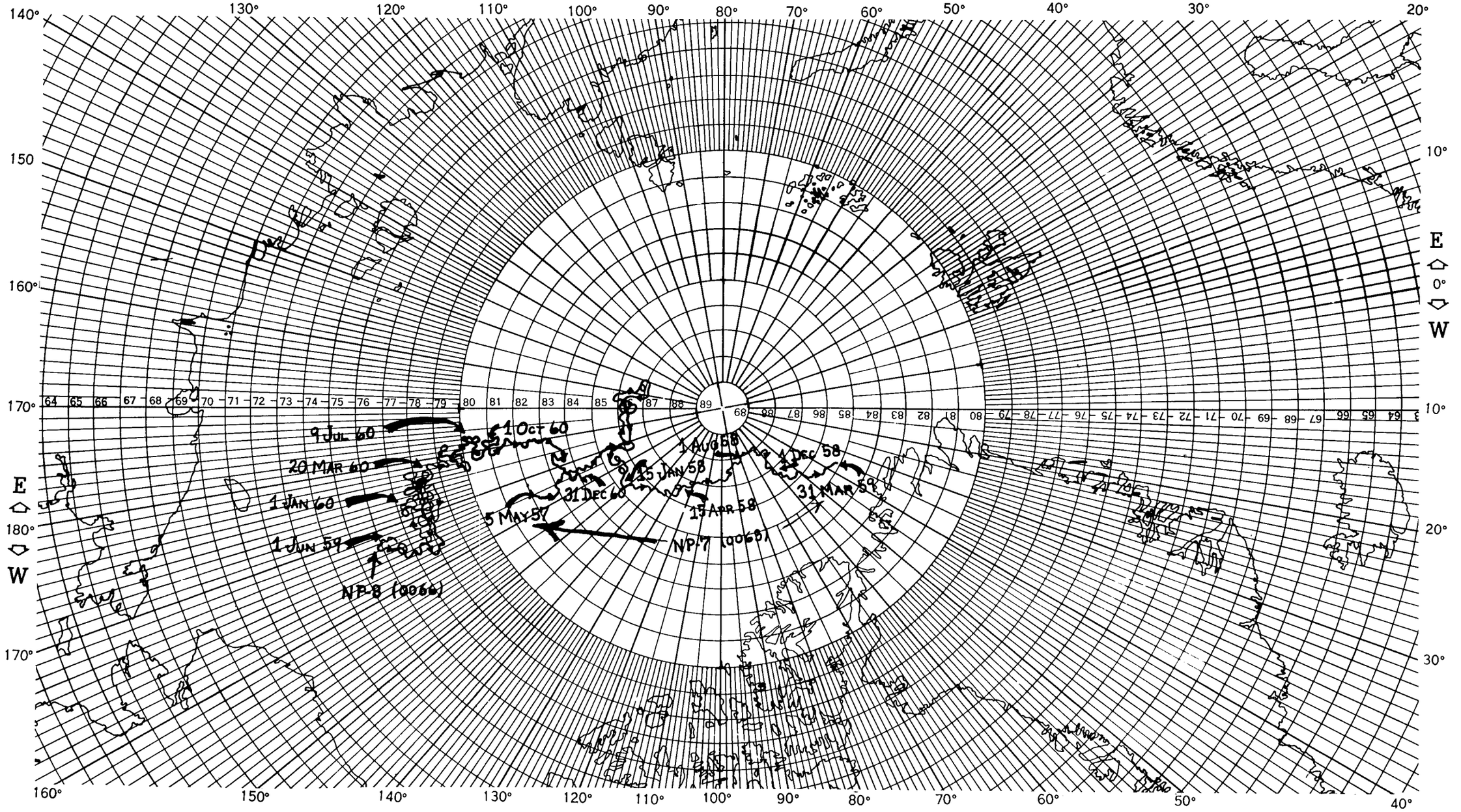
Any errors detected in this manual should be called to the attention of Director, National Weather Records Center, or Chief, Data Processing Division, Climatic Center, USAF. Please give specific instances of error, and correct information if available.

STATION LIST AND INFORMATION CHART

STATION NUMBER	STATION NAME	ABBREVIATED CALL	PERIOD OF RECORD AND POSITIONS AT BEGINNING AND ENDING	SOURCE	TIME OF OBSERVATION	REMARKS
0064	North Pole Station # 1 (See Map Page 3)	NP-1 or SP-1	Began 21 May 37 at 89.5° N 73.9° W Ended 19 Feb 38 at 70.8° N 19.3° W	Russian Publication (on Microfilm roll #134 and #650). Ekspeditsiia SSSR na Severnyi polius, 1937. (Transactions of the Drifting Station, "The Arctic Pole 1937-1938")	0300, 0900, 1500, and 2100 G.M.T.	Low Cloud amount is coded in 1929 code form. All other elements were coded in 1955 code form. See Supplementary Note for NP-1.
0065	North Pole Station # 2 (See Map Page 3)	NP-2 or SP-2	Began 2 Apr 50 at 76.1° N 166.6° W Ended 9 Apr 51 at 81.6° N 162.8° W	Translation of "Observational Data of the scientific Research Drifting Station of 1950-1951, Vol. III, Section 8", Editor, M.M. Somov. ASTIA Document No. AD 117139	0000, 0300, 0600, 0900, 1200, 1500, 1800, and 2100 G.M.T.	Low Cloud amount is in 1949 code. See Supplementary Notes for NP-2.
0061	North Pole Station # 4 (See Map Page 4)	NP-4 or SP-4	Began 14 Nov 54 at 80.8° N 177.6° E Ended 15 Apr 57 at 86.1° N 00.3° E	Microfilm copy of code sheets hand copied from received teletype or radio transmissions by the Meteorological Service of Canada.	0000, 0600, 1200, and 1800 G.M.T.	Low cloud amount and height and pressure tendency are in 1949 code form until 9 May 55 and then the 1955 code for remainder of record. See Supplementary Notes for NP-4.
0062	North Pole Station # 6 (See Map Page 3)	NP-6 or SP-6	Began 20 Apr 56 at 73.9° N 178.1° W Ended 31 Mar 59 at 85.4° N 28.1° E	Microfilm from Canadian Meteorological Service as above and Russian IGY Forms No. 1 for IGY period from 30 Jun 57 to 31 Dec 58.	0000, 0600, 1200, and 1800 G.M.T.	A missing period of record begins 1 Jan 57 through 29 Jun 57.
0063	North Pole Station # 7 (See Map Page 5)	NP-7 or SP-7	Began 5 May 57 at 82.3° N 164.3° W Ended 31 Mar 59 at 85.3° N 34.1° W	Microfilm from Canadian Meteorological Service as above and Russian IGY Forms No. 1 for IGY period from 30 Jun 57 to 31 Dec 58. Russian IGC Upper Air Surface Observations from 1 Jan 59 through 31 Mar 59.	0000, 0600, 1200, and 1800 G.M.T.	Only the 0000 and 1200 G.M.T. observations are available in 1959.
0066	North Pole Station # 8 (See Map Page 5)	NP-8 or SP-8	Began 1 Jun 59 at 76.8° N 167.4° W Ended 31 Dec 60 at 83.9° N 161.9° W Station remained in operation in 1961 but data have not been received.	Russian IGC Upper Air Surface Observations from 1 Jun 59 through 31 Dec 59 and Canadian Meteorological Service microfilm for the year of 1960.	0000, 0600, 1200, and 1800 G.M.T.	Only the 0000 and 1200 G.M.T. observations are available in 1959.
0067	North Pole Station # 9 (See Map Page 4)	NP-9 or SP-9	Began 27 Apr 60 at 77.2° N 163.7° E Ended 31 Dec 60 at 85.3° N 161.8° E Station remained in operation in 1961 but data have not been received.	Canadian Meteorological Service microfilm.	0000, 0600, 1200 and 1800 G.M.T.	


NP-6 (00662)
1 MAR 58
15 JUN 58
17 AUG 58
1 MAR 59
31 MAR 59
1 DEC 58
30 JUN 57
BREAK
15 APR 57
1 JAN 57
20 APR 56
1 AUG 50
15 JUN 50
9 APR 51
15 MAR 51
15 OCT 50
2 APR 50
NP-2 (00665)
1 NOV 37
15 JAN 38
NP-1 (00664)
19 FEB 38
21 MAY 37
E
0°
W
E
180°
W


NP-9 (0067)
8 SEPT 60
1 NOV 60
31 DEC 60
15 JUN 60
27 APR 60
14 NOV 54
1 MAR 55
15 AUG 55
15 OCT 55
15 DEC 55
15 AUG 56
15 OCT 56
1 JAN 57
15 APR 57
15 MAR 56
NP-4 (0061)
E 0° W
E 180° W


140°
130°
120°
110°
100°
90°
80°
70°
60°
50°
40°
30°
20°
150
160°
170°
180°
E
W
10°
0°
20°
30°
64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
9 JUL 60
1 OCT 60
20 MAR 60
1 JAN 60
1 JUN 59
NP-8 (0066)
5 MAY 57
31 DEC 60
15 JAN 58
1 AUG 58
15 APR 58
1 DEC 58
31 MAR 59
NP-7 (0066)

CARD CONTENT

Column	Item or Element	Symbolic Letter	Card Code	Card Code Definition	Remarks
1-80	All items		Blank		Blank card columns indicate (1) Missing observed element (2) Item not reported for this station. (3) Unassigned columns.
1-4	Station number	IIII		Russian Ice Island	A four digit number assigned arbitrarily for punch card purposes by NWRC. (See page 2.)
5-6	Year		37-60	1937-1960	Last two digits of year.
7-8	Month		01-12	January-December	Date is in GMT
9-10	Day		01-31	Day of the month	
11	Day of the week	Y	01-07	Sunday-Saturday	Day of the week is in GMT. When hour is coded "00" (midnight), day of the week is coded as the day just beginning.
12	Octant	Q	0-3	See Code 1	
13-15	Latitude	$L_aL_aL_a$	000-900	0.0-90.0 North Lat.	Northern Hemisphere only
16-18	Longitude	$L_oL_oL_o$	000-900	0.0-90.0 West Long.	Col. 12 punched "0"
			901-800	90.1-180.0 West Long.	Col. 12 punched "1"
			000-900	0.0-90.0 East Long	Col. 12 punched "3"
			901-800	90.1-180.0 East Long.	Col. 12 punched "2"
19-20	Greenwich Mean Time	GG	00-23	Time of Observation "00" Beginning of day	Usually 3 or 6 hourly observation times punched.
21	Blank			Not used.	
22	Total Cloud amount 8ths	N	0-9	See Code 2.	
23-24	Wind Direction 36 points	dd	00-36	See Code 3 and Supplementary Note A for NP-1 directions	"00" indicates "calm".
25-26	Wind Speed Knots	ff	00-99	Wind speed in knots See Supplementary Note A for NP-1 Wind Speeds.	"x" overpunch in column 25 indicates 100 knots should be added to punched speed. "00" indicates calm.
27	Blank			Not used.	
28-29	Visibility Nautical Miles	VV	90-99	See Code 4 and Supplementary Note A for NP-1 visibility	
30-31	Present Weather	ww	00-99	See Code 5 and Supplementary Note A for NP-1 weather	Converted to Code 5 according to Code 12.
32	Past Weather	W	0-9	See Code 6 and Supplementary Note A for NP-1 past weather	

CARD CONTENT

Column	Item or Element	Symbolic Letter	Card Code	Card Code Definition	Remarks
33-36	Pressure Millibars	PPPP	0000-0700	1000.0-1070.0 mbs.	Hundreds, tens, units, and tenths of millibars.
			9000-9999	900.0 - 999.9 mbs.	See page 1, Additional Remarks 6.
37-38	Air Temperature whole °F	TT	00-99	00-99 °F	Tens and units of whole °F.
			X X		"X" overpunch in col. 37 indicates temperature below zero.
			01 99	-01 through -99°F	
39-41	Blank			Not used.	
42	Low Cloud Amount 8ths	N_h	0-9	See Code 2 and Supplementary Notes A, B, and C, for NP-1, NP-2, and NP-4 low cloud amounts	
43	Low Cloud Type	C_L	0-9, X	See Code 7 and Supplementary Note A for NP-1 low clouds	
44	Low Cloud Height	h	0-9, X	See Code 8 and Supplementary Note C for NP-4 heights	
45	Middle Cloud Type	C_M	0-9, X	See Code 9	
46	High Cloud Type	C_H	0-9, X	See Code 10	
47-48	Blank			Not used.	
49	Pressure Tendency	a	0-9	See Code 11 and Supplementary Notes for NP-4 Pressure Tendency	
50-51	Amount of Pressure Change (1/10th mb.)	pp	00-99	0.0-9.9 millibars	
52-64	Blank			Not used.	
65-67	Dew point Temperature Whole °F	T_dT_d	000-099	00-99 °F	Tens and units of whole °F
			X01-X99	-01 through -99° F	"X" punch in column 65 indicates temperature below zero. Col. 65 is blank or punched "0" for plus temperatures.
68-78	Blank			Not used.	
79	Identification		8	Russian Ice Island Identification Number	
80	Blank			Not used.	

CODE TABLES

When coding a meteorological report, symbolic letters are replaced by figures, which specify the value or the state of the corresponding element. In some cases, the specification of the symbolic letter (or group of letters) is sufficient to permit a direct transcription into figures (e.g., GG or PPP). In other cases, these figures are obtained by means of a special code table (or code, in short) for each element.

The codes elaborated to this end, as far as they are in world-wide use, are called international meteorological code tables. These same codes are used inversely for decoding observations and thus making available the information contained in them.

Besides the specifications given by the code tables in world-wide use, other sets of code tables are established by the WMO for regional use. Further arbitrary codes have been made necessary by the use of data in card decks which were never encoded into WMO forms.

Only codes pertinent to this card deck are included in the present manual. They appear in the order in which the elements were introduced in the description of the card content. They are numbered consecutively, and if applicable, the corresponding WMO code numbers are shown.

Code 1

(1949 WMO Code 70)
(1960 WMO Code 3300)

Q - Octant Of The Globe

Code Figure	Greenwich Longitude	Hemisphere
0	0° - 90°W	North
1	90° - 180°W	
2	180° - 90°E	
3	90° - 0°E	

Code 2

(1949 WMO Code 60)
(1960 WMO Code 2700)

N - The fraction of the celestial dome covered by cloud

N_h - The fraction of the celestial dome covered by the cloud(s) reported for C_L or, if no C_L-cloud present, for C_M

Code figure		
0	0	0
1	1 okta or less,but not zero	1/10 or less,but not zero
2	2 oktas	2/10 - 3/10
3	3 oktas	4/10
4	4 oktas	5/10
5	5 oktas	6/10
6	6 oktas	7/10 - 8/10
7	7 oktas or more,but not 8 oktas	9/10 or more,but not 10/10
8	8 oktas	10/10
9	Sky obscured,or cloud amount cannot be estimated	

Code 3

(1949 WMO Code 23)
(1960 WMO Code 0877)

dd - True direction, in tens of degrees,from which wind is blowing (or will blow)

Code figure		Code figure	
00	Calm	19	185° - 194°
01	5° - 14°	20	195° - 204°
02	15° - 24°	21	205° - 214°
03	25° - 34°	22	215° - 224°
04	35° - 44°	23	225° - 234°
05	45° - 54°	24	235° - 244°
06	55° - 64°	25	245° - 254°
07	65° - 74°	26	255° - 264°
08	75° - 84°	27	265° - 274°
09	85° - 94°	28	275° - 284°
10	95° - 104°	29	285° - 294°
11	105° - 114°	30	295° - 304°
12	115° - 124°	31	305° - 314°
13	125° - 134°	32	315° - 324°
14	135° - 144°	33	325° - 334°
15	145° - 154°	34	335° - 344°
16	155° - 164°	35	345° - 354°
17	165° - 174°	36	355° - 4°
18	175° - 184°	99	Variable

Code 4

(1949 WMO Code 84)
(1960 WMO Code 4377
(90 - 99 Decade only)

VV - Horizontal visibility

Code Figure	Km.	Yards (Approx.)	Statute Miles (Approx.)	Nautical Miles (Approx.)
90	< 0.05	< 55	< 1/32	
91	0.05	55	1/32	
92	0.2	220	1/8	
93	0.5	550	5/16	1/4
94	1	1,100	5/8	1/2
95	2	2,200	1 1/4	1
96	4	4,400	2 1/2	2
97	10	11,000	6 1/4	5
98	20	22,000	12 1/2	10
99	≥ 50	≥ 55,000	≥ 31 1/4	≥ 25

If the observed visibility is between two of the reportable distances as given in the table, the code figure for the lower reportable distance is reported.

Maximum visible distance regardless of direction.

Code 5

(1949 WMO Code 92)
(1960 WMO Code 4677)

ww - Present weather

ww 00 - 49 No precipitation at the station at the time of observation

ww 00 - 19 No precipitation,fog,ice fog (except 11 and 12), duststorm, sandstorm, drifting or blowing snow at the station (land station or ship) at the time of observation or, except for 09 and 17, during the preceding hour.

Code figure

ww

No Meteors except photometeors — characteristic change of the state of sky during the past hour:

00 Cloud development not observed or not observable

01 Clouds generally dissolving or becoming less developed

02 State of sky on the whole unchanged

03 Clouds generally forming or developing

Haze, dust, sand or smoke:

04 Visibility reduced by smoke,e.g.veldt or forest fires, industrial smoke or volcanic ashes

05 Haze

06 Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation

07 Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen

08 Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no duststorm or sandstorm

09 Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour

10 Mist

11 (Patches of / More or less / continuous) shallow fog or ice fog at the station,whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea

12 (Patches of / More or less / continuous) shallow fog or ice fog at the station,whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea

13 Lightning visible, no thunder heard

14 Precipitation within sight, not reaching the ground or the surface of the sea

15 Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station

16 Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station

17 Thunderstorm, but no precipitation at the time of observation

18 Squalls — at or within sight of the station during the preceding hour or at the time of observation

19 Funnel cloud(s) (tornado cloud or waterspout) — at or within sight of the station during the preceding hour or at the time of observation

Code 5, continued

ww 20 - 29 Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation

Code figure

ww

20 Drizzle (not freezing) or snow grains
21 Rain (not freezing)
22 Snow
23 Rain and snow or ice pellets, type (a)
24 Freezing drizzle or freezing rain
— not falling as shower(s)

25 Shower(s) of rain

26 Shower(s) of snow, or of rain and snow

27 Shower(s) of hail(ice pellets, type (b), snow pellets), or of rain and hail (ice pellets, type (b), snow pellets)

28 Fog or ice fog

29 Thunderstorm (with or without precipitation)

ww 30 - 39 Duststorm, sandstorm, drifting or blowing snow

ww

30, 31, 32 Slight or moderate duststorm or sandstorm — has decreased during the preceding hour / no appreciable change during the preceding hour / has begun or has increased during the preceding hour

33, 34, 35 Severe duststorm or sandstorm — has decreased during the preceding hour / no appreciable change during the preceding hour / has begun or has increased during the preceding hour

36 Slight or moderate drifting snow
37 Heavy drifting snow
— generally low (below eye level)

38 Slight or moderate blowing snow
39 Heavy blowing snow
— generally high (above eye level)

ww 40 - 49 Fog or ice fog at the time of observation

ww

40 Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer

Code 5, continued

Code figure

41 Fog or ice fog in patches

42 Fog or ice fog, sky visible) has become thinner during the
43 Fog or ice fog, sky invisible) preceding hour

44 Fog or ice fog, sky visible) no appreciable change during
45 Fog or ice fog, sky invisible) the preceding hour

46 Fog or ice fog, sky visible) has begun or has become thicker
47 Fog or ice fog, sky invisible) during the preceding hour

48 Fog, depositing rime, sky visible

49 Fog, depositing rime, sky invisible

ww 50 - 99 Precipitation at the station at the time of observation

ww 50 - 59 Drizzle

ww

50 Drizzle, not freezing, intermittent) slight at time of observation
51 Drizzle, not freezing, continuous) slight at time of observation

52 Drizzle, not freezing, intermittent) moderate at time of observation
53 Drizzle, not freezing, continuous) moderate at time of observation

54 Drizzle, not freezing, intermittent) heavy(dense) at time of observation
55 Drizzle, not freezing, continuous) heavy(dense) at time of observation

56 Drizzle, freezing, slight

57 Drizzle, freezing, moderate or heavy (dense)

58 Drizzle and rain, slight

59 Drizzle and rain, moderate or heavy

ww 60 - 69 Rain

ww

60 Rain, not freezing, intermittent) slight at time of observation
61 Rain, not freezing, continuous) slight at time of observation

62 Rain, not freezing, intermittent) moderate at time of observation
63 Rain, not freezing, continuous) moderate at time of observation

64 Rain, not freezing, intermittent) heavy at time of observation
65 Rain, not freezing, continuous) heavy at time of observation

66 Rain, freezing, slight

67 Rain, freezing, moderate or heavy

68 Rain or drizzle and snow, slight

69 Rain or drizzle and snow, moderate or heavy

Code 5, continued

ww 70 - 79 Solid precipitation not in showers

ww

70 Intermittent fall of snow flakes) slight at time of observation
71 Continuous fall of snow flakes) slight at time of observation

72 Intermittent fall of snow flakes) moderate at time of observation
73 Continuous fall of snow flakes) moderate at time of observation

74 Intermittent fall of snow flakes) heavy at time of observation
75 Continuous fall of snow flakes) heavy at time of observation

76 Ice prisms (with or without fog)

77 Snow grains(with or without fog)

78 Isolated starlike snow crystals (with or without fog)

79 Ice pellets, type (a)

ww 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

ww

80 Rain shower(s), slight

81 Rain shower(s), moderate or heavy

82 Rain shower(s), violent

83 Shower(s) of rain and snow mixed, slight

84 Shower(s) of rain and snow mixed, moderate or heavy

85 Snow shower(s), slight

86 Snow shower(s), moderate or heavy

87) Shower(s) of snow pellets or ice pellets,type(b), with or without
88) rain or rain and snow mixed) - slight
) - moderate or heavy

89 Shower(s) of hail, with or without rain or rain and snow) - slight
90 mixed, not associated with thunder) - moderate or heavy

91 Slight rain at time of observation)
92 Moderate or heavy rain at time of observation) thunderstorm during the preceding hour but not at time of observation
93 Slight snow, or rain and snow mixed or hail (ice pellets, type (b), snow pellets), at time of observation)
94 Moderate or heavy snow, or rain and snow mixed or hail (ice pellets,type(b), snow pellets) at time of observation)

95 Thunderstorm, slight or moderate, without hail (ice pellets, type (b), snow pellets);but with rain and/or snow at time of observation)
96 Thunderstorm, slight or moderate, with hail (ice pellets, type (b), snow pellets) at time of observation) thunderstorm at time of observation

Code 5, continued

Code figure

97 Thunderstorm, heavy, without hail (ice pellets,type(b), snow pellets), but with rain and/or snow at time of observation)

98 Thunderstorm combined with duststorm or sandstorm at time of observation)

99 Thunderstorm, heavy, with hail (ice pellets, type(b), snow pellets) at time of observation)

Code 6

(1949 WMO Code 90)
(1960 WMO Code 4500)

W - Past weather

Code figure

0 Cloud covering 1/2 or less of the sky throughout the appropriate period

1 Cloud covering more than 1/2 of the sky during part of the appropriate period and covering 1/2 or less during part of the period

2 Cloud covering more than 1/2 of the sky throughout the appropriate period

3. Sandstorm, duststorm or blowing snow

4 Fog or ice fog or thick haze

5 Drizzle

6 Rain

7 Snow, or rain and snow mixed

8 Shower(s)

9 Thunderstorm(s) with or without precipitation

Notes:

(1) In the case of a sandstorm, with a temperature below 0°C, the word SANDSTORM is added at the end of the report, but is omitted in punching.

(2) In the case of a shower or a thunderstorm, accompanied by hail, the words PAST HAIL are added at the end of the report, but are omitted in punching.

(3) In the case of a snow shower or a shower of rain and snow mixed, with a temperature above 0°C, the word SNOW or SLEET is added at the end of the report, but is omitted in punching.

Code 7

(1949 WMO Code 11)
(1960 WMO Code 0513)

C_L - Clouds of the genera Stratocumulus, Stratus, Cumulus and Cumulonimbus

Code figure — Non technical specifications

0 No Stratocumulus, Stratus, Cumulus or Cumulonimbus

1 Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than of bad weather, or both

2 Cumulus of moderate or strong vertical extent, generally with protuberances in the form of domes or towers, either accompanied or not by other Cumulus or by Stratocumulus, all having their bases at the same level

3 Cumulonimbus the summits of which, at least partially, lack sharp outlines, but are neither clearly fibrous (cirriform) nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present

4 Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present

5 Stratocumulus not resulting from the spreading out of Cumulus

6 Stratus in a more or less continuous sheet or layer, or in ragged shreds, or both, but no Stratus fractus of bad weather

7 Stratus fractus of bad weather (generally existing during precipitation and a short time before and after), or Cumulus fractus of bad weather, or both (pannus), usually below Altostratus or Nimbostratus

8 Cumulus and Stratocumulus other than that formed from the spreading out of Cumulus; the base of the Cumulus is at a different level from that of the Stratocumulus

9 Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil; either accompanied or not by Cumulonimbus without anvil or fibrous upper part, by Cumulus, Stratocumulus, Stratus or pannus

X Stratocumulus, Stratus, Cumulus and Cumulonimbus invisible owing to darkness, fog, blowing dust or sand, or other similar phenomena

Code 8

(1949 WMO Code 43)
(1960 WMO Code 1600)

h - Height, above ground, of the base of the cloud

Code figure	
0	0 to 50 m
1	50 to 100 m
2	100 to 200 m
3	200 to 300 m
4	300 to 600 m
5	600 to 1,000 m
6	1,000 to 1,500 m
7	1,500 to 2,000 m
8	2,000 to 2,500 m
9	2,500 m or more, or no clouds
X	Height of base of cloud not known or base of clouds at a level lower and tops at a level higher than that of the station;

Notes:

(1) A height exactly equal to one of the values at the ends of the ranges is to be coded in the higher range; e.g. a height of 600 m is reported by code figure 5.

(2) The term "height above ground" is considered as being the height above the official aerodrome elevation or above station level at a non-aerodrome station.

Code 9

(1949 WMO Code 12)
(1960 WMO Code 0515)

C_M - Clouds of the genera Altocumulus, Altostratus and Nimbostratus

Code figure	
0	No Altocumulus, Altostratus or Nimbostratus
1	Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
2	Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
3	Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
4	Patches (often in the form of almonds or fishes) of Altocumulus, the greater part of which is semi-transparent; the clouds occur at one or more levels and the elements are continually changing in appearance
5	Semi-transparent Altocumulus in bands, or Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
6	Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
7	Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus, not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
8	Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
9	Altocumulus of a chaotic sky, generally at several levels
X	Altocumulus, Altostratus and Nimbostratus invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds

Code 10

(1949 WMO Code 13)
(1960 WMO Code 0509)

C_H - Clouds of the genera Cirrus, Cirrocumulus and Cirrostratus

Code figure	Non technical specifications
0	No Cirrus, Cirrocumulus or Cirrostratus
1	Cirrus in the form of filaments, strands or hooks, not progressively invading the sky
2	Dense Cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts
3	Dense Cirrus, often in the form of an anvil, being the remains of the upper parts of Cumulonimbus
4	Cirrus in the form of hooks or of filaments, or both, progressively invading the sky; they generally become denser as a whole
5	Cirrus (often in bands converging towards one point or two opposite points of the horizon) and Cirrostratus, or Cirrostratus alone; in either case, they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon
6	Cirrus (often in bands converging towards one point or two opposite points of the horizon) and Cirrostratus, or Cirrostratus alone; in either case, they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered
7	Veil of Cirrostratus covering the celestial dome
8	Cirrostratus not progressively invading the sky and not completely covering the celestial dome
9	Cirrocumulus alone, or Cirrocumulus accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant
X	Cirrus, Cirrocumulus and Cirrostratus invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds

Code 11

(1949 WMO Code 02)

a - Characteristic of barometric tendency during the period of three hours preceding the time of observation

Code figure		
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	Unsteady	
3	Steady or rising	
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	Unsteady	
8	Falling	
9	Steady or rising then falling; or falling then falling more quickly	

(1955 WMO Code 02)
(1960 WMO Code 0200)

a - Characteristic of pressure tendency during the three hours preceding the time of observation

Code figure		
0	Increasing, then decreasing; atmospheric pressure the same or higher than 3 hours ago	
1	Increasing, then steady; or increasing, then increasing more slowly;	atmospheric pressure now higher than 3 hours ago
2	Increasing (steadily or unsteadily);	
3	Decreasing or steady, then increasing; or increasing, then increasing more rapidly;	
4	Steady; atmospheric pressure the same as 3 hours ago	
5	Decreasing, then increasing; atmospheric pressure the same or lower than 3 hours ago	
6	Decreasing, then steady; or decreasing then decreasing more slowly;	atmospheric pressure now lower than 3 hours ago
7	Decreasing (steadily or unsteadily);	
8	Steady or increasing, then decreasing; or decreasing, then decreasing more rapidly;	

Code 12

Code No.	Weather Symbol USSR	Weather Symbol USA	Description	How Determined from Airways Report
00			Clouds not observed	No cloud type or obstruction to vision given
01			Clouds decreasing	Amount of clouds decreased since last observation
02			Clouds unchanged	Amount of within 1/8th of last observation
03			Clouds increasing	Amount of clouds increased since last observation
10	=	=	Light fog (haze)	Remarks: Damp haze, foggy air or shallow fog
11	=	=	Ground fog	
20	,	,]	Drizzle (not freezing) (not showers)	See past weather and remarks for time of ending
21	•	•]	Rain (not showers)	See past weather and remarks for time of ending
22	*	*]	Snow (not showers)	See past weather and remarks for time of ending
23	•*	*]	Rain and Snow (not showers)	See past weather and remarks for time of ending
25			Rain showers	See past weather and remarks for time of ending
26			Snow showers	See past weather and remarks for time of ending
28	=	=]	Fog	See past weather and remarks for time of ending
36	/		Drifting snow (low)	Light or moderate
37			Drifting snow (low)	Heavy
38	/		Blowing or drifting snow (high)	Light or moderate
39			Blowing or drifting snow (high)	Heavy
42	/		Fog (sky discernable)	Cloud types reported - visibility increased
43	/		Fog (sky not discernable)	Fog shown in cloud column - visibility increased
44	/		Fog (sky discernable)	Cloud types reported - visibility unchanged
45	/		Fog (sky not discernable)	Fog shown in cloud column - visibility unchanged
46	/		Fog (sky discernable)	Cloud types reported - visibility decreased
47	/		Fog (sky not discernable)	Fog shown in cloud column - visibility decreased
48	V		Fog depositing rime	Sky discernable clouds reported (see "ww" exponent for intensity)
49	V		Fog depositing rime	Sky not discernable fog reported for clouds (exponent = intensity)
50	,*	,	Drizzle, light (intermittently)	Dashed line between time of beginning and ending
51	,*	,,	Drizzle, light (continuous)	Solid line between time of beginning and ending
52	,	,	Drizzle, moderate (intermittent)	Dashed line between time of beginning and ending
53	,	, ,	Drizzle, moderate (continuous)	Solid line between time of beginning and ending
54	,2	,	Drizzle, heavy (intermittent)	Dashed line between time of beginning and ending
55	,2	, ,	Drizzle, heavy (continuous)	Solid line between time of beginning and ending
56	~*	~	Glazed frost, freezing drizzle	Reported with drizzle, fog, or light granular snow
57	~/~2	~	Glazed frost, freezing drizzle	Reported with drizzle, fog, or light granular snow
58	;*	;	Rain and drizzle	Light
59	;/;2	;	Rain and drizzle	Moderate or heavy
60	•*	•	Rain, light (intermittent)	Dashed line between time of beginning and ending
61	•*	••	Rain, light (continuous)	Solid line between time of beginning and ending
62	•	:	Rain, moderate (intermittent)	Dashed line between time of beginning and ending
63	•	⁘	Rain, moderate (continuous)	Solid line between time of beginning and ending
64	•2	:	Rain, heavy (intermittent)	Dashed line between time of beginning and ending
65	•2	⁘	Rain, heavy (continuous)	Solid line between time of beginning and ending
68	*•	*	Rain and snow (light)	
69	*/*2	*	Rain and snow (moderate or heavy)	
70	*•	*	Snow, light (intermittent)	Dashed line between time of beginning and ending
71	*•	* *	Snow, light (continuous)	Solid line between time of beginning and ending
72	*	*	Snow, moderate (intermittent)	Dashed line between time of beginning and ending
73	*	* *	Snow, moderate (continuous)	Solid line between time of beginning and ending
74	*2	*	Snow, heavy (intermittent)	Dashed line between time of beginning and ending
75	*2	* *	Snow, heavy (continuous)	Solid line between time of beginning and ending
76			Ice needles	
77			Granular snow	
79			Sleet (frozen ice pellets)	
80			Rain shower	Light
81	/		Rain shower	Moderate or heavy
83			Rain and snow shower	Light
84	/		Rain and snow shower	Moderate or heavy
85			Snow shower	Light
86	/		Snow shower	Moderate or heavy

During Past Hour

Other symbols used in reported observations which did not conform to 1955 code symbols or were secondary "ww" elements and not coded.

- Soft hail
- Graupel
- Wet snow shower
- Wet snow
- Hoarfrost
- Hard crust
- Rime
- Fog with charges (meaning unknown)
- Ice fog
- Lifted fog
- Blizzard with falling snow
- Stars visible
- Sun visible
- Moon visible
- Aurora Borealis
- Rainbow
- Halo, solar
- Halo, lunar
- Corona, solar
- Corona, lunar
- Pillars near sun (Parhelion?)
- Mirage
- Storm wind
- Blizzard

Note: The exponent with "ww" code symbols indicates intensity of element reported

Blank = Moderate
* = Light
2 = Heavy

In remarks, a dashed line between time of beginning and ending indicates intermittent precipitation and solid line continuous precipitation.

Columns 23 and 24 give wind direction translated from Russian as follows:

С = North
Ю = South
В = East
З = West

Thus, ССВ = NNE
ЮЮЗ = SSW
ВЮВ = ESE
etc.

SUPPLEMENTARY NOTES

A. NP-1

Data for this ice island is reported in an airway observational form in the original source and has been hand coded into the WMO 1955 synoptic code. By using the one (or more) present weather symbols and the past weather symbols along with times of beginning and ending of each element and the remarks pertaining to each 2 hour period between observations, it was possible to code present (See Code 12) and past weather (See Code 6) nearly as accurately as the observer would have if using the 1955 code. Where several types of weather were reported in one observation, the highest applicable code figure of the present (and past) weather was used. A present weather code table showing code figures of Russian symbols, corresponding U.S. map plotting symbols, a description of element, and remarks on how these parings were determined from airways reports is provided in Code 12 (it is applicable also to NP-2).). Weather elements converted or encoded to WMO 1955 synoptic code are as follows:

1. Wind Direction from 32 points to 36 point code.
2. Wind Speed from Beaufort to Knots (Mid point value).
3. Visibility from Kilometers to Nautical miles.
4. Past and Present Weather from Airways to synoptic code.
5. Temperature from degrees Centigrade to degrees Fahrenheit.
6. Low, middle, and high cloud types from airways abbreviations to WMO 1955 synoptic code.
7. Low cloud amount from 10ths to 8ths (See Note below)
8. It should be remembered that the reported code value for N_h "low" cloud amount and h height of lower cloud may, in the case of two identical cloud conditions, represent a different layer of clouds, depending on the year of observation. The following brief definitions and periods of use since the 1929 Copenhagen Code was put into use as the International Code are given for information and use in the rare cases of job requests requiring exacting and detailed summarization of this element:

1929 through 1936 Below 8,000 feet.	= Low cloud amount represented only a cloud layer of the low cloud type at or below 8,000 feet.
1937 through 1948 Below 8,000 feet No Fragments	= Low cloud amount represented the amount of the predominating low (or middle) cloud layer which is at or below 8,000 feet and whose height is reported by "h".
1949 through 1954 (If no predominating C_L or C_M then fragments below 8,201 feet)	= Low cloud amount represented the amount of predominating low (or middle if no low) cloud layer which is below 8,201 feet and whose height is reported for "h". If only fragments are present below 8,201 feet then N_h represents these fragments, but otherwise fragments were ignored.
1955 through present (If no predominating C_L or C_M then any Fragments of C_L or C_M regardless of height)	= Low cloud amount represented the amount of predominating low (or middle if no low) cloud present with no restriction of height. If only fragments were present code figure "1" was used to indicate only fragments of the reported low or middle cloud are present.

Notice that "N_h" and "h" are not related at all times to each other and to C_L as in the previous periods. N_h = lowest predominating C_L while "h" represents the lowest fragment of C_L cloud present rather than the height of the predominating layer or type reported for N_h and C_L. Also N_h may represent a low or middle cloud at any height with "h" being reported as "9". This should increase the frequency of N_h representing a middle cloud.

B. NP-2

Data for this station were reported in the same form as that of NP-1 and was processed in the same manner. Weather elements converted or uncoded to the 1955 synoptic code are as follows:

1. Wind speed from meters per second to knots.
2. Temperature from degrees Centigrade to degrees Fahrenheit.
3. Visibility from kilometers to nautical miles.
4. Past and Present weather from airways to synoptic code.
5. Low, middle, and high cloud types from airways abbreviation to synoptic code.
6. Low cloud amount from 10ths to 8ths (See note on "N_h" for NP-1.)

C. NP-4

Data for this station were taken from microfilmed hand copied synoptic reports received and transcribed by the Canadian Meteorological Service Personnel. All data are in the 1949 code from 14 Nov 54 through 9 May 55 and the 1955 code for the remainder of the period. Attention is called to the following elements:

1. Wind speed converted from meters per second to knots.
2. Temperature converted from degrees Centigrade to degrees Fahrenheit.
3. Pressure tendency (1949 code - see Code Table 11)
4. Low cloud height (1949 code - see Supplementary Note A on "N_h" for NP-1)
5. Low cloud height (1949 code - see table below)

Attention is called to the fact that although the meter values to each code figure of the "h" table have not changed the assigned feet equivalents have changed according to the following table.

HEIGHT TABLE

Code	Height in Meters 1929-1961	Height in Feet 1929-1948	Height in Feet 1949-1954	Height in Feet 1955-1960
0	0 - 49	0 - 150	0 - 163	0 - 149
1	50 - 99	150 - 300	164 - 327	150 - 299
2	100 - 199	300 - 600	328 - 655	300 - 599
3	200 - 299	600 - 1,000	656 - 983	600 - 999
4	300 - 599	1,000 - 2,000	984 - 1,967	1,000 - 1,999
5	600 - 999	2,000 - 3,000	1,968 - 3,280	2,000 - 3,499
6	1,000 - 1,499	3,000 - 5,000	3,281 - 4,920	3,500 - 4,999
7	1,500 - 1,999	5,000 - 6,500	4,921-- 6,561	5,000 - 6,499
8	2,000 - 2,499	6,500 - 8,000	6,562 - 8,201	6,500 - 7,999
9	2,500 or higher or no clouds	No low clouds (N_h = "0")	Above 8,202 or No low cloud (N_h = "0")	8,000 or higher (N_h ="1 thru 8") Could refer to middle cloud

D. NP-6, 7, 8, and 9.

All data for these stations are in the 1955 synoptic code. Elements converted are: wind speed from meters per second to knots and temperature and dew points from degrees Centigrade to degrees Fahrenheit. Data for NP-7 and NP-8 taken from IGY Upper Air surface observations do not give the tenths value of surface pressure, or the past weather, total cloud amount, visibility, and dew point temperature. NP-8 and NP-9 continued operation in 1961 but no observational data have been received.