BRITISH MARINE OBSERVATIONS

This Reference Manual was prepared for use with the observations from the British Marine Deck Number 184 (International). These observations are an extension of British Marine Observations of Deck 194, and are in the revised Hollerith card number AM 1915 in series 09. The period begins in April, 1953. Observations received at this date 9/1957 extends through 6/1956, approximately 553,000 cards. See Page 2 for 10° square Inventory.

GENERAL PRACTICES

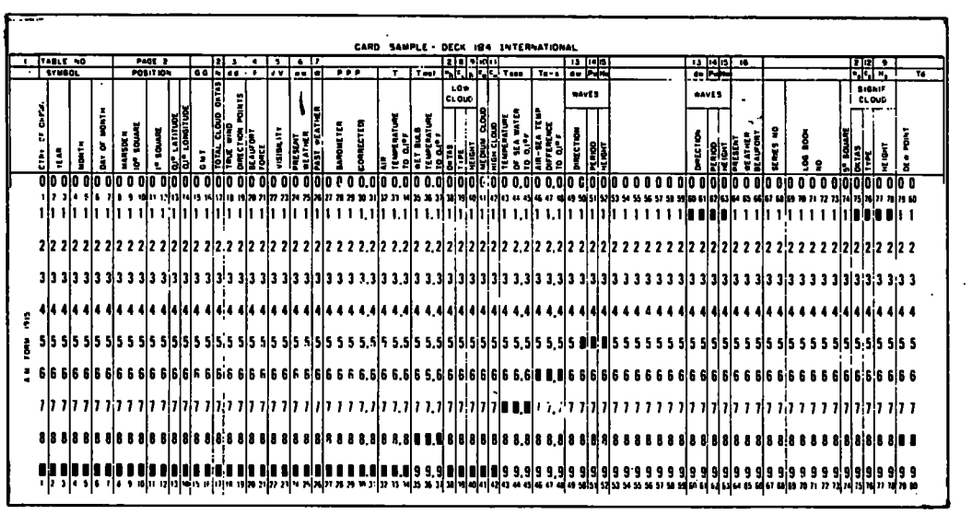
The observations were taken aboard voluntary ships using the 1949 code. 12 punch in the first column of any item indicated missing data.

UNUSUAL FEATURES

Wave height is represented in three scales permitting reporting wave height to 19 meters in columns 49-52. Additional columns are allowed to report complete data of a second group of wave data in columns 60-63. In addition to reporting present weather and past weather, present weather in Beaufort notation is reported in columns 64-66. Significant cloud data may be reported in columns 75-78. However, a survey made with Marsden square No. 31 indicated this data reported only less than 1 per cent of the time.

WEATHER ELEMENTS PUNCHED

Additional information of the weather elements and the approximate percentages of the elements are indicated on the sample card below, including notes.



Notes: According to a survey made of Marsden square 31, the approximate percentages of the element punched in the deck are indicated on the sample card above by a coded punch as follows:

9's = 90%.

8's = 80%.

1's = 10% or less.

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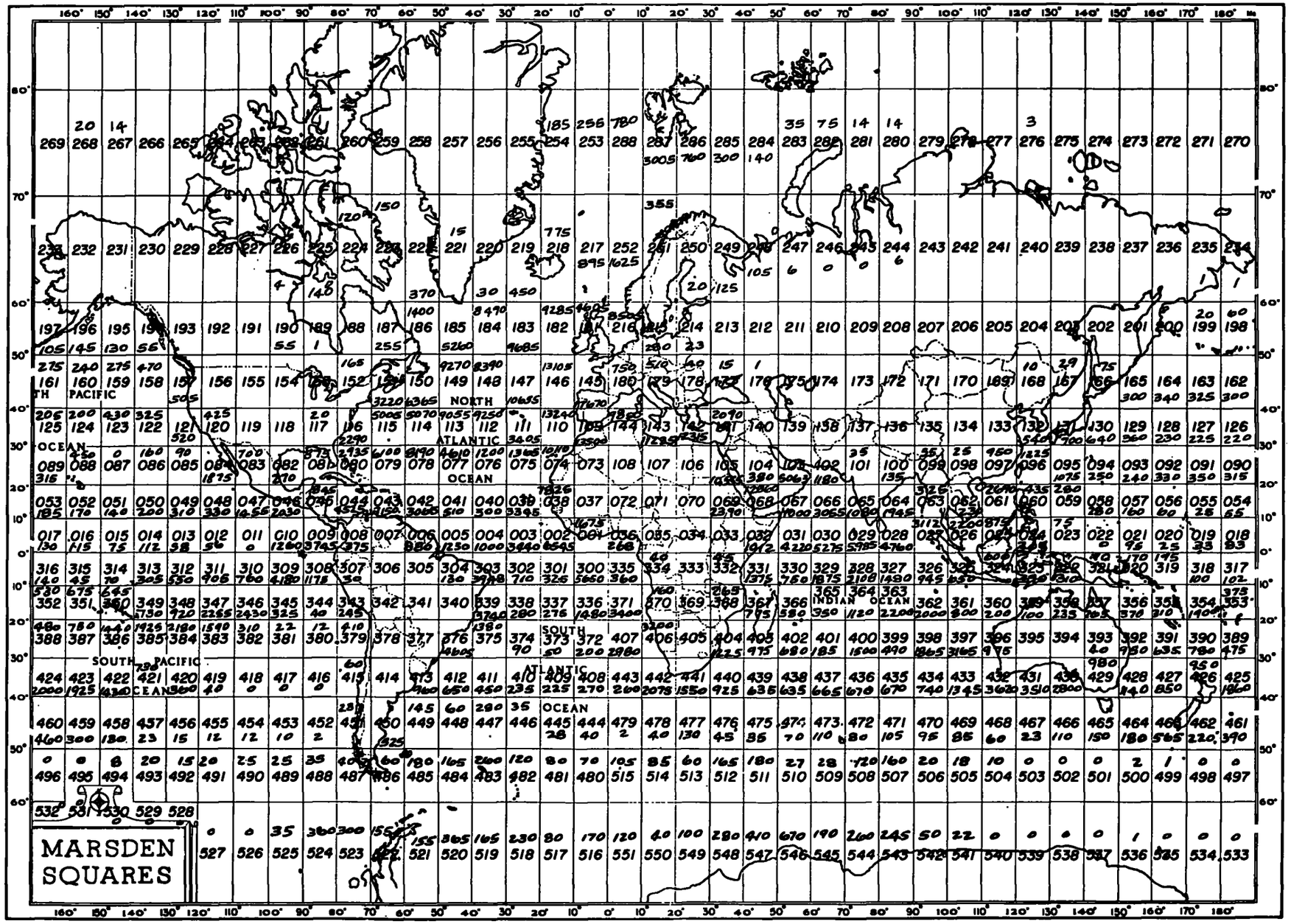
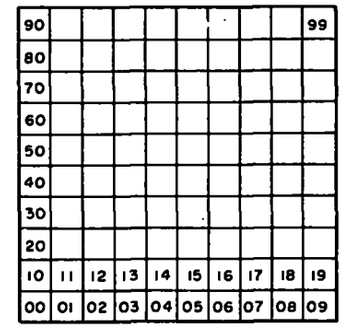
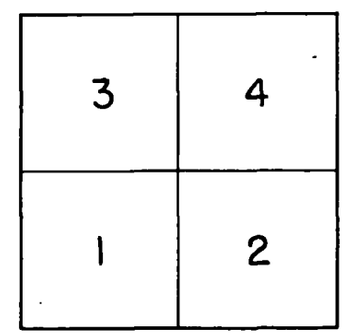




1°



5°

SQUARES ARE ALWAYS ORIENTED SO THAT THE LOWEST NUMBER IS NEAREST THE INTERSECTION OF THE GREENWICH MERIDIAN AND THE EQUATOR.

PERIOD 4/53 - 6/56

TOTAL CARDS 552,934

September 1957

Deck 184 "International"

1949 Code

Card Col. No.	Symbol	Item	Note	Card Code	Definition for Data on Card
1		Country of Origin	A	0-9 x/0-x/6	(Table 1). Indicate Nos. 10-16.
2-3		Year		53-56	Last two digits (period 4/53-6/56.)
4-5		Month		01-12	
6-7		Day		01-31	
8-10		10° Marsden Square		001-559	See page 2.
11-12		1° Marsden Square		00-99	See page 2.
13	L_a	1/10° Latitude	A	0-9	Minutes divided by 6 neglecting remainder.
14	L_o	1/10° Longitude	A	0-9	0 = 0'-5', 1 = 6'-11', ... , 9 = 54'-59'.
15-16		Hour GMT	A	00-18	Synoptic 00, 06, 12, 18 GMT.
17	N	Total Cloud Amt. 1/8	A	0-9	(Table 2).
18-19	dd	True Wind Direction, 32 points	A	00-32	(Table 3). 99 = calm or variable.
20-21	F	Beaufort Wind Force	A	00-12	(Table 4).
22-23	vv	Visibility	A	90-99	(Table 5).
24-25	ww	Present Weather	A	00-99	(Table 6).
26	W	Past Weather	A	0-9	(Table 7).
27-31	PPP	Corrected Pressure, 1/10 Mb.	A	00000-99999	Thus: 10176 = 1017.6 Mbs.
32-34	TT	Air Temperature, 1/10° Fahrenheit	A	000-999	X overpunch Units Col. = ≥ 100°F X overpunch Tens Col. = Neg.(-) values
35-37	T_{wet}	Wet Bulb Temperature 1/10° Fahrenheit	A	000-999	Col. 34 and/or 37 Blank when reported in whole degrees.
38	N_h	Amt. of Low Cloud 1/8	A	0-9	(Table 2).
39	C_L	Type of Low Cloud	A,B	0-9	(Table 8).
40	h	Height of Low Cloud	A,B	0-9	(Table 9).
41	C_M	Type Middle Cloud	A,B	0-9	(Table 10).
42	C_H	Type High Cloud	A,B	0-9	(Table 11).
43-45	T_{sea}	Sea Temperature, 1/10° Fahrenheit	A	000-999	Thus 714 = 71.4°F. Col. 45 and/or 48 Blank when reported in whole degrees F.
46-48	T_{a-s}	Air-Sea Temperature Difference	A	000-999	x/ col. 46 = sea temperature greater than air temperature.
49-50	d_w	Wave Direction 36 Pts.	A	00-36, 49 50-86, 99	(Table 13).
51	P_w	Wave Period	A	0-9	(Table 14).
52	H_w	Wave Height	A	0-9, x/0-x/9	(Table 15).
53-59		Blank			
60-63		Waves	A		Same as cols. 49-52.
64-66		Present Weather Beaufort Notation	A		(Table 16).
67-68		Series Number		09	British or commonwealth and H.M. ships beginning 4/53-
69-73		Logbook Number			Logbook number in which observation is recorded.
74		5° Square		1-4	Page 2.
75	N_s	Amt. Significant Cloud	A	0-9	(Table 2).
76	C_s	Type of Significant Cld.	A	0-9	(Table 12).
77-78	h_s	Height of Significant Cld.	A	90-99	(Table 9 with 9 added in tens position).
79-80	T_d	Dew Point Temperature, Degrees Fahrenheit	A	00-99	In whole degrees Fahrenheit.

NOTES

A - Y (or 12 punch) in the first column of any item is equal to missing data.

B - When sky was obscured by weather or lower layer of clouds, the cloud columns following were "y" punched.

Table 1 - Country of Origin - Col. 1

Code	Country of Origin	Code	Country of Origin
0	Netherlands	8	Hong Kong
1	Norway	9	New Zealand
2	U.S.A.	10	Ireland
3	United Kingdom	11	Philippines
4	France	12	Egypt
5	Denmark	13	Canada
6	Italy	14	Belgium
7	India	15	South Africa
		16	Australia

Table 2 - N, N_h, N_s - Cols. 17, 38, 75

Symbol N—Total Cloud Amount

Symbol N_h—Amount of Cloud, the height of which is reported by "h"

Code Figures	Cloud Amount (Eighths of sky covered)
0	None
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	Sky obscured

NOTES.—(1) "Fragments of clouds" are coded as 1.
(2) "Overcast but with openings" is coded as 7.

Table 3 - dd 32 pts. - Cols. 18-19

True Wind Direction

Code	Dir.	Code	Dir.	Code	Dir.
01	N'E	12	SE	22	WSW
02	NNE	13	SE'S	23	W'S
03	NE'N	14	SSE	24	W
04	NE	15	S'E	25	W'N
05	NE'E	16	S	26	WNW
06	ENE	17	S'W	27	NW'W
07	E'N	18	SSW	28	NW
08	E	19	SW'S	29	NW'N
09	E'S	20	SW	30	NNW
10	ESE	21	SW'W	31	N'W
11	SE'E			32	N
99	calm or light variable				

Table 4 - F, ff - Cols. 20-21

Symbol ff—Wind Speed in Knots

Speed in Knots	Equivalent Beaufort Force Number	Description
0	Zero	Calm
1-3	One	Light airs
4-6	Two	Light breeze
7-10	Three	Gentle breeze
11-16	Four	Moderate breeze
17-21	Five	Fresh breeze
22-27	Six	Strong breeze
28-33	Seven	High wind (moderate gale)
34-40	Eight	Gale (fresh gale)
41-47	Nine	Strong gale
48-55	Ten	Whole gale
56-63	Eleven	Storm
64 and above	Twelve	Hurricane

Table 5 - VV - Cols. 22-23

Symbol VV -Visibility

Code Figures	Visibility Range
90	Less than 50 yards (50 m.)
91	50 yards (50 m.)
92	200 yards (200 m.)
93	½ nautical mile (500 m.)
94	¾ nautical mile (1,000 m.)
95	1 nautical mile (2,000 m.)
96	2 nautical miles (4,000 m.)
97	5 nautical miles (10 km.)
98	10 nautical miles (20 km.)
99	25 nautical miles or more (50 km.)

Table 6 - ww - Cols. 24-25

Symbol ww—Present Weather

ww=00-49 No Precipitation at the Ship at the Time of Observation

00-19—No precipitation, fog, duststorm, sandstorm, or drifting snow at the ship at the time of observation or during the preceding hour, except for 09 to 12

No hydrometeors except clouds:
- 00 Cloud development not observed
- 01 Clouds generally dissolving or becoming less developed
- 02 State of sky on the whole unchanged
- 03 Clouds generally forming or developing

(00–03: Characteristic change of the state of sky during the past hour)

Haze, dust, sand or smoke:
- 04 Visibility reduced by smoke, e. g., veldt or forest fires, industrial smoke or volcanic ashes
- 05 Dry haze
- 06 Widespread dust in suspension in the air, not raised by wind at or near the ship at the time of observation
- 07 Dust or sand raised by wind at or near the ship at the time of observation, but no well developed dust devil(s), and no duststorm or sandstorm seen
- 08 Well developed dust devil(s) seen at or near the ship within last hour, but no duststorm or sandstorm
- 09 Duststorm or sandstorm within sight of ship or at ship during the last hour

- 10 Light fog (visibility 1,000 m.; 1,100 yds. or more)
- 11 Patches of
- 12 More or less continuous

(11–12: Shallow fog at the ship not deeper than about 10 meters (33 ft.) at sea)

- 13 Lightning visible, no thunder heard
- 14 Precipitation within sight, but not reaching sea at the ship
- 15 Precipitation within sight, reaching sea, but distant [i. e., estimated to be more than 5 km. (3 miles) from ship]
- 16 Precipitation within sight, reaching sea, near to but not at the ship
- 17 Thunder heard, but no precipitation at the ship
- 18 Squall(s)
- 19 Funnel cloud(s) (tornado or waterspout)

(18–19: Within sight during the past hour)

20-29—Precipitation, fog or thunderstorm at the ship during the preceding hour but NOT at the time of observation

- 20 Drizzle (not freezing)
- 21 Rain (not freezing)
- 22 Snow
- 23 Rain and snow
- 24 Freezing drizzle or freezing rain

(20–24: Not falling as showers)

- 25 Shower(s) of rain
- 26 Shower(s) of snow, or of rain and snow
- 27 Shower(s) of hail or of hail and rain
- 28 Fog
- 29 Thunderstorm (with or without precipitation)

30-39—Duststorm, sandstorm, or drifting snow

- 30 Slight or moderate duststorm or sandstorm, has decreased during last hour
- 31 Slight or moderate duststorm or sandstorm, no appreciable change during last hour
- 32 Slight or moderate duststorm or sandstorm, has increased during last hour
- 33 Severe duststorm or sandstorm, has decreased during last hour
- 34 Severe duststorm or sandstorm, no appreciable change during last hour
- 35 Severe duststorm or sandstorm, has increased during last hour
- 36 Slight or moderate drifting snow, generally low
- 37 Heavy drifting snow, generally low
- 38 Slight or moderate drifting snow, generally high
- 39 Heavy drifting snow, generally high

40-49—Fog at the time of observation

- 40 Fog at a distance at the time of observation, but not at the ship during the last hour, the fog extending to a level above that of the observer
- 41 Fog in patches
- 42 Fog, sky discernible
- 43 Fog, sky not discernible

(42–43: Has become thinner during the preceding hour)

- 44 Fog, sky discernible
- 45 Fog, sky not discernible

(44–45: No appreciable change during the preceding hour)

- 46 Fog, sky discernible
- 47 Fog, sky not discernible

(46–47: Has begun or has become thicker during the preceding hour)

- 48 Fog, depositing rime, sky discernible
- 49 Fog, depositing rime, sky not discernible

50-99 Precipitation at the Ship at the Time of Observation

50-59—Drizzle at time of observation

- 50 Drizzle, not freezing, intermittent
- 51 Drizzle, not freezing, continuous

(50–51: Slight at time of observation)

- 52 Drizzle, not freezing, intermittent
- 53 Drizzle, not freezing, continuous

(52–53: Moderate at time of observation)

- 54 Drizzle, not freezing, intermittent
- 55 Drizzle, not freezing, continuous

(54–55: Thick at time of observation)

- 56 Drizzle, freezing, slight
- 57 Drizzle, freezing, moderate or thick
- 58 Drizzle and rain, slight
- 59 Drizzle and rain, moderate or heavy

60-69—Rain at time of observation

- 60 Rain, not freezing, intermittent
- 61 Rain, not freezing, continuous

(60–61: Slight at time of observation)

- 62 Rain, not freezing, intermittent
- 63 Rain, not freezing, continuous

(62–63: Moderate at time of observation)

- 64 Rain, not freezing, intermittent
- 65 Rain, not freezing, continuous

(64–65: 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

70-79—Solid precipitation not in showers at time of observation

- 70 Intermittent fall of snow flakes
- 71 Continuous fall of snow flakes

(70–71: Slight at time of observation)

- 72 Intermittent fall of snow flakes
- 73 Continuous fall of snow flakes

(72–73: Moderate at time of observation)

- 74 Intermittent fall of snow flakes
- 75 Continuous fall of snow flakes

(74–75: Heavy at time of observation)

- 76 Ice needles (with or without fog)
- 77 Granular snow (with or without fog)
- 78 Isolated starlike snow crystals (with or without fog)
- 79 Ice pellets

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ww - Cols. 24-25

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

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 soft or small hail with or without rain or rain and snow mixed—Slight	
88	Shower(s) of soft or small hail with or without rain or rain and snow mixed—Moderate or heavy	
89	Shower(s) of hail with or without rain or rain and snow mixed, not associated with thunder—Slight	
90	Shower(s) of hail with or without rain or rain and snow mixed, not associated with thunder—Moderate or heavy	
91	Slight rain at time of observation	Thunderstorm during the preceding hour but not at time of observation
92	Moderate or heavy rain at time of observation	
93	Slight snow or rain and snow mixed or hail* at time of observation	
94	Moderate or heavy snow, or rain and snow mixed or hail* at time of observation	
95	Thunderstorm, slight or moderate, without hail* but with rain and/or snow at time of observation	Thunderstorm at time of observation
96	Thunderstorm, slight or moderate, with hail* at time of observation	
97	Thunderstorm, heavy, without hail* 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* at time of observation	

*Hail, small hail, soft hail.

Table 7 - W - Col. 26

Symbol W—Past Weather

Code Figures	Description
0	Clear or few clouds.
1	Partly cloudy or variable sky.
2	Cloudy or overcast.
3	Sandstorm or duststorm or drifting or blowing snow.
4	Fog, smoke or thick dust haze.
5	Drizzle.
6	Rain.
7	Snow or rain and snow mixed or sleet.
8	Shower(s).
9	Thunderstorm with or without precipitation.

Table 8 - C_L - Col. 39

Symbol C_L—Clouds of Types Stratocumulus, Stratus, Cumulus, and Cumulonimbus

Code Figures	Description
0	No stratocumulus, stratus, cumulus, or cumulonimbus clouds.
1	Cumulus with little vertical development and seemingly flattened.
2	Cumulus of considerable development, generally towering, with or without other cumulus or stratocumulus; bases all at the same level.
3	Cumulonimbus with tops lacking clear-cut outlines but distinctly not cirriform or anvil-shaped; with or without cumulus, stratocumulus, or stratus.
4	Stratocumulus formed by the spreading out of cumulus; cumulus also often present.
5	Stratocumulus not formed by the spreading out of cumulus.
6	Stratus or fractostratus or both, but not fractostratus of bad weather.
7	Fractostratus and/or fractocumulus of bad weather ("scud") usually under altostratus and nimbostratus.
8	Cumulus and stratocumulus other than those formed by the spreading out of cumulus, with bases at different levels.
9	Cumulonimbus having a clearly fibrous (cirriform) top, often anvil-shaped, with or without cumulus, stratocumulus, stratus or "scud."

Table 9 - h - Col. 40

Symbol h—Height of Base of Cloud Above Sea

Code Figures	Feet	Meters
0	0 to 150	0 to 50
1	150 to 300	50 to 100
2	300 to 600	100 to 200
3	600 to 1000	200 to 300
4	1000 to 2000	300 to 600
5	2000 to 3000	600 to 1000
6	3000 to 5000	1000 to 1500
7	5000 to 6500	1500 to 2000
8	6500 to 8000	2000 to 2500
9	No cloud below 8000	No cloud below 2500

Table 10 - C_M - Col. 41

Symbol C_M—Clouds of Types Altocumulus, Altostratus, and Nimbostratus

Code Figures	Description
0	No altocumulus, altostratus, or nimbostratus clouds.
1	Thin altostratus (semitransparent everywhere) through which the sun or moon would be seen dimly as through ground glass.
2	Thick altostratus, or nimbostratus.
3	Thin (semitransparent) altocumulus; not changing much; at a single level.
4	Thin (semitransparent) altocumulus in patches (often almond or fish-shaped); cloud elements continually changing and/or occurring at more than one level.
5	Thin (semitransparent) altocumulus in bands or in a layer gradually spreading over the sky and usually thickening as a whole; it may become partly opaque or double-layered.
6	Altocumulus formed by the spreading out of cumulus.
7	Any of the following cases: (a) Double-layered altocumulus, usually opaque in parts, not increasing; (b) a thick (opaque) layer of altocumulus, not increasing; (c) altostratus and altocumulus both present at the same or different levels.
8	Altocumulus in the form of cumulus-shaped tufts or altocumulus with turrets.
9	Altocumulus of a chaotic sky; generally at different levels; dense cirrus in patches is usually also present.

Table 12 - C_S - Col. 76

Symbol C_H—Clouds of Types Cirrus, Cirrostratus, and Cirrocumulus

Code Figures	Description
0	No cirrus, cirrocumulus, or cirrostratus clouds.
1	Filaments or strands of cirrus, scattered and not increasing (often "Mares' tails").
2	Dense cirrus in patches or twisted sheaves usually not increasing; possibly but not certainly the remains of upper parts of cumulonimbus.
3	Cirrus, often anvil-shaped; either the remains of the upper portions of cumulonimbus or part of a distant cumulonimbus the rest of which is not visible.
4	Cirrus (often hook-shaped) gradually spreading over the sky and usually thickening as a whole.
5	Cirrus and cirrostratus, often in bands converging toward the horizon; or cirrostratus alone; in either case gradually spreading over the sky and usually thickening as a whole, but the continuous layer not reaching 45° altitude.
6	Cirrus and cirrostratus, often in bands converging toward the horizon; or cirrostratus alone; in either case gradually spreading over the sky and usually thickening as a whole, and the continuous layer exceeding 45° altitude.
7	Cirrostratus covering the whole sky.
8	Cirrostratus not increasing and not covering the whole sky; cirrus and cirrocumulus may be present.
9	Cirrocumulus alone or cirrocumulus with some cirrus or cirrostratus, but the cirrocumulus being the main cirriform cloud present.

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Table 12 - C_s - Col. 76

Symbol C=Genus (Type) of Cloud

Code Figure	Type of Cloud	
0	Cirrus	Ci
1	Cirrocumulus	Cc
2	Cirrostratus	Cs
3	Altocumulus	Ac
4	Altostratus	As
5	Nimbostratus	Ns
6	Stratocumulus	Sc
7	Stratus	St
8	Cumulus	Cu
9	Cumulonimbus	Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena.	

Table 13 - d_w 36 pts. - Cols. 49-50

Symbol d_wd_w—Direction, in 10's of Degrees, From Which Waves Come

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

Used only with d_wd_w

49 Waves confused, direction indeterminate

99 Waves confused, direction indeterminate, higher than 14 feet

Table 14 P_w - Col. 51

Symbol P .od of Waves

Code Figures	Period	Code Figures	Period
2	5 seconds or less	8	15 to 17 seconds
3	5 to 7 seconds	9	17 to 19 seconds
4	7 to 9 seconds	0	19 to 21 seconds
5	9 to 11 seconds	1	Over 21 seconds
6	11 to 13 seconds	x	Calm or period unable to be determined
7	13 to 15 seconds		

Table 15 - H_w - Col. 52

Symbol H_w — Mean Maximum Height of Waves

Code Figures	Height	Code Figures	Height 50 added to d_w
0	Less than 1 foot (1/4 m.)	0	16 feet (5 m.)
1	1-1/2 feet (1/2 m.)	1	17-1/2 feet (5-1/2 m.)
2	3 feet (1 m.)	2	19 feet (6 m.)
3	5 feet (1-1/2 m.)	3	21 feet (6-1/2 m.)
4	6-1/2 feet (2 m.)	4	22-1/2 feet (7 m.)
5	8 feet (2-1/2 m.)	5	24 feet (7-1/2 m.)
6	9-1/2 feet (3 m.)	6	25-1/2 feet (8 m.)
7	11 feet (3-1/2 m.)	7	27 feet (8-1/2 m.)
8	13 feet (4 m.)	8	29 feet (9 m.)
9	14 feet (4-1/2 m.)	9	30-1/2 feet (9-1/2 m.)
50 added to Wave Direction and X overpunch (col. 52)			
0	33 feet (10 m.)	5	49 feet (15 m.)
1	36 feet (11 m.)	6	52-1/2 feet (16 m.)
2	39-1/2 feet (12 m.)	7	56 feet (17 m.)
3	42-1/2 feet (13 m.)	8	59 feet (18 m.)
4	46 feet (14 m.)	9	62 feet (19 m.)

Table 16 - Beaufort ww - Cols. 64-66

Table 16

Present Weather from Beaufort Notation

Code	Description	Code	Description	Code	Description
1	Snow	4	Showers	7	Hail
2	Squall	5	Drizzle	8	Lightning
3	Rain	6	Thunder	9	None of the above reported

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