

DEUTSCHE SEEMARTE MARINE OBSERVATIONS

Reference Manual Deck 196

Period as of July, 1957, is 1/49-1/53

1949 Code

The reference manual prepared July, 1957, for use with Deck 196, IBM Flat 1096/10. Punched by the German Meteorological Service after World War II. Deck 196 is an extension of Deck 192 (for the Maraden Square numbers 217-221, 249-252, 284-287). See page 2 for Inventory.

GENERAL PRACTICES

Hours of observation are usually three hourly, occurring at 0000, 0300, etc., 2100 GMT. When IST is used, 50 was added to the hour punched. The observations were from varying types of ships indicated by table 17.

UNUSUAL FEATURES

Unusual features are:

1. A method of reporting sea state, swell and wave data is included. (Cols. 59-64).
2. Quadrant of wind direction is punched in col. 28.
3. Wind speed is recorded in knots in cols. 26-27, and Beaufort Force in col. 79.
4. Precipitation amount in 1/10 mm. (Cols. 71-73).
5. Significant weather for phenomena not usually reported in present or past weather punched in cols. 74-76. (See table 15).
6. Duration of Storm. (Col. 77).
7. Duration of Fog. (Col. 78).

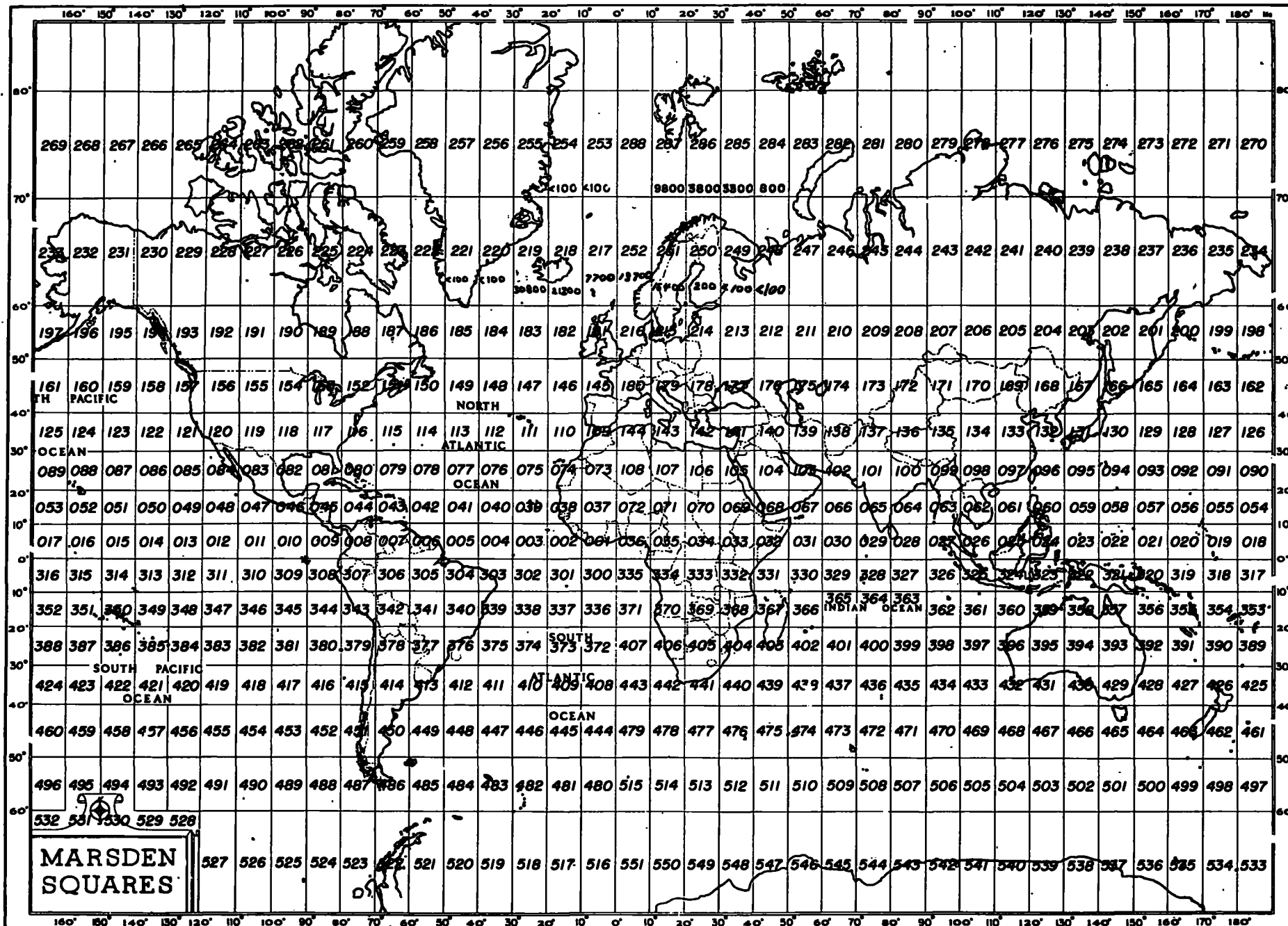
WEATHER ELEMENTS PUNCHED

The elements punched and their percentage of occurrences in the deck are indicated on the sample card below and the accompanying notes.

CARD SAMPLE-DECK 196
ENGLISH TRANSLATION AND TABLE NO.

TABLE NO.	17	PAGE 2		POSITION		SHIP		WIND		TEMPERATURE		CLOUDS		SEA		SWELL		PRECIPITATION		WEATHER		DURATION	
DATE	SHIP	CODE SHEET NUMBER	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS	NO. OF SHEETS
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

- Notes:** 9's that are punched on the card sample above indicate approximately 90% or more of the cards in the deck have that element punched.
- 6's = 60%.
 - 4's = 40%.
 - 1's = 10% or less.



90																				99
80																				
70																				
60																				
50																				
40																				
30																				
20																				
10	11	12	13	14	15	16	17	18	19											
00	01	02	03	04	05	06	07	08	09											

1°

Page 2

3	4
1	2

5°

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

July 1957

Card Deck 196 - 1949 Code

Extension of Deck 192

Card Col. No.	Sym-bol	Item	Note	Card Code	Definition
1-2		Day		01-31	Day of month. (99 = no day given).
3		Month		1-9, x/0-x/2	January thru September. x/0 = October thru x/2 = December.
4-5		Year		49-53	Last two digits. Thus: 49 = 1949.
6-7		Ship Class No.	D	(See table 17)	See note D.
8-13		Page No. of Code Sheet		000001-999999	Sequence page number with 60 observations on a page. "x" col. 8 on all cards.
14-16	10°	10° Marsden Square		See inventory pg. 2	901-936 = Marsden 10° square, 60° N. to 90° N.
17-18	1°	1° Marsden Square		00-99	See inventory page two. Bristol Channel data indicated on cards by 10° square 181, 1° square 04, "x" overpunch in col. 18.
19-20		Hour		00-23 50-73	Time in GMT. Local standard time. (99 = no time given).
21-23		Ship No.		000-299 300-849 850-999	Fishing ship. Commercial ship. Research ship.
24-25	dd	True Wind Direction	A	00-36	(See table 1). (99 = variable). 36 points.
26-27	ff	Wind Speed	A	00-99	In knots. ("x" overpunch col. 26 is equal to or greater than 100 knots). Converted to Beaufort, col. 79.
28		Wind Quadrant	A	0-4	0 = calm, 1 = (dc) 01-09, 2 = 10-18, 3 = 19-27, 4 = 28-36, 5 = variable.
29-30	VV	Visibility	A	90-99	(See table 2).
31-32	ww	Present Weather	A	00-99	(See table 3).
33	W	Past Weather	A	0-9	(See table 4).
34-38	PPP	Corrected Air Pressure 1/10 Mb.	A	07000-10800	In thousands, hundreds, tens, units and tenths. (When reported to whole millibars, col. 38 is blank).
39-41	TT	Air Temperature 1/10° C.	A	000-999	"x" overpunch col. 39 = negative (-) values. (When reported to whole degrees, col. 41 is blank).
42-44	T _{sea}	Sea Water Temperature 1/10° C.	A	000-999	"x" overpunch col. 42 = negative (-) values. (When reported to whole degrees, col. 44 is blank).
45-47	T _{a-s}	Air-Sea Temperature Difference 1/10° C.	A, B	000-999	"x" overpunch col. 45 = sea temperature higher than air temperature.
48-50	Td	Dew Point 1/10° C.	A	000-999	"x" overpunch col. 48 = negative (-) values.
51-52	RH	Relative Humidity in %.	A	00-99	(99 = 100%).
53	N	Total Amt. of Clouds	A	0-9	In 8ths. (See table 5).
54	N _h	Amt. of Low Clouds	A	0-9	In 8ths. (See table 5).
55	h	Height of Low Clouds	A	0-9	(See table 6).
56	C _l	Type of Low Clouds	A, C	0-9	(See table 7).
57	C _M	Type of Middle Clouds	A, C	0-9	(See table 8).
58	C _H	Type of High Clouds	A, C	0-9	(See table 9).
59-60	d _{sea}	Sea Direction	A, D	00-36 47, 99	36 points. (See table 1) ("x" overpunch col. 6 = wave direction in cols. 59 and 60).
61	S	State of Sea	A, D	0-9	(See table 10). ("x" overpunch col. 6, see note D.)
62-63	DK	Swell Direction	A, D	00-36 49, 99	36 points. See table 1. "x" overpunch col. 6, see note D.
64	K	Type of Swell	A, D	0-9	(See table 11).
65	D _s	Ship's Course	A	0-9	9 = variable. (See table 12).
66	V _s	Ship's Speed	A	0-9	(See table 13).
67	a	Pressure Tendency	A	0-9	Pressure characteristic in last 3 hours. (See table 14).
68-70	pp	Pressure Change, 1/10 Mb.	A	000-999	Pressure change last three hours, in 1/10 mb.
71-73		Precipitation Amount	A	000-999	In 1/10 mm. (000 = trace). 0 col. 71, and blank cols. 72 and 73 = no rain has fallen.
74-76		Significant Weather	A	0-9, x Each col.	(See table 15).
77		Duration of Storm Beaufort Force ≤ 8	A	0-9	In units of four hour periods. (Light ships have three hour periods). (See Tables 16 and 17).
78		Duration of Fog	A	0-9, x, y	Four hour periods. (Light ships have three hour periods). (See Tables 16 and 17).
79	F	Wind Force Beaufort	A	0-9, x/0-x/2	Beaufort Force 0-9. (See Table 18). Added at NWRC.
80		Blank			Beaufort Force 10-12.

NOTES

- A - Missing data indicated on card by blanks in the appropriate columns unless otherwise noted in the text above.
- B - Air-Sea Temperature Difference, cols. 45-47.
 (1) If air and sea temperatures were reported in whole degrees only, col. 47 was left blank. (2) If the tenth is missing, only in air or water, the value reported in tenths is rounded, and the air-sea temperature difference is reported in whole degrees only. (Positive values are rounded off at 5/10ths. Negative values are rounded at 6/10ths).
- C - When cloud levels were obscured by weather or lower layer of clouds, the layer was left blank.
- D - Wave data cols. 59-64, when col. 6 is "x" overpunched. These are for ship class number 52, 53, 67, in cols. 6-7.
 Cols. 59-60 = wave direction (d_w). (See table 1).
 Cols. 61-62 = wave period (p_w) measured to nearest seconds. Blank = calm or indeterminate.
 Cols. 63-64 = wave height (H_w) coded in units to nearest 1/2 meter. 00 = less than 1/4 meter. 01 = 1/2 meter. 02 = 1 meter, etc.

Table 1 - dd, d_s, d_k, d_w,
Cols. 24-25, 59-60, 62-63

Symbol dd—True Direction, in 10's of Degrees, FROM WHICH Wind is Blowing (00-36)

Symbol d_s, d_k, d_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_s, d_k, d_w.

49 Waves confused, direction indeterminate

99 Waves confused, direction indeterminate, higher than 14 feet

Table 2—vv - Cols. 29-30

Symbol VV—Visibility

CODE FIGURE	VISIBILITY RANGE
90	Less than 50 yards (50 m.)
91	50 yards (50 m.)
92	200 yards (200 m.)
93	¼ nautical mile (500 m.)
94	½ 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 3 - ww - Cols. 31-32

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
hydro-
meteors
except
clouds | 00 | Cloud development not observed | Characteristic change
of the state of sky
during the past
hour |
| | 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 | 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 | Shallow fog at the ship not deeper than about 10 meters (33 ft.) at sea |
| | 12 | More or less | |
| | 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) | Within sight during the past hour or waterspout |
- 20-29—Precipitation, fog or thunderstorm at the ship during the preceding hour but NOT at the time of observation
- | | | |
|----|--|------------------------|
| 20 | Drizzle (not freezing) | Not falling as showers |
| 21 | Rain (not freezing) | |
| 22 | Snow | |
| 23 | Rain and snow | |
| 24 | Freezing drizzle or freezing rain | |
| 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
- 44 Fog, sky discernible
- 45 Fog, sky not discernible
- 46 Fog, sky discernible
- 47 Fog, sky not discernible
- 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
- 52 Drizzle, not freezing, intermittent
- 53 Drizzle, not freezing, continuous
- 54 Drizzle, not freezing, intermittent
- 55 Drizzle, not freezing, continuous
- 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
- 62 Rain, not freezing, intermittent
- 63 Rain, not freezing, continuous
- 64 Rain, not freezing, intermittent
- 65 Rain, not freezing, continuous
- 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
- 72 Intermittent fall of snow flakes
- 73 Continuous fall of snow flakes
- 74 Intermittent fall of snow flakes
- 75 Continuous fall of snow flakes
- 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
- 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
- 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
- 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 4 - W - Col. 33

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 5 - N, N_h - Cols. 53-54

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 6 - h - Col. 55

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 7 - C_L - Col. 56

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."

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Table 8 - C_M - Col. 57

Symbol C_M—Clouds of Types Alto cumulus, Altostratus, and Nimbostratus

CODE FIGURES	DESCRIPTION
0	No alto cumulus, 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) alto cumulus; not changing much; at a single level.
4	Thin (semitransparent) alto cumulus in patches (often almond or fish-shaped); cloud elements continually changing and/or occurring at more than one level.
5	Thin (semitransparent) alto cumulus 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	Alto cumulus formed by the spreading out of cumulus.
7	Any of the following cases: (a) Double-layered alto cumulus, usually opaque in parts, not increasing; (b) a thick (opaque) layer of alto cumulus, not increasing; (c) altostratus and alto cumulus both present at the same or different levels.
8	Alto cumulus in the form of cumulus-shaped tufts or alto cumulus with turrets.
9	Alto cumulus of a chaotic sky; generally at different levels; dense cirrus in patches is usually also present.

Table 9 - C_H - Col. 58

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.

Code	State of Sea	
0	Calm-glassy	0
1	Rippled	0 - 1 foot
2	Smooth	0 - 1/2 metre
3	Slight	1 - 2 feet
4	Moderate	1/2 - 1 metre
5	Rough	2 - 4 feet
6	Very rough	1 - 2 metres
7	High	2 - 3 metres
8	Very high	3 - 4 metres
9	Phenomenal	4 - 6 metres
		6 - 9 metres
		9 - 14 metres
		over 14 metres

In all cases the exact bounding length or height is included in the lower category, e. g. a sea of 13 feet is described as "rough".

Table 11 - K - Col. 64

Table 11

Character of Swell (Cols. 62-64)

Code	Approx. Height Feet	Description
0	0	No swell
1	1-6	Low swell, short or avg. length
2	1-6	Low swell, long
3	6-12	Moderate swell, short
4	6-12	Moderate swell, avg. length
5	6-12	Moderate swell, long
6	12	Heavy swell, short
7	12	Heavy swell, avg. length
8	12	Heavy swell, long
9		Confused swell
Blank		Unknown

Table 12 - D_s - Col. 65

Symbol D_s—Ship's Course—Direction Toward Which Ship Is Moving

CODE FIGURES	TRUE DIRECTION	CODE FIGURES	TRUE DIRECTION
0	Ship hove to.	5	SW.
1	NE.	6	W.
2	E.	7	NW.
3	SE.	8	N.
4	S.	9	No information.

Table 13 - V_s - Col. 66

Symbol v_s—Ship's Speed

CODE FIGURES	SPEED	CODE FIGURES	SPEED
0	Ship stopped.	5	13 to 15 knots.
1	1 to 3 knots.	6	16 to 18 knots.
2	4 to 6 knots.	7	19 to 21 knots.
3	7 to 9 knots.	8	22 to 24 knots.
4	10 to 12 knots.	9	More than 24 knots.

Table 14 - a - Col. 67

Symbol a—Characteristic of Changes of Barometer in the Last 3 Hours

CODE FIGURES	DESCRIPTION
0	Rising, then falling.
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.
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.

} Barometer now higher than or the same as 3 hours ago

} Barometer now lower than 3 hours ago

Table 15
Significant Weather (Cols. 74-76)

Code	74	75	76
0.	Squalls	Dew	No ice or ice blink
1	Heavy squalls	Heavy dew	Flush or young ice
2	Wind gusts	Hoar frost	Fast ice
3	Water spout	Glazed frost & rime	Drift ice
4	Drizzle, Fog	Icing, smooth ice	Packed slush or strips of hummocked ice
5	Fog shower	Rainbow	Open lead near shore
6	Fog bank	Corona	
7	Coastal fog, otherwise good visibility	Moon corona	Heavy drift ice
8	Unusual visibility, light visibility	Sun halo	Packed ice
9	Optical phenomena	Moon halo	Ice jamming
x	Northern lights	Sand or dust fall	Iceberg or icebergs
	St. Elmo's fire		

Table 16

Duration Period of Storm (Col. 77)
Duration Period of Fog (Col. 78)

Code	Description
0	Only between the periods.
1	One period.
2	Two periods.
3	Three periods.
4	Four periods.
5	Five periods.
6	Six periods.
7	Seven thru nine periods.
8	Ten thru twelve periods.
9	Thirteen thru eighteen periods.
x	Nineteen thru twenty-three periods.
y	Twenty-four and more periods.

Table 17

Ship Class Number (Cols. 6 and 7)

Code	Description
50	Commercial ships. Entirely ship weather code.
51	Fishing ships. Entirely ship weather code.
52	Commercial ships. Shortened code (with clouds or waves given).
53	Fishing ships. Shortened code (with clouds or waves given).
54	Commercial ships. Short code.
55	Fishing ships. Short code.
67	Research ship with observations by meteorologists. Entire code (among others, fishing ice boat "Sea Cat").
69	Research ship without meteorologists. Shortened code.
70-93	Light ships.

"x" punch in col. 6 = wave observations in cols. 59-64 (Day book 52, 53, 67).

Table 18- F, ff - Col. 79

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

NOTE.—In case the true wind speed exceeds 99 knots, 50 will be added to "dd" and only the wind speed in excess of 100 knots will be reported as "ff."

NO. AIR WEATHER SERVICE, DATA CONTROL DIV. WEATHER BUREAU, CLIMATOLOGICAL SERVICES DIV.

REFERENCE MANUAL

196 DEUTSCHE SEEWARTER MARINE 1/1949-1/1953