. B. No. 1046

UNITED STATES DEPARTMENT OF AGRICULTURE

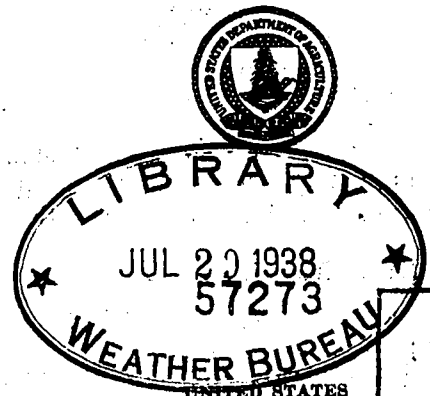
U.S. WEATHER BUREAU

INTERNATIONAL CODE

FOR

RADIO WEATHER REPORTS FROM SHIPS

Used by the United States Weather Bureau in broadcasting ships' weather reports from United States Navy Radio Stations in accordance with schedules given in United States Weather Bureau Radio Circular No. 1



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INTERNATIONAL CODE FOR RADIO WEATHER REPORTS FROM SHIPS

This code book is for use in the decoding of weather observations from ships that are included in the bulletins issued by the United States Weather Bureau and broadcast through United States Navy radio stations.

It is the international code adopted by the International Meteorological Organization. Marked advantages of the code are convenience and certainty of translation regardless of the nationality of the ship from which a weather report is sent. The code tables and explanations herein will also be useful to vessel masters in coding radiograms containing weather reports sent from ships on call.

DESCRIPTION OF CODE

The first four groups, of five figures each, designated as the Universal Data, are invariably the same. Additional data may be included but they are restricted to a choice of three combinations, designated Supplemental Data. Only one of the Supplemental Data combinations may be used in the same message with the Universal Data, and then in the prescribed arrangement and order. The first figure of the Supplemental Data always identifies the combination code that is being used.

In preparing radiograms in which this code is used, each item of data is given a distinctive symbol. The symbols and group arrangements are as follows:

Universal Data: YQLLL 111GG DDFww PPVTT.

Supplemental Data: $3C_LC_MC_HN$ $T_dKD_KWN_h$ d.v.app.
(The identifying figure for this combination of groups is always the figure 3.)

Supplemental Data: $6KD_KCN$ $T_dd.AWC_H$.
(The identifying figure for this combination of groups is always the figure 6.)

Supplemental Data: $9SKD_KW$ CNN_hAT_d.
(The identifying figure for this combination of groups is always the figure 9.)

Ship reports included in bulletins broadcast by the Weather Bureau through Navy radio stations contain, as a rule, only the four Universal Groups.

KEY SYMBOL LETTERS

A=Amount and characteristic of barometric tendency expressed by a single figure. (See Table IX.)
a=Characteristic of barometric tendency during the period of 3 hours preceding the time of observation. (See Table X.)
C=Form of predominating Cloud. (See Table XVI.)
C_H=Form of Upper (Cirrus) Cloud. (See Table XV.)
C_L=Form of Low Cloud. (See Table XIII.)

C_M=Form of Middle Cloud. (See Table XIV.)
DD=Direction of the wind (True) near the surface. (See Table III.)
D_K=Direction (True) from which swell is moving. (See Table IV.)
d_s=Direction of ship's course on scale (0–8). (See Table IV.)
F=Force of wind on the Beaufort scale. (Forces above 9 are reported as 9, with the actual force in a word at the end.) (See Table V.)
GG=Greenwich mean time of observation (00=midnight, 06=6 a.m., 12=noon, 18=6 p. m., etc.).
K=Swell in open sea. (See Table XIX.)
LLL=Latitude, in degrees and tenths, the tenths being obtained by dividing the number of minutes by 6 and neglecting the remainder.
lll=Longitude, in degrees and tenths, the tenths being obtained as for latitude LLL.
N=Total amount of sky covered with cloud. (See Table XVII.)
N_h=Amount of Low Cloud. (See Table XVII.)
PP=Pressure, in whole millibars (initial 9 or 10 omitted). The values refer to sea level and include all corrections for index error, temperature, and gravity. (See Table VIII.)
pp=Amount of barometric tendency during the 3 hours preceding the time of observation expressed in units of one-fifth of a millibar. (See Table XI.)
Q=Octant of globe in which ship is located. (See Table II.)
S=State of sea. (See Table XXI.)
TT=Temperature of the air, in whole degrees, Fahrenheit.
T_d=Difference between air and sea temperature. (See Table XVIII.)
V=Visibility or distance at which objects can be seen in daylight (or at which lights can be seen at night). (See Table XII.)
v_s=Speed of ship in knots. (See Table XX.)
W=Past weather—the weather in the interval preceding the time of observation. (See Table VII.)
ww=The actual weather at the time of observation. (See Table VI.)
Y=Day of the week. (See Table I.)

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The following is an example of an observation coded, using only the four *Universal Groups*:

Description of data	Code index	Code table	Observation as taken	Observation as coded
Day of week	Y	I	Tuesday	3
Octant of globe	Q	II	North latitude: 0° to 90° W	0
Latitude	L		North 42° 38′	4
	L			2
	L			6
Longitude	l		West 46° 22′	4
	l			6
	l			3
Time of observation (G. M. T.).	G		0000 G. M. T.	0
	G			0
Wind direction (true)	D	III	SSE	1
	D			4
Wind force (Beaufort)	F	V	Moderate gale	7
Present weather	w	VI	Cloudy	0
	w			2
Barometer	P	VIII	29.74	0
	P			7
Visibility	V	XII	Poor visibility	5
Temperature of air F.	T		54° F	5
	T			4

NOTE.—The letter "X" is sent for any missing or unavailable datum in any of the figure groups.

TABLES FOR DECODING RADIO WEATHER REPORTS FROM SHIPS AT SEA IN INTERNATIONAL CODE

CODE TABLE I

Symbol Y—Day of the week

Day	Code figures
Sunday	1
Monday	2
Tuesday	3
Wednesday	4
Thursday	5
Friday	6
Saturday	7

CODE TABLE II

Symbol Q—Octant of the globe

Longitude	Code figures
North latitude:	
0° W. to 90° W	0
90° W. to 180° W	1
180° E. to 90° E	2
90° E. to 0° E	3
South latitude:	
0° W. to 90° W	5
90° W. to 180° W	6
180° E. to 90° E	7
90° E. to 0° E	8

CODE TABLE III

Symbols DD—Wind direction

(Direction from which wind is blowing)

Code figures	True directions	Code figures	True directions
00	**Calm.**	17	S. by W.
01	N. by E.	**18**	**SSW.**
02	**NNE.**	19	SW. by S.
03	NE. by N.	**20**	**SW.**
04	**NE.**	21	SW. by W.
05	NE. by E.	**22**	**WSW.**
06	**ENE.**	23	W. by S.
07	E. by N.	**24**	**W.**
08	**E.**	25	W. by N.
09	E. by S.	**26**	**WNW.**
10	**ESE.**	27	NW. by W.
11	SE. by E.	**28**	**NW.**
12	**SE.**	29	NW. by N.
13	SE. by S.	**30**	**NNW.**
14	**SSE.**	31	N. by W.
15	S. by E.	**32**	**N.**
16	**S.**		

NOTE 1.—Observers who record and code wind direction to 16 points only will use the figures shown in **black-faced** type.

NOTE 2.—When unusual squalliness or gustiness has occurred during the hour preceding the observation, the observer adds 33 to the number for wind direction (DD), as given in the above table. When a squall or line squall (ligne de grain) has occurred in the hour preceding the observation, the observer adds 67 to the wind direction number given in the table. Example: For west-southwest wind the observer will use the number 22 from the table, but if unusual gustiness or squalliness has occurred he will add 33 and encipher 55 for the wind direction (DD), and if a line squall has occurred he will add 67 and encipher 89 as the wind direction (DD).

CODE TABLE IV

Symbol D_s—Direction from which swell is moving
Symbol d_s—Direction toward which ship is moving

True direction	Code figures
No sea or swell or ship hove to	0
NE	1
E	2
SE	3
S	4
SW	5
W	6
NW	7
N	8

CODE TABLE V

Symbol F—Wind force, Beaufort scale

Beaufort number		Code figures
Zero	Calm	0
One	Light airs	1
Two	Light breeze	2
Three	Gentle breeze	3
Four	Moderate breeze	4
Five	Fresh breeze	5
Six	Strong breeze	6
Seven	High wind (moderate gale)	7
Eight	Gale (fresh gale)	8
Nine	Strong gale	9
Ten	Whole gale [1]	9
Eleven	Storm [1]	9
Twelve	Hurricane [1]	9

[1] When force is in excess of strong gale the observer uses code figure 9 and adds word "gale," "storm," or "hurricane" (as the case may be) to the end of the message.

CODE TABLE VI

Symbols ww—Present weather

00–19. ABBREVIATED DESCRIPTION OF SKY AND SPECIAL PHENOMENA

00 Cloudless.
01 Partly cloudy.
02 Cloudy.
03 Overcast.
04 Low fog, whether on ground or at sea.
05 Haze (but visibility greater than 2,000 m., 2,200 yds.).
06 Dust devils seen.
07 Distant lightning.
08 Light fog (visibility between 1,000 and 2,000 m., 1,100 yards and 2,200 yds.).
09 Fog at a distance, but not at station (or ship).
10 Precipitation within sight.
11 Thunder, without precipitation at station (or ship).
12 Dust storm 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 }
17 Visibility reduced by smoke (industrial, grass or forest fires), or volcanic ashes.
18 Dust storm (visibility greater than 1,100 yards).
19 Signs of tropical storm (hurricane).

20–29. PRECIPITATION IN LAST HOUR BUT NOT AT TIME OF OBSERVATION

20 Precipitation (rain, drizzle, hail, snow, or sleet). } In last hour but not at time of observation.
21 Drizzle } other than showers.
22 Rain }
23 Snow }
24 Rain and snow, mixed }
25 Rain shower (s).
26 Snow shower (s).
27 Hail or rain and hail shower (s).
28 Slight thunderstorm.
29 Heavy thunderstorm.

30–39. DUST STORMS AND STORMS OF DRIFTING SNOW
(visibility less than 1,000 meters, 1,100 yards)

30 Dust or sand storm.
31 Dust or sand storm has decreased.
32 Dust or sand storm, no appreciable change.
33 Dust or sand storm has increased.
34 Line of dust storms.
35 Storm of drifting snow.
36 Slight storm of drifting snow } generally low.
37 Heavy storm of drifting snow }
38 Slight storm of drifting snow } generally high.
39 Heavy storm of drifting snow }

40–49. FOG (visibility less than 1,000 meters, 1,100 yards)

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

50–59. DRIZZLE (precipitation consisting of numerous minute drops)

50 Drizzle.
51 Intermittent } slight drizzle.
52 Continuous }
53 Intermittent } moderate drizzle.
54 Continuous }
55 Intermittent } thick drizzle.
56 Continuous }
57 Drizzle and fog.
58 Slight or moderate } drizzle and rain.
59 Thick }

60–69. RAIN

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

70–79. SNOW

70 Snow (or snow and rain, mixed).
71 Intermittent } slight snow in flakes.
72 Continuous }
73 Intermittent } moderate snow in flakes.
74 Continuous }
75 Intermittent } heavy snow in flakes.
76 Continuous }
77 Snow and fog.
78 Grains of snow (frozen drizzle).
79 Ice crystals; or frozen raindrops (sleet—U. S. definition).

80-89. SHOWER(S)

80	Shower (s).	
81	Shower (s) of slight or moderate	rain.
82	Shower (s) of heavy	
83	Shower (s) of slight or moderate	snow.
84	Shower (s) of heavy	
85	Shower (s) of slight or moderate	rain and snow.
86	Shower (s) of heavy	
87	Shower (s) of snow pellets (soft hail).	
88	Shower (s) of slight or moderate	hail, or rain and hail.
89	Shower (s) of heavy	

90-99. THUNDERSTORM

90	Thunderstorm.	
91	Rain at time	thunderstorm during last hour, but not at time of observation.
92	Snow, or rain and snow mixed, at time	
93	Thunderstorm, slight without hail or soft hail, but with rain (or snow)	at time of observation.
94	Thunderstorm slight with soft hail	
95	Thunderstorm moderate without hail, but with rain (or snow)	
96	Thunderstorm moderate with soft hail	
97	Thunderstorm heavy without hail, but with rain (or snow)	
98	Thunderstorm combined with dust storm	
99	Thunderstorm heavy with hail	

NOTE.—In coding present weather (ww) the observer will use the highest number applicable to the weather existing at time of observation.

CODE TABLE VII

Symbol W—Past weather

Weather	Code figures
Fair (clear or slightly clouded)	0
Variable sky	1
Mainly overcast	2
Sandstorm or duststorm, or storm of drifting snow	3
Fog or thick dust haze (visibility less than 1,000 meters, 1,100 yards)	4
Drizzle	5
Rain	6
Snow or sleet	7
Showers	8
Thunderstorm	9

CODE TABLE VIII

Symbols PP—Corrected barometer reading

(In millibars and inches)

Code figures	Inches	Millibars	Code figures	Inches	Millibars	Code figures	Inches	Millibars
25	27. 32	925	70	28. 65	970	15	29. 97	1, 015
26	27. 35	926	71	28. 67	971	16	30. 00	1, 016
27	27. 38	927	72	28. 70	972	17	30. 03	1, 017
28	27. 41	928	73	28. 73	973	18	30. 06	1, 018
29	27. 44	929	74	28. 76	974	19	30. 09	1, 019
30	27. 46	930	75	28. 79	975	20	30. 12	1, 020
31	27. 49	931	76	28. 82	976	21	30. 15	1, 021
32	27. 52	932	77	28. 85	977	22	30. 18	1, 022
33	27. 55	933	78	28. 88	978	23	30. 21	1, 023
34	27. 58	934	79	28. 91	979	24	30. 24	1, 024
35	27. 61	935	80	28. 94	980	25	30. 27	1, 025
36	27. 64	936	81	28. 97	981	26	30. 30	1, 026
37	27. 67	937	82	29. 00	982	27	30. 33	1, 027
38	27. 70	938	83	29. 03	983	28	30. 36	1, 028
39	27. 73	939	84	29. 06	984	29	30. 39	1, 029
40	27. 76	940	85	29. 09	985	30	30. 42	1, 030
41	27. 79	941	86	29. 12	986	31	30. 45	1, 031
42	27. 82	942	87	29. 15	987	32	30. 48	1, 032
43	27. 85	943	88	29. 18	988	33	30. 51	1, 033
44	27. 88	944	89	29. 21	989	34	30. 53	1, 034
45	27. 91	945	90	29. 24	990	35	30. 56	1, 035
46	27. 94	946	91	29. 26	991	36	30. 59	1, 036
47	27. 97	947	92	29. 29	992	37	30. 62	1, 037
48	28. 00	948	93	29. 32	993	38	30. 65	1, 038
49	28. 03	949	94	29. 35	994	39	30. 68	1, 039
50	28. 05	950	95	29. 38	995	40	30. 71	1, 040
51	28. 08	951	96	29. 41	996	41	30. 74	1, 041
52	28. 11	952	97	29. 44	997	42	30. 77	1, 042
53	28. 14	953	98	29. 47	998	43	30. 80	1, 043
54	28. 17	954	99	29. 50	999	44	30. 83	1, 044
55	28. 20	955	00	29. 53	1, 000	45	30. 86	1, 045
56	28. 23	956	01	29. 56	1, 001	46	30. 89	1, 046
57	28. 26	957	02	29. 59	1, 002	47	30. 92	1, 047
58	28. 29	958	03	29. 62	1, 003	48	30. 95	1, 048
59	28. 32	959	04	29. 65	1, 004	49	30. 98	1, 049
60	28. 35	960	05	29. 68	1, 005	50	31. 01	1, 050
61	28. 38	961	06	29. 71	1, 006	51	31. 04	1, 051
62	28. 41	962	07	29. 74	1, 007	52	31. 07	1, 052
63	28. 44	963	08	29. 77	1, 008	53	31. 10	1, 053
64	28. 47	964	09	29. 80	1, 009	54	31. 13	1, 054
65	28. 50	965	10	29. 83	1, 010			
66	28. 53	966	11	29. 86	1, 011			
67	28. 56	967	12	29. 89	1, 012			
68	28. 59	968	13	29. 92	1, 013			
69	28. 62	969	14	29. 94	1, 014			

NOTE.—It will be seen that the code figures may represent two values of barometric pressure, but this takes place only with a very high or very low barometer reading. In such cases the recipients of a message will be able to decide which value is intended. Code figures which correspond closest to exact barometer reading are used.

CODE TABLE IX

Symbol A—Barometric tendency

Code figures	Barometric tendency
0	Barometer steady. (Has not fallen or risen more than 0.01 inch (½ millibar) in last 3 hours.)
1	Barometer rising slowly. (Has risen 0.03 to 0.04 inch (1 to 1½ millibars) in last 3 hours.)
2	Barometer rising. (Has risen 0.06 to 0.10 inch (2 to 3½ millibars) in last 3 hours.)
3	Barometer rising quickly. (Has risen 0.12 to 0.18 inch (4 to 6 millibars) in last 3 hours.)
4	Barometer rising very rapidly. (Has risen more than 0.18 inch (6 millibars) in last 3 hours.)
5	Barometer falling slowly. (Has fallen 0.03 to 0.04 inch (1 to 1½ millibars) in last 3 hours.)
6	Barometer falling. (Has fallen 0.06 to 0.10 inch (2 to 3½ millibars) in last 3 hours.)
7	Barometer falling quickly. (Has fallen 0.12 to 0.18 inch (4 to 6 millibars) in last 3 hours.)
8	Barometer falling very rapidly. (Has fallen more than 0.18 inch (6 millibars) in last 3 hours.)

CODE TABLE X

Symbol a—Characteristic of changes of barometer in the last 3 hours

Code figures	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	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*	

CODE TABLE XI

Symbols pp—Barometer change

(Amount of rise or fall of the barometer in the last three hours)

Code figure	Amount of rise or fall		Code figure	Amount of rise or fall		Code figure	Amount of rise or fall	
	Millibars	Inch		Millibars	Inch		Millibars	Inch
01	0. 2	0. 01	36	7. 2	0. 22	71	14. 2	0. 43
02	. 4	. 01	37	7. 4	. 22	72	14. 4	. 43
03	. 6	. 02	38	7. 6	. 23	73	14. 6	. 44
04	. 8	. 02	39	7. 8	. 23	74	14. 8	. 44
05	1. 0	. 03	40	8. 0	. 24	75	15. 0	. 45
06	1. 2	. 04	41	8. 2	. 25	76	15. 2	. 46
07	1. 4	. 04	42	8. 4	. 25	77	15. 4	. 46
08	1. 6	. 05	43	8. 6	. 26	78	15. 6	. 47
09	1. 8	. 05	44	8. 8	. 26	79	15. 8	. 47
10	2. 0	. 06	45	9. 0	. 27	80	16. 0	. 48
11	2. 2	. 07	46	9. 2	. 28	81	16. 2	. 49
12	2. 4	. 07	47	9. 4	. 28	82	16. 4	. 49
13	2. 6	. 08	48	9. 6	. 29	83	16. 6	. 50
14	2. 8	. 08	49	9. 8	. 29	84	16. 8	. 50
15	3. 0	. 09	50	10. 0	. 30	85	17. 0	. 51
16	3. 2	. 10	51	10. 2	. 31	86	17. 2	. 52
17	3. 4	. 10	52	10. 4	. 31	87	17. 4	. 52
18	3. 6	. 11	53	10. 6	. 32	88	17. 6	. 53
19	3. 8	. 11	54	10. 8	. 32	89	17. 8	. 53
20	4. 0	. 12	55	11. 0	. 33	90	18. 0	. 54
21	4. 2	. 13	56	11. 2	. 34	91	18. 2	. 55
22	4. 4	. 13	57	11. 4	. 34	92	18. 4	. 55
23	4. 6	. 14	58	11. 6	. 35	93	18. 6	. 56
24	4. 8	. 14	59	11. 8	. 35	94	18. 8	. 56
25	5. 0	. 15	60	12. 0	. 36	95	19. 0	. 57
26	5. 2	. 16	61	12. 2	. 37	96	19. 2	. 58
27	5. 4	. 16	62	12. 4	. 37	97	19. 4	. 58
28	5. 6	. 17	63	12. 6	. 38	98	19. 6	. 59
29	5. 8	. 17	64	12. 8	. 38	99	19. 8	. 59
30	6. 0	. 18	65	13. 0	. 39			
31	6. 2	. 19	66	13. 2	. 40			
32	6. 4	. 19	67	13. 4	. 40			
33	6. 6	. 20	68	13. 6	. 41			
34	6. 8	. 20	69	13. 8	. 41			
35	7. 0	. 21	70	14. 0	. 42			

CODE TABLE XII

Symbol V—Visibility

Code figures	Visibility
0	Dense fog. (Objects not visible at 50 yards.)
1	Thick fog. (Objects not visible at 200 yards.)
2	Fog. (Objects not visible at 500 yards.)
3	Moderate fog. (Objects not visible at ½ nautical mile.)
4	Thin fog. (Objects not visible at 1 nautical mile.)
5	Poor visibility. (Objects not visible at 2 nautical miles.)
6	Moderate visibility. (Objects not visible at 5 nautical miles.)
7	Good visibility. (Objects not visible at 10 nautical miles.)
8	Very good visibility. (Objects not visible at 30 nautical miles.)
9	Excellent visibility. (Objects visible at more than 30 nautical miles.)

CODE TABLE XIII

Symbol C_L—Form of low cloud

Code figures	Form of cloud
0	No lower clouds.
1	Cumulus of fair weather.
2	Cumulus (large, without anvil).
3	Cumulonimbus.
4	Stratocumulus (spread from cumulus).
5	Stratus or stratocumulus (in layer).
6	Ragged low clouds of bad weather.
7	Cumulus *and* stratocumulus of fair weather.
8	Cumulus, large (or cumulonimbus) *and* stratocumulus.
9	Cumulus, large (or cumulonimbus) *and* ragged low clouds of bad weather.

CODE TABLE XIV

Symbol C_M—Form of middle cloud

Code figures	Form of cloud
0	No middle clouds.
1	Altostratus, typical thin.
2	Altostratus, typical thick (sun or moon invisible), or nimbostratus.
3	Altocumulus or high stratocumulus, single layer.
4	Altocumulus, in bands, decreasing.
5	Altocumulus, in bands, increasing.
6	Altocumulus, spread out from cumulus.
7	Altocumulus, with altostratus; or altostratus with parts resembling altocumulus.
8	Altocumulus castellatus (or altocumulus in ragged fragments).
9	Altocumulus in several layers, generally with fibrous veils and chaotic appearance of sky.

CODE TABLE XV

Symbol C_H—Form of upper cloud

(Cirrus cloud)

Code figures	Form of cloud
0	No upper clouds (cirrus type).
1	Cirrus, fine, not increasing; scarce.
2	Cirrus, fine, not increasing; plentiful but not a continuous layer.
3	Cirrus, anvil.
4	Cirrus, fine, increasing.
5	Cirrus or cirrostratus increasing, below 45° altitude.
6	Cirrus or cirrostratus increasing, and reaching above 45° altitude.
7	Cirrostratus, veil covering entire sky.
8	Cirrostratus, not increasing, and not covering whole sky.
9	Cirrocumulus predominating, and a little cirrus.

CODE TABLE XVI

Symbol C—Form of predominating cloud

Code figures	Form of cloud	Code figures	Form of cloud
1	Cirrus.	6	Stratocumulus.
2	Cirrostratus.	7	Nimbostratus.
3	Cirrocumulus.	8	Cumulus or fractocumulus.
4	Altocumulus.	9	Cumulonimbus.
5	Altostratus.	0	Stratus or fractostratus.

CODE TABLE XVII

Symbol N—Total amount of all clouds

(Regardless of kind of clouds)

Symbol N_h—Amount of lower cloud

Code figures	Proportion of sky covered (in tenths)
0	0.
1	Less than 0.1.
2	0.1.
3	0.2 to 0.3.
4	0.4 to 0.6.
5	0.7 to 0.8.
6	0.9.
7	More than 0.9 but with openings.
8	Sky completely covered with clouds.
9	Sky obscured by fog, duststorm, or other phenomenon.

CODE TABLE XVIII

Symbol T_d—Temperature difference (air and water)

(Difference between temperature of air and temperature of water at or near surface)

Code figures		
0	More than 9° F	Air temperature same as or higher than sea temperature.
1	6° to 9°	
2	3° to 6°	
3	1° to 3°	
4	No difference or less than 1° F. higher	
5	Less than 1° F	Air temperature lower than sea temperature.
6	1° to 3°	
7	3° to 6°	
8	6° to 9°	
9	More than 9°	

CODE TABLE XIX

Symbol K—Swell

Code figures		Code figures	
0	No swell.	5	Moderate swell, long.
1	Low swell, short or average length.	6	Heavy swell, short.
		7	Heavy swell, average length.
2	Low swell, long.	8	Heavy swell, long.
3	Moderate swell, short.	9	Confused swell.
4	Moderate swell, average length.		

CODE TABLE XX

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.

CODE TABLE XXI

Symbol S—State of sea

Code figures	Description	Height of wave, crest to trough
0	Calm	0.
1	Smooth	Less than 1 foot.
2	Slight	1 to 3 feet.
3	Moderate	3 to 5 feet.
4	Rough	5 to 8 feet.
5	Very Rough	8 to 12 feet.
6	High	12 to 20 feet.
7	Very High	20 to 40 feet.
8	Precipitous	Over 40 feet.
9	Confused	

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MEMORANDUM FOR VESSEL WEATHER OBSERVERS

March 1, 1938.

INTERNATIONAL CODE FOR RADIO WEATHER REPORTS FROM SHIPS (1938 edition)

This code book is for use in decoding weather observations from ships that are included in the bulletins issued by the UNITED STATES WEATHER BUREAU and broadcast through UNITED STATES NAVY radio stations.

Since the last edition of this publication some changes have been made. The new symbols and definitions which are in accord with the International Meteorological Organization announcements are indicated below.

SYMBOL LETTERS

D_K for direction (true) from which swell is moving.
N_h for amount of low cloud.
PP for barometric pressure.
pp for amount of barometric tendency during 3 hours preceding the time of observation.
T_d for difference between air and sea temperature.
v_s for speed of ship in knots.
Y for day of the week.

CODE TABLES

Code Table VI - Symbol ww--Present Weather

04 Low fog, whether on ground or over sea.
08 Light fog (visibility between 1,000 and 2,000 m., 1,100 and 2,200 yds.).
09 Fog at a distance, but not at station (or ship).
12 Dust storm within sight, but not at station (or ship).
17 Visibility reduced by smoke (industrial, grass or forest fires), or volcanic ashes.
18 Dust storm (visibility greater than 1,100 yds.).
19 Signs of tropical storm (hurricane).

24 Rain and snow, mixed.
41 Moderate fog in last hour, but not at time of observation.
42 Thick fog in last hour, but not at time of observation.
70 Snow or (snow and rain, mixed).
78 Grains of snow (frozen drizzle).
79 Ice crystals; or frozen raindrops (sleet-U. S. definition).
87 Shower (s) of snow pellets (soft hail).
92 Snow or rain and snow, mixed, at time.

Code Table VII - Symbol W--Past Weather

3 Sandstorm or duststorm, or storm of drifting snow.
4 Fog or thick dust haze (visibility less than 1,000 m., 1,100 yds.).
5 Drizzle.
6 Rain.
7 Snow or sleet.
8 Showers.

Code Table XII - Symbol V--Visibility

4 Thin fog (Objects not visible at 1 nautical mile).

Instructions pertaining to coding PRESENT WEATHER (Code Table VI), in vessel weather observation messages forwarded by radio to the UNITED STATES WEATHER BUREAU have been modified so as to provide for the use of the complete table instead of an abridgment thereof. In general, it is desired that the highest number applicable to the observation be used in coding.

Attention is invited to the 6th edition of "Instructions to Marine Meteorological Observers", January 1938, which contains detailed instructions regarding the use of Code Table VI-PRESENT WEATHER, on pages 38 to 44; Code Table VII-PAST WEATHER, on page 61; Code Table X-CHARACTER OF CHANGES IN THE BAROMETER IN THE LAST 3 HOURS, on page 57; and also photographs and descriptions of cloud forms on pages 63 to 78.