UNITED STATES
DEPARTMENT OF AGRICULTURE
WEATHER BUREAU

INTERNATIONAL RADIO WEATHER CODE

FOR USE ON

UNITED STATES SELECTED SHIPS

1930

W. B. No. 1005

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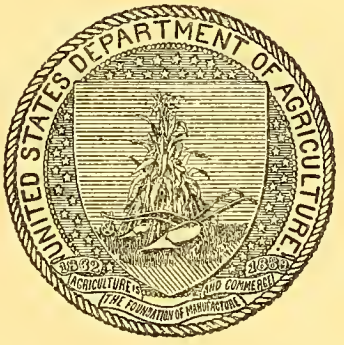

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NOTICE

UNITED STATES DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU,
Washington, D. C., May 1, 1930.

1. The accompanying Weather Code for the transmission of meteorological observations by radio is for the use of observers on SELECTED SHIPS only, and will become effective May 1, 1930.

2. Observers on other than SELECTED SHIPS will continue to use Radio Weather Code for Vessel Weather Observers, 1925. (W. B. 860.)

CHARLES F. MARVIN, *Chief of Bureau.*

INTERNATIONAL RADIO WEATHER CODE

FOR USE ON UNITED STATES SELECTED SHIPS

1. This code book is for use of observers in the coding of weather observations from ships that are specially selected for international service and designated SELECTED SHIPS.

2. Other ships reporting to the United States Weather Bureau will continue to use the word code as contained in W. B. No. 860—Radio Weather Code for Vessel Weather Observers, 1925.

3. Figures, in groups of five, are employed exclusively in the code described herein. The code was adopted by the International Meteorological Organization at a conference held at Copenhagen, Denmark, in September, 1929, and will be used by SELECTED SHIPS of all nations.

4. A marked advantage of the code is that when it goes into general use, certainty of translation, regardless of the nationality of the ship from which a weather report is sent, is assured. The code tables and explanations herein will also be useful to vessel masters in decoding weather reports received from ships employing this code.

DESCRIPTION OF CODE

5. The first four groups, designated as the UNIVERSAL DATA, invariably will be the same. Additional data may be included but they are restricted to a choice from two 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.

6. For convenience in preparing observations and coding the radiograms, each item of data is given a distinctive symbol. The symbols and group arrangements are as follows:

Universal Data: PQLLL 111GG DDFww BBVTT.

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

Supplemental Data: $3C_LC_MC_HN$ $t_g KdWN_L$ $d_s fabb$.
(The identifying figure for this combination of groups is always the figure 3.)

7. Each ship will be given separate instructions in writing or otherwise should **Supplemental Data** be desired. *In the absence of such instructions only the UNIVERSAL DATA will be coded and included in the radiogram.*

8. *Arrangement of Universal Data and explanation of symbols—*

UNIVERSAL DATA: PQLLL 111GG DDFww BBVTT

FIRST GROUP—Symbols PQLLL:

P—*Day of week:* See Code Table I. The observer will be careful to code the day of week as at Greenwich and not the local day. When an observation is taken at 0000 G. M. T., the day of the week should be coded as the day just beginning and not the day just ended.

Q—*Octant of globe:* See Code Table II. Determined by position of ship. Example: "Ship is in north latitude and between 0° and 90° W."—code figure 0.

LLL—*Latitude:* Ship's position. (No code table necessary.) Record latitude in degrees and minutes but code in degrees and tenths, the tenths being obtained by dividing minutes by 6 and neglecting the remainder. Example: "Lat. N. 42° 38′"—code figures 426.

SECOND GROUP—Symbols 111GG:

111—*Longitude:* Ship's position. (No code table neeessary.) Record longitude in degrees and minutes and code in same manner as for latitude. Example: "Long. W. 46° 22′"—code figures 463. If longitude is 100° or more, omit the first figure (1). The fact that longitude is 100° or in excess thereof, will be indicated by the code figure showing octant of globe (Q). Example: "Long. W. 123° 41′"—eode figures 236.

GG—*Time of observation, G. M. T.:* (No code table necessary.) Greenwich mean time, 24-hour system. The day begins at midnight (0000). Unless otherwise instructed, regular observations will be taken at midnight (0000) and noon (1200). If observation is not taken on the hour, code the nearest hour. Example: "0000 G. M. T."—code figures 00. See paragraph 22 regarding speeial observations.

THIRD GROUP—Symbols DDFww:

DD—*Wind direction:* See Code Table III. Direction from which wind is blowing. Record and code to 16 points, using only code figures in full face type in Table III. Example: "SSE."—code figure 14.

F—*Wind force (Beaufort):* See Code Table V. Record wind force according to Beaufort scale. Example: "Moderate Gale"—code figure 7.

ww—*Present weather:* See Code Table VI. Weather at time of observation. Example: "Cloudy"—code figures 02.

FOURTH GROUP—Symbols BBVTT:

BB—*Barometer:* See Code Table VIII. Record corrected reading in inches or millibars, according to type of barometer used on board. Example: "29.74 in."—code figures 07. (Note—Code figures 07 are last two figures of the equivalent in whole millibars.)

V—*Visibility:* See Code Table XII. Example: "Poor Visibility"—code figure 5.

TT—*Temperature of air (F.°):* (No code table necessary.) Record temperature to nearest whole degree Fahrenheit. Example: "54°"—code figures 54.

9. *Arrangement of Supplemental Data (6) and explanation of symbols.—*

SUPPLEMENTAL DATA: 6KdCN $t_d d_s AWC_H$

FIFTH GROUP—Symbols 6KdCN:

6—*Group index:* This is a code figure to identify the supplemental data being used. For these supplemental data the code figure is always 6 and is so entered in column (e).

K—*Swell:* See Code Table XIX. Character of swell. Example: "Heavy swell, long"—code figure 8.

d—*Direction of swell:* See Code Table IV. True direction from which swell is moving. Example: "SW"—code figure 5.

C—*Predominating cloud:* See Code Table XVI. Example: "Strato-cumulus"—code figure 6.

N—*Cloud amount:* See Code Table XVII. Amount of sky covered by clouds, recorded in tenths. Example: "0.7 to 0.8"—code figure 5.

SIXTH GROUP—Symbols $t_d d_s AWC_H$:

t_d—*Temperature difference (air and water):* See Code Table XVIII. Difference between temperature of air and temperature of water at or near surface. Example: "Air 4° lower"—code figure 7.

d_s—*Course of ship:* See Code Table IV. General direction toward which ship is moving, recorded to 8 cardinal points. Example: "NE"—code figure 1.

A—*Barometric tendency:* See Code Table IX. Give change during 3 hours preceding observation. Example: "Barometer falling. Has fallen 0.08 inch in last 3 hours"—code figure 6.

W—*Past weather:* See Code Table VII. General characteristies of weather during 3 hours preceding the observation. Example: "Showers"—code figure 7.

C_H—*Form of upper cloud:* See Code Table XV. This relates only to forms of cirrus or cirro-stratus clouds. Example: "Cirrus, fine, increasing"—code figure 4.

10. *Arrangement of Supplemental Data (3) and explanation of symbols.—*

SUPPLEMENTAL DATA: $3C_LC_MC_HN$ t_dKdWN_L d_sfabb

FIFTH GROUP—Symbols $3C_LC_MC_HN$:

3—*Group index:* This is a code figure to identify the supplemental data being used. For these supplemental data, the code figure is always 3.

C_L—*Form of low cloud:* See Code Table XIII. Example: "Cumulo-nimbus"—code figure 3.

C_M—*Form of middle cloud:* See Code Table XIV. Example: "Alto-cumulus, in bands, increasing"—code figure 5.

C_H—*Form of upper cloud:* See Code Table XV. This relates only to forms of cirrus or cirro-stratus clouds. Example: "Cirrus, fine, increasing"—code figure 4.

N—*Cloud amount:* See Code Table XVII. Amount of sky covered by clouds, recorded in tenths. Example: "0.7 to 0.8"—code figure 5.

SIXTH GROUP—Symbols t_dKdWN_L:

t_d—*Temperature difference (air and water):* See Code Table XVIII. Difference between temperature of air and temperature of water at or near surface. Example: "Air 4° lower"—code figure 7.

K—*Swell:* See code Table XIX. Character of swell. Example: "Heavy swell, long"—code figure 8.

d—*Direction of swell:* See Code Table IV. True direction from which swell is moving. Example: "SW"—code figure 5.

W—*Past weather:* See Code Table VII. General characteristics of weather during 3 hours preceding the observation. Example: "Showers"—code figure 7.

N_L—*Amount of lower cloud:* See Code Table XVII. Proportion of sky covered by lower clouds recorded in tenths. Example: "Sky completely covered by lower clouds"—Code figure 8.

SEVENTH GROUP—Symbols d_sfabb:

d_s—*Course of ship:* See Code Table IV. General direction toward which ship is moving, recorded to 8 cardinal points. Example: "NE"—code figure 1.

f—*Ship's speed:* See Code Table XX. Speed of ship in knots per hour. Example: "22 to 24 knots"—code figure 8.

a—*Barometer characteristic:* See Code Table X. Characteristic of change in the barometer in the last 3 hours. Example: "Barometer unsteady but falling, now lower than 3 hours ago"—code figure 7.

bb—*Barometer change:* See Code Table XI. Amount of barometer change in last 3 hours. Example: "Fall of 0.12 inch"—code figures 20.

HOURS OF REGULAR OBSERVATIONS

11. Regular observations will be taken twice daily, at 0000 G. M. T. and 1200 G. M. T.
For instructions regarding special observations, see paragraph 22.

INSTRUCTIONS FOR RECORDING AND CODING OBSERVATIONS

12. Enter in column (d) of Form 1210—Marine, the observation as taken and in column (e) the appropriate code number.

13. When data are not available or are omitted for any other reason, use an X in column (e) in place of each code figure so omitted and include in radiogram.

14. It will be necessary for the observer to refer to code tables, as indicated, to obtain the proper code number for most of the data. The code tables appear on pages 6 to 14, inclusive.

15. An example of Form 1210—Marine, with an observation recorded and coded thereon appears on page 4. This example also includes Supplemental Data, index 6.

16. Prepare Form 1210—Marine, in duplicate. Retain carbon copy for ship's file and mail original as directed in paragraph 21.

Number Forms 1210—Marine consecutively, beginning with the first observation of the year. Begin new series each calendar year.

PREPARATION OF RADIOGRAMS

17. After the observation is recorded and coded on Form 1210—Marine, prepare the radio message on Form 1204, in duplicate, and file the original immediately with the radio operator, addressing the message according to instructions given to each individual ship. Retain duplicate and mail according to instructions contained in paragraph 21.

18. When the ship is in certain designated areas it may be desired that the coded radiograms will be sent elsewhere than to the United States Weather Bureau. When this is desired special arrangements will be made in writing with the ship concerned, and information furnished as to the exact address to be used.

19. Examples of Form 1204 with coded groups will be found on page 5.

20. Make the serial number on Form 1204 correspond with the serial number of Form 1210—Marine from which the radiogram was prepared.

MAILING FORMS

21. At the end of each return voyage to a United States port, mail original copies of Form 1210—Marine and the duplicate copies of Form 1204 to the Weather Bureau office from which the observer receives his instructions. Special envelopes, which require no additional postage, will be provided for the purpose.

SPECIAL OBSERVATIONS

22. Occasionally special observations will be taken and forwarded by radio. They may be taken on the initiative of the vessel master when unusual weather conditions exist, or on call by the United States Weather Bureau in connection with special service. Such special observations will follow the same procedure as in regular observations, care being taken to indicate accurately the time the special observation is taken.

The following is a sample of Form 1210—Marine with an observation entered and coded.

Form 1210—Marine. No. 45

Name of ship: *S. S. America.* Date *January 28, 1930.*

Radio messages addressed to OBSERVER, WASHINGTON.

	(a) Description of data	(b) Code index	(c) Code table	(d) Observation as taken	(e) Observation as coded	(f) Group position in message
Universal Data: PQLLL 111GG DDFww BBVTT	Day of week	P	I	Tuesday	3	First.
	Octant of globe	Q	II	North latitude between 0° and 90° W	0	
	Latitude	L L L		North 42° 38′	4 2 6	
	Longitude	1 1 1		West 46° 22′	4 6 3	Second.
	Time of observation (G. M. T.)	G G		0000 G. M. T	0 0	
	Wind direction (true)	D D	III	S. SE	1 4	Third.
	Wind force (Beaufort)	F	V	Moderate gale	7	
	Present weather	w w	VI	Cloudy	0 2	
	Barometer	B B	VIII	29.74	0 7	Fourth.
	Visibility	V	XII	Poor visibility	5	
	Temperature of air ° F	T T		54° F	5 4	
Supplemental Data (6): 6KdCN $t_d d_s$AWC_H	Group index (Sup.)	6			6	Fifth.
	Swell	K	XIX	Heavy swell, long	8	
	Direction of swell	d	IV	SW	5	
	Predominating cloud	C	XVI	St. cu	6	
	Cloud amount	N	XVII	7 to 8 tenths	5	
	Temperature difference, air and water	t_d	XVIII	Air 4° lower	7	Sixth.
	Course of ship	d_s	IV	NE	1	
	Barometric tendency	A	IX	Fall of 0.08 inch	6	
	Past weather	W	VII	Showers	7	
	Form of upper cloud	C_H	XV	Cirrus, fine, increasing	4	

The following is a sample radiogram, Form 1204, with the Universal Data only coded in the message.

FORM No. 1204 V. W. S. R. No. 45

UNITED STATES DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

SELECTED SHIP RADIOGRAM

RUSH (Government message)

Prefix	Vessel of origin	No.	Operator		Check	Filing		Forwarding		Coastal station routed via—
			Sending	Receiving		Date	Time	Date	Time	
Radio	America	1	S. F. K.	W. J. S.	6 Govt	Jan. 28, 1930	00 05	Jan. 28, 1930	00 10	N B D
Observer, Washington:								Sent to Bar Harbor, Me. (Ship or station)		N B D (Call letters)
30426		46300			14702			07554		

Following is a sample radiogram, Form 1204, with the Universal Data and Supplemental Data (6) coded in the message.

FORM No. 1204 V. W. S. R. No. 45

UNITED STATES DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

SELECTED SHIP RADIOGRAM

RUSH (Government message)

Prefix	Vessel of origin	No.	Operator		Check	Filing		Forwarding		Coastal station routed via—
			Sending	Receiving		Date	Time	Date	Time	
Radio	America	1	S. F. K.	W. J. S.	8 Govt	Jan. 28, 1930	00 05	Jan. 28, 1930	00 10	N B D
Observer, Washington:								Sent to Bar Harbor, Me. (Ship or station)		N B D (Call letters)
30426		46300			14702			07554		68565
71674										

CODE TABLES

Code Table I

Symbol P—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**	**S. SW.**
02	**N. NE.**	19	SW. by S.
03	NE. by N.	**20**	**SW.**
04	**NE.**	21	SW. by W.
05	NE. by E.	**22**	**W. SW.**
06	**E. NE.**	23	W. by S.
07	E. by N.	**24**	**W.**
08	**E.**	25	W. by N.
09	E. by S.	**26**	**W. NW.**
10	**E. SE.**	27	NW. by W.
11	SE. by E.	**28**	**NW.**
12	**SE.**	29	NW. by N.
13	SE. by S.	**30**	**N. NW.**
14	**S. SE.**	31	N. by W.
15	S. by E.	**32**	**N.**
16	**S.**		

Record and code directions to 16 points. Use only directions as shown in black-faced type and code numbers corresponding thereto.

NOTE.—When unusual squalliness or gustiness has occurred during the hour preceding the observation, the observer will add 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 will add 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—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
No observation or no information	9

99083°—30——2

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 use code figure 9 and add word "gale," "storm," or "hurricane" (as the case may be) to the end of the message.

Code Table VI

Symbols ww—Present weather

(Weather at time of observation. Abridged for United States ships)

Weather	Code figures
Cloudless (less than one-tenth of sky covered)	00
Partly cloudy (0.1 to 0.5 of sky covered)	01
Cloudy (0.6 to 0.9 of sky covered)	02
Overcast (sky completely covered)	03
Mist	08
Squally weather	14
Signs of a tropical storm forming	18
Signs that a tropical storm has formed	19
Fog (moderate or thick)	40
Fog (moderate) has continued during last hour	41
Fog (thick) has continued during last hour	42
Drizzle	50
Drizzle and fog	57
Rain	60
Rain and snow mixed	68
Snow or sleet	70
Showers	80
Thunderstorm	90

Code Table VII

Symbol W—Past weather

Weather	Code figures
Fair (clear or slightly clouded)	0
Variable sky	1
Mainly overcast	2
Fog or thick dust haze (visibility less than 3,500 feet, about 5 cables)	3
Drizzle	4
Rain	5
Snow or sleet	6
Showers	7
Sandstorm or duststorm	8
Thunderstorm	9

Code Table VIII

Symbols BB—Corrected barometer reading

(In millibars and inches)

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

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. Use code figures which correspond closest to exact barometer reading.

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

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	Mist or haze, or very poor visibility. (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 low clouds.
1	Cumulus of fair weather.
2	Cumulus (large, without anvil).
3	Cumulo-nimbus.
4	Strato-cumulus (spread from cumulus).
5	Stratus or strato-cumulus (in layer).
6	Nimbus (ragged low clouds of bad weather.)
7	Cumulus *and* strato-cumulus of fair weather.
8	Cumulus, large (or cumulo-nimbus) *and* strato-cumulus.
9	Cumulus, large (or cumulo-nimbus) *and* nimbus.

Code Table XIV

Symbol C_M.—Form of middle cloud

Code figures	Form of cloud
0	No middle cloud.
1	Alto-stratus, typical thin.
2	Alto-stratus, typical thick (sun or moon invisible).
3	Alto-cumulus or high strato-cumulus, single layer.
4	Alto-cumulus, in bands, decreasing.
5	Alto-cumulus, in bands, increasing.
6	Alto-cumulus, spread out from cumulus.
7	Alto-cumulus, with alto-stratus; or alto-stratus with parts resembling alto-cumulus.
8	Alto-cumulus castellatus (alto-cumulus in ragged fragments).
9	Alto-cumulus 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 cirro-stratus increasing, below 45° altitude.
6	Cirrus or cirro-stratus increasing, and reaching above 45° altitude.
7	Cirro-stratus, veil covering entire sky.
8	Cirro-stratus, not increasing, and not covering whole sky.
9	Cirro-cumulus predominating, and a little cirrus.

Code Table XVI

Symbol C—Form of predominating cloud

Code figures	Form of cloud	Abbreviation
1	Cirrus	Ci.
2	Cirro-stratus	Ci. St.
3	Cirro-cumulus	Ci. Cu.
4	Alto-cumulus	A. Cu.
5	Alto-stratus	A. St.
6	Strato-cumulus	St. Cu.
7	Nimbus	Nb.
8	Cumulus or fracto-cumulus	Cu. or Fr. Cu.
9	Cumulo-nimbus	Cu. Nb.
0	Stratus or fracto-stratus	St. or Fr. St.

Code Table XVII

Symbol N—Total amount of all clouds

(Regardless of kind of clouds)

Symbol N_L—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.
2	Low swell, long.	7	Heavy swell, average length.
3	Moderate swell, short.	8	Heavy swell, long.
4	Moderate swell, average length.	9	Confused swell.

Code Table XX

Symbol f—Ship's speed

Code figures	Speed in knots per hour	Code figures	Speed in knots per hour
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 OF EQUIVALENT TEMPERATURES

Centigrade	Fahrenheit	Centigrade	Fahrenheit	Centigrade	Fahrenheit	Centigrade	Fahrenheit	Centigrade	Fahrenheit
°	°	°	°	°	°	°	°	°	°
−20	−4. 0	−8	17. 6	4	39. 2	16	60. 8	28	82. 4
−19	−2. 2	−7	19. 4	5	41. 0	17	62. 6	29	84. 2
−18	−0. 4	−6	21. 2	6	42. 8	18	64. 4	30	86. 0
−17	1. 4	−5	23. 0	7	44. 6	19	66. 2	31	87. 8
−16	3. 2	−4	24. 8	8	46. 4	20	68. 0	32	89. 6
−15	5. 0	−3	26. 6	9	48. 2	21	69. 8	33	91. 4
−14	6. 8	−2	28. 4	10	50. 0	22	71. 6	34	93. 2
−13	8. 6	−1	30. 2	11	51. 8	23	73. 4	35	95. 0
−12	10. 4	0	32. 0	12	53. 6	24	75. 2	36	96. 8
−11	12. 2	1	33. 8	13	55. 4	25	77. 0	37	98. 6
−10	14. 0	2	35. 6	14	57. 2	26	78. 8	38	100. 4
−9	15. 8	3	37. 4	15	59. 0	27	80. 6	39	102. 2

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