National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 1117 (DSI-1117)

Navy/Marine Surface Observations

November 17, 2003

National Climatic Data Center
151 Patton Ave.
Asheville, NC 28801-5001 USA

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1. Abstract: The Navy Marine Surface Observations dataset is a historical dataset archived at the National Climatic Data Center (NCDC). Observations were recorded on WBAN 11A and 11B forms. Major parameters include temperature, dew point, wet bulb, wind speed, present weather, visibility, ceiling height, sea surface temperature, wave direction, and cloud types. These observations began in 1952 and continued through June of 1964 and cover the entire globe.

2. Element Names and Definitions:

Card Column Number	Symbol	Element	Note	Card Code	Definition
1-4		Ship No.		X001-x999	All ships have been assigned numbers beginning with "x" in col. 1. The three following numbers in col. 2 through 4 range from 001-999.
5-6		Year		00-99	Last two figures of year. i.e. 52 = 1952.
7-8		Month		01-12	01 = January, 02 = February, etc.
9-10		Day		01-31	25 = 25th day of month.
11	Q	Octant		0-3, 5-8	See table 1. Octant of globe.
12-13	La_{La}	Latitude		00-90	Latitude to whole degrees.
14-15	Lo_{Lo}	Longitude		00-99	Longitude to whole degrees, omitting the "1" if over 100°.
16-17	GT	Hour GGT		00-23	Hour of day. 0 = midnight of day beginning.
18-20	hhh	Ceiling	A, B	000-999	Ceiling was recorded in hundreds of feet above the surface up to 5,000 ft., the nearest 500 ft. up to 10,000 ft., to nearest 1,000 ft. above that.
21-24	$S_1S_2S_3S_4$	Sky Condition	A, C	See table 2	See notes. S_1 – 1st sky layer, etc.
25-27	vv	Visibility	A	000-990	See table 3. In nautical miles and fractions. 150 = 15.0 miles.
28-35	ww	Present weather	A	See table 4	More than 1 column may be punched to denote combination of weather.
36-38	PPP	Corrected sea level pressure	A	000-999	In tens units and 10ths mbs. "x" overpunch in col. 36 = less than 1,000 mbs. "x" overpunch in cols. 36, 37 = less than 900 mbs.
39-40	TT	Temperature	A	00-99	Whole degrees Fahrenheit. ("x" overpunch in col. 39 = negative (-) Values). ("x"

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					overpunch in col. 40 - 100°F or over).
41-42	T_dT_d	Dew Point Temperature	A	00-99	Whole degrees Fahrenheit. “x” overpunch in column 41 = negative (-) values.
43-44	dd	True Wind direction	A	See table 5	16 points of 32 point compass.
45-46	ff	Wind speed	A	00-99	In knots. “x” overpunch in col. 45 is equal to or greater than 100 knots.
47-48	T_wT_w	Wet Bulb Temperature	A	00-99	In whole degrees Fahrenheit. “x” overpunch in col. 47 = negative (-) values.
49	N	Total Cloud Amount	A, D	0-9, x	In tenths, x = 10/10ths.
50	N_1	Cloud amount in 10ths	A, D, E	0-9, x	1st or lowest layer.
55	N_2	Cloud amount in 10ths	A, D, E	0-9, x	2nd layer.
61	N_3	Cloud amount in 10ths	A, D, E	0-9, x	3rd layer.
67	N_4	Cloud amount in 10ths	A, D, E	0-9, x	4th layer.
60	$N_1 + N_2$	Cloud amount in 10ths	A, D, E	0-9, x	Summation of layers 1 and 2.
66	$N_1 + N_2 + N_3$	Cloud amount in 10ths	A, D, E	0-9, x	Summation of layers 1, 2 and 3
72	N_{opaque}	Cloud amount in 10ths	A, D, E	0-9, x	Total opaque sky cover
51	C_1	Cloud Type	A, D, E	See table 6	1st or lowest layer.
56	C_2	Cloud Type	A, D, E	See table 6	2nd layer.
62	C_3	Cloud Type	A, D, E	See table 6	3rd layer.
68	C_4	Cloud Type	A, D, E	See table 6	4th layer.
52-54	hhh_1	Cloud Height	A, E, F	000-999	Base of lowest layer in hundreds of feet.
57-59	hhh_2	Cloud Height	A, E, F	000-999	Base of second layer.
63-65	hhh_3	Cloud Height	A, E, F	000-999	Base of third layer.
69-71	hhh_4	Cloud Height	A, E, F	000-999	Base of fourth layer.
73-74	T_{sea}	Sea Water Temperature	A	00-99	In whole degrees Fahrenheit.
75-76	d_w	True Wave Direction	A	00-36	Closest 10° or 36 points. (xx = confused condition). 00 = calm.
77-78	P_w	Period of	A	0-99	In seconds. (xx = confused

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		Waves			condition)
79-80	Hw	Height of Waves	A	00-99	Mean maximum height of waves in feet.

Notes:

A – Missing data indicated on card by blanks in the appropriate columns.

B – Ceiling (cols. 18-20).
The ceiling is the height ascribed to the lowest layer or payers of clouds or obscuring phenomena (not classified) as a "thin" sky condition, thin or partial obscuration), and obscures more than ½ of the sky. For obscurations, the vertical visibility into the obscuring phenomena is reported rather than the height of the base. After 9/1/56, cirro type clouds with estimated ceilings were reported and punched as 888.

C – Sky Condition (cols. 21-24).
(1) Provisions have been made of punching 4 sky symbols for four layers of sky cover, including clouds or obscuring phenomena. The layers are punched in ascending order of elevation. When less than 4 sky cover symbols were reported, those reported were punched starting with the 1st layer in col. 21. Any remaining columns to the right of the highest reported symbol were punched 0. The layers above an opaque, overcast, or obscuration, were also punched 0. When more than 4 sky (and cloud) conditions were reported, the last (highest) symbol was punched in col. 24. The first 3 symbols were punched in cols. 21 thru 23, unless the ceiling symbol is thereby excluded; in this case, ceiling symbol was punched in col. 23, and the first 2 (lowest) symbols were punched in cols. 21 and 22.
(2) Partial or thin obscuration (-x) col. 21, ws left blank. A layer became classified as "thin" if the ratio of opaque coverage is ½ or less of the total coverage. Succeeding sky symbols were punched in cols. 22-24. If (-x) reported alone, 000 was punched in cols. 22-24.
(3) Clear punched as 0000.

D – Total cloud amount, or amount of clouds (cols. 49, 50, 60, 61, 66, 67, 72). In tenths. 0 = clear or less than 1/10 cloudiness or obscuration. "x" = 9/10+ or 10/10 cloudiness or obscuration.

E – Clouds (cols. 50-71).
Provisions have been made to punch 4 layers of clouds and/or obscuring phenomena existing at one time. If more than 4 layers are reported, only the four lowest layers are punched. The layers were punched in ascending order of elevation. Card cols. Punched 50-54 are the lowest layer, cols. 55-59, second layer, cols. 61-65, third layer, and cols. 67-71, fourth layer. The amount, type and height is punched for each layer. Also the summation amounts of layers 1 and 2 (if reported) in col. 60; and layers 1, 2 and 3 in col. 66 (if reported). If two or more types of clouds or obscuring phenomena were observed at the same height, the amounts were combined and the predominating type was punched. When any layer was obscured by lower layer of opaque clouds or obscuring phenomena, that or higher layers were left blank on the card.

F – Cloud height (cols. 52-54, 57-59, 63-65, 69-71).
Xxx is punched in height if the reported amount reported as clear or few clouds was punched as 0. 888 = height of cirro type clouds with estimated height effective 9/1/56.

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Table 1
Octant of Globe (col. 11)

Octant	North Latitude
0	0° W. to 90° W.
1	90° W. to 180° W.
2	180° W. to 90° E.
3	90° E. to 0° E.
	South Latitude
5	0° W. to 90° W.
6	90° W. to 180° W.
7	180° E. to 90° E.
8	90° E. to 0° E.

Table 2
Sky Condition (cols. 21-24)

Code	Definition
0	Clear or no other sky condition.
1	Thin scattered, 1.10 thru 5/10 cloudiness.
2	Mod. Scattered, 1/10 thru 5/10 cloudiness.
3	Thick scattered, 1/10 thru 5/10 cloudiness.
4	Thin broken, 6/10 thru 9/10 cloudiness.
5	Mod. Broken 6/10 thru 9/10 cloudiness.
6	Thick broken, 6/10 thru 9/10 cloudiness.
7	Thin overcast, 10/10 cloudiness.
8	Mod. Overcast, 10/10 cloudiness.
9	Thick overcast, 10/10 cloudiness.
Blank	Thin obscuration.
x	Thick obscuration.

Table 3
Visibility (cols. 25-27)

Code	Definition
000 to 006	0 to 3/8 nautical mile in 1/16 mile increments
006 thru 009	3/8 thru ¾ nautical mile in 1/8 mile increments
010 thru 027	1 thru 2½ nautical miles in ½ mile increments
030 thru 150	3 thru 15 nautical miles in 1 mile increments
150 thru 950	15 thru 95 nautical miles in 5 mile increments
Two additional fractions 7/8 and 1-7/8 were reported and were punched as 3/4 and 1-3/4, respectively.	

Table 4
Present Weather (cols. 28-35)

Col. 28		Col. 29		Col. 30		Col. 31	
Code	**Definition**	**Code**	**Definition**	**Code**	**Definition**	**Code**	**Definition**
0	No Thunderstorms or tornado	0	No Precipitation listed below.	0	No precipitation listed below	0	No precipitation listed below
1	(T) thunder	1	(R-) Light rain			1	(S-) Light snow.
2	(T+) Heavy thunder	2	(R) Mod. Rain			2	(S) Mod. Snow

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3	(Tor) Tornado or waterspout	3	(R+) Heavy Rain			3	(S+) Heavy snow
5	(Q) Squall	4	(RW-) Light Rain showers	4	(L-) Light drizzle	4	(SP-) Light snow pellets
		5	(RW) Mod. Rain showers	5	(L) Mod. Drizzle	5	(SP) Mod. Snow pellets
		6	(RW+) Heavy Rain showers	6	(L+) Heavy drizzle	6	(SP+) Heavy snow pellets
		7	(ZR-) Light freezing rain	7	(ZL-) Light freezing rain	7	(IC-) Light ice crystals
		8	(ZR) Mod. freezing rain	8	(ZL) Mod. Freezing rain	8	(IC) Mod. Ice crystals
		9	(ZR+) Heavy freezing rain	9	(ZL+) Heavy freezing rain	9	(IC+) Heavy ice crystals

Table 4 cont.

Col. 32		**Col. 33**		**Col. 34**		**Col. 35**	
Code	**Definition**	**Code**	**Definition**	**Code**	**Definition**	**Code**	**Definition**
0	No precipitation listed below	0	No Precipitation listed below.	0	No obscuration to vision listed below	0	No obscuration to vision listed below
1	(SW-) Light snow showers	1	(E-) Light sleet	1	(F) Fog	1	(K) Smoke
2	(SW) Mod. Snow showers	2	(E) Mod. Sleet	2	(IF)	2	(H) Haze
3	(SW+) Heavy snow showers	3	(E+) Heavy Sleet	3	(GF) Ground Fog	3	(KH) Smoke and Haze
7	(SG-) Light snow grains	4	(A-) Light hail	4	(BD) Blowing Dust	4	(D) Dust
8	(SG) Mod. Snow grains	5	(A) Mod. Hail	5	(BN) Blowing Sand	5	(BS) Blowing Snow
9	(SG+) Heavy snow grains	6	(H+) Heavy hail			6	Blowing Spray
		7	(AP-) Light soft hail				
		8	(AP) Mod. Soft hail				
		9	(AP+) Heavy soft hail				

Table 5
Wind Direction (cols. 43-44)

Code	Direction	Code	Direction
00	Calm	55	S
11	North	56	SSW
12	NNE	66	SW
22	NE	76	WSW
33	E	78	WNW
34	ESE	88	NW
44	SE	18	NW
54	SSE		

Table 6
Cloud type (Cols. 51, 56, 62, 68)

Code	Definition	Code	Definition

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x	obscuration phenomena other than fog		“x” overpunch
0	None or less than 1/10.	x/2	Fractostratus (Fs)
1	Fog (F)	x/4	Fractocumulus (Fc)
2	Stratus (St)	x/5	Cumulomammatus (Cm)
3	Stratocumulus (sc)	x/6	Nimbostratus (Ns)
4	Cumulus (Cu)	x/7	Altocumulus castellatus (Acc)
5	Cumulonimbus (Cb)		
6	Altostratus (As)	x/9	Cirrocumulus (Cc)
7	Altocumulus (Ac)		
8	Cirrus (Ci)	Blank	Missing or unknown data
9	Cirrostratus (Cs)		

3. Start Date: 19520101

4. Stop Date: 19640630

5. Coverage:

a. Southernmost Latitude: -90.0S
b. Northernmost Latitude: 90.0N
c. Westernmost Longitude: -180.0W
d. Easternmost Longitude: 180.0E

6. How to Order Data:

Ask NCDC’s Climate Services about the cost of obtaining this data set.
Phone: 828-271-4800
FAX: 828-271-4876
E-mail: **NCDC.Orders@noaa.gov**

7. Archiving Data Center:

Archive Branch
National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

8. Technical Contact:

National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

9. Known Uncorrected Problems: None.

10. Quality Statement:

11. Essential Companion Datasets:

12. References:

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