

National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 1118 (DSI-1118)

Japanese Ship Observations

November 19, 2003

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

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1. **Abstract:** Japanese Ship Observations (DSI-1118) is a historical digital data set in archive at the National Climatic Data Center (NCDC). Data are from ocean areas wherever Japanese ships operated, from 1933 to 1953. Parameters included in this dataset are: wind direction, pressure, temperature of air and sea, cloud type, high, middle and low, visibility, sea and swell direction and height, ice descriptions and special phenomena.

2. **Element Names and Definitions:**

Column	Element	Card Code	Card Code Definition	Remarks
1	Format	1	Format number for deck 118	
2	Ship class	0-5	See code 1	
3-7	Ship number	00000-99999	Indicates ship's name	Arbitrarily assigned number for each ship stamped on the upper left side of record.
8-9	Year	37-53	1937-1953	
10-11	Month	01-12	January-December	
12-13	Day of month	01-31		
14-15	Hour LMT	06, 12, 18, 24		See note*, observation time.
16	Quadrant	0-3	See code 2	
17-18	Latitude	00-90	Degrees	North and South indicated in column 16.
19-20	Latitude	00-59	Minutes	
21-23	Longitude	000-180	Degrees	
24-25	Longitude	00-59	Minutes	
26-27	Wind direction	00-32	See code 3	The points of a 32 point compass are most frequently used.
28	Wind force	0-9	Beaufort force 0-9	Hurricane >73 mph or 64 knots. At standard height 6m. above water.
		x/0	Beaufort force 10	
		x/1	Beaufort force 11	
		x/2	Beaufort force >12	
			See code 4	
29-31	Barometric sea level pressure	000-999	700.0 through 799.9mm in 1/10 millimeters	X-overpunch in column 29 indicates the hundreds position value is 6 rather than 7.
32-33	Air temperature	00-99	0 thru 99°C	1/10°C values are dropped and punched in whole °C.
		x/01-x/99	-1 thru -99°C	X-overpunch in tens position equals minus (-) values.
34-45	Sea surface temperature	00-99	0 thru 99°C	1/10°C values are dropped and punched in whole °C.

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		x/01- x/99	-1 thru -99°C	X-overpunch in tens position equals minus (-) values.
36	High clouds	0-7	See code 5	
37	Middle clouds	0-3	See code 6	
38	Low Clouds	0-9	See code 7	
39	Total amount	0-9 ----- x	0-9/10 sky covered ----- 10/10, total sky covered or obscured	
40	Sky condition	Blank 0-5	See code 8	
41	Type of precipitation	Blank 0-9 ----- x/0- x/5	See code 9	
42	Other phenomena	Blank 0-9, x	See code 10	
43	Obstruction to vision	Blank 0-3	See code 11	
45-46	Direction of sea waves	00-32, xx	See code 3	See remarks columns 26-27.
47	Sea waves height	0-9, x	See code 13	
48-49	Direction of sea swell	00-32	See code 3	See remarks columns 26-27.
50	Swell height	0-7	See code 14	See note*, swell height.
51-54	Time difference between ships and JST	00-21	Ships time is 00-21 hours slow from JST	See note*, observation time. X in column 51 and blank in columns 52-54 indicate difference missing.
51-52	Hours	X0-X3 or 30-33	Ships time is 0-3 hours fast from JST	
53-54	Minutes	00-59	00-59 minutes	
55	Kind of ice	0-9, x	See code 15	Covers the preceding 6 hours.
56-57	Current direction	00-36	See code 16	Direction toward which ocean current is moving. Normally reported once daily on the 1200 LMT.
58-59	Current Speed	00 ----- 01-99 ----- x/00- x/99	No current ----- 1-99 miles per day ----- 100-199 miles X-overpunch in column 58	Ships drift in nautical miles in past 24 hours. Normally punched on the 1200 LMT observation card only. See page 1, additional remarks.
60-63	Special phenomena	1-8	See code 17	(a) Covers the past 6 hours.
61	Sea water phenomena or lithometers	1-9	See code 18	(b) Blank when none occurred.
62	Disastrous phenomena	1-5	See code 19	(c) The highest code is given priority when two or more conditions occur in

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63	Sequake	1-9, x	See code 20	each category.
64		x	Indicates 65-80 are blank	
65-80	Blank	Blank	Not used	These columns are always blank.

*Observation time - The hours 06, 12, 18, 24 Local Mean Time (LMT). Special observations were taken between these hours at the discretion of the observer.

The difference between ship's LMT and Japanese Standard Time (JST) is punched in columns 51-54. JST is the 135 E. Meridian Time and is +9 hours from GCT.

The ship's LMT was computed once daily as follows: The LMT of the ship changed continuously with the ship's movement. The time used on the ship's log for any given day, however, was the LMT for one of the meridian which the ship was reckoned to cross during that day. The particular meridian selected for the LMT was sometimes the midpoint of the reckoned meridional distance for that day and sometimes the meridian crossed at 00 GMT. The logs do not distinguish which of the methods were used.

*Swell height - It should be noted that swell height codes were changed from 7 point code to a 9 point code in 1953. The period 1947-1950 the swell was reported with the 0 point Douglas Scale.

Code Tables

Code 1 Ships Class

Code	Description
0	Weather ship
1	University Scientific Expedition Ship
2	Maritime Ship of Government Agency
3	Naval Ship
4	Privately owned Merchant or Cargo Ship
5	Privately owned Fishing Boat

Code 2 Quadrant

Code	Description
0	N Latitude and W Longitude
1	N Latitude and E Longitude
2	S Latitude and W Longitude
3	S Latitude and E Longitude

Code 3 dd - Wind Direction

Code	32 Points	16 of 32 Points	Direction
00	Calm		C
01	06-16		N/E
02	17-28	12-33	NNE

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03	28-39		NE/N
04	40-50	35-56	NE
05	51-61		NE/E
06	62-73	57-78	ENE
07	74-84		E/N
08	85-95	79-101	E
09	96-106		E/S
10	107-118	102-123	ESE
11	119-129		SE/E
12	130-140	124-146	SE
13	141-151		SE-S
14	152-163	147-163	SSE
15	164-174		S/E
16	175-185	169-191	S
17	186-196		S/W
18	197-208	192-213	SSW
19	209-219		SW/S
20	220-230	214-236	SW
21	231-241		SW/W
22	242-253	237-258	WSW
23	254-264		W/S
24	265-275	259-281	W
25	276-286		W/N
26	287-298	282-303	WNW
27	299-309		NW/W
28	310-320	304-326	NW
29	321-331		NW/N
30	332-342	327-348	NNW
31	344-354		N/W
32	355-005	349-011	N
XX	Variable or confused		

Even values of code are used when coding 16 points of 32 point compass which was most frequently used.

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Value in parenthesis indicated grouping of code between lines are 8 point reduction.

Code 4
F - Force of Surface Wind
Beaufort Scale of Wind

Beaufort Number	Description Term	Mean Velocity in Knots	Meters/sec.	Km/h	m.p.h
0	Calm	<1	0-0.2	<1	<1
1	Light air	1-3	0.3-1.5	1-5	1-3
2	Light Breeze	4-6	1.6-3.3	6-11	4-7
3	Gentle Breeze	7-10	3.4-5.4	12-19	8-12
4	Moderate Breeze	11-16	5.5-7.9	20-28	13-18
5	Fresh Breeze	17-21	8.0-10.7	29-38	19-24
6	Strong Breeze	22-27	10.8-13.8	39-49	25-31

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7	Near Gale	28-33	13.9-17.1	50-61	32-38
8	Gale	34-40	17.2-20.7	62-74	39-46
9	Strong Gales	41-47	20.8-24.4	75-88	47-54
10	Storm	48-55	24.5-28.4	89-102	55-63
11	Violent Storm	56-63	28.5-32.6	103-117	64-72
12	Hurricane	64-	32.7-	118-	73-

Code 5
CH - Type of Cloud

Code	Symbol	Description
0		No high clouds
1	CK	Cirrocumulus
2	C	Cirrus
3	CS	Cirrostratus
4	C & CK	Cirrus and Cirrocumulus
5	C & CS	Cirrus and Cirrostratus
6	CK & CS	Cirrocumulus and Cirrostratus
7	CK & CS & C	Cirrocumulus and Cirrostratus and Cirrus

Code 6
CM - Type of Middle Cloud

Code	Symbol	Description
0		No middle clouds
1	SC	Altostratus
2	KC	Alto cumulus
3	KC & SC	Alto cumulus and Altostratus

Code 7
CL - Type of Low Cloud

Code	Symbol	Description
0		No low clouds
1	KN&N or S	Cumulonimbus and Nimbus or Stratus
2	KN & SK	Cumulonimbus and Stratocumulus
3	KN	Cumulonimbus
4	S.FS	Stratus, Fractostratus
5	N.NS	Nimbus, Nimbostratus
6	K.FK	Cumulus, Fractocumulus
7	K&SK	Cumulus and Stratocumulus
8	SK	Stratocumulus
9	F or ≡	Fog

When two or more low clouds were reported that could not be described by the above code, the lowest code (not "0") was given preference.

Code 8
Total Sky Cover

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Code Figure	Symbol	Description	Coverage
0	b	Blue sky	0 to \geq 3/10
1	bc	Partly cloudy	4/10 - 7/10
2	c	Cloudy	8/10
3	K or CK	High overcast with high clouds predominating	8/10 - 10/10
4	O or OC	Low overcast	8/10 - 10/10
5	KO	High overcast with low overcast	8/10 - 10/10
Blank		Sky obscured or missing obscured sky indicated by column 39 as an X.	

**Code 9
Type of Precipitation**

Code	Symbol	Description
0	d	drizzle
1	d & r	drizzle and rain
2	d & p	drizzle and passing showers
3	d & s	drizzle and snow
4	r	rain
5	r & p	rain and passing showers
6	r & s	rain and snow
7	p	passing showers
8	p & s	passing showers and snow
9	s	snow x/ indicates X-overpunch of digit indicated
x/0	rs	sleet (ice, rain, snow together)
x/1	h	hail
x/2	h & d	hail and drizzle
x/3	h & r	hail and rain
x/4	h & p	hail passing showers
x/5	h & s	hail and snow
Blank		No precipitation occurring at time of observation

Note: When 3 or more types of precipitation were recorded, 2 combined types were punched in the order of preference: 1. Hail, 2. Sleet, 3. Snow, 4. Rain, 5. Showers, 6. Drizzle.

**Code 10
Other phenomena**

Code	Symbol	Description
0	w	Dew
1	x	Hoarfrost
2	g	Gloomy weather. Sky covered by low clouds. Rain seems to be falling, but showers or storm are absent
3	e	Wet without rain. Atmosphere feels wet or moist. Dew may be observed on cool surfaces.
4	u	Ugly weather. tendency to storm - sky covered by fast moving clouds and rain or strong winds are expected momentarily.

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5	q	Squalls
6	l	Lightning
7	t	Thunder
8	t & l	Thunder and lightning
9	q & l	Squall and lightning or
	q & t	Squall with thunder
x	Q & t & l	Squall with thunder and lightning
Blank		None of the above phenomena observed.

**Code 11
Obstructions to vision**

Code	Symbol	Description
0	v	Unusual visibility Object visible at 750 km.
1	z	Haze
2	m	Mist
3	F	Fog
Blank		None of the above

**Code 12
V - Horizontal visibility**

Code figure	Km.	Yards	Statute Miles	Nautical Miles
0	<0.05	<55	<1/32	
1	0.05	55	1/32	
2	0.2	220	1/8	
3	0.5	550	5/16	1/4
4	1	1,100	5/8	1/2
5	2	2,200	1-1/4	1
6	4	4,400	2-1/2	2
7	10	11,000	6-1/4	5
8	20	22,000	12-1/2	10
9	≥50	≥55,000	≥31-1/4	>25

If the observed visibility is between two of the reportable distances as given in the table, the code figure for the lower reportable distance is reported.

Maximum visible distance regardless of direction.

**Code 13
S - Sea Waves Height**

Code	Description	Height (Feet)	Height (Meters)
0	Calm	0	0
1	Very smooth	<1	0.3
2	Smooth	1-2	0.3-0.6
3	Slight	2-3	0.6-1.0
4	Moderate	3-5	1.0-1.5
5	Rather rough	5-8	1.5-2.5
6	Rough	8-12	2.5-4.0
7	High	12-20	4.0-7.0
8	Very high	20-40	7.0-13

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9	Phenomenal	>40	>13
X	Variable or confused		

Note: When the height is the exact value for two codes the lower code was punched.

Code 14
K - Swell Heights

Code	Description	Height (Feet)	Height (Meters)
0	No swell	0	0
1	Slight	0.1-1	0.1-0.4
2	Moderate	2-4	0.5-1.4
3	Rather rough	5-8	1.5-2.4
4	Rough	9-12	2.5-3.9
5	Heavy	13-17	4.0-5.4
6	Very heavy	18-22	5.5-6.9
7	Abnormal	≥23	≥7.0

Code 15
C2 - Type of Ice

Code	Description
0	No sea ice
1	New ice
2	Flat ice
3	Drift ice
4	Ice field
5	Packed (compact) slush or strips of hummocked ice
6	Open lead near shore
7	Heavy fast ice
8	Heavy drift ice
9	Hummocked ice
x	Ice jamming

When two or more Ice codes were reported the highest code figure was punched.

Code 16
Wind Direction

Code Figure	Description (degrees)
00	Calm
01	5-14
02	15-24
03	25-34
04	35-44
05	45-54
06	55-64
07	65-74
08	75-84
09	85-94
10	95-104
11	105-114

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12	115-124
13	125-134
14	135-144
15	145-154
16	155-164
17	165-174
18	175-184
19	185-194
20	195-204
21	205-214
22	215-224
23	225-234
24	235-244
25	245-254
26	255-264
27	265-274
28	275-284
29	285-294
30	295-304
31	305-314
32	315-324
33	325-334
34	335-344
35	345-354
36	355-4

Code 17
SpSp - Special Phenomena

Columns 60-63 - (Blank means none occurred.) the highest code figure was punched covering the previous 6 hours for each category when 2 or more kinds of phenomena were reported in one category.

Code	Description
1	Afterglow
2	Morningglow
3	Halo
4	Corona
5	Abnormal refraction
6	Mirage
7	St Elmo's Fire
8	Aurora

The highest code was punched when two of more types of optical phenomena were reported.

Code 18
Sea Water Phenomena or Lithometers
Column 61

Code	Description
1	Disclosed water
2	Rip tide
3	Abnormal tide

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4	Rip current
5	Dust fall
6	Fall of volcanic ash
7	Pumice
8	Marine volcano
9	Graupel

Code 19
Disastrous Phenomena - Column 62

Code	Description
1	High water
2	Squall
3	Tidal wave
4	Eye of storm
5	Water spout

Code 20
Seaquake (Kaishin) - Rudolph Scaler Quantity
Column 63

Code	Description	Remarks
1	Weak sound	Cannot be felt on deck
2	Felt	Man awakened from sleep
3	Very slight	Felt as if heavy mass were dropped on deck
4	Slight	Slight shock felt as if a heavy anchor was dropped rapidly
5	Moderate	Shock felt as if the ship ran upon a coral reef or sand bar
6	Rather strong	Cups, glasses, etc. are vibrated
7	Strong	Unable to stand on deck
8	Very strong	Furniture, mast, etc. are trembled, compass, thermometers may be broken.
9	Disastrous	Ship is pushed to one side and cannot be navigated.
X	Very disastrous	Men on deck are brought down, heavy objects are thrown upward, ship may be broken.

3. **Start Date:** 19330101

4. **Stop Date:** 19531231

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.

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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:** None.

11. **Essential Companion Datasets:** None.

12. **References:** None.

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