

PMO Activity in Japan

Jun'chi Hirosawa
(Japan Meteorological Agency)

Location of PMOs



- Yokohama, Nagoya, Kobe;
The 3 major ports in Japan.
- Kobe, Nagasaki,
Hakodate, Maizuru;
Marine Observatories
(home ports of JMA R/Vs)

PMO Service

Recruiting and assisting VOSs in coordination between HQ of JMA and PMOs

- HQ - National contact
 - Contact with shipping companies
 - Communication with ships through internet, facsimile, magazine, etc.
 - Assistance to PMO activities using the **intranet** etc.
- PMO - Visiting ships

PMO Activity

By visiting ships,

- To supply instructive material (e.g. guides, manuals) as well as weather logbooks etc.
- To encourage and give advice on meteorological observations and reports
- To check and give advice on meteorological instruments, especially barometers

[Ships' barometers can be checked using air pressure data observed at the nearest weather station via telefacsimile communication between ships and PMOs instead of visiting ships and directly comparing ships' barometers with PMOs' standard barometers.]

- To give explanations on meteorological information provided by JMA

Web Site for VOSs (in Japanese)

The screenshot shows a web browser window with the following content:

- Browser title: 船舶気象観測・通報のページ - Microsoft Internet Explorer
- Navigation menu: ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)
- Page title: 船舶気象観測・通報のページ
- Sub-header: 気象庁 気候・海洋気象部 海洋気象課
- Text: あなたは2002年1月7日以来 00140 人目のお客様です。
- Image: A large white ship at sea.
- Text below image: 平成15年国土交通大臣表彰受賞船舶「みらい」(株式会社グローバルオーシャンディベロップメント)
- Section: ご登録会社入口 (要登録ID)
- Text: 登録すると、「気象測器の備え付け状況等...」などがホームページで提出できるようになります。ぜひご登録下さい。登録はこちらへ。
- List of links:
 - 港湾気象サービスとは
 - 日本の港湾気象官(PMO)
 - 気象測器の備え付け状況等に関する報告
 - 対話型気象観測作成ソフトウェア
 - 海上気象観測関係パンフレット
 - 船と海上気象(広報誌)
 - 海洋気象課担当職員紹介
 - 気象情報へのリンク
- Text: 港湾気象業務に関するお問い合わせは [こちら](#) までお寄せ下さい。
- Footer: 気象庁ホームページ
- System clock: 22:59

Entrance into the web page for shipping company to submit metadata

Outline of PMO service in Japan

Introduction of Japanese PMOs

How to submit metadata

How to obtain OBSJMA

Brochures

Magazines

Links

Introduction of JMA HQ staff

The ship presented the FY2003 award by the Minister of Land, Infrastructure and Transport for its outstanding contribution to marine observations


Web Site for VOSs (in English)

Ships' Weather Observations/Reports - Microsoft Internet Explorer

ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

Now only available for submitting
Report on meteorological observations/reporting
in compliance with the Article 50
of the Meteorological Service Implementation Regulation

Please type Callsign of your ship.

 [Japan Meteorological Agency](#)

The top page in English;
At present, only the entrance page for submitting
metadata on on-board meteorological instruments
is available.
The additional contents of the web site for VOSs
in English are under construction.

Web Page for Submitting Metadata (1)

Report on meteorological observations/reporting... - Microsoft Internet Explorer

ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

**Report on meteorological observations/reporting
in compliance with the Article 50 of the Meteorological
Service Implementation Regulation
in conjunction with the Article 7 of the Meteorological Service Law**

The Japan Meteorological Agency

1.Name of Ship

2.Callsign

3.Vessel dimension

Gross tonnage	<input type="text"/>	tons
Length over all	<input type="text"/>	meters
Breadth	<input type="text"/>	meters
Free Board	<input type="text"/>	meters

4.Cruising areas of routes

<input type="text" value="route1 (Please select)"/>	<input type="text" value="route2 (Please select)"/>
other route	
<input type="text"/>	

5.Navigation area

1. Ocean going 2. Coasting

6.International Cruise

1. Yes 2. No

7.Vessel type

<input type="radio"/> 1. Oil tanker	<input type="radio"/> 8. Other Fishing vessel
<input type="radio"/> 2. LNG/LPG tanker	<input type="radio"/> 9. Ferryboat
<input type="radio"/> 3. Other bulk carrier	<input type="radio"/> 10. Other passenger boat
<input type="radio"/> 4. Closed container	<input type="radio"/> 11. Resaerch vessel
<input type="radio"/> 5. Ro/Ro container (including PCC,PTC)	<input type="radio"/> 12. Other(Please specify)
<input type="radio"/> 6. Other cargo	<input type="text"/>
<input type="radio"/> 7. Trawler	

8.Type of barometer

1. Aneroid barometer

Web Page for Submitting Metadata (2)

Report on meteorological observations/reporting... - Microsoft Internet Explorer

ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

8.Type of barometer

- 1. Aneroid barometer
- 2-a Barograph with seven day clock
- 2-b Barograph with one day clock
- 3. Digital oscillation type barometer

9.Type of thermometer

- 1. Mercury thermometer
- 2. Electric(resistance) thermometer
- 3. Alcohol thermometer

10.Condition of exposure of the thermometer

- 1. Screen(ventilated)
- 2. Screen(not ventilated)
- 3. Sling
- 4. Whirling
- 5. Aspirated

11.Type of hygrometer

- 1. Hair hygrometer
- 2. Psychrometer (including wet and dry bulb thermometer)
- 3. Electric hygrometer

12.Condition of exposure of the hygrometer

- 1. Screen(ventilated)
- 2. Screen(not ventilated)
- 3. Sling
- 4. Whirling
- 5. Aspirated

13.Method of obtaining sea surface temperature

- 1. Bucket thermometer
- 2. Thermometer in inlet of engine cooling system
- 3. Bait tanks thermometer

14.Various instruments used aboard the ship

- 1. Maximum thermometer
- 2. Minimum thermometer
- 3. Electric thermometer for sea surface temperature
- 4. Hand anemometer

Web Page for Submitting Metadata (3)

Report on meteorological observations/reporting... - Microsoft Internet Explorer

ファイル(F) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

14. Various instruments used aboard the ship

1. Maximum thermometer

2. Minimum thermometer

3. Electric thermometer for sea surface temperature

4. Hand anemometer

5. Cup anemometer

6. Wind vane and anemometer

7. Wind vane

8. Other(Please specify)

15. Height of barometer

measured from maximum load line meters

16. Height of anemometer

measured from maximum load line meters

17. Depth of thermometer (to measure sea surface temperature)

measured from maximum load line meters

18. Telecommunication facilities

1. Radio telephone

2. Direct printing radio-telegraphy

3. INMARSAT-C communication facility

4. Other INMARSAT communication facility

5. ARGOS communication facility

6. Environmental/meteorological satellite communication facility(DCP)

7. Other including MF/HF radio-telegraphy(Please specify)

19. Could you register your vessel with international Voluntary Observing Ship?

1. Yes as

a. Selected Ship

b. Supplementary Ship

c. Auxiliary Ship

2. No

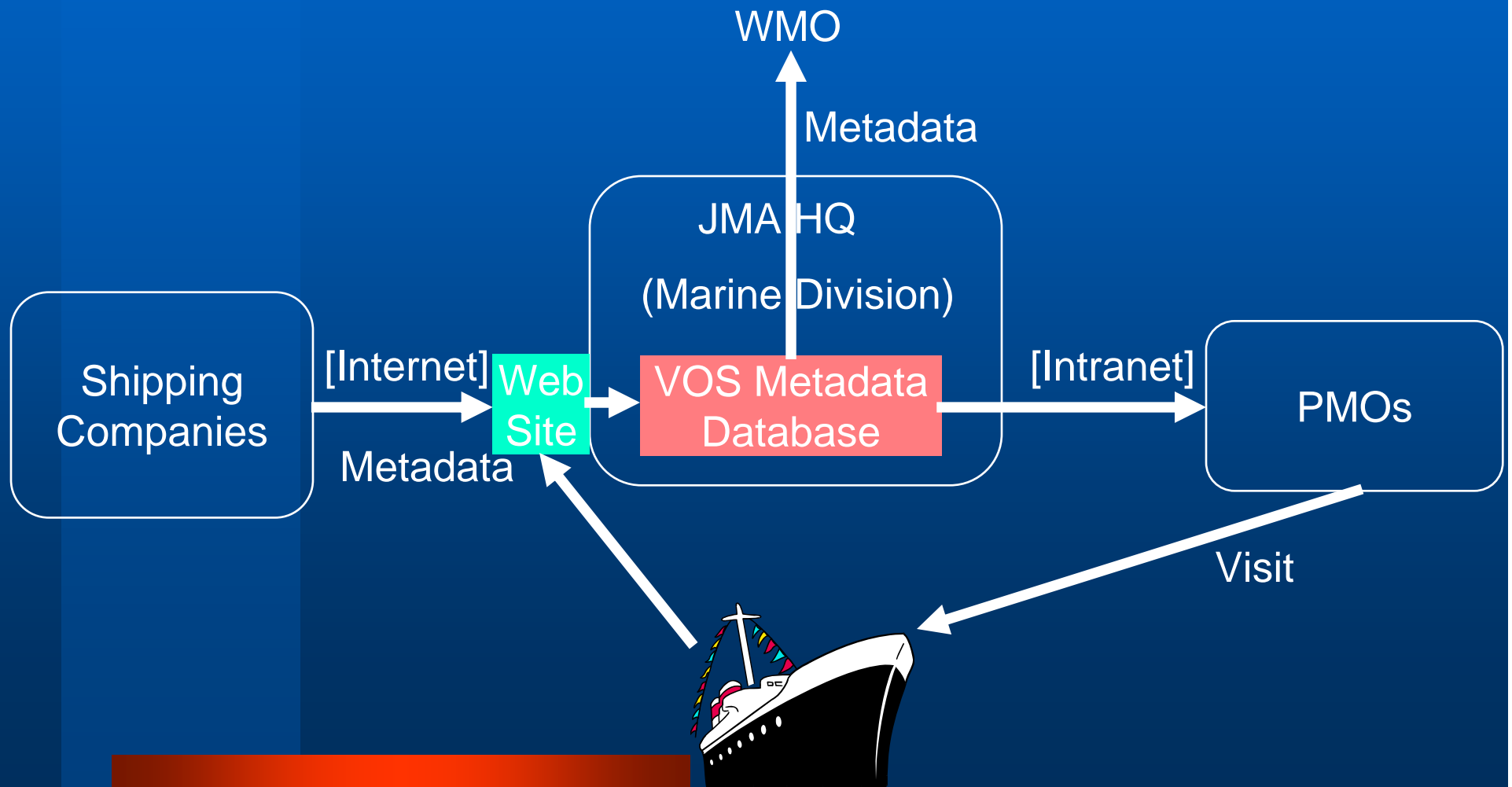
Mon Day Year

Date: Jan 1 2003

Name of Recruiting Company (Ship Company)

Please input Your NAME

Operation of the Web Site

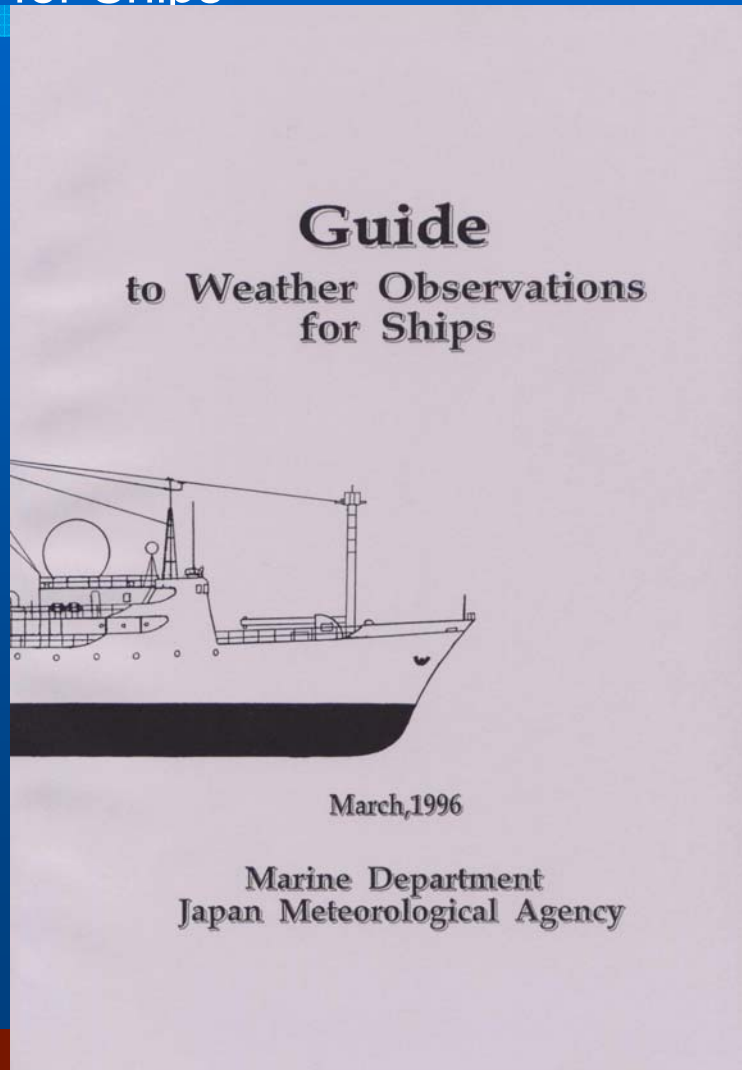


Instructive Material for Ships

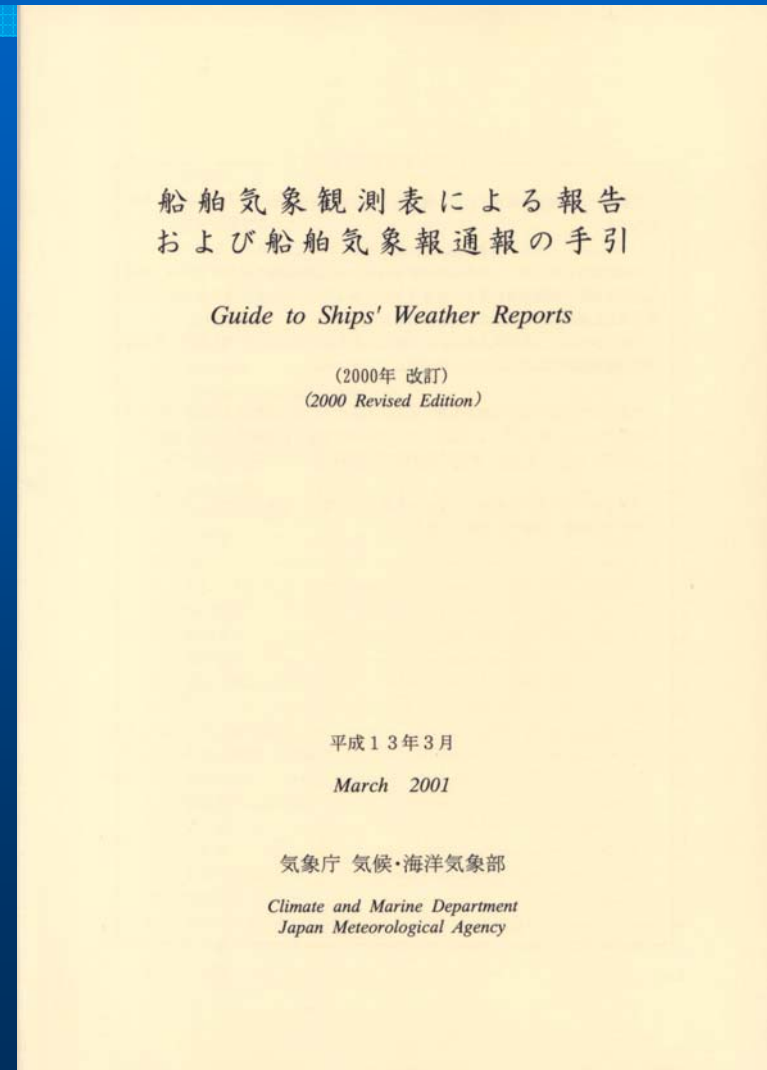
(Japanese and English versions)

- “Guide to Weather Observations for Ships”
- “Guide to Ships’ Weather Reports”
- “Ships’ Weather Code Card”
- “Beaufort Scale of Wind Force”
- “Table of Dew-Point”
- “JMA Cloud Plate”

Guide to Weather Observations for Ships



Guide to Ships' Weather Reports



Ships' Weather Code Card

Beaufort Scale of Wind Force

SHIPS' WEATHER CODE CARD

Effective as from
1 January 2003
Japan Meteorological Agency

TABLE 1

BBXX	CALL SIGN	YYGGi 1 2 3	99L.L.L 4 5	Q.L.L.L.L 6 7	ixhVV 8 9 10 11	Nddff 12 13 14
1s.TTT 15 16	2s.T.T.T. 17 18 19	4PPPP 20 21	5pppp 22 23	7wwW.W. 24 25 26 27	8N.C.C.C.C 28	9GGgg 29 30 31
0s.T.T.T. 32 33	1P..P..H..H.. 34 35	2P.P.H.H. 36 37	3d..d..d..d.. 38	4P..P..H..H.. 39 40	5P..P..H..H.. 39 40	
6LE.E.R. 41 42 43	8s.T.T.T. 44 45	ICE 46	cSbDz 47 48 49 50 51	REMARKS		

EXPLANATION

The groups shaded as **.....** shall be always included.
The groups shaded as **.....** shall be included in case of transmission through the INMARSAT -A or -B system.
"BBXX" is the identifier for ship's weather report.
Japan Meteorological Agency (JMA) accepts ship's weather report through Yamaguchi Coast Earth Station (CES), which provides INMARSAT Service via Pacific Ocean Region (POR) satellite for System "A" (CES-ID=00), "B" (CES=00) and "C" (ID=00) and via Indian Ocean Region (IOR) satellite for INMARSAT-C (CES-ID=00) for the use of charge to the ship, using the Code "01" procedure.

For Transmission Through The INMARSAT-A or -B System

- Make a file of the current observation, after sending the report, repeatable to include the indicator BBXX as a separate group before the call sign group. End the report with 6 periods.
- Connect the installation with a Coast Earth Station (CES). After CA- appears, type 41 which indicates that a weather report is following and there will be no charge for the ship.
- The automatic answer back of the main service will appear. Then transmit the file with the observation.

For Transmission Through The INMARSAT-C System

- The first time you send a report, you must send the Code "01" address in your INMARSAT-C System.
To connect to a shore, the Code "01" is considered a "Special Issue Code or Special Issue Address". "Charge Code" should be TEXT or 145 "Priority" should be NORMAL or PRIORITY. Remember to also 01 Confirmation.
- The weather report should be entered beginning with the BBXX, and listing all observations from the top down. (It is also possible to use the weather report format in a database by Uploading.) After entering the report, send transmit and the address stored in 01.

TABLE 2 EXPLANATIONS OF CODES

GROUP YYGGi This group shall be always included.
YY DAY OF THE MONTH (UTC)
 Day of the month, with 01 indicating the first day, 02 the second day, 03 the third day, etc.
GG TIME OF OBSERVATION (UTC)
 Actual time of observation, to the nearest whole hour UTC.

UTC	15 18 21 00 03 06 09 12	"24" is not used, but "00" shall be logged.
JST	00 03 06 09 12 15 18 21	

ix INDICATOR FOR SOURCE OF WIND SPEED
 ix shall be coded as 3 or 4 as the case may be. 3 is used when wind speed is estimated in the absence or failure of instrument; 4 is used when wind speed is measured by instrument. Wind speed shall be reported in unit of knots.

GROUP ixhVV This group shall be always included.
ix INDICATOR FOR INCLUSION OR OMISSION OF PRECIPITATION DATA
 ix is always coded as 4.
ix INDICATOR FOR PRESENT AND PAST WEATHER DATA

i.	Group 7wwW.W.	Notes
1	Included	
3	Omitted	No observation, or data not available

ix HEIGHT ABOVE SURFACE OF THE BASE OF THE LOWEST CLOUD OBSERVED

h.	Height above the surface	h.	Height above the surface
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BEAUFORT SCALE OF WIND FORCE (Determination of wind speed by sea condition)

JAPAN METEOROLOGICAL AGENCY (JMA)










		
Wind force 1 Light air	Wind force 5 Fresh breeze	Wind force 9 Strong gale
		
Wind force 2 Light breeze	Wind force 6 Strong breeze	Wind force 10 Storm
		
Wind force 3 Moderate breeze	Wind force 7 Gusty breeze	Wind force 8 Gale

Table of Dew-Point

JMA Cloud Plate

露点温度を求める表
Table for finding the dew-point

氷が凍結していないとき
case of not frozen wet-bulb

露点 (°C)	乾球と湿球との差 (1-1°)										露点 (°C)											
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5		5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0
0	10.0	9.6	8.2	8.7	8.3	7.8	7.4	6.9	6.4	5.9	5.4	4.8	4.3	3.7	3.1	2.5	1.9	1.2				10.0
5	10.5	10.1	8.7	8.3	8.9	8.4	8.0	7.5	7.0	6.6	6.0	5.5	5.0	4.4	3.8	3.2	2.6	2.0				10.5
10	11.0	10.6	10.2	8.8	9.4	9.0	8.5	8.1	7.7	7.2	6.7	6.2	5.7	5.2	4.6	4.0	3.4	2.8	2.2			11.0
15	11.5	11.1	10.7	10.4	10.0	9.5	9.1	8.7	8.3	7.8	7.3	6.9	6.4	5.9	5.3	4.8	4.2	3.6	3.0			11.5
20	12.0	11.6	11.3	10.8	10.5	10.1	9.7	9.3	8.9	8.4	8.0	7.5	7.1	6.6	6.0	5.5	5.0	4.4	3.9	3.3		12.0
25	12.5	12.2	11.8	11.4	11.1	10.7	10.3	9.9	9.5	9.0	8.6	8.2	7.7	7.3	6.8	6.3	5.8	5.2	4.7	4.1		12.5
30	13.0	12.7	12.3	12.0	11.6	11.2	10.8	10.5	10.1	9.6	9.2	8.8	8.4	7.9	7.5	7.0	6.5	6.0	5.5	4.9		13.0
35	13.5	13.2	12.8	12.5	12.1	11.8	11.4	11.0	10.7	10.3	9.9	9.4	9.0	8.6	8.1	7.7	7.2	6.7	6.2	5.7	5.2	13.5
40	14.0	13.7	13.3	13.0	12.7	12.3	12.0	11.6	11.2	10.9	10.5	10.1	9.7	9.3	8.9	8.4	7.9	7.5	7.0	6.5	6.0	14.0
45	14.5	14.2	13.9	13.5	13.2	12.9	12.5	12.2	11.8	11.5	11.1	10.7	10.3	9.9	9.5	9.1	8.6	8.2	7.7	7.3	6.8	14.5
50	15.0	14.7	14.4	14.1	13.7	13.4	13.1	12.7	12.4	12.0	11.7	11.3	10.9	10.6	10.2	9.7	9.3	8.9	8.5	8.0	7.6	15.0
55	15.5	15.2	14.9	14.6	14.3	14.0	13.6	13.3	13.0	12.6	12.3	11.9	11.6	11.2	10.8	10.4	10.0	9.6	9.2	8.8	8.3	15.5
60	16.0	15.7	15.5	15.1	14.8	14.5	14.2	13.9	13.5	13.2	12.9	12.5	12.2	11.8	11.5	11.1	10.7	10.3	9.9	9.5	9.1	16.0
65	16.5	16.2	15.9	15.6	15.4	15.1	14.7	14.4	14.1	13.8	13.5	13.1	12.8	12.5	12.1	11.8	11.4	11.0	10.6	10.2	9.8	16.5
70	17.0	16.7	16.5	16.2	15.9	15.6	15.3	15.0	14.7	14.4	14.1	13.8	13.4	13.1	12.8	12.4	12.1	11.7	11.3	11.0	10.6	17.0
75	17.5	17.2	17.0	16.7	16.4	16.1	15.8	15.6	15.3	15.0	14.7	14.4	14.0	13.7	13.4	13.0	12.7	12.4	12.0	11.7	11.3	17.5
80	18.0	17.7	17.5	17.2	17.0	16.7	16.4	16.1	15.8	15.5	15.2	15.0	14.6	14.3	14.0	13.7	13.4	13.0	12.7	12.3	12.0	18.0
85	18.5	18.3	18.0	17.7	17.5	17.2	16.9	16.7	16.4	16.1	15.8	15.5	15.2	15.0	14.6	14.3	14.0	13.7	13.4	13.0	12.7	18.5
90	19.0	18.8	18.5	18.3	18.0	17.7	17.5	17.2	17.0	16.7	16.4	16.1	15.8	15.6	15.2	15.0	14.6	14.3	14.0	13.7	13.4	19.0
95	19.5	19.3	19.0	18.9	18.5	18.3	18.0	17.8	17.5	17.3	17.0	16.7	16.4	16.2	15.9	15.6	15.3	15.0	14.7	14.4	14.1	19.5
200	20.0	19.9	19.5	19.3	19.1	18.8	18.6	18.3	18.1	17.8	17.6	17.3	17.0	16.8	16.5	16.2	15.9	15.6	15.3	15.0	14.7	20.0
205	20.5	20.3	20.1	19.8	19.6	19.3	19.1	18.9	18.6	18.4	18.1	17.9	17.6	17.4	17.1	16.8	16.5	16.3	16.0	15.7	15.4	20.5
210	21.0	20.8	20.6	20.3	20.1	19.9	19.6	19.4	19.2	18.9	18.7	18.4	18.2	17.9	17.7	17.4	17.2	16.9	16.6	16.3	16.1	21.0
215	21.5	21.3	21.1	20.9	20.6	20.4	20.2	20.0	19.7	19.5	19.3	19.0	18.8	18.5	18.3	18.0	17.8	17.5	17.3	17.0	16.7	21.5
220	22.0	21.8	21.6	21.4	21.2	20.9	20.7	20.5	20.3	20.1	19.8	19.6	19.4	19.1	18.9	18.6	18.4	18.1	17.9	17.6	17.4	22.0
225	22.5	22.3	22.1	21.9	21.7	21.5	21.3	21.0	20.8	20.6	20.4	20.2	19.9	19.7	19.5	19.2	19.0	18.7	18.5	18.3	18.0	22.5
230	23.0	22.8	22.6	22.4	22.2	22.0	21.8	21.6	21.4	21.2	20.9	20.7	20.5	20.3	20.1	19.8	19.6	19.4	19.1	18.9	18.6	23.0
235	23.5	23.3	23.1	22.9	22.7	22.5	22.3	22.1	21.9	21.7	21.5	21.3	21.1	20.9	20.6	20.4	20.2	20.0	19.7	19.5	19.3	23.5
240	24.0	23.8	23.6	23.4	23.2	23.0	22.9	22.7	22.5	22.3	22.1	21.8	21.6	21.4	21.2	21.0	20.8	20.6	20.3	20.1	19.9	24.0
245	24.5	24.3	24.1	24.0	23.8	23.6	23.4	23.2	23.0	22.8	22.6	22.4	22.2	22.0	21.8	21.6	21.4	21.2	20.9	20.7	20.5	24.5
250	25.0	24.8	24.6	24.5	24.3	24.1	23.9	23.7	23.5	23.4	23.2	23.0	22.8	22.6	22.4	22.3	22.0	21.8	21.5	21.3	21.1	25.0
255	25.5	25.3	25.2	25.0	24.8	24.6	24.4	24.3	24.1	23.9	23.7	23.5	23.3	23.1	22.9	22.7	22.5	22.3	22.1	21.9	21.7	25.5
260	26.0	25.8	25.7	25.5	25.3	25.1	25.0	24.8	24.6	24.4	24.3	24.1	23.9	23.7	23.5	23.3	23.1	22.9	22.7	22.5	22.3	26.0
265	26.5	26.3	26.2	26.0	25.9	25.7	25.5	25.3	25.2	25.0	24.8	24.6	24.4	24.3	24.1	23.9	23.7	23.5	23.3	23.1	22.9	26.5
270	27.0	26.8	26.7	26.5	26.4	26.2	26.0	25.9	25.7	25.5	25.4	25.2	25.0	24.9	24.6	24.5	24.3	24.1	23.9	23.7	23.5	27.0
275	27.5	27.3	27.2	27.0	26.9	26.7	26.5	26.4	26.2	26.1	25.9	25.7	25.6	25.4	25.2	25.0	24.9	24.7	24.5	24.3	24.1	27.5
280	28.0	27.8	27.7	27.5	27.4	27.2	27.1	26.9	26.8	26.6	26.4	26.3	26.1	25.9	25.8	25.6	25.4	25.3	25.1	24.9	24.7	28.0
285	28.5	28.4	28.2	28.1	27.9	27.7	27.6	27.4	27.3	27.1	27.0	26.8	26.7	26.5	26.3	26.2	26.0	25.9	25.7	25.5	25.3	28.5
290	29.0	28.9	28.7	28.6	28.4	28.3	28.1	28.0	27.8	27.7	27.5	27.4	27.2	27.0	26.9	26.7	26.6	26.4	26.2	26.1	25.9	29.0
295	29.5	29.4	29.2	29.1	28.9	28.8	28.6	28.5	28.4	28.2	28.1	27.9	27.8	27.6	27.4	27.3	27.1	27.0	26.8	26.7	26.5	29.5
300	30.0	29.9	29.7	29.6	29.4	29.3	29.2	29.0	28.9	28.7	28.6	28.4	28.3	28.1	28.0	27.8	27.7	27.5	27.4	27.2	27.1	30.0
305	30.5	30.4	30.2	30.1	30.0	29.9	29.7	29.5	29.4	29.3	29.1	29.0	28.8	28.7	28.5	28.4	28.3	28.1	28.0	27.8	27.7	30.5
																						31.0

JMA CLOUD PLATE



Type of Low Cloud (Sc: Stratocumulus, St: Stratus, Cu: Cumulus, Cb: Cumulonimbus)

Japan Meteorological Agency



CL:1 Cu with little vertical extent and seemingly flattened, or ragged Cu other than of bad weather, or both.



CL:2 Cu of moderate or strong vertical extent, generally with protuberances in the form of domes or towers, either accompanied or not by other Cu or by Sc, all having their bases at the same level.



CL:3 Cb the summits of which, at least part, neither clearly fibrous (ciriform) nor in any other form.



CL:4 Sc formed by the spreading out of Cu; Cu may also be present.



CL:5 Sc not resulting from the spreading out of Cu.



CL:6 St in a more or less continuous sheet both, but no St fractus of bad weather.



Barometers Comparison Check via Teleacsimile

The Form for Barometer Comparison Check through Facsimile

Japan Meteorological Agency

Please use this form to make a request to check your barometer. The request is acceptable when your ship stays in a **port of Japan**.

After completing the following procedure, transmit this form through facsimile to the nearest observatory **listed bellow**. The observatory will return the correction value for your barometer. (Business hours are 09-16 JST from Monday to Friday except public holidays in Japan)

1. Make sure that the wind is not so strong. Strong wind may disturb the barometer reading.
2. Open the window or door of the house to measure outboard air pressure.
3. Reading of the barometer should be made just on the hour.
4. Fill in the following blanks.

Name of ship _____ Port of call _____

Call sign _____ Gross tonnage _____ tons Registry _____

Name of the person in charge _____

Ship's telephone No. _____ - _____ -

Facsimile No. of Ship (INMARSAT-A) 001-872-81-
(INMARSAT-B) 001-872-
(marine TEL.) 090-302-

Name of Your Shipping Agent in Japan (if available) _____

Telephone No. _____ - _____ - Facsimile No. _____ - _____ -

Barometer reading on the hour _____ . *hPa* [0.1hPa unit]

Outboard air temperature _____ . *°C* [0.1°C unit]

Time of reading *Year* _____ *Month* _____ *Day* _____ *Hour* _____

20 _____ *just* _____ *h UTC*

or *20* _____ *just* _____ *h JST*

Latitude _____ *N* Longitude _____ *E*

About Barometer

Placement in your ship

Height of barometer above sea level at present and other conditions

At present _____ *m* At full load _____ *m* In ballast _____ *m*

Manufacturer _____ Serial number _____

Date of manufacture _____ Date of official approval _____

Recent value of total correction if you have

_____ . *hPa(at full load)* _____ . *hPa(in ballast)*

Place and date of the last barometer check

Facsimile and telephone numbers of the officer to receive this form

FAX TEL

Kobe Marine Observatory **078-222-8946 078-222-8918**

Nagoya Local Meteorological Observatory **052-762-1242 052-752-6364**

Yokohama Local Meteorological Observatory **045-622-3520 045-621-1991**

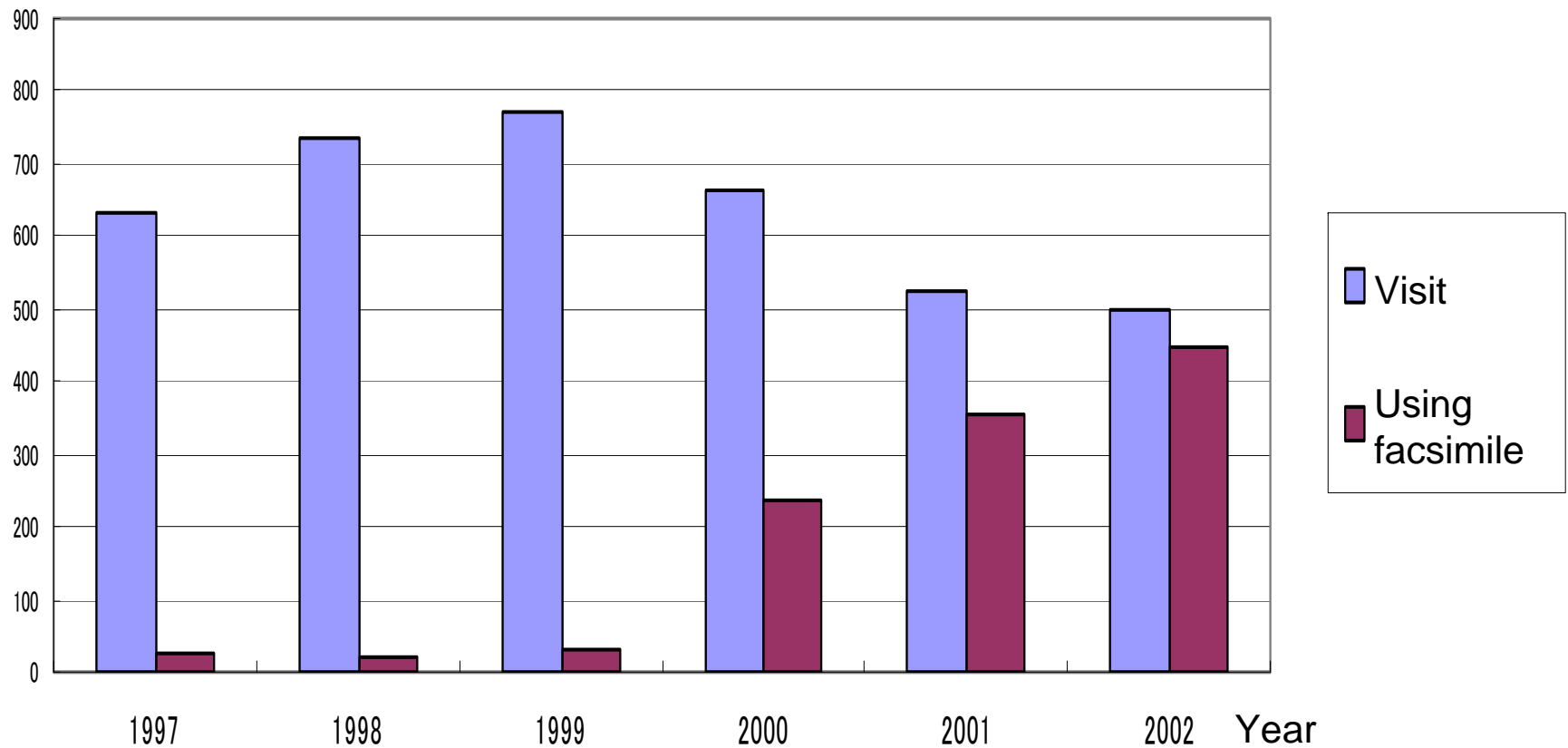
Hakodate Marine Observatory **0138-47-7682 0138-46-2213**

Nagasaki Marine Observatory **095-823-8220 095-811-4867**

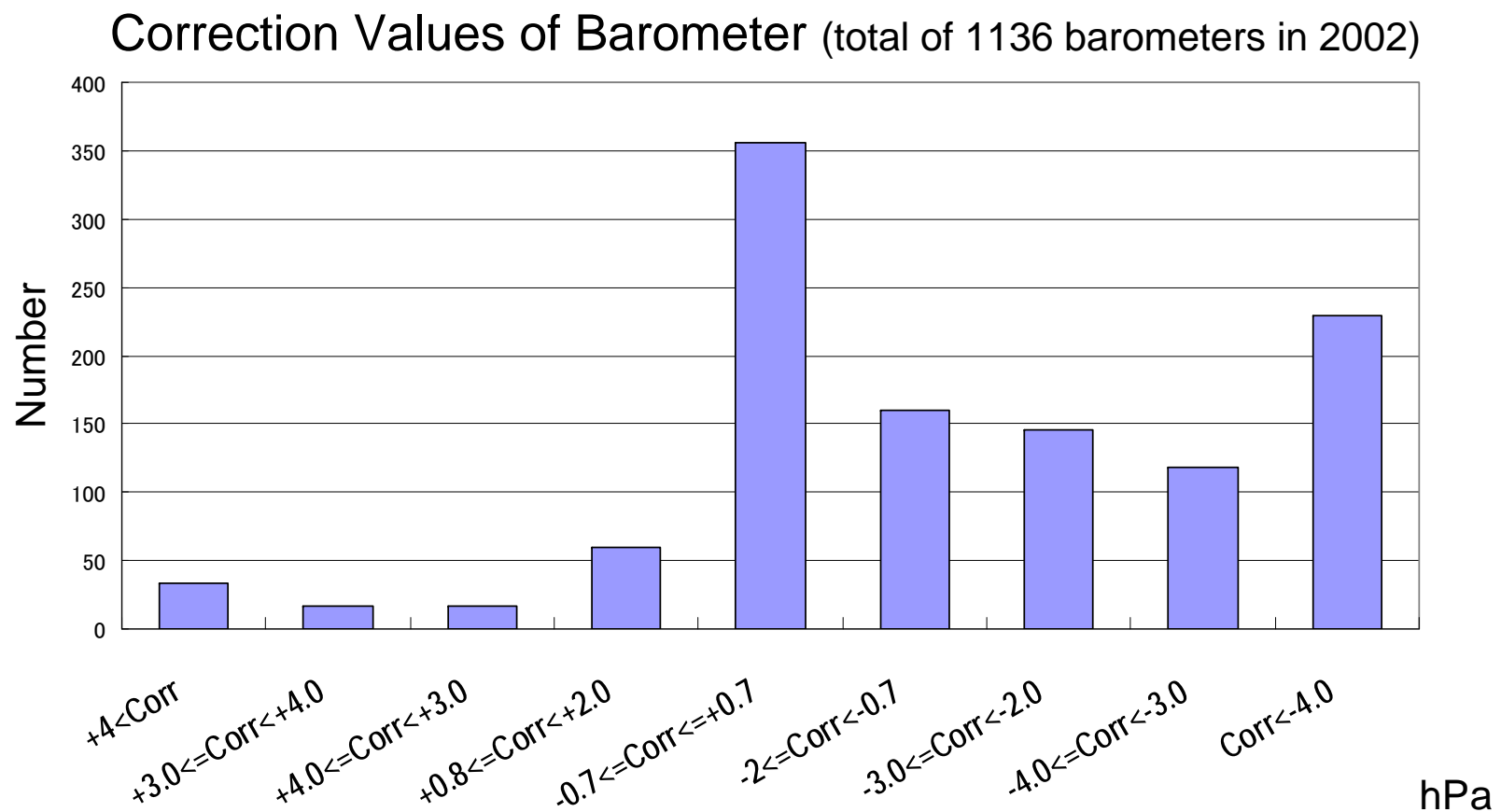
Maizuru Marine Observatory **0773-76-4114 0773-76-4114**

Number of ships visited by PMOs

Number of Ships



Barometer Correction



Explanations on Meteorological Information

By using printed/online brochures
(Japanese and English versions)

- Visiting ships to give explanations.
- Distributing them through shipping companies.
- Via Internet.
 - “Marine Meteorological Information Services for Shipping and Fishing”
 - “Guide to the Wave Charts”
 - “Guide to Sea Ice Information”
 - “JMH Broadcast schedule”

Brochures (in Japanese and English)

Marine Meteorological Information Services for Shipping and Fishing

Guide to Wave Charts

■気象の実況図・予想図

地上解析、500hPaの高度・気温、地上24時間予想をはじめとして、8種類の実況図と23種類の予想図を、毎日放送しています。



地上解析図 (ASAS)
Surface analysis chart

■Weather analysis and prognosis charts

JMA issues eight kinds of analysis charts and 23 kinds of prognosis charts including surface analysis, height and temperature analysis at 500 hPa and 24 hours surface prognosis every day.



500hPa高度気温図 (AUAS50)
Height and temperature analysis chart at 500hPa

■海況(海面水温、海流等)の実況図・予報図

日本近海を含む北西太平洋域の海面水温、海流等の海況について、5種類の実況図と2種類の予想図を放送しています。

■Sea temperature and current analysis and prognosis charts

Five analysis charts and two prognosis charts of oceanographic conditions, such as sea surface temperatures and currents in the western North Pacific, are broadcast.



海流実況図 (SOPQ)
Sea surface current analysis chart

■海水情報

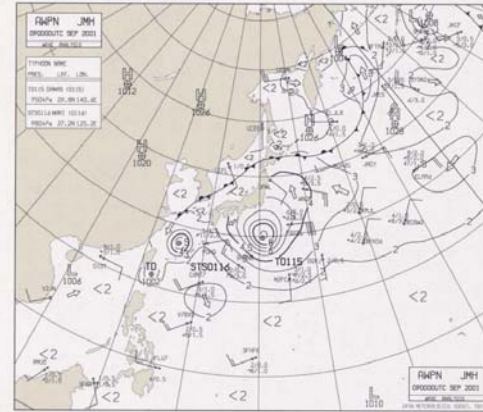
主にオホーツク海の海水の広がりや疎密の状況に関して、12月から翌年5月まで毎週、火曜日と金曜日に実況図を、水曜日と土曜日に予想図(2日後、7日後)を放送します。

■Sea ice information for High Seas

Analysis and prognosis charts of the extent and concentration of sea ice mainly in the Sea of Okhotsk are broadcast from December through May. Analysis charts are broadcast on Tuesdays and Fridays and prognosis charts on Wednesdays and Saturdays, respectively.



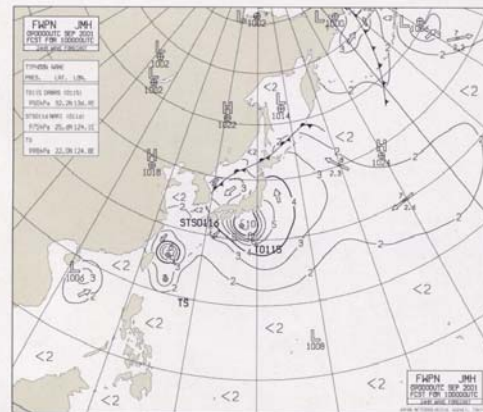
全般海水情報 (STPN)
Sea ice condition chart



外洋波浪実況図 (AWPN)
Ocean Wave Analysis Chart

凡例 (実況・予想) 共通 Description of Symbols for Analysis and Forecast

①	高気圧 High pressure	H
②	低気圧 Low pressure	L
③	台風 Tropical cyclone	T,STS,TS
④	熱帯低気圧 Tropical depression	TD
⑤	中心気圧 1022 hPa Central pressure	1022
⑥	等波高線 3 m Waveheight	3
⑦	2m未満の領域 Area of less than 2m	<2
⑧	卓越波向 Prevailing wave direction	←
⑨	海氷線 Sea ice edge	-----



外洋波浪24時間予想図 (FWPN)
Ocean Wave 24-hour Forecast Chart

凡例 AWPN(実況) Description of Symbols for AWPN (Analysis)

①	風向・流速 NNE 15 knots Wind direction and speed	NNE 15
②	4/1.0	4/1.0
③	8/1.5	8/1.5
④	2/0.5	2/0.5
⑤	3/0.5	3/0.5
⑥	JGQH	JGQH
⑦	船のサイン	Call sign of the ship reporting wave data

凡例 FWPN(予想) Description of Symbols for FWPN (Forecast)

①	卓越波向 NE Prevailing wave direction	NE
②	卓越周期 8 sec Prevailing wave period	8
③	合成波高 2.5 m Combined waveheight	2.5

Guide to Sea Ice Information

JMH Broadcast Schedule

オホーツク海の海水

海水は海水が凍結してできた水です。流水は海上にあって海流や風によって漂流する海水です。海水には流水の他に、海岸に沿って生成したり流水が岸に流れ着き固着してできる氷もあります。

海水は、船舶の航行の妨げになったり、水産物や漁業施設に被害を及ぼすこともあり、その動向の監視や予報は社会経済活動にとって重要です。

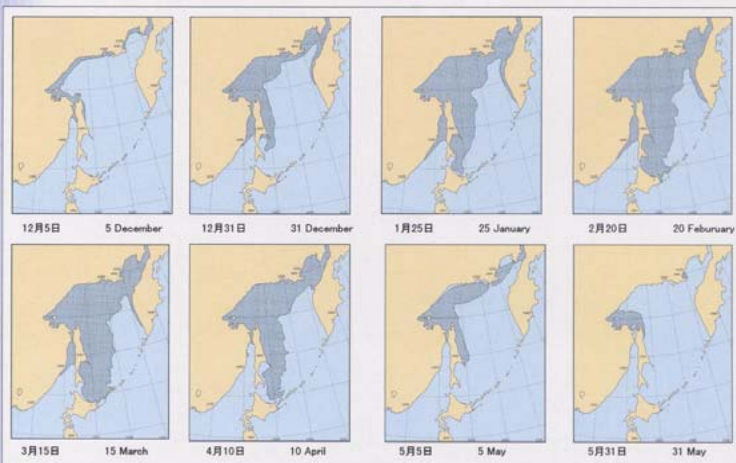
オホーツク海は、日本周辺で冬季に海水が毎年見られる唯一の海です。例年11月初めに、オホーツク海の北部から凍り始め、その後次第に南方に広がり、流水となって南下し、1月中旬には北海道沿岸に到来します。2月から3月にかけてオホーツク海の海水域は最も広がり、オホーツク海の約80%が海水に覆われます。そして流水は太平洋と日本海にしばしば流出します。4月になると北海道沿岸の流水は沖合いに去り、7月はじめ頃オホーツク海の海水は融けて無くなります。

Sea Ice in the Sea of Okhotsk

Sea ice originates from the freezing of sea water. The drift ice is the sea ice moving by ocean current and surface wind. The category 'Sea ice' includes the ice which forms or remains fast along the coast.

Monitoring and forecasting of sea ice is very important for socio-economic activities because, in some cases, sea ice obstructs shipping or damages marine products and facilities of fisheries.

Around Japan, the drift ice can be seen only in the Sea of Okhotsk in each winter season. In early November sea ice begins to be formed in the northern part of the Sea. Subsequently, sea ice drifts southward and in mid January it reaches around the coast of Hokkaido. During late February and early March the extent of the sea ice has its mature phase and around 80% of sea surface of the Sea of Okhotsk is covered with sea ice. Occasionally, the sea ice flows into the Pacific Ocean and the Sea of Japan. In April sea ice begins to retreat from the coastal waters of Hokkaido and in early July sea ice completely disappears from the Sea of Okhotsk.



平年の海水分布 (1971年~2000年の平均)
Normal sea ice extent (Average from 1971 through 2000)

JMH (気象庁第1気象無線模写通報) スケジュール JMH BROADCAST SCHEDULE

周波数 (Frequencies): 3622.5 / 7305 / 9970 / 13597 / 18220 / 23522.9 kHz
出力 (Power): 5kW 電波の型式 (Emission): F3C

平成13年3月21日現在 (As of 21st March 2001)

JST	05	10	15	20	25	30	35	40	45	50	55	UTC
00				20 ASAS (12) 地上解析 (再放送) *				30				15
01				20 AUAS70 (12)				30	40 AUAS50 (12)			16
02	00 AUAS85 (12)			19 AWJP (12) 1) 沿岸波浪実況				38	AUF50 (12) AXFE78	49	FUFE502 (12) FSFE02	17
03	00 FXFE572 (12) FXFE782	11	FUFE503 (12) FSFE03	22	FXFE573 (12) FXFE783	30						18
04		10	静止気象衛星雲写真(18) (GMS)	29	FSAS24 (12) 海上悪天24時間予想			49	50	WTAS07(18) 1) 台風予報		19
05		10	FWJP (12) 1) 沿岸波浪24時間予想	29				40	ASAS (18) 地上解析			20
06	00 FSAS48 (12) 海上悪天48時間予想	19	20 ASAS (18) 地上解析 (再放送) *					30	40	FXAS504 (12)		21
07	00 FXAS784 (12)	19	20 FXAS507 (12)					30	40	FXAS787 (12)		22
08	00 FUXT852 (12) FUXT854	19	20 AUXT85 (12) AUXT20					30	40	FUXT202 (12) FUXT204		23
09	00 FSAS04 (12) FSAS07 (12)	19	20 FSAS09 (12)					30	40	FSAS12 (12)		00
10	03 テストチャート Test chart	10	静止気象衛星雲写真(00) (GMS)	29	30 STPN(再放送) * FIOH04/16 (00)			49	50	WTAS07(00) 1) 台風予報		01
11		10	COPO1,COPA,SOPQ, SOPN,FOPN1 (再放送) *	29	9) 電波予報 Radio prediction			40	ASAS (00) 地上解析			02
12	COPO2 FOPN2 (再放送) *	17	20 ASAS (00) 地上解析 (再放送) *					30	40	JMH放送スケジュール (MANAM)		03
13	02 AUAS70 (00)		21	AWPN (00) 外洋波浪解析				40	AWJP (00) 沿岸波浪実況			04
14	00 AUAS50 (00)		18	AUAS85 (00)				37	AUF50 (00) AXFE78	48	FSAS24 (00) 海上悪天24時間予想	05
15	07	FUFE502 (00) FSFE02	18	FXFE572 (00) FXFE782	29	FUFE503 (00) FSFE03		30	FXFE783	49	FWPN (00) 外洋波浪24時間予想	06
16		10	静止気象衛星雲写真(06) (GMS)	29	30	FWJP (00) 沿岸波浪24時間予想		49	50	WTAS07(06) 1) 台風予報		07
17				20	FSAS48 (00) 海上悪天48時間予想			30	40	ASAS (06) 地上解析		08
18	00	FXAS504 (00)	19	20 ASAS (06) 地上解析 (再放送) *				30	40	FSAS04(00) FSAS07(00)		09
19	00	FXAS507 (00)	19	2) STPN(海水) 3) FIOH04/16(00)				38				10
20		11	4)COPO1, 5)COPA, 6)SOPQ 7)SOPN, 8)FOPN1	29	30	4) COPO2 8) FOPN2		47				11
21	00	FUXT852 (00) FUXT854	19	20	AUXT85 (00) AUXT20			30	40	FUXT202 (00) FUXT204		12
22	03	テストチャート Test chart	10	静止気象衛星雲写真(12) (GMS)	29					50	WTAS07(12) 1) 台風予報	13
23	00								40	ASAS (12) 地上解析		14

放送日:
1) 各風時
2) 毎週水曜日及び金曜日 (結氷期) 再放送: 翌日0130U T C
3) 毎週水曜日及び土曜日 (融氷期) 再放送: 翌日0130U T C
4) 毎月02日、12日及び22日
再放送: 翌日0210U T C (COPQ1) / 翌日0300U T C (COPQ2)
5) 毎月04日、14日及び24日 再放送: 0210U T C
6) 毎月06日、10日、16日、20日、26日及び30日
(02月最終日は03月01日) 再放送: 0210U T C
7) 毎月07日、17日及び27日 再放送: 0210U T C
8) 毎月09日、19日及び29日 (平年の場合02月29日は02月28日)
再放送: 翌日0210U T C (FOPN1) / 翌日0300U T C (FOPN2)
9) 毎月20日及び21日

注) 各回は、300Hz白電交互の信号が10秒間、続いて相位信号が30秒間送信された後に放送される。なお、図の枠内には終了信号が15秒間送信される。表中の () 内の時刻は、協定世界時 (UTC) による。図の内容は、裏面参照。黄色の時間帯は、放送されない。