

**JAPANESE NATIONAL REPORT
TO THE 14TH MEETING OF THE HYDROGRAPHIC COMMISSION OF
ANTARCTICA**

1. Hydrographic Office: General, e.g. reorganization

Japan Hydrographic and Oceanographic Department (JHOD), as a part of Japan Coast Guard (JCG), has been conducting hydrographic surveys and producing paper/digital charts for 140 years since its establishment. The JHOD consists of a headquarter in Tokyo and 11 regional coast guard headquarters located in Japan. There are totally 12 survey vessels/craft; 5 survey vessels belonging to the headquarter and 7 survey craft belonging to the regional coast guard headquarters. Hydrographic surveys are mainly conducted with multi beam echo sounders installed to these survey vessels/craft and airborne LIDAR (Light Detection And Ranging) system is also utilized at shallow waters where shipborne survey is not approachable. Some of these survey equipment have been replaced since 2009. Furthermore, the JHOD introduced interferometric sonars in 2010 as a new hydrographic survey tool to strengthen its hydrographic ability.

A variety of surveys by the JHOD are not limited only to surveys for nautical charting. It also includes seafloor geodetic observations to study mechanism of earthquakes, marine and radioactivity surveys for marine environment conservation.

Responding to mandatory carriage requirement of ECDIS from 2012, the JHOD is tackling to improve ENC's user convenience. Weekly ENC's update to mirror paper charts began in January 2012. And also, in order to facilitate understandings of navigational warnings, their provision in a visualized way is at work.

Recognizing importance of hydrographic surveys for safety of navigation, the JHOD is contributing to a capacity building to enhance hydrographic ability of the hydrographic community through a group training course with JICA (Japan International Cooperation Agency) and "IHO-NF CHART Project with a financial support of Nippon Foundation.

For the purpose of observing various geophysical phenomena in the Antarctic area, Japan has been conducting at Japan Antarctic Research Expedition (JARE) with cooperation of the government organizations concerned since 1955.

.2. Surveys:

Hydrographic survey in the Antarctic Area by Japan has been conducting as a part of JARE using Icebreaker "Shirase".

Coverage of surveys.

ONGUL to LANGHOVDE
LUTZOW - HOLMBUKTA APPROACHS

Ships

Icebreaker "Shirase" launched in 2009.

Technologies and /or equipment

Icebreaker "Shirase" is the first Japanese Antarctic Observation ship to be equipped with multi-beam echo sounder. "Shirase" is installed on multi-beam echo sounder for icebreaker and sub-bottom profiler, SeaBeam 3020 ICEBREAKER and Bathymetry 2010, respectively. The multi-beam echo sounder is a high performance deep sea echo sounder, providing bathymetric, bottom backscatter and side scan data with high resolution beams of 2deg x 2deg, over a wide swath width. The system beam can operate at 20 kHz in water depths ranging up to 6,000 m. The sub-bottom profiler provides sub-bottom backscatter and nadir depth, which can operate at 3.5kHz up to 12,000m.

General characteristics of icebreaker

Displacement tonnage: 12,650 t
Propulsion: 30,000 PS
Main engine: Diesel-electric 4 shafts
Complement: approximately 260
Maximum Speed: 19kt
Dimensions: 138 x 28 x 15.9 x 9.2 m
(Length, Beam, Depth, Draft)
Aircraft carried: 3 helicopters



“Shirase”

motors 2

3. Charts and Publications:

a. Charts

New charts & updates

ENCs

Year and month published new ENC October 2014

2 “General Navigation” ENCs based on INT9045 , Cell size : 4°

Cell No. : JP20ODC0, Area : 70-00S - 66-00S 32-00E - 36-00E

Cell No. : JP20ODCG, Area : 70-00S - 66-00S 36-00E - 40-00E

Cell No. : JP20ODD0, Area : 70-00S - 66-00S 40-00E - 44-00E

Year and month published new ENC September 2011

3 “Coastal Navigation” ENCs based on INT9046 , Cell size : 1°

Cell No. : JP30ODCO, Area : 70-00S - 69-00S 38-00E - 39-00E

Cell No. : JP30ODCS, Area : 70-00S - 69-00S 39-00E - 40-00E

Cell No. : JP30PKEO, Area : 69-00S - 68-00S 38-00E - 39-00E

Cell No. : JP30PKES, Area : 69-00S - 68-00S 39-00E - 40-00E

Year and month published new ENC April 2011

4 “Approach” ENCs based on INT9047, Cell size : 30’

Cell No. : JP40P0TS, Area : 69-30S - 69-00S 39-00E - 39-30E

Cell No. : JP40P0TU, Area : 69-30S - 69-00S 39-30E - 40-00E

Cell No. : JP40PKES, Area : 69-00S - 68-30S 39-00E - 39-30E

Cell No. : JP40PKEU, Area : 69-00S - 68-30S 39-30E - 40-00E

5 “Harbour” ENCs based on INT9047 Plan , Cell size : 15’

Cell No. : JP50PAME, Area 69-15S - 69-00S 39-30E - 39-45E

Cell No. : JP50PKEU, Area 69-00S - 68-45S 39-30E - 39-45E

RNCs

No RNCs around Antarctica

INT charts

INT Number INT9045 (W3922)

Title LÜTZOW-HOLM BUKTA AND APPROACHES

Area Surrounded by the four lines of 67-00S, 70-00S, 32-00E and 44-00E

Scale 1:500,000

Year and month published August 2014

INT Number INT9046 (W3941)
Title ONGUL ISLANDS TO SKARVSNES
Area Surrounded by the four lines of 68-52S, 69-28S, 38-47E and 39-55E
Scale 1:100,000
Year and month published March 2010

INT Number INT9047 (W3950)
Title ONGUL TO LANGHOVDE-KITA MISAKI
Area Surrounded by the four lines of 68-59S, 69-12S, 39-18E and 39-43E
Scale 1:25,000
Title PLAN: SHOWA KICHI AND APPROACHES
Area Surrounded by the four lines of 69-00S, 69-01S, 39-35E and 39-37E
Scale 1:10,000
Year and month published March 2009

National paper charts

National Chart Number W3911
Title MAWSON COAST TO LÜTZOW-HOLM BUKTA
Area Surrounded by the four lines of 62-00S, 71-00S, 32-00E and 64-00E
Scale 1:1,500,000
Year and month published July 2015

National Chart Number W3922 (INT9045)
Title LÜTZOW-HOLM BUKTA AND APPROACHES
Area Surrounded by the four lines of 67-00S, 70-00S, 32-00E and 44-00E
Scale 1:500,000
Year and month published August 2014

National Chart Number W3941 (INT9046)
Title ONGUL ISLANDS TO SKARVSNES
Area Surrounded by the four lines of 68-52S, 69-28S, 38-47E and 39-55E
Scale 1:100,000
Year and month published March 2010

National Chart Number W3950 (INT9047)
Title ONGUL TO LANGHOVDE-KITA MISAKI
Area Surrounded by the four lines of 68-59S, 69-12S, 39-18E and 39-43E
Scale 1:25,000
Title PLAN: SHOWA KICHI AND APPROACHES
Area Surrounded by the four lines of 69-00S, 69-01S, 39-35E and 39-37E
Scale 1:10,000
Year and month published March 2009

b. Publications

6. S-55 Latest update

1. HYDROGRAPHIC SURVEYING

1.1 Status of hydrographic survey

Survey coverage, where:

A = percentage which is adequately surveyed.

B = percentage which requires re-survey at larger scale or to modern standards.

C = percentage which has never been systematically surveyed.

	A	B	C
Depths < 200m	0	0	0
Depths > 200m	2	84	14

7. Oceanographic activities

General

The tidal observation at Syowa Station in Antarctica has been carried out by Japan Hydrographic and Oceanographic Department (JHOD) as a part of Japanese Antarctic Research Expedition (JARE) since 1965. The observation has been continued in good condition until now.

The observed data are transferred from the station to the JHOD once an hour via satellite and are opened to the public on the website as real time data.

Its monthly and yearly mean sea level are shown in fig.1 and fig.2 respectively.

Long term variation in mean sea level at Syowa Station has been clearly observed, which would be caused by sea level rise due to global warming and crustal uplift due to Antarctic ice melting. The tidal station of Syowa Station has been consisted of a part of network of the Global Sea Level Observing System (GLOSS) project.

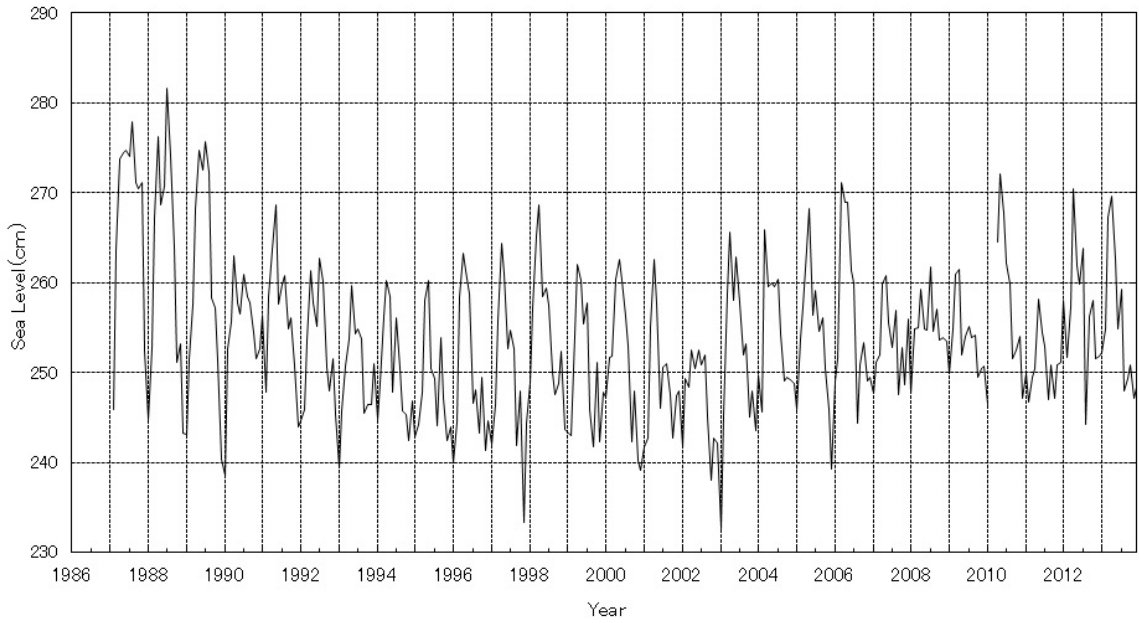


Figure 1: Monthly Mean Sea Level at Syowa Station

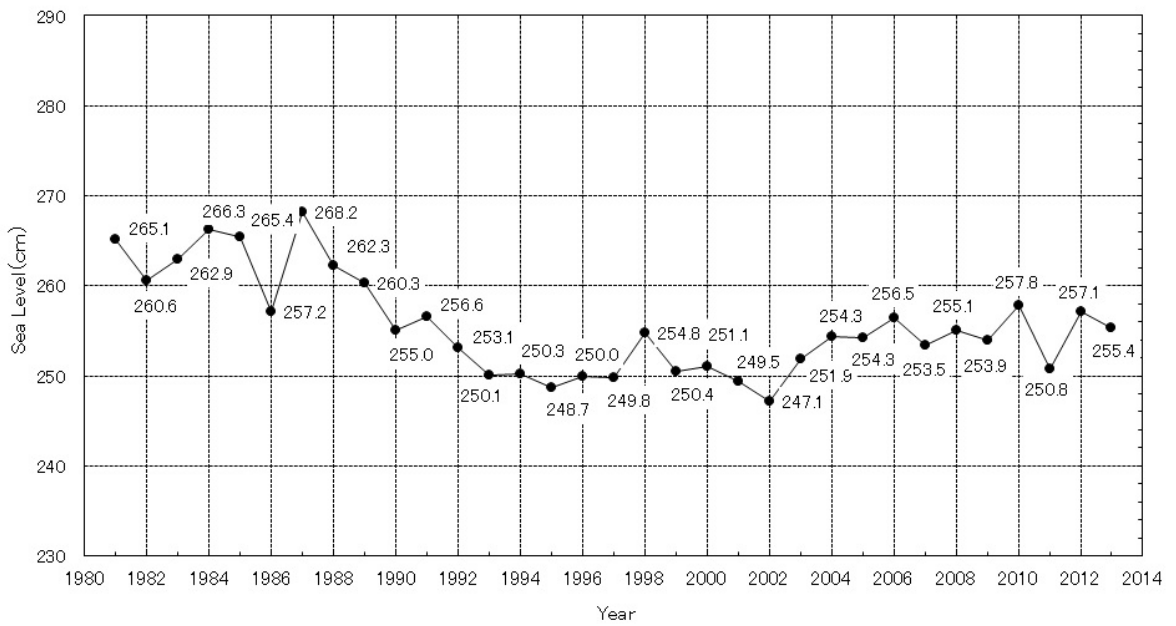


Figure 2: Yearly Mean Sea Level at Syowa Station