

**IHO HYDROGRAPHIC COMMISSION ON ANTARCTICA (HCA)
9th Meeting, Simon's Town, Cape Town, South Africa, 12 - 14 October 2009**

**National Report - JAPAN
Hydrographic and Oceanographic Department of Japan**

1. Bathymetric Survey in the Antarctic Area

For the purpose of observing various geophysical phenomena in the Antarctic area, Japan has been conducting investigative observations, transport operation and so on with cooperation of the government organizations concerned since 1955. Icebreaker "Shirase" of the Maritime Self-Defense Force has been used for these missions.

Icebreaker "previous" Shirase was decommissioned in July 2008 and its successor equipped with multi-beam echo sounder, which was also named "Shirase" (hereinafter referred to as "new" Shirase), was commissioned in May 2009. "New" Shirase is the fourth icebreaker engaged in Antarctic Observation.

Hydrographic and Oceanographic Department has been conducting bathymetric surveys in Lützow-holm Bay, where Syowa base is located, and Amunsen Bay to off Breid Bay using single-beam echo sounder. And after "new" Shirase goes into service, bathymetric surveys are going to be carried out using multi-beam eco sounder.

We will focus on the surveys in the area around Syowa Base for some time to come.

General characteristics of icebreaker "new" Shirase

Displacement tonnage: 12,650 t
Propulsion: 30,000 PS
Main engine: Diesel-electric 4 motors 2 shafts
Complement: approximately 250
Speed: 19kt
Dimensions: 138 x 28 x 15.9 x 9.2 m
(Length, Beam, Depth, Draft)
Aircraft carried: 3 helicopters

General characteristics of multi-beam echo sounder

Type: ELAC SEABEAM 3020
Frequency: 20 kHz
Number of sampling per sweep: 205
Beam width 2°
Max swath: 130°
Depth Range: 50 - 7,000 m



2. Publication of nautical charts

The recently published and planned charts in the Antarctic Ocean are given in the table below.

National Number W3905

Name LARS CHRISTENSEN COAST TO PRINCE HARALD COAST

Area Surrounding by the four lines of 57-00S, 70-30S, 30-00E and 75-00E

Scale 1:3,000,000

Year and month published October 1966

Memo The new chart will be published in November 2009.

National Number W3911

Name AMUNDSEN BAY TO LÜTZOW-HOLM BAY

Area Surrounding by the four lines of 65-00S, 70-00S, 33-10E and 51-40E

Scale 1:800,000

Year and month published October 1968

Memo The new chart will be published in November 2009.

National Number W3922 (INT9045)

Name LÜTZOW-HOLM BUKTA AND APPROACHES

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

Scale 1:500,000

Year and month published March 1995

Memo The new chart will be published in November 2009.

National Number W3941 (INT9046)

Name ONGUL ISLANDS TO SKARVSNES

Area Surrounding by the four lines of 68-52S, 69-28S, 38-47E and 39-55E

Scale 1:100,000

Year and month published March 1994

Memo The new chart will be published in March 2010.

National Number W3950 (INT9047)

Name ONGUL TO LANGHOVDE-KITA MISAKI

Area Surrounding by the four lines of 68-59S, 69-12S, 39-18E and 39-43E

Scale 1:25,000

Plans SHOWA KICHI AND APPROACHES

Area Surrounding by the four lines of 69-00S, 69-01S, 39-35E and 39-37E

Scale 1:10,000

Year and month published March 2009

Memo The chart was published in March 2009 as a new chart. The contents of No.3951 and No.3952 were imported in the new chart and the two charts were canceled when the new chart was published.

National Number No.3951

Name EASTERN PART OF ONGUL

Area Surrounding by the four lines of 68-59S, 69-04S, 39-33E and 39-43E

Scale 1:10,000

Year and month canceled March 2009

Memo No.3951 published in October 1970 was canceled. The contents of No.3951 were imported in W3950 (INT9047) published as a new chart.

National Number No.3952

Name WESTERN PART OF ONGUL

Area Surrounding by the four lines of 68-59S, 69-04S, 39-25E and 39-35E

Scale 1:10,000

Year and month canceled March 2009

Memo No.3952 published in October 1970 was canceled. The contents of No.3952 were imported in W3950 (INT9047) published as a new chart.

2.1 INT Charts publication schedule

INT Number INT9045 (W3922)

Name LÜTZOW-HOLM BUKTA AND APPROACHES

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

Scale 1:500,000

Year and month published March 1995

Memo The chart will be published in March 2010 as a new chart.

INT Number INT9046 (W3941)

Name ONGUL ISLANDS TO SKARVSNES

Area Surrounding by the four lines of 68-52S, 69-28S, 38-47E and 39-55E

Scale 1:100,000

Year and month published March 1994

Memo The chart will be published in November 2009 as a new chart.

INT Number INT9047 (W3950)

Name ONGUL TO LANGHOVDE-KITA MISAKI

Area Surrounding by the four lines of 57-00S, 70-30S, 30-00E and 75-00E

Scale 1:25,000

Name PLAN: SHOWA KICHI AND APPROACHES

Area Surrounding by the four lines of 68-59S, 69-12S, 39-18E and 39-43E

Scale 1:10,000

Year and month published March 2009

Memo The chart was published in March 2009 as a new chart.

2.2 ENC publication schedule

Not published.

3. Tidal observations

The tidal observation at Syowa Station in Antarctica has been carried out by Hydrographic and Oceanographic Department (HOD) as a part of Japanese Antarctic Research Expedition (JARE) since 1965.

The observation has been continued in good condition at present.

The observed data are transferred from the station to the HOD once a day via satellite and are opened in public on the Internet as real time data.

(http://www1.kaiho.mlit.go.jp/KANKYO/KAIYO/jare/tide/tide_index.html)

Tsunami caused by Sumatra Earthquake on 26 December 2004 and 29 March 2005 were observed at Syowa Station even located 8,900 km off from the earthquake site. The tsunami record are also available at the following website.

(http://www1.kaiho.mlit.go.jp/sumatra/index_e.html)

Long term change of mean sea level at Syowa Station is remarkable, because the change would be connected to the movement of sea level by global warming and of crust by Antarctic ice melting.

Monthly and yearly mean sea level are shown in fig.1 and fig.2 respectively. The tidal data from February 2006 to January 2009 are under processing.

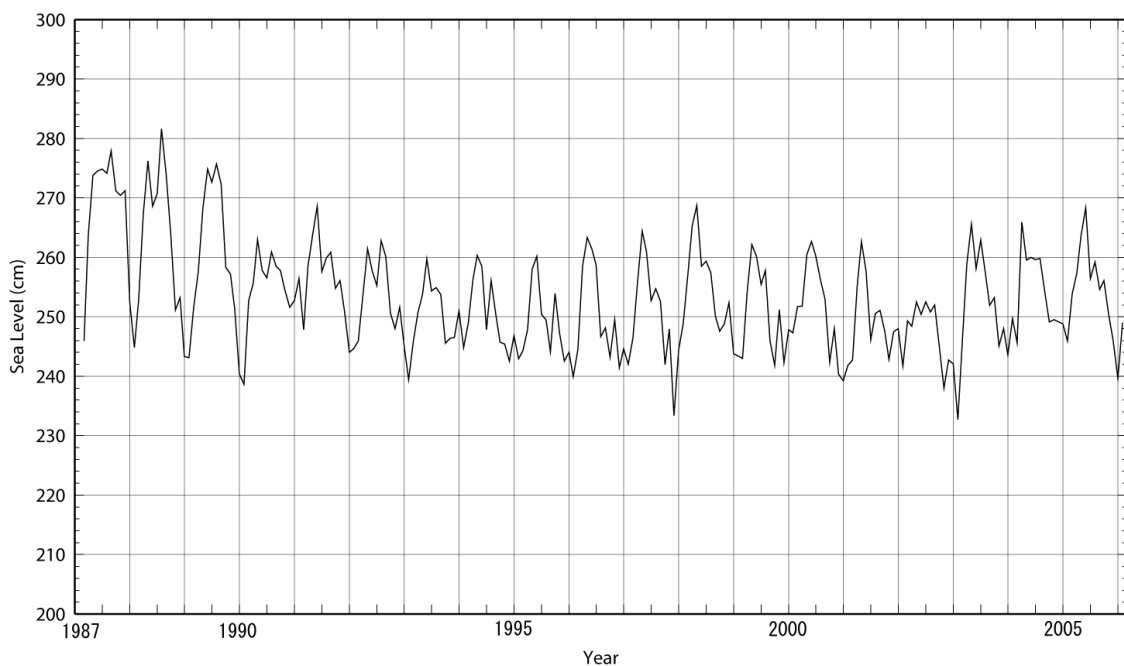


Figure 1: Monthly Mean Sea Level at Syowa Station

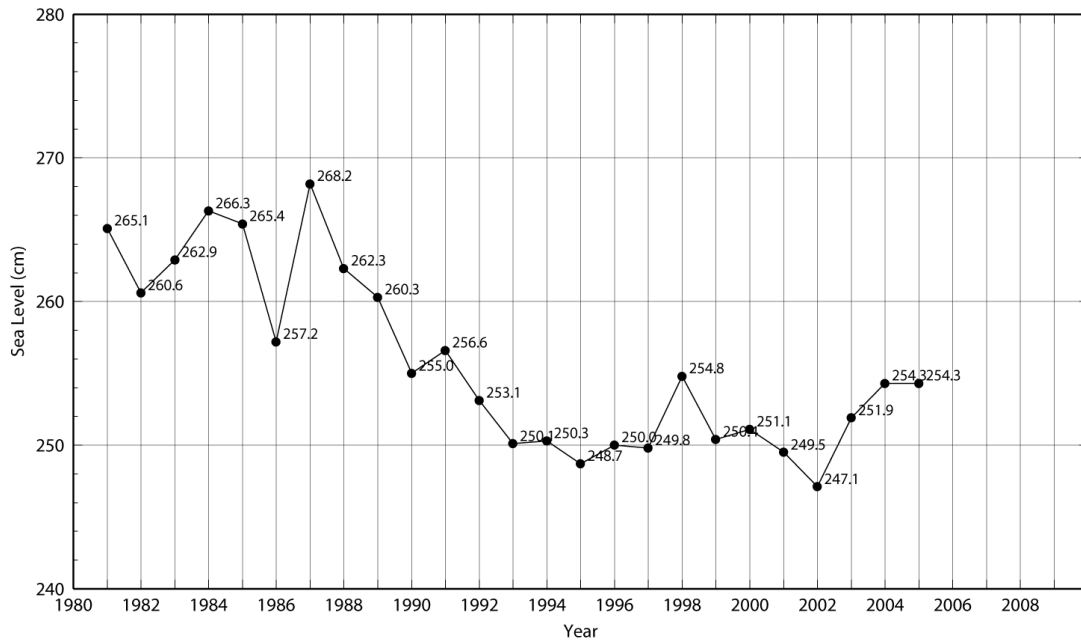


Figure 2: Yearly Mean Sea Level at Syowa Station

4. Oceanographic Observations

The HOD has also responsibilities to observe the change of the Antarctic Circumpolar Current in the JARE.

The fig.3 shows observation points for Water sampling, CTD (Conductivity Temperature Depth profiler), XCTD (Expendable CTD), XBT (Expendable Bathythermograph) and drifting ARGOS (Advanced Research and Global Observation Satellite) buoy. These observations were made Aurora Australis (The Aurora Australis is an icebreaker under the command of the Australian Antarctic Division). From December 2008 to February 2009, CTD and Serial observations were made at 11 points, 80 points for XBT, 45 points for XCTD and 3 points for drifting ARGOS buoy. The result of observation is reported in JARE Data Report.

From the next cruise of the JARE, HOD will hand over the responsibility of carrying out oceanographic observations to other Japanese organizations.

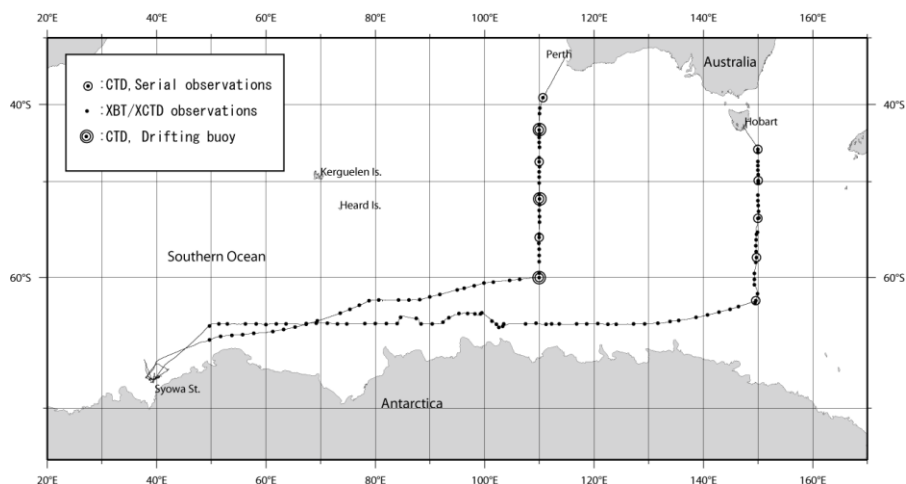


Figure 3: Observation Line