Hydrographic National Report of Denmark

September 2012

1. Hydrographic Office

The present report outlines and sums up the activities carried out in 2011 by The Danish Maritime Safety Administration(DaMSA), and The National Survey and Cadastre (KMS).

Until 5 October 2011, the Danish, Faroese and Greenlandic hydrographic obligations are managed by two governmental organisations:
Farvandsvæsenet, (DAMSA) and
Kort & Matrikelstyrelsen, (KMS), Hydrographic Office.

On 5 October 2011 the Danish Government decided to discontinue and close DaMSA. The tasks were distributed between four existing organizations: KMS, Danish Maritime Authority (DMA), Danish Defense and Danish Meteorological Institute (DMI).

KMS took over the responsibility for hydrographic surveys. The practical work is still done with personnel and ships from the Danish Navy. The responsibility as Danish national hydrographer has changed from Svend Eskildsen (DaMSA) to, Mr. Sigvard Stampe Villadsen (KMS). Survey personnel from DaMSA is now stationed in KMS. Hydrographic Office in The National Survey and Cadastre is still responsible for e.g. technical support for delimitating the maritime boundary of the Danish waters, charting, issuing of Chart Corrections and related nautical publications such as INT 1 and Pilots (sailing directions).

Issuing of Notices to Mariners, List of Lights and MSI is the responsibility of DMA.

Tide tables and operational tide gauges are the responsibility of DMI.

2. Surveys

Coverage of new surveys
The hydrographic surveys are conducted by KMS and mainly carried out by the Royal Danish Navy.

The Danish hydrographic survey operations have been carried out in the following areas:
1. Danish waters inside the Skaw. (See appendix 1 for details.)
2. The west coast of Greenland. (See appendix 1 for details)
3. North of Greenland in connection with UNCLOS surveys.

Danish waters:
The hydrographic surveys inside the Skaw are re-surveys carried out in accordance with the HELCOM Copenhagen Declaration adopted on 10 September 2001 by the HELCOM Extraordinary Ministerial Meeting. In addition, survey of routes in the North Sea has been initiated.

In accordance with the Declaration a coordinated survey plan has been made for the Baltic. Therefore, the main survey effort has been placed on the primary shipping routes through the Danish waters and entrances to major ports. The routes will be re-surveyed to meet the standards of "Special Order" or "Order 1" as set in the International Hydrographic Organization "Special Publication No 44". Denmark is working on a general national survey plan which is expected to be ready by the end of 2013. This plan is in accordance with the HELCOM Moscow declaration of May 2010 and covers all areas of interest to navigation named Cat. 2. And areas that are in need of survey for other reasons than safety of navigation.

The surveys in 2011 have been carried out as outlined in Appendix 1.
All surveys were carried out with multibeam echo sounder systems.

Denmark and Sweden is in the process of optimizing the shipping routes through Kattegat, based on AIS and statistical data. The new optimized routes will be submitted to IMO and HELCOM resurvey monitoring group.
The Surveys in 2012 will be a continuation of the revised coordinated re-survey plan for the Baltic area. Denmark has completed surveys in the North sea in connection to the proposed Traffic separation scheme off Skagen.
Detailed plan for resurveys in 2012 can be seen in appendix 2.

Greenland waters:
The surveys on the West Coast of Greenland were carried out in the archipelago in unsurveyed waters in order to allow safe access to major ports and to locate sheltered coastal fairways.

All surveys were carried out with multibeam echo sounder systems.

The plan for the surveys in the Greenland waters in 2010 is a continuation of the re-surveying program of the entrances to the main ports and inshore routes between ports in Greenland. Some near shore areas are being surveyed for the safety of cruise ships operating on the west coast. A detailed plan for surveys in 2012 can be seen in appendix 2.

New ships
No new ships have been put in to service since the last report.
BIRKHOLM is replacing SKA 16 in Greenland for the 2011 and 2012 seasons.

Problems encountered:
No new problems where encountered in 2011.

3. New charts & updates

Charts (paper as well as electronic navigational charts (ENC)) covering the Danish, Faroese and Greenlandic waters are produced and updated by KMS.

ENC
The Danish waters have been covered by ENCs in various navigational bands since June 2000.
In 2011, KMS has produced 14 ENCs of the Greenlandic waters.
Until 2009, the Faroese waters were not covered by ENCs. In the past year, KMS has produced a total of 3 ENCs of a part of the Faroese waters.
In 2012 KMS will produce ENCs based on the paper charts.
All the ENCs are updated on a weekly basis.

ENC distribution method
All the Danish-produced ENCs and updates (ERs) are distributed through a network of Primar-authorized distributors.

INT charts
12 new editions have been published.

National paper charts
The chart portfolio of the Danish waters comprises 63 charts, all produced according to international standards.
The chart index showing the Danish waters is available at:
http://www.danskehavnelods.dk/indexkort/danskesoekort.html
The chart index showing the Greenlandic waters is available at:
http://www.danskehavnelods.dk/indexkort_gronland/gronlandskesoekort.html

Geometric rectification of the Greenlandic charts
The geometric rectification of the Greenlandic charts, mentioned in the Hydrographic National Report 2011, will continue in the coming years.
4 charts are expected to be rectified and published in 2012.

Faroese waters
All the Faroese charts are now based on vector data. 6 charts have been published in 2011. All the Faroese charts will be converted to ENC by 2012.

4. New publications & updates

New publications

- Produktkatalog (in Danish)/-

Updated publications

The Danish Maritime Safety Administration updates the following publications and reports online:

- Navigation through Danish Waters (PDF 744 KB)

- Tide tables for Danish, Faroese and Greenland waters

The National Survey and Cadastre, Hydrographic Office's online publications:

- Produktkatalog (in Danish)/-
- Kort 1/INT 1 (bilingual)
- Søkortrettelser/Chart Corrections (bilingual)
- Bag om søkortet (in Danish) / Behind the nautical chart (in English)
- Den danske Lods, generelle oplysninger (in Danish)
- Den danske Havnelods (in Danish)

The National Survey and Cadastre, Hydrographic Office's printed publications:

- Produktkatalog (in Danish)
- Kort 1/INT 1 (bilingual)
- Den grønlandske Lods I (in Danish)
- Den grønlandske Lods II (in Danish)
- Den grønlandske Havnelods (in Danish)
- Den færøske Lods (in Danish)
- Havneoplysninger for Færøerne (in Danish)
- Den danske Havnelods, Erhvervshavne (in Danish)

5. MSI

NAV Warnings, Information to mariners and oceanographic forecasts are still available in English on the following web pages:
http://frv.dk/en/SailingInformation/Warnings/Pages/default.aspx
http://frv.dk/en/SailingInformation/SailingForecast/Pages/default.aspx

6. S-55

State of surveys updated March 2012

Area	A1	A2	B1	B2	C1	C2	Comment
Denmark south	95	100	5	0	0	0	Contributes to the HELCOM harmonised re-survey programme.
Denmark Faeroes	100	100	0	0	0	0	Revision of ports and resurveys are ongoing
Denmark Greenland	25	20	25	10	50	70	The coastline of Greenland is very complex and the total sea area of the EEZ is ca. 2.000.000 square kilometres. Due to permanent ice cover, the limit for navigable waters has been set to 75 degrees northern latitude. Thus the percentages are rough approximations. The East coast is sparsely populated and only surveyed near populated areas. A prioritised programme is in force to resurvey navigable routes to and between populated areas on the west coast of Greenland, to modern standards.

7. Capacity Building

Status of national, bilateral, multilateral or regional development projects with hydrographic component (In progress, planned, under evaluation or study)

Joined survey project in Flensborg Fjord between The Danish and German hydrographic offices.

New technologies and/or equipment
The Danish survey fleet are all equipped with Reson 7125 200/400 KHz SW2 multibeam systems.

8. Oceanographic activities

Tide gauge network
DMI maintains a network of water level stations spread across Denmark. The data are used in several ways, primarily for navigation safety, but the data are also an integral part of the national storm surge monitoring and prediction system. The data are transferred by telephone from each site to the oceanographic database every ten minutes.
In addition, DAMSA has in the past measured water levels in Greenland from 1990 until 2004 for the purpose of obtaining sufficient data to enable the prediction of tide levels for the coming many years. The Danish Defence is maintaining three oceanographic monitoring stations. These three stations are located at Drogden and at two sites in Storebælt (the Great Belt). These data are transferred to the database every 30 minutes. Online observations and forecasts are available in English on:
http://frv.dk/en/SailingInformation/SailingForecast/Pages/default.aspx

UNCLOS
KMS are actively involved in the work for The United Nations Convention on the Law of the Sea (UNCLOS) in the waters around Greenland and the Faroe Islands.

KMS is responsible for the data quality assessment on existing bathymetric data and planning and technical specifications for new surveys. In 2012 KMS has conducted bathymetric work during an expedition to the east coast of Greenland.

The LOMROG-III cruise started from Longyearbyen on Svalbard on the 31th July 2012. The multibeam was switched on when Oden left Longyearbyen. The focus areas were a gap between existing data from 2009 on the Lomonosov Ridge that needed to be filled in with bathymetric data (A). The bathymetric data consists of three multibeam profiles and four singlebeam profiles all collected from the deep ocean to the top of the Lomonosov Ridge. Furthermore successful dredging was carried out on two step slopes. On the second (B) location a bathymetric profile was collected and the FOS and BOS were charted in that region.

The areas C1 and C2 the data collection was mainly focused on seismic data collection.
In addition to the data collection related to the Danish UNCLOS project a number of both Danish and Swedish projects were on-board Oden and as well as the UNCLOS project they did have a very successful cruise.

Figur 1 LOMROG -III cruise

9. Other activities

Participation in IHO Working Groups

KMS has the chairmanship for the Baltic Sea MSDI Working Group (BSMSDIWG) and The ARHC Mariners Routeing Guide Working Groupe (ARHCRGWG)

KMS is actively involved in the work done by HSMSDIWG, CSPCWG, SNPWG, TSMAD, DIPWG, DQWG, EUWG and HSSC.

International

KMS is together with the Hydrographic Offices in Norway, Sweden and Finland preparing new bilateral arrangements with the United Kingdom Hydrographic Office.

KMS has actively taken part in the work done by the IMO Correspondence Group on e-Navigation and in the IALA e-Navigation Committee.

KMS is participating in work done by the HELCOM Monitoring Working Group.

KMS continues to participate in the project "Bringing Land and Sea Together" (BLAST).
BLAST is a co-operation between the countries around the North Sea. BLAST has received founding from the EU Interreg programme for the North Sea.
The main theme for the project is integrated coastal zone management and it consists of five work packages:

- Developing the marine and coastal reference base
- Harmonisation of maritime information
- Regional monitoring, information, integration and distribution functionality
- Climate change and integrated coastal zone management
- Dissemination and communication

The project is expected to be complete by the end of 2012.

Websites

Kort & Matrikelstyrelsen, the National Survey and Cadastre (KMS):
http://www.kms.dk/English/

Søfartsstyrelsen, the Danish Maritime Authority (DMA):
http://www.dma.dk/

Danish Meteorological Institute (DMI):
http://WWW.DMI.DK