

**2nd Meeting Arctic Regional Hydrographic Commission  
Copenhagen Denmark  
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**ARHC2-02D  
National report  
Denmark**

# **Hydrographic National Report of Denmark**

September 2011

## **1. Hydrographic Office**

The present report outlines and sums up the activities carried out in 2010 by The Danish Maritime Safety Administration (DaMSA), and The National Survey and Cadastre (KMS).

The Danish, Faroese and Greenlandic hydrographic obligations are managed by two governmental organisations:

Farvandsvæsenet, The Danish Maritime Safety Administration (DAMSA) and Kort- & Matrikelstyrelsen, The National Survey and Cadastre (KMS), Hydrographic Office.

The Danish Maritime Safety Administration is responsible for hydrographic surveying, issuing of Notices to Mariners, List of Lights and Tide Tables, coastal rescue, aids to navigation and AIS-management and statistics.

The Hydrographic Office in The National Survey and Cadastre is 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).

In KMS there have been some changes with regard to staff and organisation. Mr. Sigvard Stampe Villadsen has been appointed Head of Hydrographic Division in KMS and succeeded Mr. Jens Peter Hartmann.

## 2. Surveys

### Coverage of new surveys

The hydrographic surveys are conducted by DAMSA 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.
2. The west coast of Greenland.

### 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 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".

The surveys in 2010 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 reported to the HELCOM resurvey monitoring group. The Surveys in 2011 will be a continuation of the revised coordinated re-survey plan for the Baltic area. The plan is expanded to include other areas in accordance with the HELCOM Moscow declaration from May 2010. Denmark plans to continue surveys in the North sea in connection to the proposed Traffic separation scheme off Skagen.

### 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 with special emphasis on local traffic and cruise ship traffic.

All surveys were carried out with multibeam echo sounder systems.

The plan for the surveys in the Greenland waters in 2011 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.

DaMSA launches a series of innovative projects in 2011 with focus on safety of shipping for small craft and cruise ships.

Denmark is conducting investigations on the consequences of declaring parts of the Greenland sea area as Particularly Sensitive Sea Area "PSSA".

## Hydrographic National Report of Denmark, September 2011

### **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 were encountered in 2010.

### **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 2010, KMS has produced 6 ENCs of the Greenlandic waters.

Until 2009, the Faroese waters were not covered by ENCs. In the past year, KMS has produced 1 more ENC to a total of 3 ENCs of a part of the Faroese waters.

In 2011 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 Primary-authorized distributors.

#### **INT charts**

14 new editions and 1 updated reprint 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](http://www.danskehavnelods.dk/indexkort_gronland/gronlandskesoekort.html)

Since the last report, KMS has published 4 new editions.

#### **Geometric rectification of the Greenlandic charts**

The geometric rectification of the Greenlandic charts, mentioned in the Hydrographic National Report 2010, will continue in the coming years.

3 charts are expected to be rectified and published in 2011.

#### **Faroese waters**

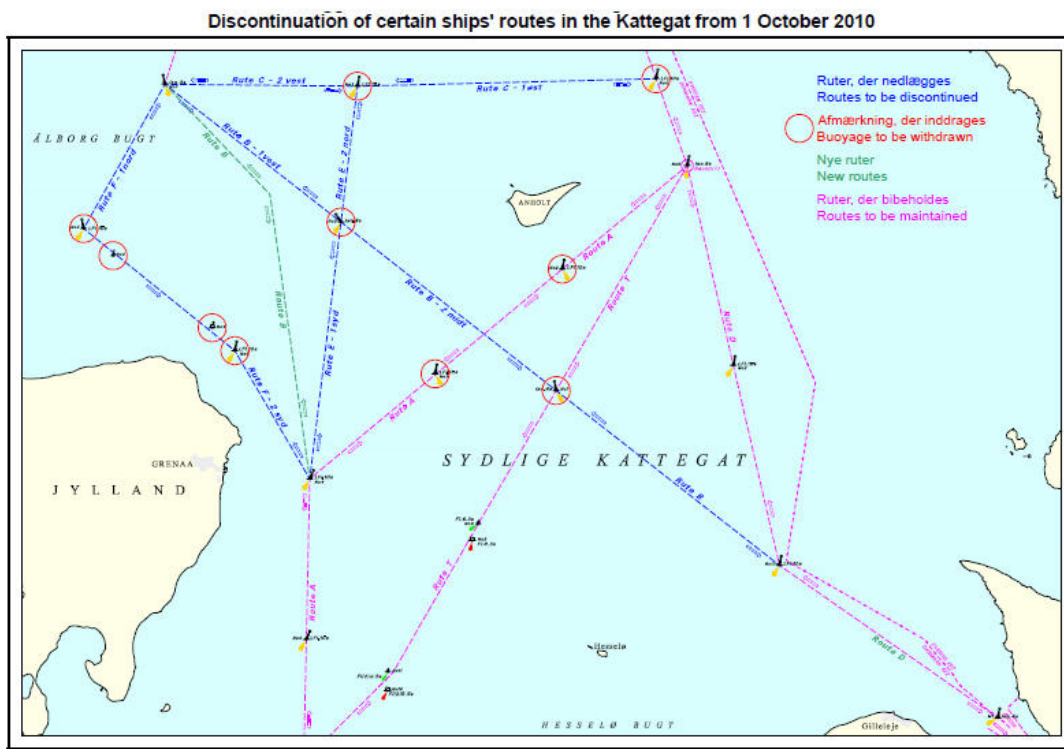
2 paper charts based solely on vector data of the Faroese waters were published as new editions in 2010. 4 more paper charts are expected to be published in 2011.

Other activities

Information about discontinuation of certain Shipping routes in the Kattegat from 1 October 2010

Denmark and Sweden have started cooperating on changes of the ship routing systems in the Kattegat. The existing routing system in the Kattegat relates to the mine-swept routes established in the post-war years. These routes were laid according to the needs for maritime infrastructure at that time and buoyed to support navigation. By now, it is considered necessary to optimize the navigational safety of today's shipping, where large ships to an increasing degree pass through our waters, some of whose maneuverability is constrained due to a large draught. The interaction between large and small ships' navigation in between one another has also been included in the work changing the routing system in order to create more predictable navigational patterns and, thereby, reduce the risk of collisions. Navigational patterns reveal that a part of the routing system is not used very much compared to the most used ship routes. At the same time, new navigational methods such as satellite navigation have reduced the need for buoying routes for navigational purposes. This means that it becomes possible to discontinue certain routes that are only used to a very small degree today and to use the buoys from these routes in a more cost-effective manner by, for example, buoying grounds and reefs rather than routes. In this way, the users will benefit more from the buoys in areas that may present navigational difficulty. The remaining changes of the routing system in the Kattegat will be subject to consultation in late 2010. The consultation procedure will include a detailed presentation of the changes planned to be collected for a new routing system in the Kattegat. A full description is available on:

[Discontinuation of certain ships routes in Kattegat](#)



## 4. New publications & updates

### New publications

The Danish Maritime Safety Administration has published the following new publications on line:

- [Experience with AIS AtoN \(Aids to Navigation\) - Is there a future for electronic AtoN within e-Navigation?](#) (PDF 0.7 MB)
- [The Coastal Rescue Service – providing safety at sea Do you know how to get help in an emergency?](#) (PDF 4.0 MB)
- [Validation of the forecast at DaMSA Information for Mariners 1/1-30/6 2009](#) (PDF 1.2 MB)

### 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)

## 5. MSI

IMO has approved the expansion of the area of responsibility of the Sound VTS to cover the entire Sound from Kullen in the north to Falsterbo in the south. The expansion will come into effect from 1 September 2011.

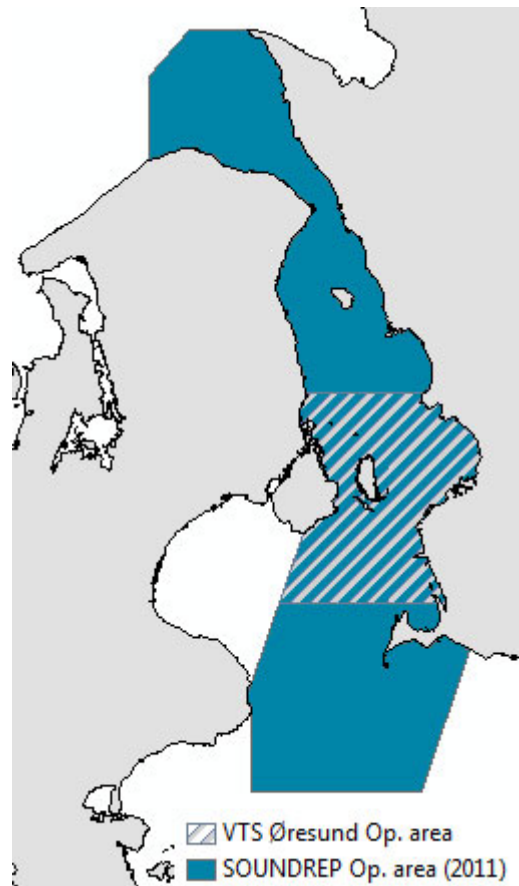
DaMSA has signed an agreement with Greenland Telecom on the replacement of the existing technical equipment on NAVTEX station on the Cook Islands in Western Greenland, and the implementation of two new NAVTEX stations on the West Coast. The background for the two new stations is the desire to improve the NAVTEX coverage and thereby also the navigation safety in the Arctic.

With the implementation of the new stations, all meteorological areas in Greenland will be covered by the NAVTEX system and the entrance to the Northwest passage will also be covered. The new stations are expected to be operational during 2011.

NAV Warnings, Information to mariners and oceanographic forecasts are available in English on the DaMSA web page:

<http://frv.dk/en/SailingInformation/Warnings/Pages/default.aspx>

<http://frv.dk/en/SailingInformation/SailingForecast/Pages/default.aspx>



## Hydrographic National Report of Denmark, September 2011

### 6. C-55

C-55 is updated March 2011, with no significant changes.

#### State of surveys updated March 2011

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)

Bilateral cooperation between Denmark and Sweden on planning of new routes and traffic separation schemes in the Kattegat is ongoing.

#### New technologies and/or equipment

The Hydrographic Office in KMS has chosen a new production system for producing nautical charts of Greenland. The implementation of the production system will be finalised by the end of 2011.

### 8. Oceanographic activities

#### Tide gauge network

DAMSA maintains 9 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. DAMSA has not encountered serious problems with the new system.

## Hydrographic National Report of Denmark, September 2011

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. DAMSA also maintains three floating oceanographic stations, measuring temperature, salinity and currents within the water column. These three stations are located at Drogden and at two sites in Storebælt (the Great Belt). These data are also transferred to the database every 30 minutes.

### **Oceanographic and hydrographic forecast online**

Online observations and improved forecasts for Danish waters are available in English on:

<http://www.frv.dk/en/ifm/index.htm>

As a new development, embedded services are available from the FRV website.

### **UNCLOS**

Both DAMSA and 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.

DAMSA is responsible for the data quality assessment on existing bathymetric data and planning and technical specifications for new surveys. In 2011 DAMSA will conduct bathymetric work during an expedition to the east coast of Greenland. DAMSA is also conducting soundings through the ice cap north of Greenland in cooperation with Canada.

## **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 Group (ARHCRGWG)

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

## **International**

DAMSA and KMS are both actively participating in work done by the HELCOM Monitoring Working Group.

DaMSA is participating in the E-navigation project EFFICIEN-SEA. (Presentation will be given at 55 NHC-conference.)

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



## Hydrographic National Report of Denmark, September 2011

- Climate change and integrated coastal zone management
- Dissemination and communication

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

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

### Websites

Farvandsvæsenet, the Danish Maritime Safety Administration (DAMSA):  
<http://www.frv.dk/en/index.php>

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

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