

Hydrographic National Report of Denmark

April 2010

1. Hydrographic Office

This report outlines and summarizes the activities carried out in 2009 by the Danish Maritime Safety Administration and the National Survey and Cadastre.

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

- Farvandsvæsenet, the Danish Maritime Safety Administration (DAMSA) is responsible for hydrographic surveying, issuing Notices to Mariners, List of Lights and Tide Tables.
- Kort & Matrikelstyrelsen, the National Survey and Cadastre, Hydrographic Office (KMS) is responsible for charting, issuing Chart Corrections and related nautical publications such as INT 1 and Pilots (sailing directions) and technical support for delimitation of the maritime boundary of the Danish waters.

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. (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 at the HELCOM Extraordinary Ministerial Meeting.

In accordance with the Declaration, a coordinated survey plan has been developed for the Baltic Sea. The main focus of current Danish survey efforts are on the primary shipping routes through the Danish waters and the entrances to major ports. The routes will be re-surveyed to meet the standards of "Special Order", or "Order 1", as set out in the International Hydrographic Organization's "Special Publication No 44".

A description of the surveys carried out in 2009 can be found in appendix 1.

All surveys were carried out with multibeam echo sounding systems.

Denmark and Sweden are in the process of optimizing the shipping routes through Kattegat, based on AIS and statistical data. The new optimized routes will be submitted to the IMO and HELCOM resurvey monitoring group. The 2010 surveys will be a continuation of the revised coordinated re-survey plan for the Baltic area. Denmark plans to start surveys in the North Sea in connection with the proposed traffic separation scheme off Skagen.

A detailed plan for resurveys in 2010 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 Greenlandic 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 have been surveyed for the safety of cruise ships operating on the west coast. A detailed plan for surveys in 2010 can be seen in appendix 2.

New ships

No new ships have been put into service since the last report.

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BIRKHOLM is replacing SKA 16 in Greenland for the 2009 and 2010 seasons.

Problems encountered:

No new problems were encountered in 2009.

3. New charts & updates

Charts (paper as well as 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 2009, KMS has produced 4 ENCs of the Greenlandic waters. In 2010, KMS intends to produce 12 additional ENCs of additional areas of the Greenlandic waters.

Until 2009, the Faroese waters were not covered by ENCs. In the past year, KMS has produced 2 ENCs of a part of the Faroese waters.

In 2010 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

24 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

Since the last report, KMS has published 12 new editions and 3 updated reprints.

Geometric rectification of the Greenlandic charts

The geometric rectification of the Greenlandic charts, mentioned in the Hydrographic National Report 2009, will continue in the coming years.

Three charts are expected to be rectified and published in 2010.

Faroese waters

Two charts based solely on vector data of the Faroese waters were published in 2009. Five more charts are expected to be published in 2010.

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:

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:

Kort 1/INT 1 (bilingual)

Søkortrettelser/Chart Corrections (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. Maritime Safety Information (MSI)

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>

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6. S-55

Status of hydrographic surveying and nautical charting worldwide

State of surveys updated March 2010

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 north latitude. Thus the percentages are rough approximations. The east coast is sparsely populated and only surveyed near populated areas. A prioritised programme is in place 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.

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 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.

In addition, DAMSA measured water levels in Greenland from 1990 until 2004 in order to improve 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. Online observations and forecasts are available in English on:

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

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 2009 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

DAMSA is participating in the Nordic CHRIS DQWG.

KMS is actively involved in the work done by MSDIWG, CSPCWG, SNPWG, TSMAD and HSSC.

New technologies and/or equipment

The Hydrographic Office in KMS is implementing a LEAN process.

International

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.

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

DAMSA and KMS both actively participate in the work of the HELCOM Monitoring Working Group.

The Formal Safety Assessment (FSA) "Study on ECDIS - ENC coverage" that was mentioned in the report from last year has been completed and presented at the NAV 53 meeting in July 2007.

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Websites

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

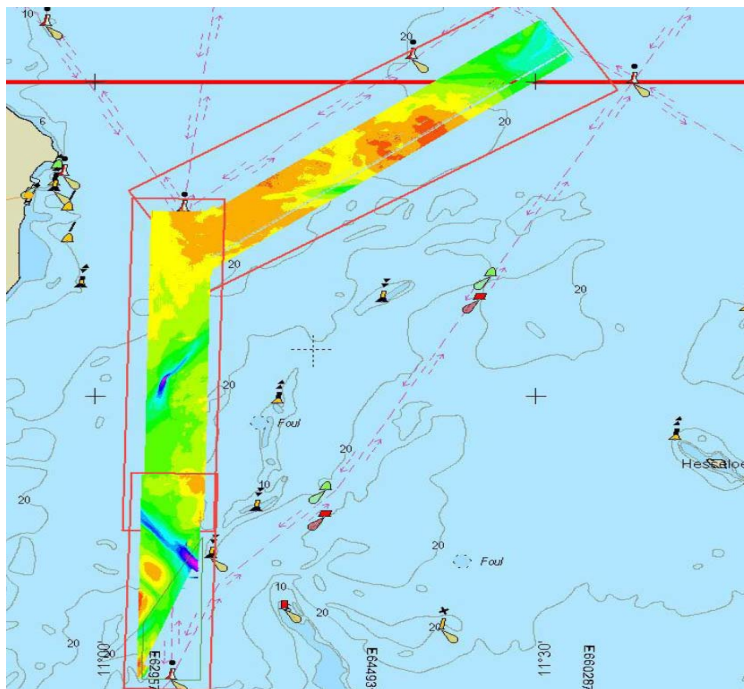
Kort & Matrikelstyrelsen, the National Survey and Cadastre (KMS):
<http://www.kms.dk/English/>

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

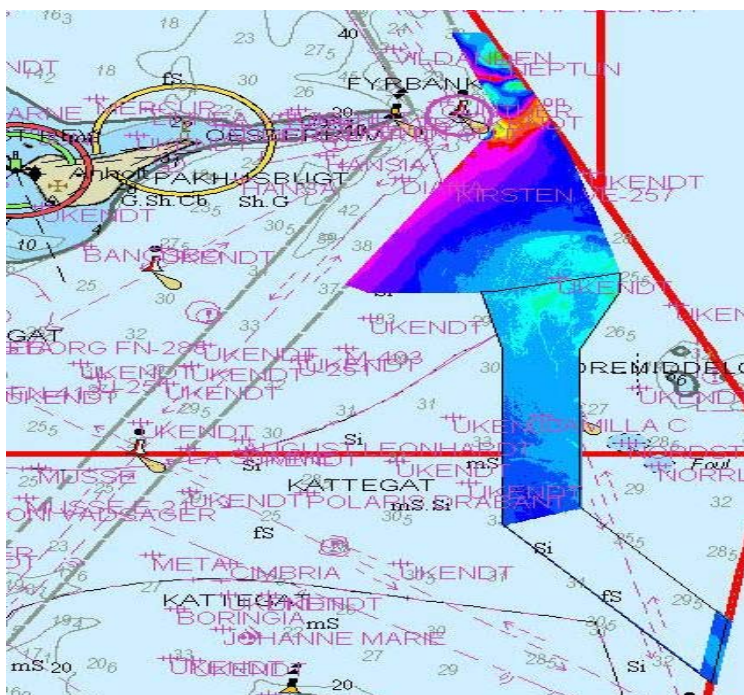
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Appendix 1, Surveys 2009

Denmark:



Route A East of Grenå



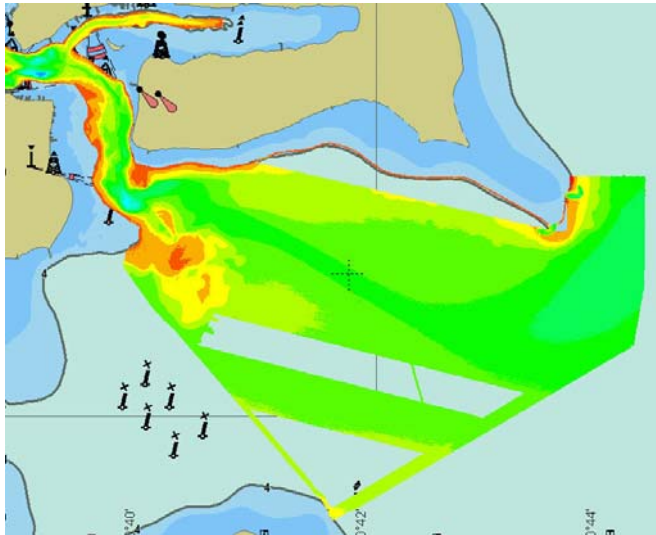
TSS south of Anholt

The map displays the Lofoten archipelago with various islands and settlements. Key locations labeled include MARTA FN 409, VICTORE URBANA S-185, LIS FN-361, SKOGLAND, HEDDERNHEIM, LONNY GORD, SKAGENS REV, and many others. A red line runs diagonally across the map, and a red triangle is located near the bottom center.

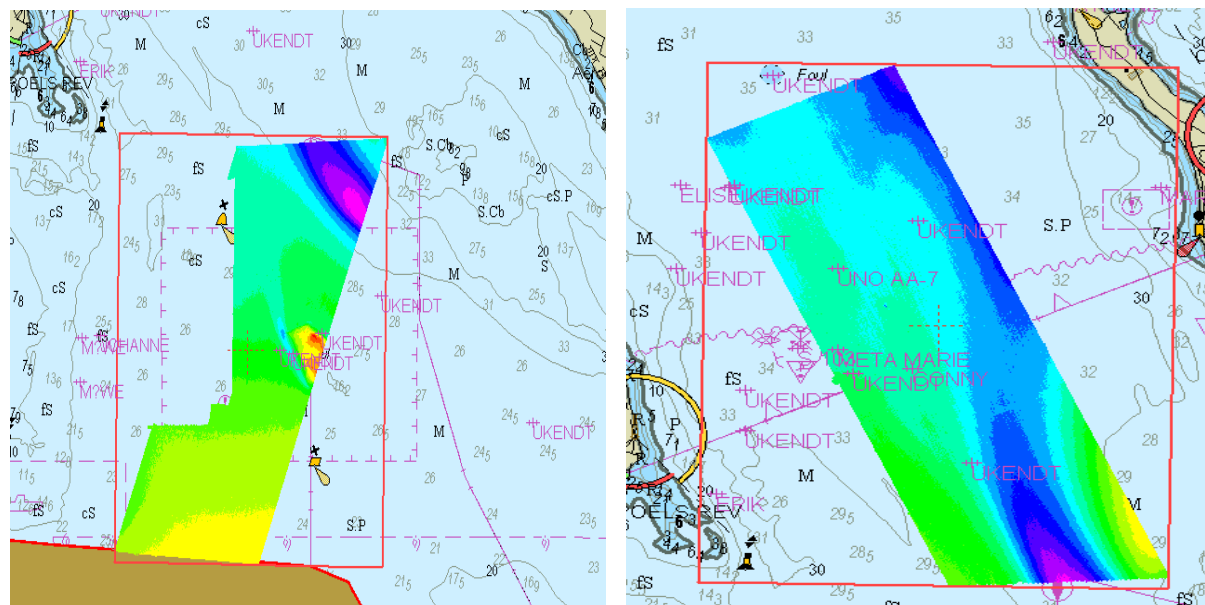
The figure is a bathymetric map of a coastal area. It features a color-coded depth scale on the left, ranging from 0' (light blue) to 7600' (dark blue). The map shows a wide, shallow area (0' to 2000') transitioning into a deeper channel (2000' to 7600'). Several sampling stations are marked with icons: a small boat icon at the top left, a person icon at the top center, a person icon at the top right, a person icon at the bottom left, and a person icon at the bottom right. Dashed lines indicate specific survey tracks or boundaries. The map is labeled with '02' and '1200' on the left side, and '7600' and '3000' on the right side.

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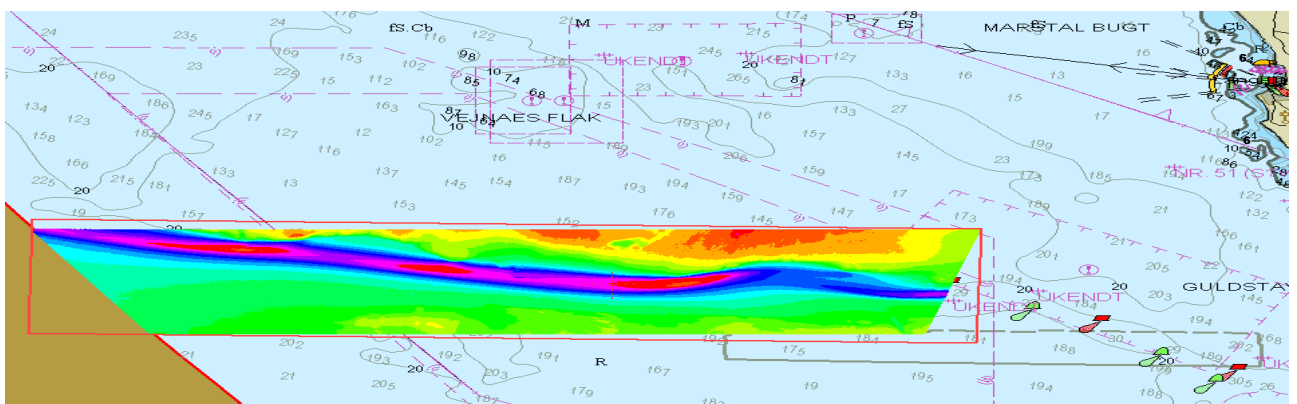
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Svendborgsund 3



Deep water route south west of Bagenkop, Langeland

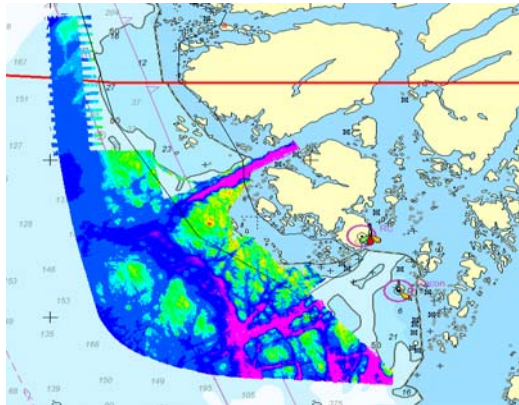


Area north of Skarø, western entrance to Svendborg Sund

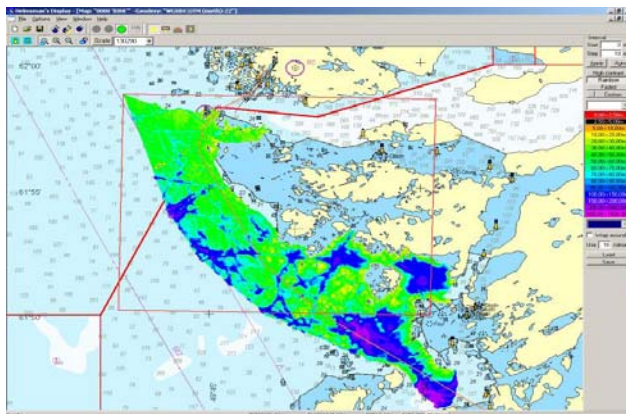
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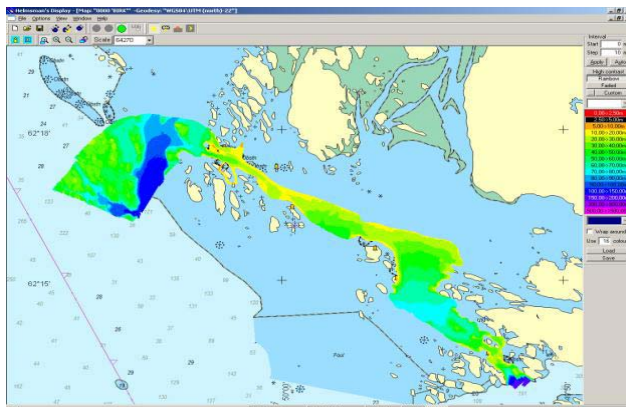
Greenland:



Manitsaq

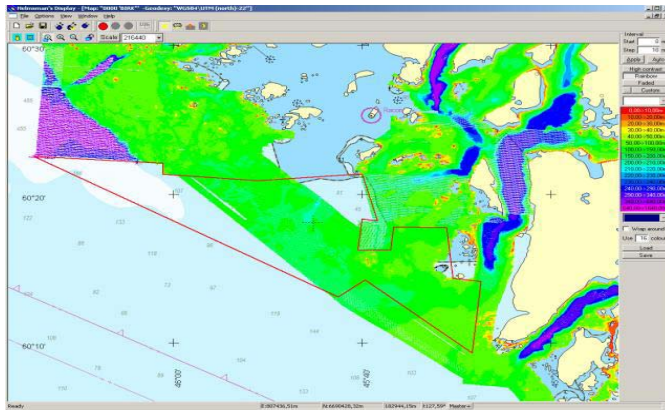


Paamiut

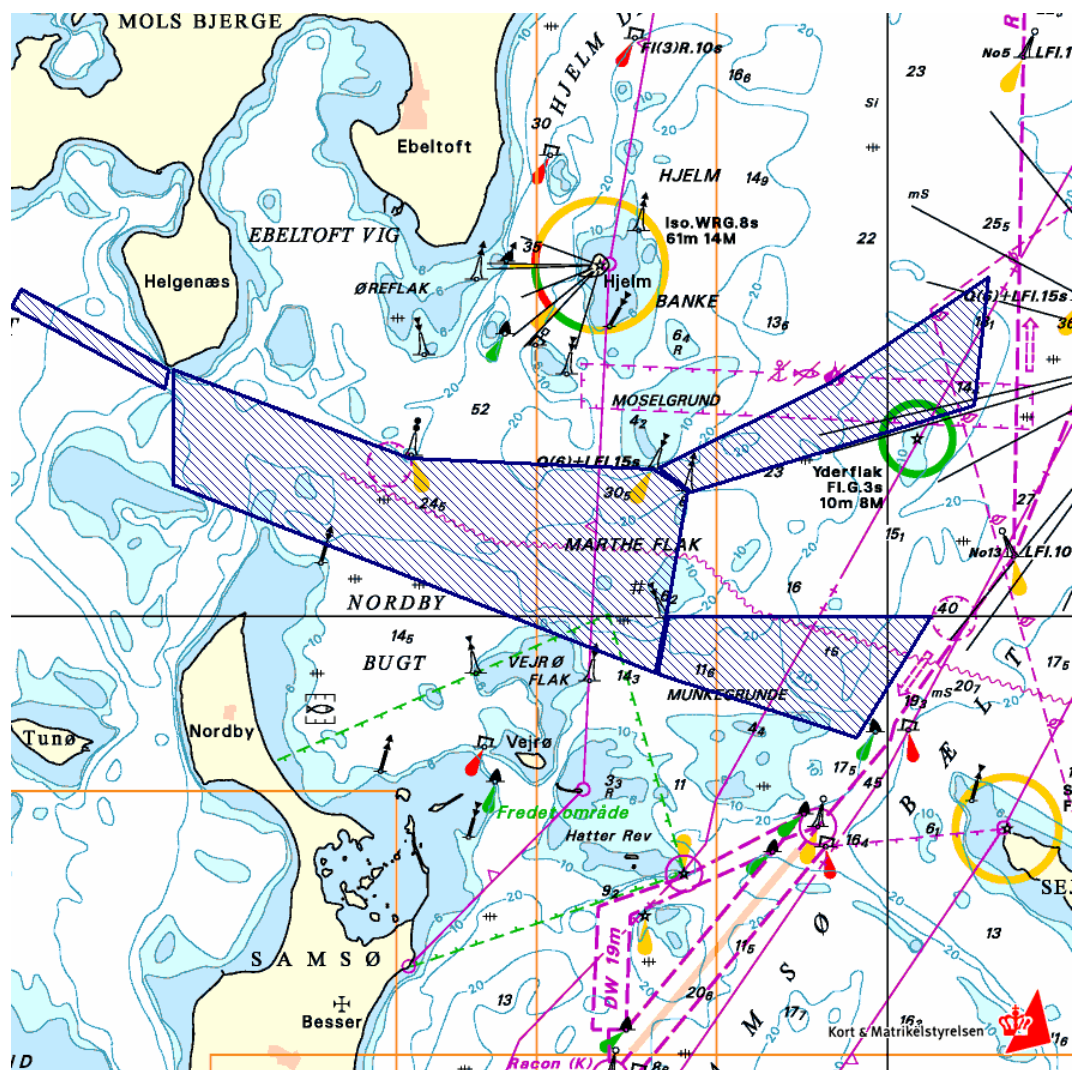


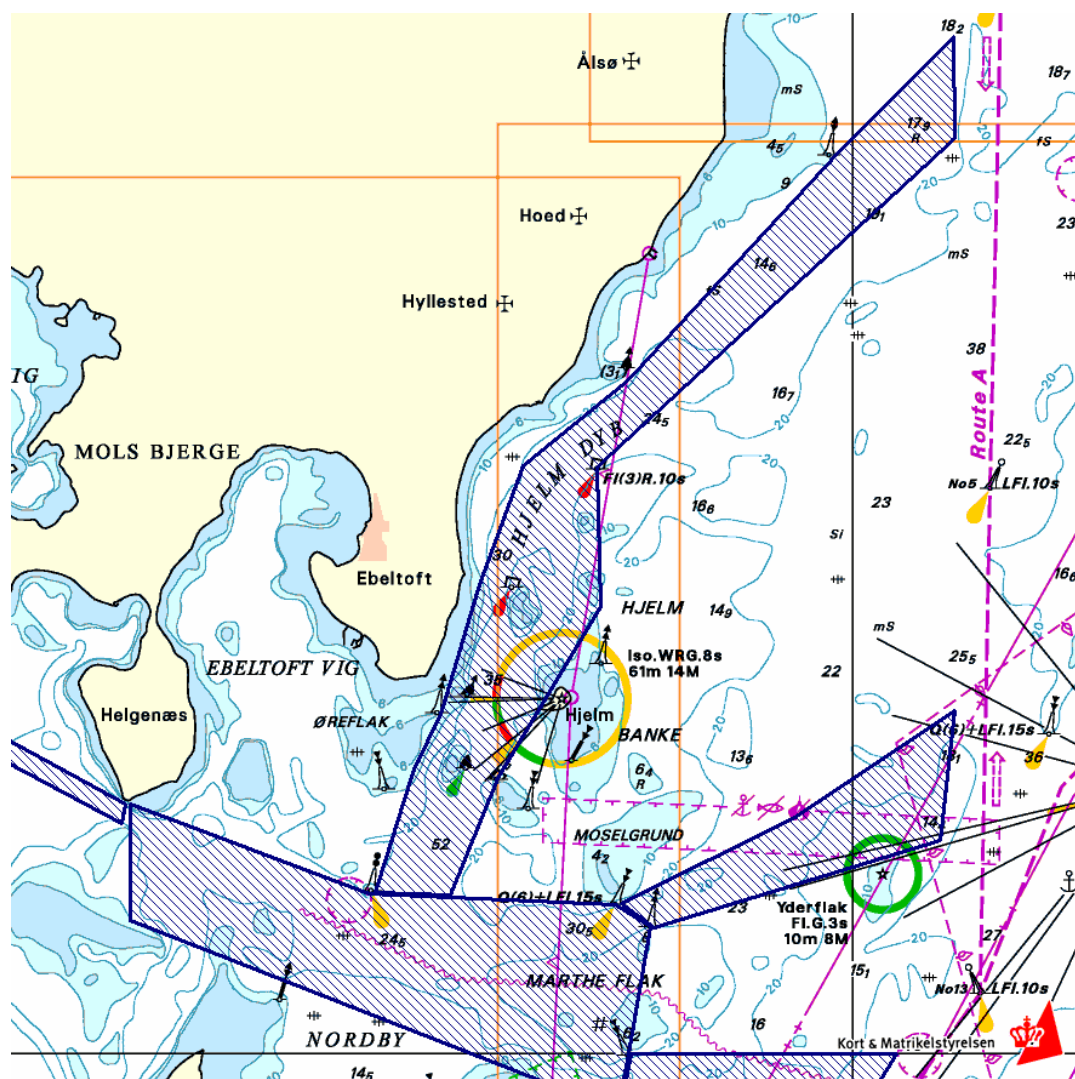
Avaigat

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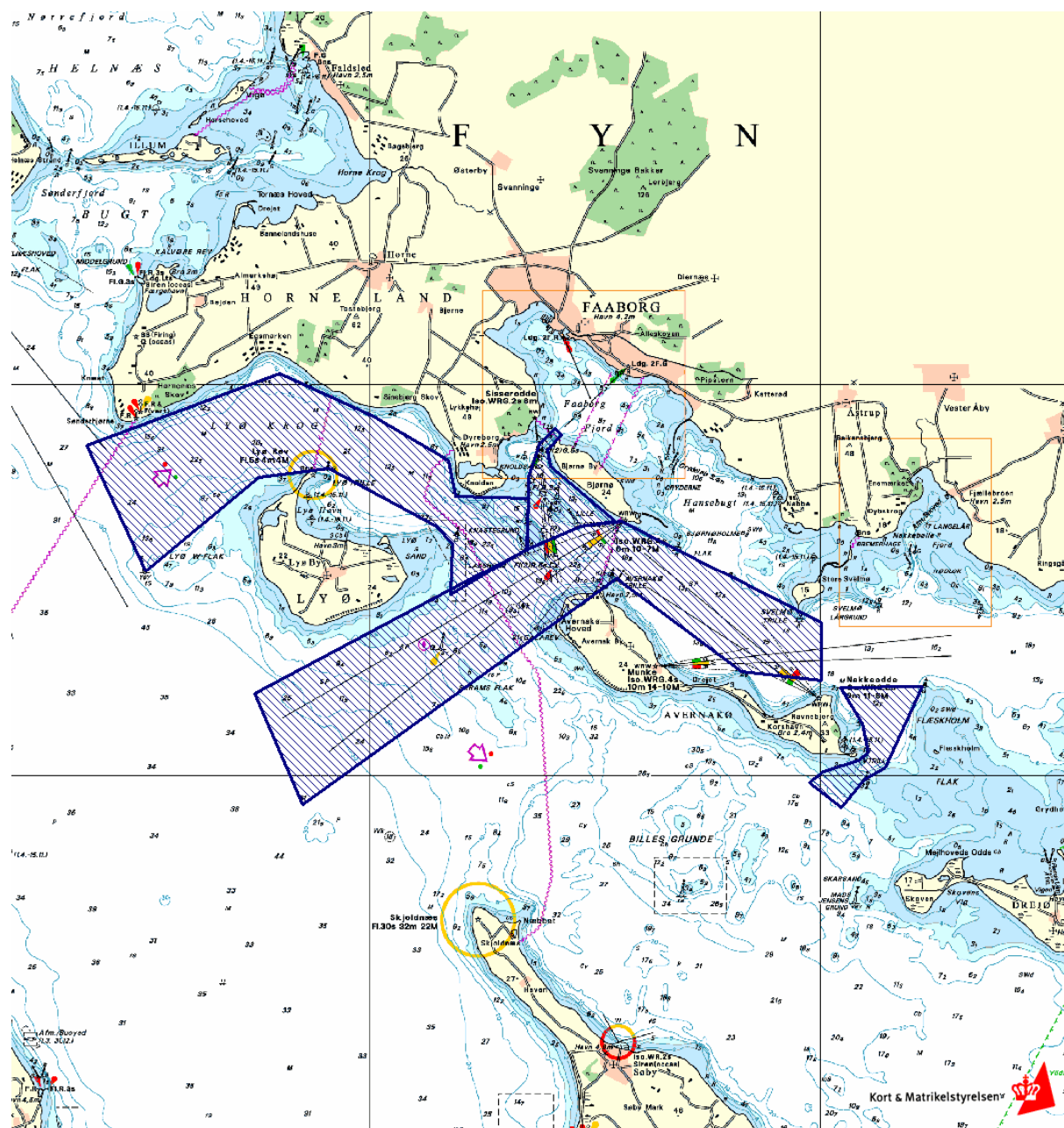


Sermersooq

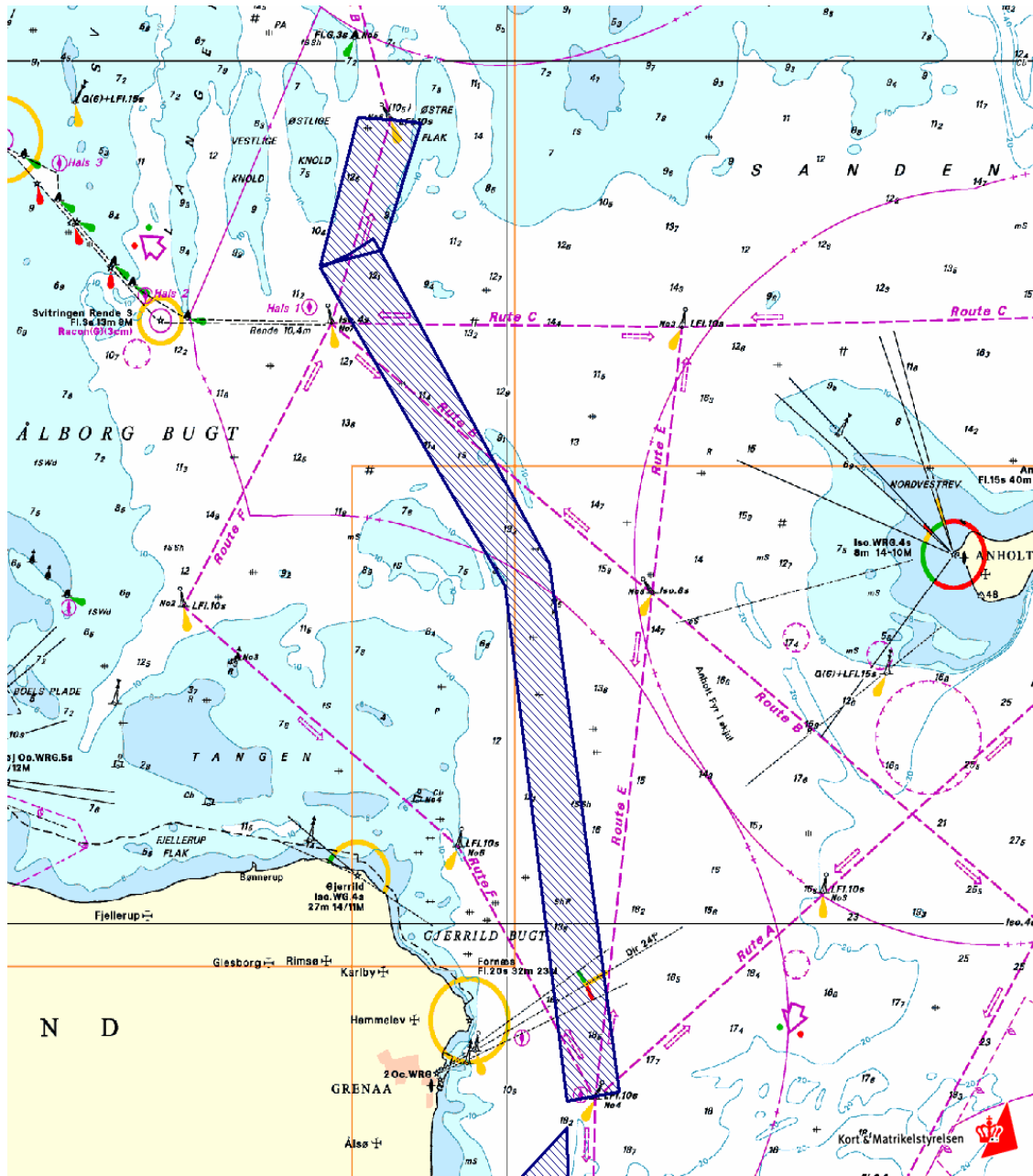




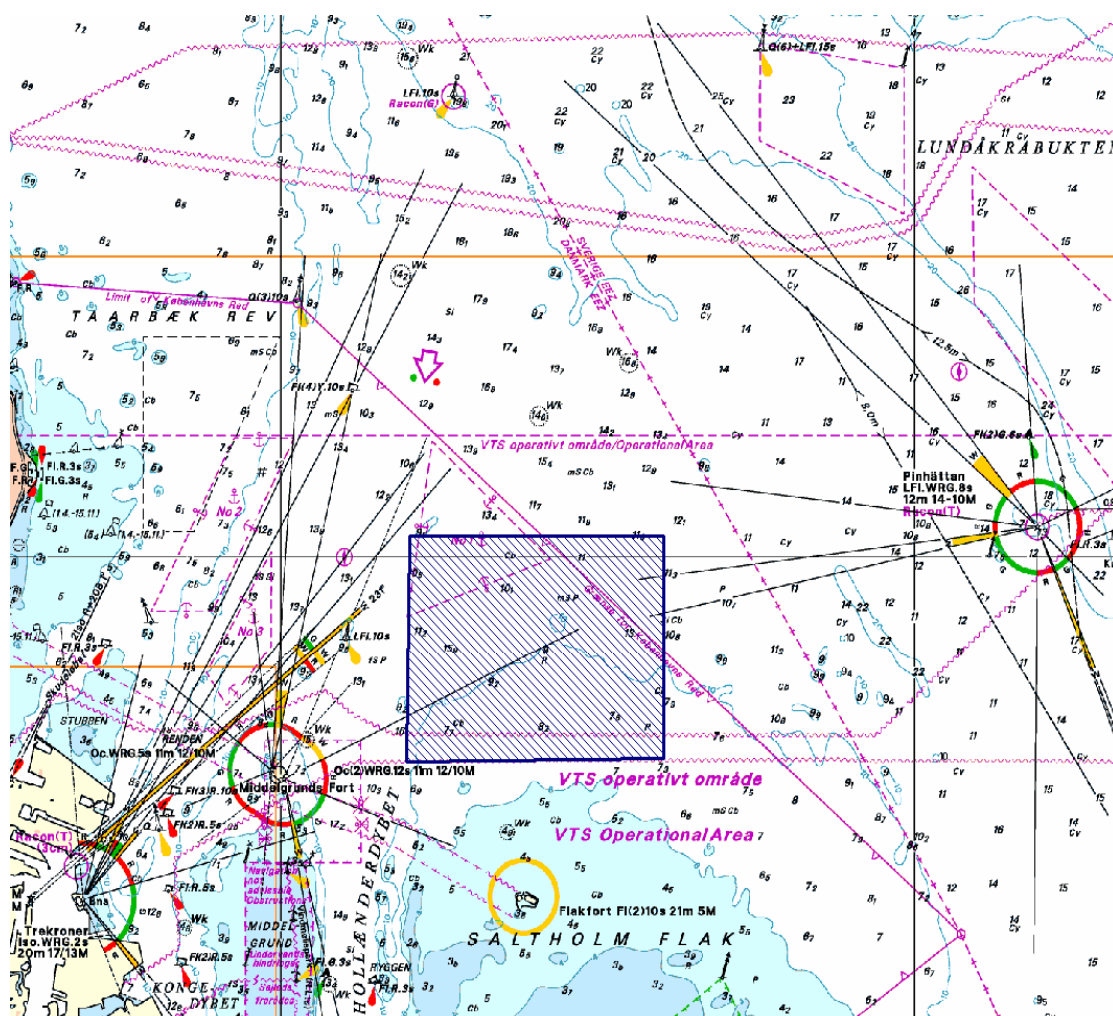
§ 4 The waters south of Fyn.



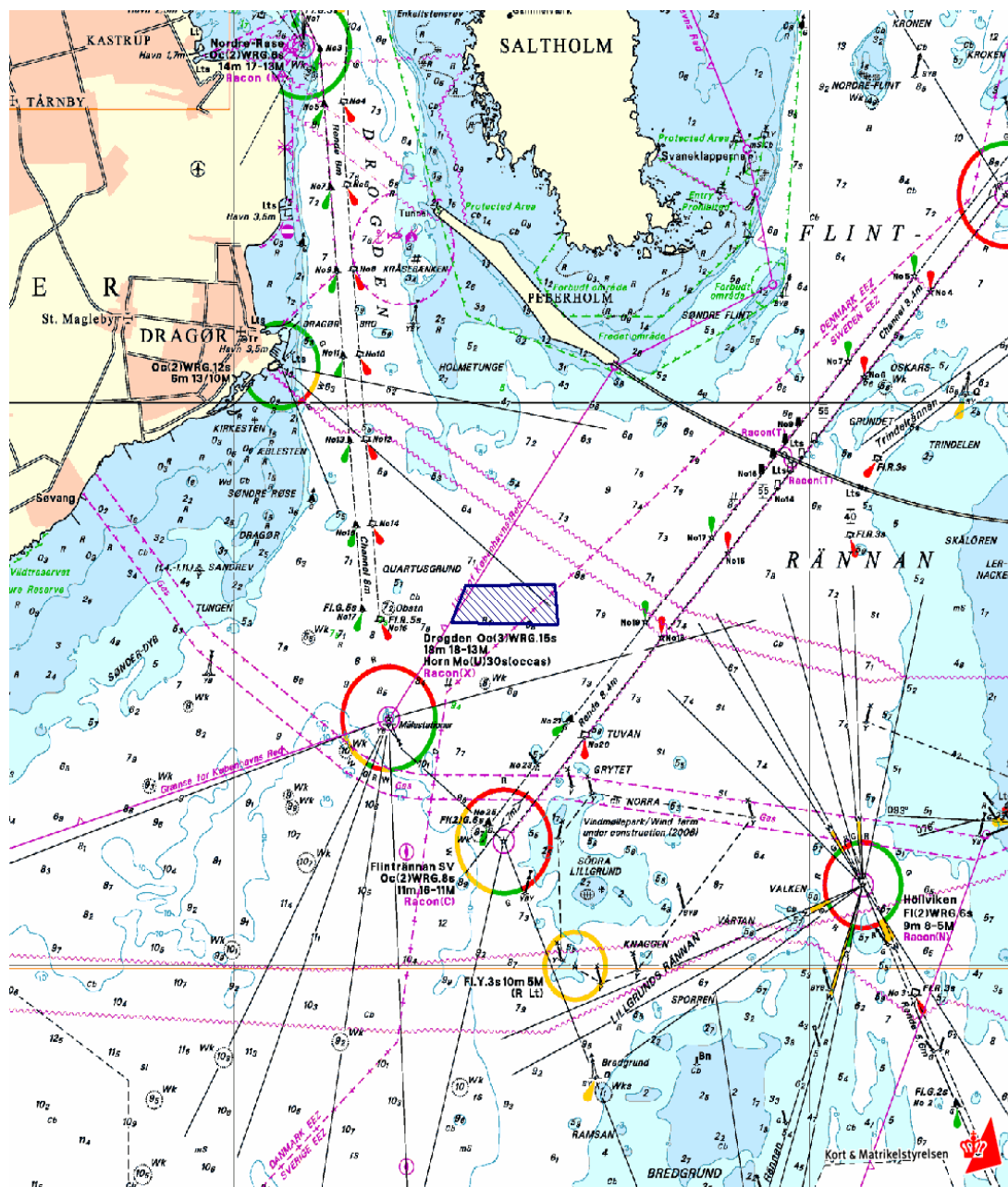
§ 5 Proposed Route B. west of Anholt



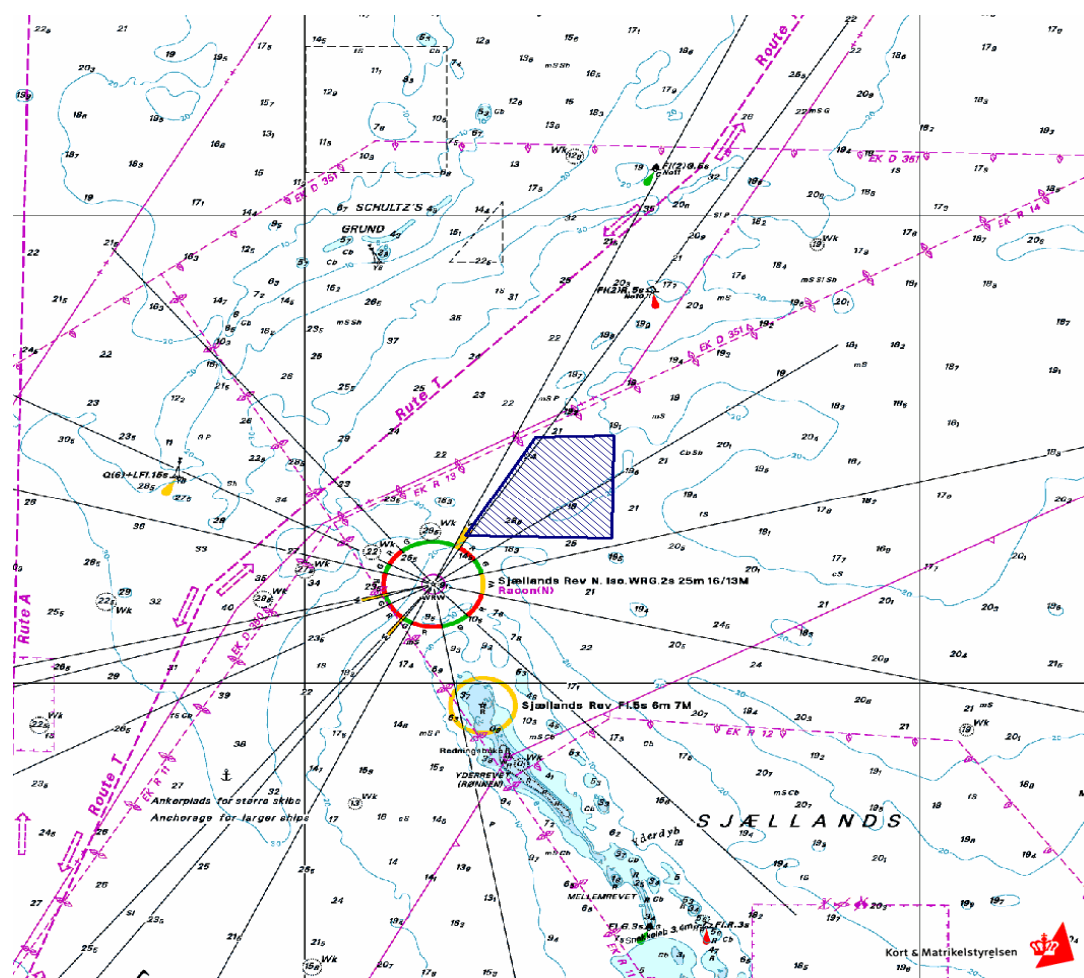
§ 6 Saltholm Flak N:



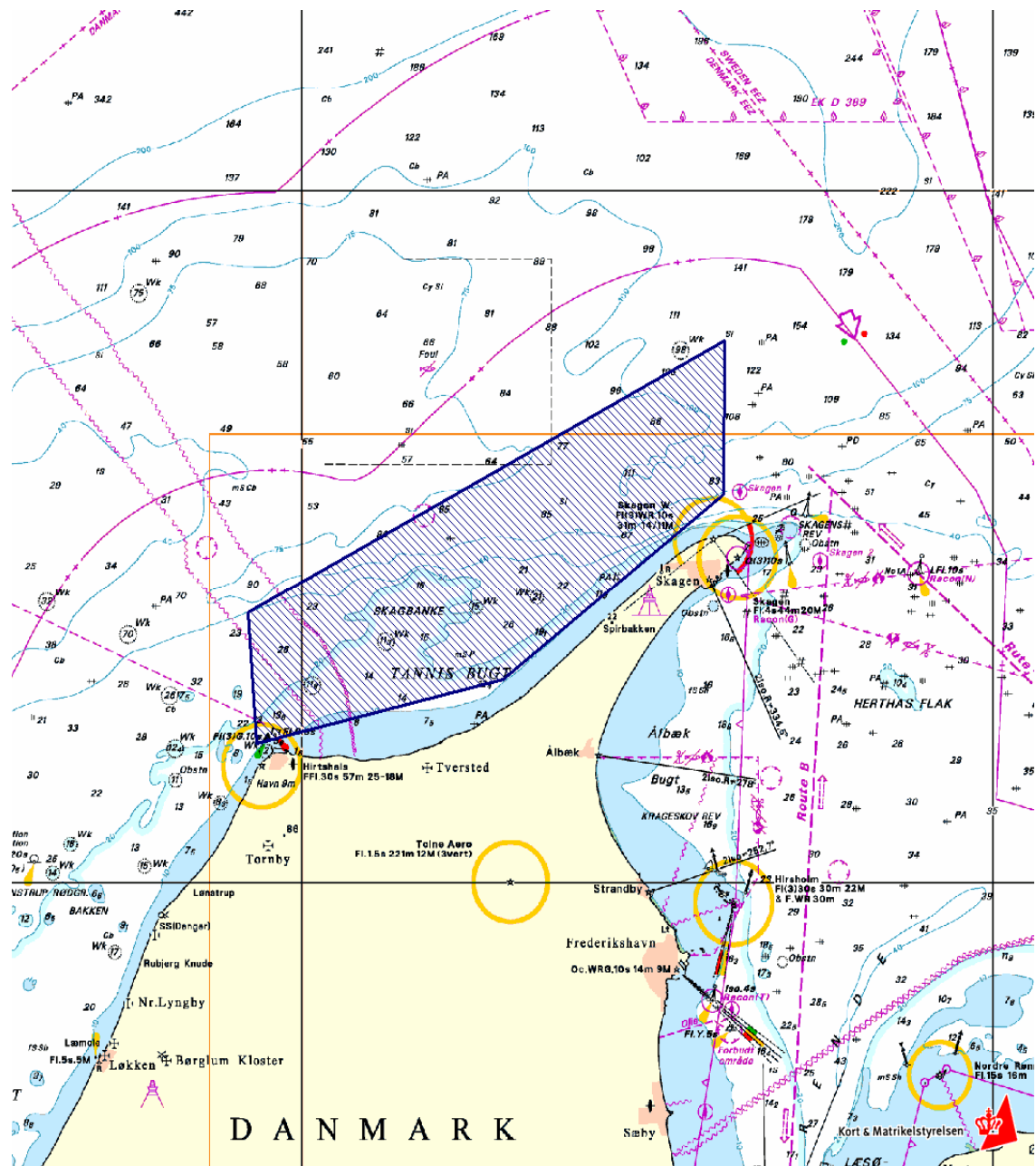
§ 7 Drogden channel South



§ 8 Proposed TSS Sjællands Rev:



§ 9 Skagen W to Hirtshals:



Greenland

§ 1. Nuuk Fiord

Fig.1a

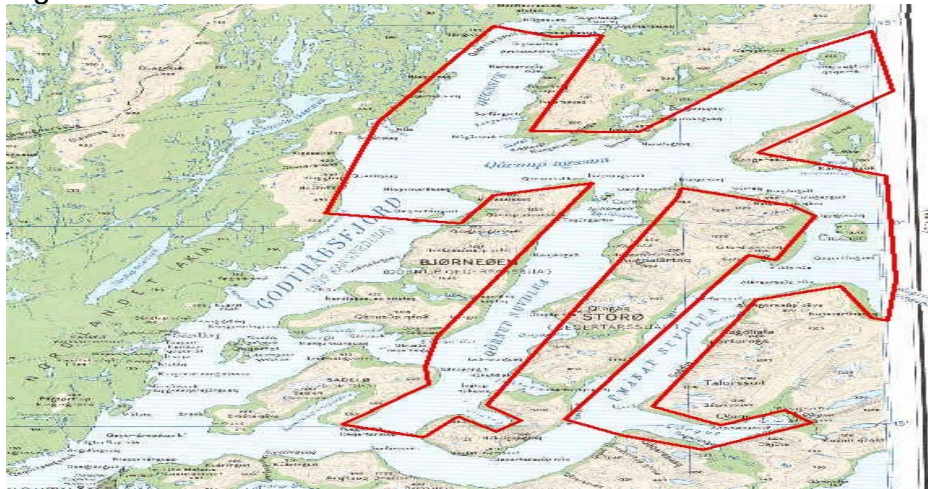
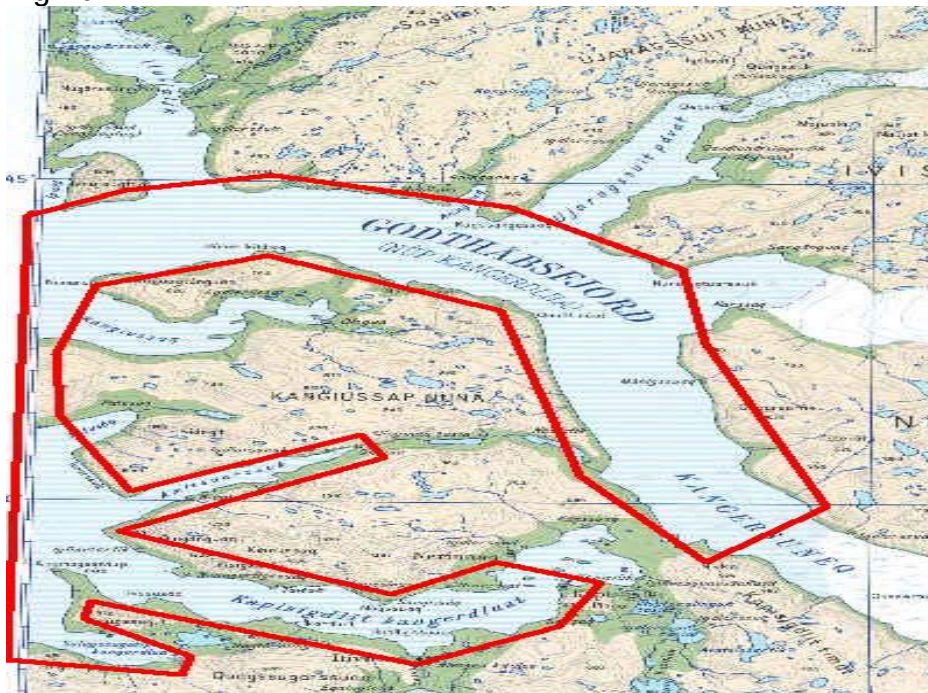


Fig.1b



§ 2. Chart 1310. Area south of Nuuk.

Fig.2.



§3. Chart 1313. Northern part of Atagmik small craft route



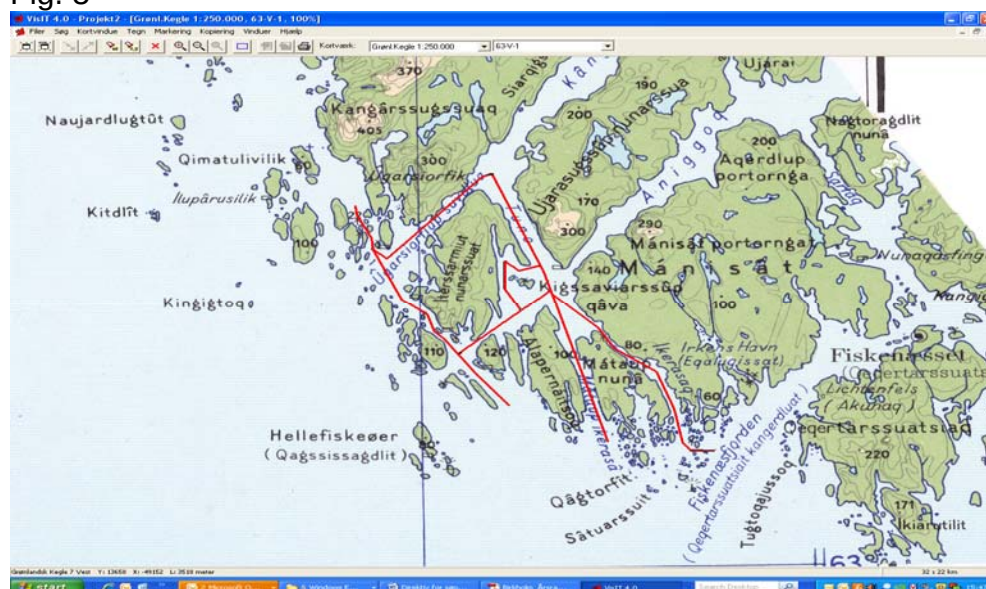
§ 4. Chart 1314. Foul area south of Tovqussaq.

Fig.4.



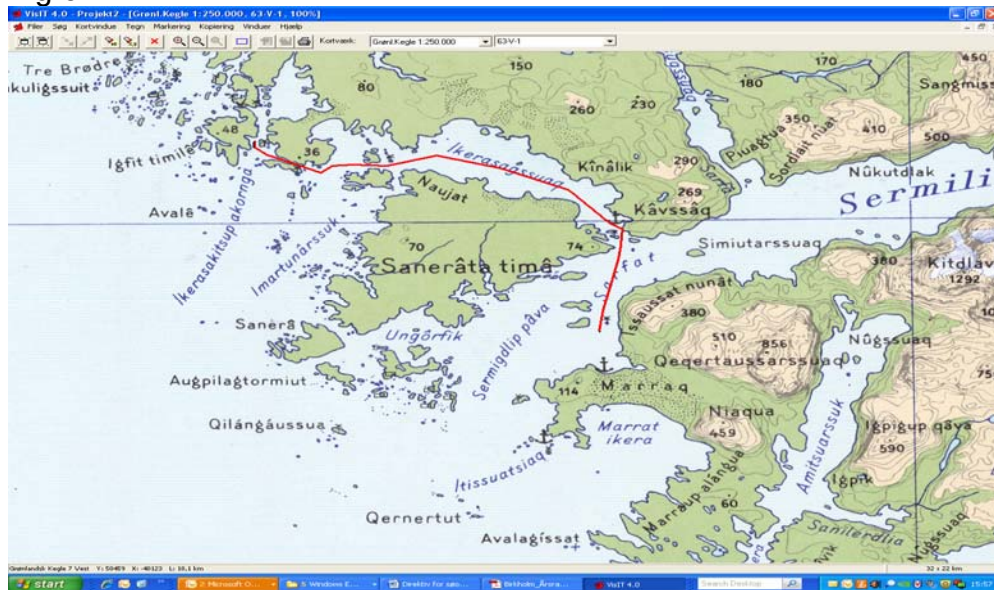
§ 5. Chart 1314. Small craft routes north of Fiskenæs fjorden.

Fig. 5



§ 6. Chart1213 Small craft route between Sermilik and Tre Brødre.

Fig.6.



§ 7. Chart 1114. Qaqortoq Fig.

Fig.7a

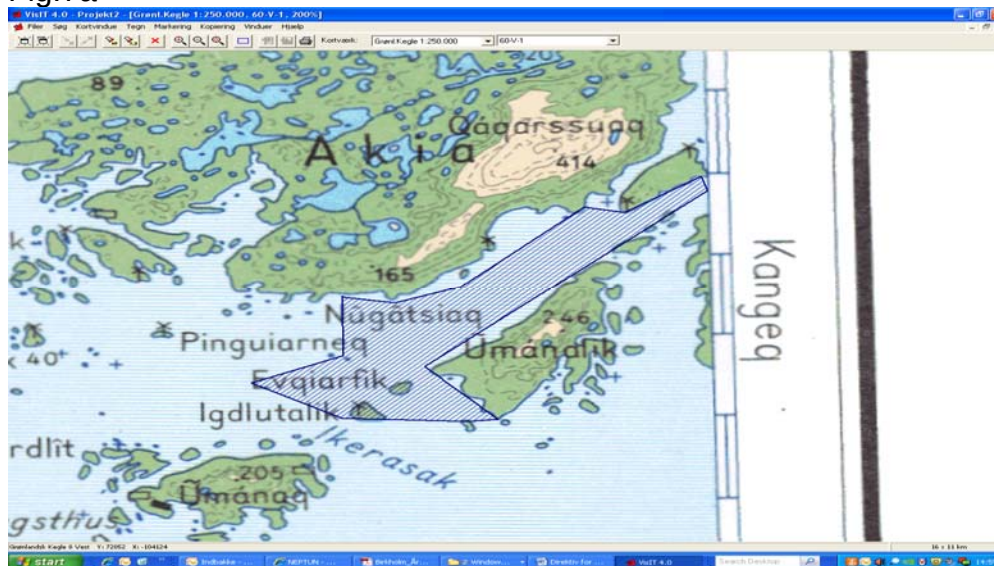
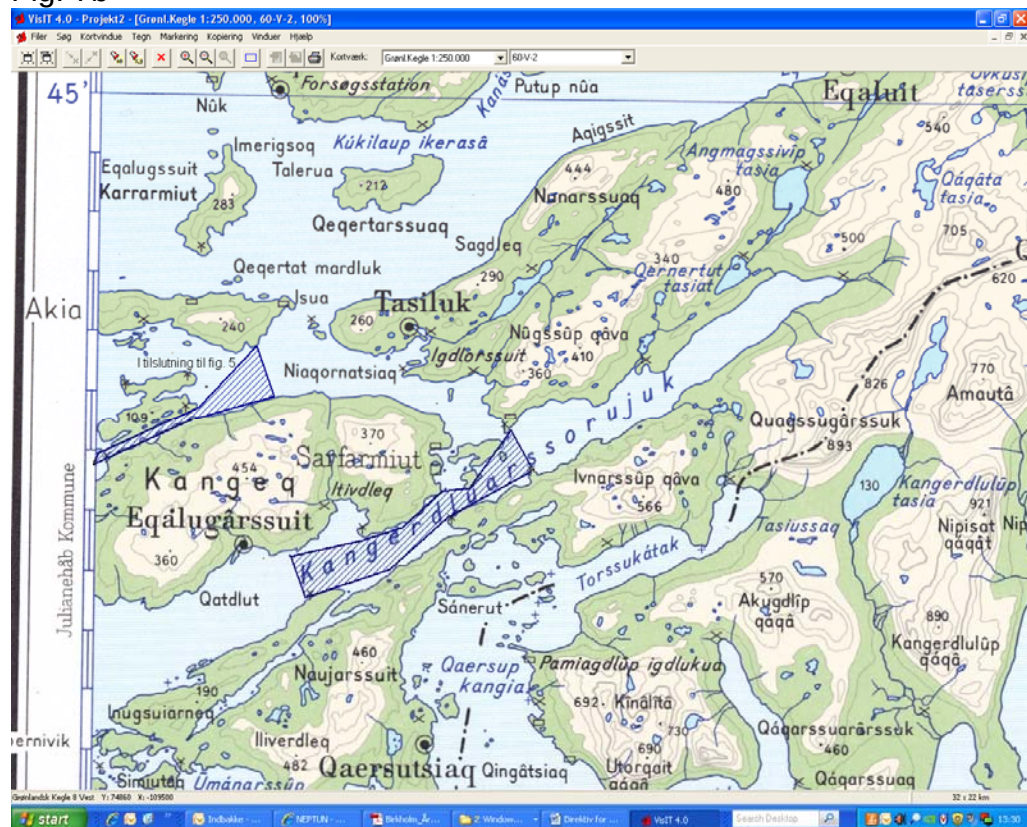


Fig. 7b



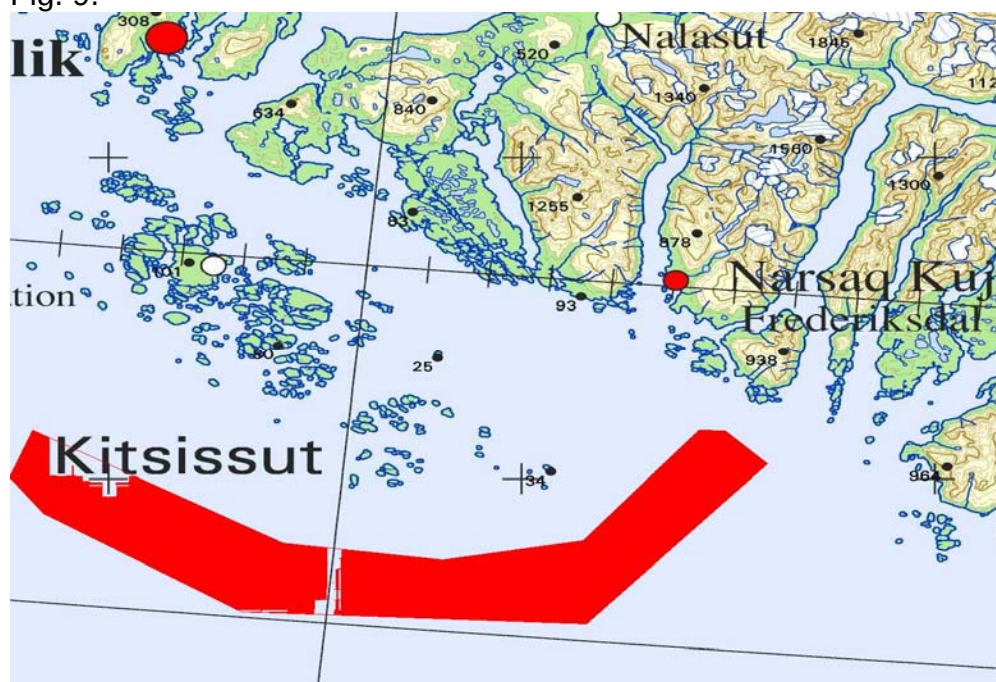
§ 8. Chart 1113. Small craft route west of Frederiksdal.

Fig. 8.



§ 9. Chart 1113. Near shore off Kitsissutøerne.

Fig. 9.



§ 10. Prins Christian Sund.

Fig.10.

