

# Hydrographic Society, Denmark

## Re-surveying

### Making a new chart of the western Baltic

Since the beginning of April two Royal Danish Administration of Navigation and Hydrography (RDANH) smaller survey boats, SKA 15 and SKA 16, have been conducting a hydrographic survey in the western part of the Baltic, SW of Gedser, in an area near the Danish-German exclusive economic zone.

Up until this year Denmark has not conducted hydrographic surveying in the above mentioned area and therefore no soundings existed for this area. The soundings represented in the charts originated from older German surveys. These old soundings did not meet the present standards for hydrographic surveys, especially with regard to accuracy. There was therefore a need for re-surveying the area. The accuracy of the position of a sounding has at least to match the accuracy to which mariners can position themselves. Furthermore, full bottom search is required, by which there is an increased possibility of detecting all obstructions potentially dangerous to navigation. The area is now surveyed in accordance with IHO Order 1 standards for Hydrographic surveys. The requirements of the Order 1 standards are a horizontal accuracy (95 per cent) of approximately 5m, a depth accuracy of approximately 0.5m and a need to be able to detect cubic features larger than 2m. The new survey complies with the requirements for ENC-charts used in ECDIS.

The survey was conducted with a SEA BEAM 1180 multibeam echosounder and the line spacing was chosen in such a way that full bottom search was achieved. Positioning was carried out with Ashtech Z12 DGPS receivers and own reference stations, which gave a position accuracy of within  $\pm 1$  m (95 per cent). The boats are also equipped with Applanix POS/MV motion sensors, giving information about the movements in three dimensions and very precise heading. In addition to the multibeam coverage, the whole area was searched with Edge Tech DF 1000 side-scan sonar to ensure that all major objects on the bottom were detected. Side-scan sonar is an important instrument when conducting wreck searches. All new wrecks are registered in a database, with relevant data including side scan-sonar image. Variations in the water level are handled by setting up tide-gauges in the vicinity of the survey area. In the inner Danish waters there is hardly any tide but it is still necessary to measure even small variations in the water level so that the survey as a whole fulfils the existing hydrographic surveying standards.

Though the inner Danish waters are by and large surveyed - some areas still need to be surveyed to a quality and position accuracy which correspond to the requirements for modern surveys. This means that in the future there will also be a need for surveying of the inner Danish waters. From the political side, the Danish Authorities have decided that in the years to come the focus will be upon international traffic channels, so that the main emphasis will be on surveying traffic channels through Danish waters.

*Authors: Jesper Vedel and Anders Fertin*

## Agenda

### HSD meetings winter 2002/ 2003

Mark the following dates in your calendar:

- 11 November 2002
- 12 December 2002
- 6 February 2003
- 20 March 2003

### 11 November 2002

We are very fortunate in being able to present John Hughes Clarke from UNB at our first meeting in Denmark. The subject will be: Monitoring fine-scale seabed change: Repetitive swath surveying.

Meeting on 11 November 2002, 19:00 hours at: Farvandsvej 1, Senet - Store mÃ, delokale.

Overgaden O. Vandet 62B  
DK-1023 Copenhagen K

### 12 December 2002

Presentation by Ulrich Ditlev Christiansen. Subject: Establishment of off-shore windmills at RÃ, dsand.

### 6 February 2003

Presentation by Knut Gjerstad. Subject: "Forced charting of the Norwegian coast line". A survey using laser bathymetry.

### 20 March 2003

General meeting and presentation by ?. The subject is not yet finalised.

## Contact

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