

Navigational planning with Greenland charts

Mariners can obtain information for the safe navigation in charts and nautical publications. The Danish Geodata Agency publishes the official paper charts, electronic navigational charts (ENC) and nautical publications of the Greenland waters.

Mariners should be aware that the majority of the paper charts for Greenland were originally compiled in the 1960s. The source material on which these paper charts are based had limitations, especially with regard to their geometric accuracy.

The positioning of the information in these paper charts (i.e. topography, including the coastline, and hydrography) is therefore not accurate.

Since the positioning accuracy that can be achieved with satellite navigation systems (for instance GPS) is better than the paper charts, mariners are advised to use sources of positional information other than satellite navigation systems.

These dated paper charts can be identified by noting that the first edition of the chart originates from the 1960s (stated in the chart's frame at the bottom). The horizontal datum for most of these charts is Qornoq 1927.

It is important to emphasize that, in spite of the inaccuracies in the paper charts of older origin, it is possible to navigate the coastal areas of Greenland if radar is used as the primary instrument for positioning (bearing and distances), thus determining the position relative to the coast.

The following IMO paper provides useful information regarding the precautions that should be taken in connection with the use of charts in Greenland waters: [Precautions in using navigational charts in Greenland Waters](#). References to a number of relevant IMO circular letters (SN/Circ) are also available on the website of the International Maritime Organization.

Since 2009, the Danish Geodata Agency has worked to improve the paper charts for the West Greenland waters. Following a geometric alignment and the rendering of a new coastline, some of the paper charts have been published as new nautical charts.

These new paper charts can be identified by noting that the first edition of the chart is from the 2000s or 2010s (stated in the chart's frame at the bottom). The horizontal datum for these paper charts is WGS-84.

Official electronic navigational charts (ENC) corresponding to these new and improved paper charts are also published by the Danish Geodata Agency. These ENCs for Greenland can be used in electronic chart display and information systems (ECDIS).

The mariner needs to see everything from detailed charts for the approach to ports, to simplified charts for navigation in open water or for navigational planning.

The mariner must be aware that the data in the ENC is associated with a particular navigational purpose (Usage).

Just like paper charts, the data content or the level of detail in ENCs is adapted to the different scales or Usage Bands.

In ECDIS, the mariner can zoom in to a large scale in an ENC, which is associated with a Usage Band for use in open water, in other words an Overview Band (although the ECDIS must indicate Over-Scale or Under-Scale if you zoom in or out beyond what is reasonable for the Usage Band in question).

However, the mariner cannot expect to obtain detailed information about a Greenlandic fjord or harbour if such waters are viewed in an ENC in the Overview Band.

Greenland waters are covered by a number of ENCs in Overview Band. These ENCs hold the same content as the paper chart G (scale 1:4 000 000), and do therefore not contain detailed information, including inshore depths. These Overview Band ENCs can only be used for navigation in open water or in connection with navigational planning.

Navigation and navigational planning should only be carried out on the basis of ECDIS in waters where the Greenland coast is covered by ENC in Usage Band Coastal.

The work to publish improved new paper charts and establish full coverage of ENC in Coastal, Approach and Harbour Band for the West Greenland waters will continue towards 2018.

The current ENC coverage of the Greenland waters can be seen in the [IC-ENC World Catalogue](#).

Mariners must take into account that the majority of Greenland waters are only covered by paper charts for inshore navigation. Navigational planning should therefore generally be done on the paper charts, and inshore navigation should be done on the basis of the paper charts.

Some chart producers have issued unofficial electronic navigational charts for Greenland waters. These electronic charts are usually based on Greenland paper charts of older origin. They are therefore subject to the same inaccuracies in the positioning of information as the paper charts of older origin. Consequently there are major risks associated with using these unofficial electronic navigational charts and electronic chart systems as the primary means for navigation.