

## Navigation planning with Greenlandic charts

Navigators can find information in nautical charts and nautical publications to use for the safe navigation of ships. The Danish Geodata Agency is the publisher of the official paper charts, electronic navigational charts (ENC) and nautical publications covering the Greenland waters.

Navigators should be aware that the majority of the paper charts for Greenland were originally produced in the 1960s. The source material on which these paper charts were based had limitations, especially regarding geometric accuracy.

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

Since the positioning accuracy that can be achieved with satellite navigation systems (e.g. GPS) is better than the paper charts, ships cannot navigate safely using satellite navigation.

These older paper charts can be identified by noting that the first edition of the map is from the 1960s (indicated at the bottom of the frame of the chart). 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 for ships to navigate the coastal areas of Greenland if radar is used as the primary instrument for positioning (bearing and distance) and the position is thereby determined relative to the coast.

The following IMO paper provides useful information about the precautions that should be taken when using navigational charts in Greenland waters: [Precautions in using navigational charts in Greenland Waters](#). There are also a number of relevant IMO circulars (SN/Circ).

Since 2009, the Danish Geodata Agency has been working to improve the paper charts of the West Greenland waters. After a geometric alignment and the inclusion of newly charted coastline, some paper charts were published as new charts.

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

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

The navigator needs to have everything displayed, from detailed charts for use when approaching ports to simplified charts for navigating open waters or for navigation planning.

The navigator must be aware that data in the ENC is associated with a particular navigational purpose or usage. As in the case of the paper charts, the data content or the degree of detail in the ENC is adapted to the different scales/usage bands.

In ECDIS, the navigator can zoom in to a large scale in an ENC, which is associated with a usage band for use in navigation in open waters, i.e. Overview band. However, ECDIS must indicate overscale or underscale if zooming in or out beyond what is safe in that band).

However, the navigator cannot expect to receive detailed information about a Greenlandic fjord or harbour if the navigator zooms in on such a section of water in an ENC in Overview band.

Greenland waters are covered by a number of ENCs in Overview band. These ENCs have the same content as the paper charts referred to as chart G (scale 1:4,000,000) and therefore do not contain detailed information, including depth information close to the coast. These ENCs in Overview bands can only be used in connection with navigation in open waters or to obtain an overview in connection with navigation planning.

Navigation and navigation planning should only be performed on the basis of ECDIS in sections of water, where the Greenland coast is covered by the ENC in the Coastal usage band.

Work on publishing new and improved paper charts and establishing full coverage with ENC in Coastal, Approach and Harbour bands for the West Greenland waters will continue.

The current ENC coverage of the Greenland waters is described in [IC-ENC World Catalogue](#)

Navigators must therefore take into account that for most Greenland waters, only paper charts are available for coastal navigation. Navigation planning should therefore generally be performed using the paper charts, and the coastal navigation should also be performed using the paper charts.

Some private chart producers have produced unofficial electronic navigational charts of Greenland waters. These electronic navigational charts are usually produced on the basis of Greenlandic paper charts of older origin. They are therefore subject to the same inaccuracies in the positioning of information as the older paper charts. There is thus a major risk associated with using these unofficial electronic navigational charts and electronic chart display systems as the primary basis for navigation.