ARHC10_B8_IS

National Report of Iceland

The report gives a summary of activities that have taken place within Hydrographic and Maritime Safety Department of the Icelandic Coast Guard since last report given at the ARHC9 meeting in September 2019.

1. Hydrographic Office

Following organizational changes and the retirement of Hydrographer Mr. Hilmar Helgason, Mr. Árni Þór Vésteinsson was appointed Head of the Hydrographic and Maritime Safety Department (ICG-HMSD) on November 1st 2019. At the same time Mr. Guðmundur Birkir Agnarsson, was appointed Chief Surveyor, replacing Mr Björn Haukur Pálsson, former Head of Survey Section.

In January 2020, the Icelandic Coast Guard advertised two positions open at the Hydrographic and Maritime Safety Department. One in hydrographic surveying and the other in nautical cartography. Recruitment process took a while as the outbreak of COVID-19 prolonged the process. The selected candidates for the jobs joined the department in late April and early June respectively. The number of staff in the department has thus increased from six people to eight.

2. Surveys

The project of surveying in Breiðafjörður continued in 2019. This third survey season in the fjord started in June and ended around the middle of September. The survey season in 2019 was in total 85 days.

The survey project focuses on multibeam coverage of the northern and eastern parts of the bay. A chart scheme for four new 1:50.000 charts to cover the bay is ready and surveying for the first of the four charts is finished.

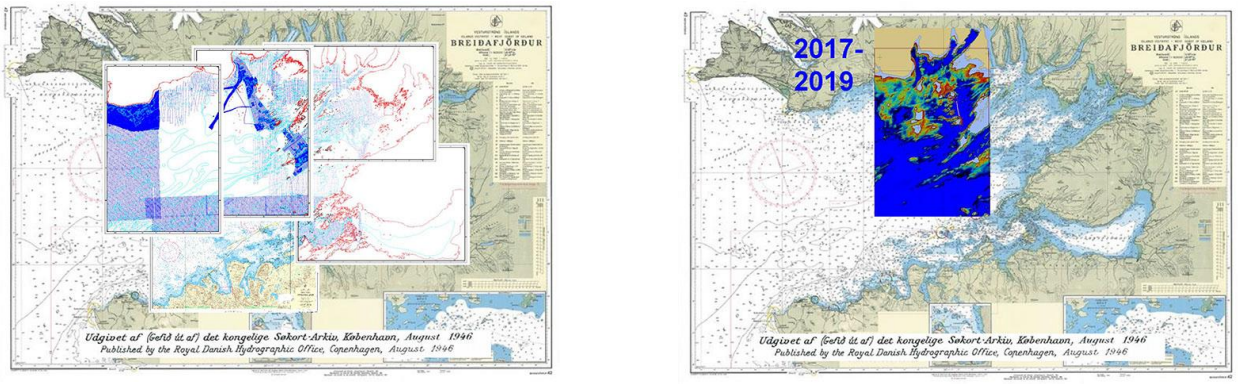

Fig. 1 New charts planned in Breiðafjörður and surveyed area 2017- 2019.

It will take several years to finish surveying for the three remaining charts i.e. both the areas that need resurveying and the numerous unsurveyed areas.

As there are other areas of equally high priority elsewhere, it was decided to shift the focus to the northern part of Vestfirðir for a while. The plan is to survey unsurveyed areas close to coast at the northern tip of Vestfirðir and in the many fjords in Ísafjarðardjúp.

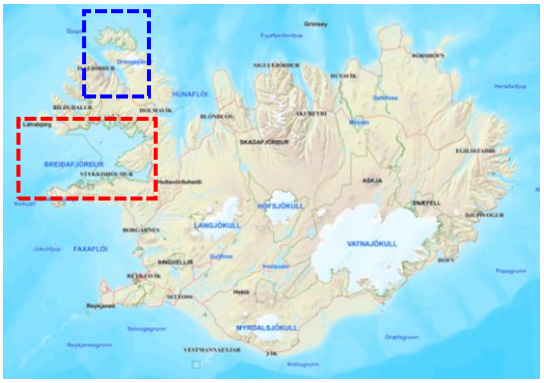

Fig. 2 Breiðafjörður in Iceland (red) and planned survey area for 2020 in the northern part of Vestfirðir (blue).

Cruise ships frequent the waters close to coast to view seabirds and the spectacular cliffs, which drop in places several hundred metres straight down to the sea below. The only data available immediately north of Vestfirðir are lead line soundings.

All of the fjords on the southern side of Ísafjarðardjúp are unsurveyed except Skutulsfjörður where the town of Ísafjörður is located. One of the factors that calls for adequate surveying is the fact that aquaculture is growing in the area.

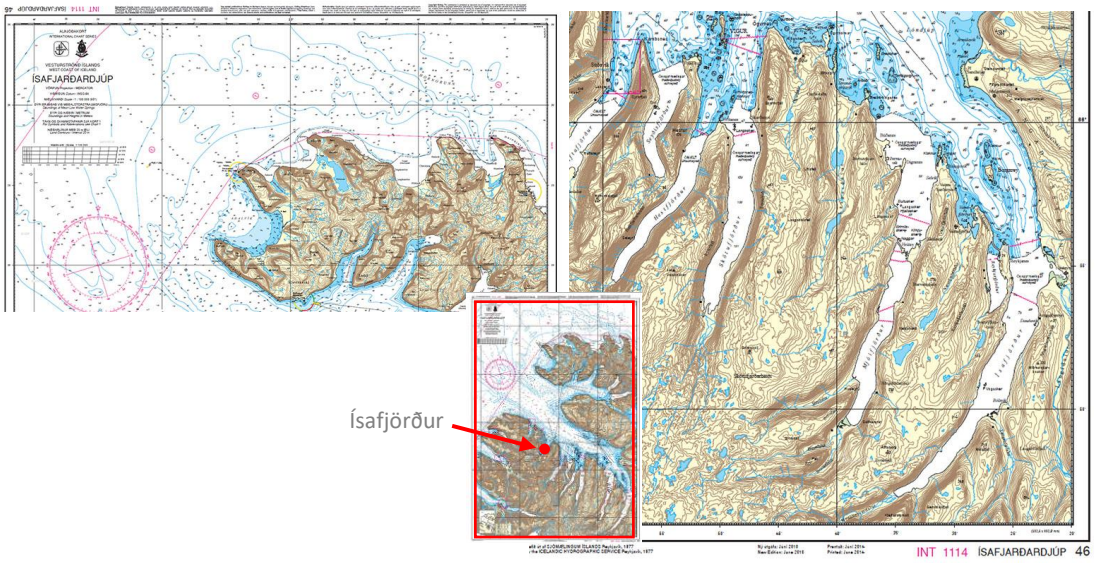

Fig 3. Sparse lead line depths north of Vestfirðir and unsurveyed areas in the fjords in Ísafjarðardjúp.

In June 2020, after having finished resurveying the approach to Reykhólar í Breiðafjörður, where a factory producing organic algal meal is located, surveying started in the northern part of Vestfirðir.

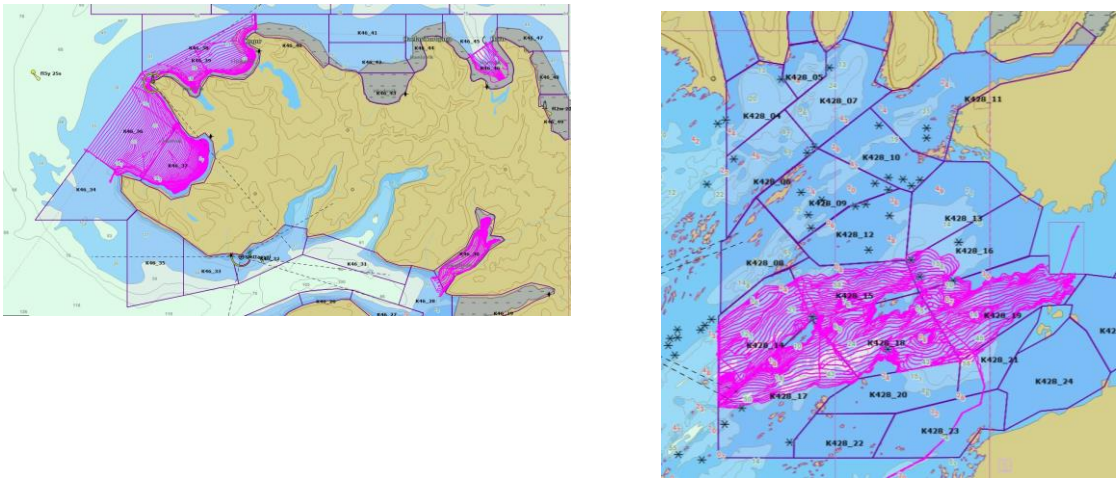

Fig 4. First 2020 survey areas north of Vestfirðir and the approach to Reykhólar í Breiðafjörður.

A new survey method regarding the vertical was apdopted i.e. a decision was made to move from recording in unreliable with the use of tide gauges to recording in accurate with RTK and ellipsoid based survey with geoid model and vertical offset model from MSL to chart datum (MLWS).

Towards the end of the survey season in 2019 the two approaces to the port of Stykkishólmur on the south side of Breiðafjörður were resurveyed. This new survey reviled depths that needed to be brought to the attention of mariners via NMs. The 5/2019 issue of Notices to Mariners, issued on November 15th, reported numerous changes in depths to the three charts covering the area at different scales.

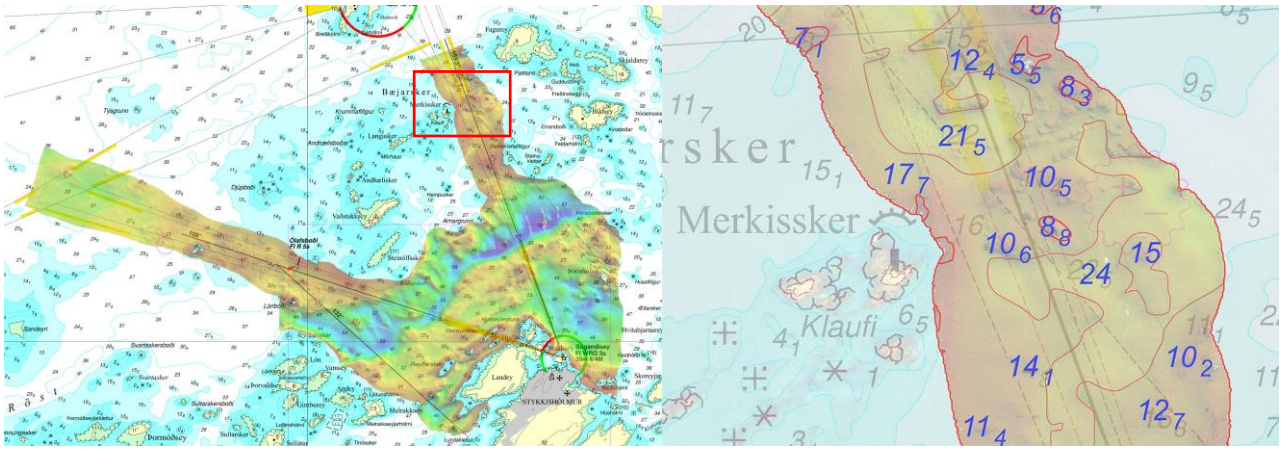

Fig. 5 New survey of the approaches to Stykkishólmur. The survey reviles the shallowest depth to be 8.8 m in the northern approach by Merkissker. The chart showed previously 11.4 m as the shallowest depth.

In addition to the above-mentioned survey activities, some contract work was done for the Port Authorities in Reykjavík (Faxaflóahafnir).

A new multibeam echo sounder, SeaBat T50 Extended Range, was installed in ICG survey vessel BALDUR in March 2019 and a new sound velocity sensor.

The project of surveying the EEZ of Iceland, which the Marine & Freshwater Research Institute (MFRI) leads, and ICG takes part in, continues. The focus of ICG-HMSD lies approx. within the circular extent of the 200 m contour, which is somewhat larger than the area of the Territorial Waters. Red line on the image on the right below shows the TW (12 NM) and the extent of ICG-HMSD modern hydrographic surveys.

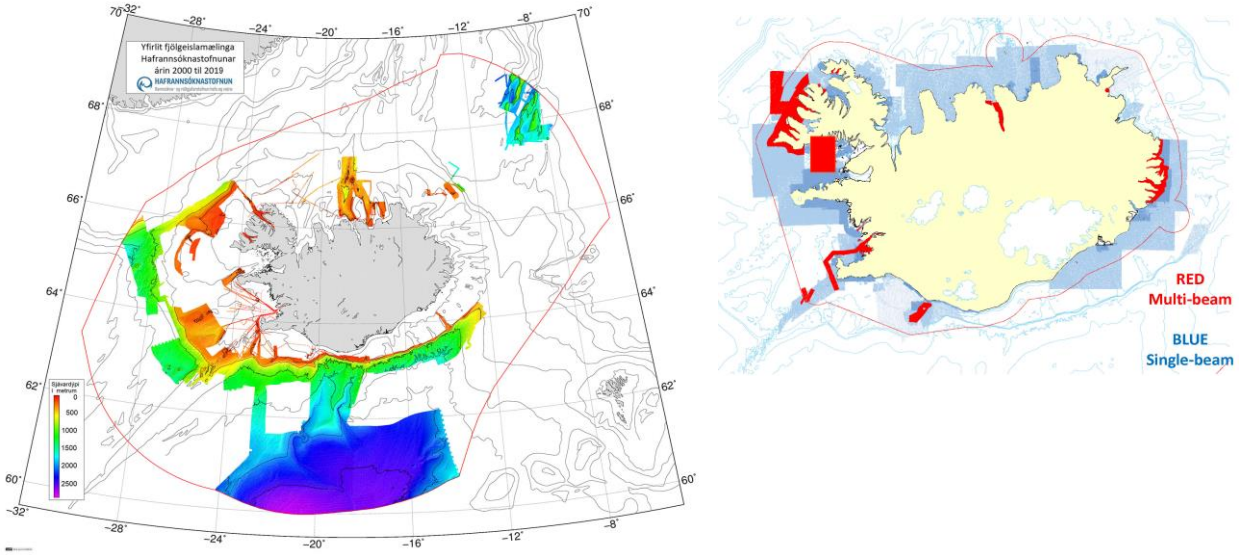

Fig. 6 Status of the project of surveying the EEZ of Iceland. The image shows data from MFRI (left).

3. New charts & updates

Printed charts

Nine new editions have been published since last ARHC meeting. Last year's report listed new editions of the chart for Reykjavík and the approach chart for Reykjavík (NE June 2019). The new editions of these charts included a new sector light (-house) for entering the port of Reykjavík through Engeyjarsund.

Fig. 7 New editions of approach (365) and harbour charts (362) for Reykjavík and the new lighthouse.

New editions of three charts covering the southern part of Breiðafjörður were published in January 2020. The chart are: The 1:10.000 for the port of Stykkishólmur, the 1:50.000 approach chart and the 1:100.000

coastal chart covering the area on either side of the Snæfells-peninsula (Snæfellsnes). Considerable time and effort went into recompilation of the three charts. This included reviewing of all available depth data

and careful examination of latest geo-referenced aerial photos to update the coastline and to position more accurately many islets and rocks. The table below lists new editions published the past 12 months.

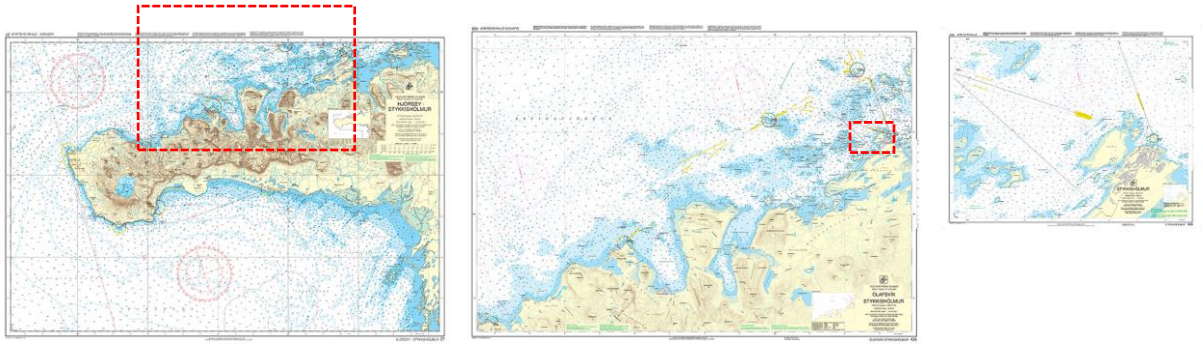

Fig. 8 New editions of charts 37, 426 and 424, coastal, approach and harbour chart, January 2020.

National No.	Title	Scale	Pub. month
31	Dyrhólaey - Snæfellsnes	1:300000	01/2020
37	Hjörsey - Stykkishólmur	1:100000	01/2020
426	Ólafsvík - Stykkishólmur	1:50000	01/2020
424	Stykkishólmur	1:10000	01/2020
313	Þorlákshöfn	1:10000	03/2020
314	Grindavík	1:10000	03/2020
524	Dalvík	1:10000	03/2020
534	Húsavík	1:10000	07/2020
611	Þórshöfn	1:10000	07/2020

ENC production

New editions and updates were 5 and 11 in 2019. In 2020, 6 new editions have been made and 6 updates. Iceland produces and maintains 73 ENC cells.

Plans for 2020 and 2021

Work on incorporating *CARIS BASE Editor* (BE) in to the Chart Production process is ongoing. The plan for the second half of 2019 was to continue work on incorporating *CARIS BASE Editor* (BE) into the Chart Production process. This went as planned but progress was a bit slower than anticipated. The work will extend far into 2020.

Latest plans regarding data management are to focus on preparations for setting up a database like e.g. CARIS Bathy DataBASE. This is becoming crucial for the department. Efficient storage and management of depth data is vital in supporting current and future requirements, internally and externally.

4. New publications & updates

The annual nautical publications, *Tide Tables 2020* and *Tide Almanac 2020*, where published in the autumn of 2019. The pdf-publication, *List of Lights* was updated in August 2019 and *Catalogue of charts* was updated in July 2019 and again in March 2020. Both are available for download at www.lhg.is. Five issues of *Notices to Mariners* were published in 2019, 31 NM in total. Three issues of NMs have been published so far in 2020, total of 24 NMs.

5. MSI

The Icelandic Coast Guard runs VTS. MSI service is an integrated part of that operation.

6. C-55

Last update in November 2016. Planned update in October 2018 not carried out. New time for update TBD.

7. Oceanographic activities

An Innomar SES-2000 compact sub-bottom profiler was installed in ICG survey vessel BALDUR at the same time as the new multibeam echo sounder. Installing the Sub-bottom profiler was a part of the project of surveying the EEZ of Iceland.

8. Capacity Building

A new member of staff joined the ICG-HMSD team in April 2020 and another new member joined in June 2020.

9. Other activities.

IHO RHCs, WGs and other work

Representatives of ICG-HMSD attended the following:

IC-ENC Steering Committee meeting, 9-11 July 2019, Cape Town, S-Africa.
ARHC9 Conference, 17 - 19 September 2019, Murmansk, Russian Federation.
IC-ENC 4th Technical Conference 22 – 24 October 2019, Panama City, Panama.

NCPEG 2019, 20 – 21 November 2019, Norrköping, Sweden

- Geodatastyrelsen, meeting, 18 November, Aalborg, Denmark
- FMI (DALO), meeting, 19 November, Copenhagen, Denmark

Forsvarsministeriets Materiel- og Indkøbsstyrelse (FMI)
The Danish Ministry of Defence Acquisition and Logistics Organisation (DALO)

Map viewer for Icelandic Nautical Charts

A chart viewer was launched in December 2019 in cooperation with the National Land Survey of Iceland.

All Icelandic nautical charts are available for viewing at:

https://gis.lmi.is/sjokort/ or https://atlas.lmi.is/mapview/?application=LHG

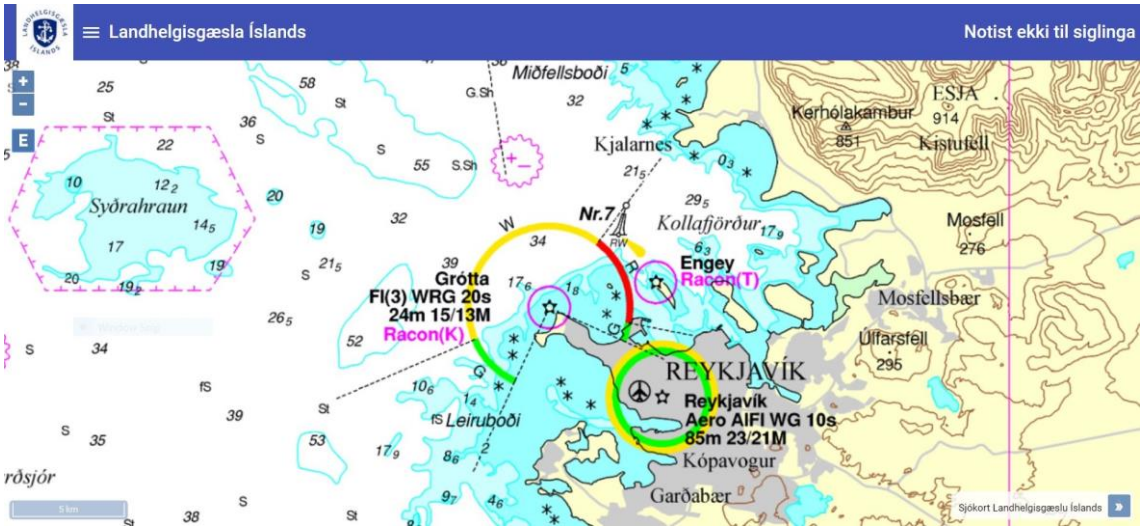

Fig. 9 Screen capture from the map viewer for Icelandic Nautical Charts.

This report highlights activities of the Icelandic Coast Guard, Hydrographic and Maritime Safety Department since the last ARHC meeting in September 2019.