

**Arctic Regional Hydrographic Commission (ARHC)
Portsmouth, New Hampshire, United States, January 30-31, 2014**

Report of the OTWG

Submitted by: United States

Executive Summary: This paper reports on efforts of the OTWG in 2013 and proposes testing the development and use of a Working Group web presence to support information exchange and collaboration during intersessional periods.

Related Documents: ARHC2-07A

Related Projects: none

Introduction / Background

The Operations and Technology Working Group was established at ARHC-1. The Terms of Reference (ARHC2-07A) identifies the objectives of the group:

- a. To provide a core of expertise on hydrographic operations in the Arctic.
- b. To develop and maintain documented best practices, lessons learned, an advances in training and technology.

At ARHC-3, the US agreed to continue serving as OTWG chair. Two action items were identified for the OTWG for the 2013 period:

- ARHC3-13: OTWG chair to propose a work program for 2013 reflecting the subjects identified by ARHC3 for approval by ARHC MS.
- ARHC3-20: OTWG Chair to coordinate with Norway in order to gather MS experiences on using modeled vertical reference frames in the Arctic and to present a report to the ARHC4

In February 2013, the U.S. informed the ARHC that LT Olivia Hauser would serve as the U.S. Chair, succeeding CDR James Crocker. In April 2013, the U.S. informed the ARHC membership that LT Hauser would not be able to continue as chair and Jonathan Justi would serve as interim Chair.

The current membership of the OTWG is:

Canada	Denmark	Norway	Russian Federation	United States
scott.youngblut@dfo-mpo.gc.ca Sean.Hinds@dfo-mpo.gc.ca	larsh@gst.dk jepha@gst.dk	Arne.ofstad@kartverket.no Noralf.Slotsvik@kartverket.no	main@gunio.ru	Jonathan.Justi@noaa.gov Stanley.B.Harvey@Navy.mil John.E.Lowell@nga.mil Keith.E.Alexander@nga.mil Keith.E.Dominic@nga.mil

2013 Activities

- Canada submitted to the OTWG participants the following papers that have been distributed to the OTWG group regarding the initial field report from hydrographic survey of the CCGS Pierre Raddisson to expand corridors in Hudson Strait and Foxe Basin:
 - [4013269 Lancaster Sound 2012 Final Field Report.pdf](#)
 - [4800053 Western Arctic 2012 Final Field Report.pdf](#)
 - [ARHC CHS 2013 Summary.doc](#)
 - [CVDupdate2.docx](#)
 - [Draft 2012-OLEX Data analysis 2.doc](#)
 - [EA 2011 Final Field Report.pdf](#)
 - [Final Field Report UNCLOS Borden Ice Camp 2010.pdf](#)
 - [FP2009-RPT-01-00.pdf](#)
- The U.S. submitted to the ARHC-4 website:
 - NOAA's Office of Coast Survey: Arctic Approach for Utilization of Ellipsoidally Referenced Survey Techniques
 - Summary of Joint NOAA/USCG Arctic Hydrography Project
- Norway submitted the following
 - Establishment and maintenance of vertical reference frameworks for high resolution bathymetric surfaces (5th IHO-TWLWG)
 - NHS experiences with the ellipsoid as a reference surface for hydrographic work

Analysis/Discussion

Challenges

The OTWG has an important role envisioned by the membership. Several challenges have impeded its ability to meet those goals and objectives:

- Infrequent communications
- Frequent staffing turnovers

- The long operational planning time horizon
- A lack of more direct peer-to-peer expert groups that could facilitate discussions in discrete disciplines
- An unclear way forward

Topical interests identified by OTWG members

In spring/summer, solicitation was made for identification of proposed action items for a prospective work program. Although some of the following interests may not be appropriate for the OTWG to undertake, topics of interest identified included:

- Multispectral imagery
- Sharing operational ship reports
- Developing a web presence to support specific OTWG interests
- Inter-comparison of depths and contours on overlapping national chart coverage
- Comparison of depths and contours on small/medium scale charts to the IBCAO database
- Establishment of mechanisms (where they don't already exist) for submission of new hydrographic data to IBCAO
- Setting international priorities for improved chart coverage
- Comparison of existing "crowd-sourced" (i.e., Olex) data with charted data where data are available.
- third party bathymetric data - solicitation of experiences and issues
- MS experiences on using modeled vertical reference frames
- ARHC survey plans for 2013-2017 and any relevant operational reports
- 2012 operational reports (the 2012 CHS survey reports can be provided to the chair for distribution – please let me know)
- Develop a limited access web presence to share and archive information, provide a discussion forum, and identify experts for both nations with an interest to be consulted or participate in periodic dialogues on some of the common interests in the areas prioritized by the ARHC through the OTWG. A strawman model is offered at:
<https://coastsurvey.noaa.gov/arhcotwg/default.aspx>
- Implications of IMO Polar Code
- Additional Aids to Navigation
- Shipboard Safety Requirements

Suggestions for discussion items in 2014

- Develop the OTWG website for sharing, linking, archiving OTWG-relevant information in a one place;
- Pursue any discrete topics for collaboration or information sharing as identified during the ARHC-4;
- Meet in mid FY 2014;
- Confirm membership roles and contact information for 2014

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- U.S. nominates Mike Gonsalves, LCDR/NOAA, PHD(michael.gonsalves@noaa.gov) to serve as OTWG chair.

Report on Action ARHC3-20:

Please see related separate paper to be presented to ARHC-4

Recommendations

ARHC Member State Hydrographers are invited to consider this report and determine if a web presence would be a useful tool to the Commission for aiding the OTWG in meeting its objectives. If so, discuss the content of that site in light of the strawman provided in Annex A.

Action Required of ARHC

The ARHC is invited to:

1. review the 2013 report;
2. consider the discussion points;
3. discuss the proposed 2014 actions; and
4. make any adjustments and decisions as warranted.

Annex A

Conceptual Strawman OTWG website

Purpose:

To provide a readily accessible web presence to collect and share information and promote collaboration among OTWG in areas the group determines.

Content:

Selected Priority Scientific and Technical Interest Areas Identified

Members may post articles of interest or information (such as active research or projects) to share with interested ARHC OTWG colleagues. An initial list of topic libraries of interest may include:

- Sound speed in the Arctic
- Water Level observations in the Arctic
- Positioning at high latitudes
- Marine mammal interactions
- Multispectral imaging
- Documents shared by MS in the current RHC intersessional period
- Others TBD

Other Document Libraries

- OTWG Documents (Terms of Reference, reports, etc...)
- Arctic Cruise reports
- Collaborative Projects

Calendar

- Calendar of events (relevant training events, meetings, approximate cruise dates and plans, webinars, milestones, field projects, etc...)

Points of contact

- OTWG representatives and contact information

Access:

Require a user name and password but access is provided to OTWG members and any recommended colleagues.

Only OTWG members can upload documents but other registered users may access information freely.

Initial Site:

<https://coastsurvey.noaa.gov/arhcotwg/default.aspx>

Management/Up-keep:

OCS is willing to maintain this site for an initial demonstration period, if Hydrographers feel this will be helpful to test the concept.