

***Arctic Icebreaker Coordinating Committee (AICC) Meeting  
January 10 and January 11 2018- Wednesday & Thursday  
Rainier Room-U.S. Coast Guard Facility  
Alaskan Way- Pier36-Seattle, WA***

**Summary**

The AICC met on January 10-11, 2018 at the U.S. Coast Guard Base in Seattle for their winter meeting. It was well attended by UNOLS-AICC committee members, the *Healy* Ops group and U.S. Coast Guard personnel, federal agencies, the STARC team, and the UNOLS Office.

**Minutes**

Welcome and Introductions- Bob Campbell/URI & AICC Chair called the meeting to order with introductions, a review of the agenda, and outline for the meeting.

**AICC Chair Report-**

Bob Campbell highlighted several topics that he and the AICC have been working on for the past several months which included committee membership, debriefs, Mapservers subcommittee, and outreach efforts. A list of items discussed include:

- Chris Polashenski/USACE & Mike Lomas/Bigelow offered to stay on the committee for a second term from 8/2017 to 8/2020. In October of 2018, we will have five members with their first term ending. Maintaining continuity of members is important.
- Debriefs were completed for the HLY1601, HLY1602, & HLY 1603
- Mapservers subcommittee- Steve Hartz, Lee Cooper and Bob Campbell conducted teleconferences with STARC on the Mapservers functionality. An update is coming soon.
- AICC continues to work with researchers and subsistence hunters to reduce conflicts.
- AICC provided input for the new heavy icebreaker on mission requirements including a multibeam summit meeting.
- Capt. Greg Tlapa is the new commanding officer for the *Healy* effective June 22, 2017.
- A list of UNOLS meetings, which had AICC representation, was highlighted.
- Quick review of the *USCGC Healy* 2017 schedule with the (4) science missions were discussed.
- List of foreign vessels doing research in the Arctic.
- National Academies Polar Icebreaker Cost Assessment Study slide was shown.

## Agency Reports

### NSF

Frank Rack/NSF/Polar provided an agency report remotely via webex and covered the status of the FY2018 NSF budget, plans for ship usage, update on the *Oden*, the STARC award and interagency reimbursements. Highlights are:

- MOSAIC Mtg. – There is a plan to use the *Polarstern* for a freeze in expedition in the Arctic from fall of 2019 to fall of 2020. A planning meeting was held in St. Petersburg on November 2017. NSF will fund (4) projects in the MOSAIC program totaling ~ 8 million in science support and ~ 3.5 million in logistics support.
- NSF Panel- There is a review panel in March 2018 and other projects are being proposed.
- STARC is funded through 2018. The next solicitation is being reviewed and NSF may extend the current contract award into 2019. STARC costs for non-NSF projects are paid by other agencies on a per day and per technician basis through an interagency process, handled by Frank Rack.
- NSF continues to work with indigenous communities. NSF is collecting input of conduct in the Arctic with a survey in the Federal Register. Focus is on integrity, respect, transparency, collaboration, and stewardship.
- Proposal Pressure- There has been a drop in the number of overall science program days for the *Healy* over the past 3 years, however there may be a slight up-tick in recent numbers of days. NSF Polar has gone away from a proposal deadline. There has been a lot of NSF funded work on foreign vessels that are PI driven organic efforts.
- NSF position on the new CG heavy icebreakers has not changed. NSF believes Coast Guard should operate the heavy icebreakers and NSF will work with the Coast Guard on this.

Question proposed: Rajiv Khandpur asked if the NSF is looking to the CG for support of the MOSAIC program. Frank Rack replied that he not think so at this time.

Frank continued with the budget process and that NSF is on a continuing resolution (CR) until January 19<sup>th</sup>, waiting to see what happens.

A map of the 2017 NSF funded field research locations was shown.

NSF funded projects of other ships, which includes the *Sikuliaq* with projects for Hopcroft, Abers, Bi, and Ashjian. In addition, NSF is funding a 2018 *Oden* expedition with dates pending that will have science awards of 3.2 million and 2.5 million in logistics.

NOAA is funding Pickart on HLY-18-01 and ONR is funding the Soda project on HLY1802, then NSF is funding HLY1803 for the Bob Pickart/WHOI mooring leg.

NSF is also funding work on other vessels:

- *CCGS Sir Wilfrid Laurier* for a Grebmeier cruise in July 2018.
- Rebecca Woodgate project on the *Norseman II*

- A 2018 project on the Russian ship *R/V Akademik Tryoshnikov*.

### **U.S. Coast Guard Headquarters Report**

CDR Ken Boda/USCG-HQ provided this report.

Office of Cutter Forces is looking at ship capability across the fleet. The government acquisition process for the CG is being reviewed and all alternatives are being considered, keeping in mind the operational requirements. There are 11 missions within the CG with the polar mission having three primary focus areas. “Deep Freeze” at McMurdo, rescue operations, and science support. There are constraints to be considered in this wide operating envelope.

The acquisition process for the new heavy icebreakers was highlighted in the slides.

- Plan is to acquire three ships, (2023, 2025, and 2026).
- The build will be fast-tracked with NAVSEA assistance.
- Basic vessel constraints are listed in the slides.
- Science party size of ~ 35, with potential to carry 50 scientists.
- Two azimuthing propulsors.
- Will be in the FY 2019 budget with funding to come through the Navy.
- High latitude study determined (3) hulls should be built, then National Academy of Sciences (NAS) recommended (4) hulls and Coast Guard recommends (3) heavy and (3) medium icebreakers. It was a congressional mandate that a National Academy of Science study should be done. NAS study stated the vessels should be science ready platforms.
- A slide showing the capabilities required to support a survey mission as well as a science missions was shown.
- There will not be a gap in supporting “Operation Deep Freeze.” This will require 20-25 million dollars be put into the *Polar Star* to keep ship operating.

### **Office of Naval Research**

Scott Harper/ONR provided a report via webex. ONR appreciates the good support that the USCG and the personnel of the *Healy* have provided ONR.

ONR is focusing on the changing Arctic as it relates to ice coverage and how the Arctic is changing as a whole. Scott reviewed the Navy’s strategic objectives for the Arctic region.

ONR’s major programs are now focusing on improving the basic physical understanding of the Arctic with new techniques for observations, development for models, and remote sensing.

A review of the ONR Arctic research initiatives since 2014 was highlighted with plans for 2019-2023 presented.

- SODA- Jim Thomson, full annual cycle from 2018 to 2019. First field effort this summer. SODA map and objective- (3) moorings, with sea gliders around moorings. *Sikuliaq* will do the process studies and the *Healy* will deploy the moorings. Meetings were in held in Barrow in cooperation with subsistence hunters. They plan to stay outside of 50 nm and

maintain low noise source levels. Craig Lee is chief scientist on *Healy*. Ice based platforms will drift with the ice. *Sikuliaq* in September 2018 will do process and shipboard surveys.

- SIDEX experiment, in 2019 or 2020, experiment looking at ice deformation.
- AMOS- this is a notional program at this point for an Arctic Mobile Observing System
- ONR has Arctic access concerns and can do a lot to help.
- *Healy* will be needed for these programs to get into multi-year ice.

### **NOAA Report**

Jessica Cross/NOAA reported on the Arctic Research Program. Sandy Starkweather/NOAA is the deputy and Jeremy Mathis will be on assignment with Senator Murkowski's office for 2 years. NOAA's Arctic focus is how the system is changing in the near term and decades out.

NOAA has two main Arctic priorities, which are developing sustainable Arctic observing systems and data management capabilities and improving navigation and spill responses to handle increased ship traffic.

A review of the 5 lines of effort was given.

1. Distributed Biological Observatory
2. Sailydrons
3. Distributed Biological Observatory in the Northern Chukchi Study area.
4. Arctic modeling of climate, sea ice and ecosystems.
5. U.S. Arctic Observing Network (AON)

### **U.S. National Ice Center-**

Aaron Bisig/NIC presented on the mission of the NIC, which is environmental domain awareness, which is done through observation, analysis, and prediction.

Highlights of the Operation Deep Freeze 2017 was discussed. Ice imagery was used to locate thinner ice, which saved transit time to McMurdo break-in. Other examples of NIC successes was the Operation PACER GOOSE in 2017 off Newfoundland, a northwest passage transit of the *USCGC Maple* buoy tender and a medical evacuation from the Orcadas Antarctic Station on Laurie Island, Antarctic Peninsula are some examples of the successes supporting sea ice analysis in 2017.

### **U.S. Arctic Research Commission- USARC**

John Farrell, the USARC Executive Director, provided an annual report on the organizational structure of the USARC as well as the responsibilities of the USARC as dictated by U.S. law. USARC is required to release a biennial report to the President and Congress, which outlines the goals for Arctic research. The last report: "Report on the Goals and Objectives for Arctic Research 2017-2018 was released on 12/15/16. They are working on the new one now.

A White House Arctic Science Ministerial was held in September 2016 and the second is planned for Oct 2018. Designed to facilitate access to the Arctic. This will be hosted by Germany, Finland, and the EU and will be held in Berlin, Germany.

## **Special Reports**

### **Alaska Eskimo Whaling Commission**

Arnold Brower/AEWC Executive Director presented a report for the AEWC.

The native communities are witnessing an increase in the number of vessels and the size of the vessels operating in our waters. Increased ship traffic poses a threat and last year a cruise ship hit a whale and killed it. This increase in vessel traffic put whalers and others at risk as the whalers have to travel further offshore to find and hunt the whales. Community centers are active and communicating with the researchers is important.

International Whaling Commission sets the quotas based on dietary and nutritional needs. IWC can reduce their quotas, if a whale is struck but not landed the IWC does not increase # of whales allowed to be taken.

The next AEWC Annual Meeting will be held Feb 5-8, 2018. The focus will be on open water season conflict avoidance. They will be working with oil companies to mitigate impact of oil research.

The AEWC is a founding member on the Arctic Waterways Safety Committee and has helped to develop a matrix of research vessels – this is an important tool to help reduce the impact of vessels. Helps both ways, tied into AIS

### **2017 Barrow Support and 2018 Barrow Logistics- Kaare Erickson/UIC Science**

UIC continues to provide logistics support to scientists in the Arctic Alaska region. The primary role of the UIC and prime mission is to keep the scientists safe. Kaare thanks NSF for the lead on outreach efforts with the local communities. Some of the key points made in his talk included:

- There has been a significant increase in the numbers of various groups coming to Barrow to do research.
- They have four new vessels in Utqiagvik, these landing craft are helping to support science. The boats are made available for search and rescue efforts.
- Research has a long history in the Arctic, see the slides, which give details on the many projects.
- 1990- Barrow Environmental Observatory
- 2000's- UIC builds science logistics.
- Good examples of outreach activities, Chris Polashenski on ice and Carin Ashjian on marine science research.
- North Slope Barrow School District- UIC is helping to build curriculum for teaching units.

- AEWG is the most important entity for conducting marine scientific research in the Arctic. The AEWG and AWSC SOP's are important documents.

### **North Pacific Research Board- Danielle Dickson/NPRB**

Danielle Dickson, senior program manager with the NPRB gave an overview of the NPRB, which is an integrated ecosystem research program and is not a federal agency. Funding of the NPRB comes from the Bureau of Ocean Energy Management, (BOEM), North Slope Borough/Shell Baseline Studies Program and the Office of Naval Research.

They are currently comprised of 27 scientists from 11 institutions, working on 22 collaborative projects. One such program is looking at reductions in Arctic sea ice and the changes in the environment. Details on the scope of projects on *Sikuliaq* and *Ocean Starr* was well detailed.

Danielle stressed the importance of communicating this science with the native communities and they have put in place six key steps in order to keep everyone informed.

### **R/V *Sikuliaq* Update & Report-Steve Hartz/UAF**

Steve provided a review of the current status with the *Sikuliaq* and personnel. Doug Baird is the new marine superintendent at the Seward Marine Center. The 2017 cruise tracks and number of days funded by each agency was given for 2017. Highlights from recent Arctic cruises was discussed.

### **Operations, scheduling, and planning- Recap of 2017 and plans for 2018. Healy 2017/2018 Cruise Schedule- Dave Forcucci/USCG**

Dave Forcucci gave a high-level summary of the 2017 season then raised a recent development that there is some consideration in exploring the Eastern Arctic. The AICC was asked is there was there any interest in the Eastern Arctic as the Coast Guard has some interest in going to the E. Arctic/Baffin Bay. Jeff Welker has some insights into a program in the Baffin Bay area and west coast of Greenland. Should AICC lead an effort to poll community to measure interest in the Eastern Arctic? Should the AICC lead the charge of a workshop? It was pointed out that the U.S. Coast Guard's program may be at least 5 years down the road. With only two icebreakers, *Healy* and *Polar Star*, and their commitments to the Western Arctic and Operation Deep Freeze, it may be difficult to move away from the McMurdo and Western Arctic operating areas.

### **Foreign R/V in US EEZ**

Dave Forcucci maintains a list of all ships operating in the western Arctic. This project is a very valuable resource and we need to make it even more useful. Could be helpful for ship to shore communications during an emergency.

Setting up protocols for how position is reported. There are two communication centers now that Deadhorse moved to Endicott and then Quintillion. There are no communication centers south of Barrow.

## Thursday 11 January

### **STARC Support, Science mods, infrastructure and equipment.**

Brett Hembrough/SIO gave the report for the STARC team, which is now entering their 5th year, and the re-compete is on an extension. They have used UNOLS resources such as the tech pool. They created a matrix model to customize the level of support needed.

A few of the areas that STARC is working on include:

- Increase documentation to help with technician turnover between cruises and trouble shooting.
- Diagrams- Lucid chart is a software package to make wiring diagrams.
- Standardized weekly reports- a weekly update on where things are, a condition report, saved as a pdf.
- STARC Surface Pro- allows “grab and go” documentation when working on a piece of equipment that contains good documentation.
- Daily Tech Blog- Allows managers to see what is going on and give guidance.
- Using a checklist for SOP has worked as a good system.
- Software for ticket tracking- all web based.
- List of projects worked on and completed, see slides.
- Calibration, Diagrams, Fiber Optic Cleaning, New servers, K-synch.
- Computer labs rebuilt, CTD Rosette- 24 bottle. MET sensors, PCO2 recalibrated.
- Winch respooling
- Multibeam Advisory Committee, (MAC) completed a site visit and site report is available.
- JMS Inspection- Steps taken to prepare for this. Inspection showed: “Overall, very good”
- Science Vans up forward
- 12 KHz transducer replacement
- Cruise Planning 2017, Icefloe.net. Content updated.
- Underway for 2017- very full schedule. Underway slides, MAC, UHDAS, JMS Inspection, SIOTechs.
- Patch Tests- completed at various depths.
- Noise level- Last survey was done on 2014 by Gates Acoustics, STARC will schedule another underwater radiated noise survey.
- Mobilization for 2017 cruises.
- HLY 1701 RDC- Scot Trip cruise.
- HLY1702 Bob Pickart
- HLY1703 & HLY 1704 Worcester CANAPE cruises, (deep water and a shallow water mooring legs)
- Mapserver Action Plans- The AICC Subcommittee was formed to create a top list of priorities for Mapserver and they have met with STARC. There are no direct off the shelf software package is available with all the features of MapServer. They have tried Hypack QPS Open CPN with a QPS sent a technician out to train 6-7 techs. The servers for the Mapserver are failing and are too old to get replacements.

- Icefloe.net- STARC presented an action plan of what has been completed so far and a list of projects to work on next.
- Multibeam Action Plan- list of what has been done on recent months.
- List of projects for 2018Ashtech, no longer supported and no spares are available.
- Dry-docking in 2019, plans for this upcoming maintenance period, see slides for list of projects.

### **Science Operations and technical support**

Healy Mooring winch- The TSE mooring winch for the Healy was discussed at length. They still need one and the question of who is to pay for it remains. The UNOLS winch pool was discussed as an option. The Coast Guard has in house requirements and CG needs a dedicated winch. The CG feels it is not a sustainable model to use the UNOLS Winch Pool.

Frank Rack mentioned that from a business case if they use the UNOLS mooring winch 3-4 times, the shipping costs would justify having the CG have a dedicated TSE winch assigned to the *Healy*.

Danielle Dickson/North Pacific Research Board stated that NPRB has a stake in having a mooring winch for a cruise in summer of 2018 and NPRB may be able to cost share. (Note, later in spring 2018, NPRB regrettably informed us that they would not be able to help fund this winch)

Medical Screening- this was last updated in 2009 with a medical questionnaire but no medical exam was required. A potential change might be coming that targets an age range ~ 50-70 years old that will require a physical exam. Up to now, it has been on an honor system, which poses a significant risk if a medical condition is not disclosed.

**Arctic Waterways Safety Committee/Standard of care document/** Martin Robard from the Wildlife Conservation Society presented an update to this document designed as a conflict avoidance document. The goal is to reach an agreement between industry and native communities to operate in the Arctic with mutual respect for each other.

The history of the Arctic Waterways Safety Plan began in 2014 when the committee was formed to bring waterway users together. Arcticwaterways.org- there is a list of committee members and geographic range. This standard of care document is a voluntary compliance document.

Question was asked, how we pressure foreign vessels to follow SOC.

Coast Guard is helping with foreign vessels.

Questions; why isn't a federal agency rep not on the committee. The federal agencies are ex-officio members. The science community representative is Brenda Konar/UAF.

Voted to approve the document in Dec. 2017. Been a success, although more work is still needed on the ground between researchers and community members.

### **University of Alaska/Community and Environmental Compliance.**

Brenda Konar/UAF and Lauren Frisch/UAF.

The CECSOP is a community and environmental compliance document, funded by NSF, modeled after the AWSC document. This SOC has been peer reviewed and published in Marine Policy, and is on the *Sikuliaq* web site. This is a living document and will be edited as new information becomes available to keep it current.

[https://www.unols.org/sites/default/files/Sikuliaq\\_CECSOP\\_Mar%2022%202017\\_0.pdf](https://www.unols.org/sites/default/files/Sikuliaq_CECSOP_Mar%2022%202017_0.pdf)

There is a pre-cruise, during the cruise, and post cruise section for each field plan. UAF and AWSC reviews the initial plan, then there is reporting requirement during the cruise and a post cruise summary report that is presented to AWSC and the AEWC.

The CECSOP is not voluntary, but is a compliance requirement if you sail on the *Sikuliaq*.

The various requirements on timing and dates will vary each year and the local communities need to be consulted.

### **ESU Report**

Sarah Kaye/USCG is the contract lead for Polar IT group. She and the ESU group are responsible for ship and IT support and they work closely with STARC in any areas of crossover responsibilities. On the personnel side, Jen Bryant has left the group

Future projects include a fiber optic cable replacement project for the *Healy* and is in the planning stages with now being a good time for any input.

Some recent accomplishment of the ESU group are:

HLY1701- fixed an ROV software and computer issue

HLY1702- training and 247 support

HLY1703 & HLY 1704- Provided video recording communications of mooring work?

### **Next Meeting**

A summer AICC tele-conference will be planned for this summer and the winter meeting will be set later.

### **Adjourned**

The meeting adjourned at ~ 1145. Presentations will be posted on the AICC web page at [www.unols.org](http://www.unols.org).