

AICC minutes 9/10/01

AICC Chair Lisa Clough opened the meeting, and attendees introduced themselves. [Appendix I](#)

The [agenda was briefly reviewed](#).

The [minutes from the January 2001](#) meeting were approved.

General Business and Reports

AICC Chair report

- None needed.

UNOLS report

- Mike Prince - This is the first of 5 UNOLS meetings this week. The major issue in UNOLS is fleet replacement. This does not include a need to replace icebreakers at present. The focus is on academic research vessels over 40 meters in length. Considerable input has been made to a draft Fleet Renewal Plan created by the Federal Oceanographic Facilities Committee (FOFC), and the plan will be completed in the next few months. The intermediate-sized vessels are a special need already identified. Some other UNOLS business relates to AICC concerns, such as post-cruise assessments. There is hope that the AICC and general UNOLS reports can be made to work together so that there are not a multiplicity of forms with similar intent. Scheduling meeting this week will attempt to resolve a few remaining issues.

UNOLS Fleet Improvement Committee

- Terry Whitley - The committee will meet later this week. Issues include revising the science mission requirements for some classes of vessels. They will also be dealing with vessel modifications. Terry was pleased to announce that the Alaska Regional Research Vessel concept design is now complete. The project is going into the second phase now, the preliminary design. Funding for construction costs still needs to be included in the FY 2004 budget for NSF or some other Federal Agency in order for this project to keep moving forward. The hope is for this issue to be resolved in the near future.

RVTEC

- Dale Chayes - RVTEC is pleased that so many science systems on Healy are working so well.

RVOC

- Dan Schwartz - RVOC and RVTEC will meet together in October. In RVOC they are dealing with implications of International Ship Management (ISM) regulations, computerized ship maintenance and quality assurance programs, and the implications in this for crew retention. UNOLS ship operators are beginning to use the purchasing power of the fleet through group purchases. It is possible this approach could be used for some of the equipment used on CG Icebreakers.

NSF update

- Tom Pyle - Congratulated and thanked the AICC and the Coast Guard on a successful first science mission with the USCGC HEALY. He observed that the AICC is a committee that is really working well and that the dialog between NSF and the Coast Guard has been productive. Future Arctic marine science programs look strong.
- On October 4th and 5th there will be a meeting of the SBI science team that has been selected recently and NSF would like Coast Guard representation at this meeting for at least one day. Dave

Forcucci will probably attend.

- AL Sutherland reported that they had completed two successful cruises with the PALMER and GOULD doing winter cruises for GLOBEC. This will happen again next year. POLAR STAR will go to the Antarctic during the Austral Summer. Primary purpose for the Icebreakers is breaking the channel at McMurdo. If that doesn't happen then nothing much else happens. This coming year will include several funded science cruises, which is considered somewhat of a risk, if there is any trouble with breaking the channel. SOFEX scientists will fly down to the Antarctic and go back through the iron fertilization patch on the way home. Lisa asked if ARVOC has taken up oversight of the POLAR's science programs. Jeff Garrett sees it as positive that the science suite will be exercised during the Deep Freeze cruise. During the 2002-2003 season, there will be 7 different science projects on the Polar Star. But a major unknown is an iceberg, very near the critical channel, about the size of Long Island.

NOAA report

- Tom Murray - The Ocean Exploration initiative is still being pushed forward. An announcement of opportunity was issued 4 September (<http://www.oceanexplorer.noaa.gov/>) The funds are now being debated in Congress. The Arctic Announcement of Opportunity is very broad, with no areas specified for different years. There is still hope for an Arctic cruise in 2002 (ca. 30 days) followed by a more substantial cruise in 2003. Kathy Crane is working for the initiative. Kathy reported to AICC that the Arctic part of the Ocean Exploration plan is focusing on foreign vessels, especially in 2002, due to lack of US ship time. The recent NURP AOO for ALVIN/Atlantis work in the Bering Sea and Gulf of Alaska is not included in the Arctic Ocean Exploration initiative but is part of the Ocean Exploration Initiative. NOAA has requested two months of Healy time in 2003. The 2002 budget request for Arctic Ocean Exploration work is \$2M, but this is not necessarily what they will receive. The science is supposed to be splashy, high risk, high visibility, with significant outreach. There are pending requests from NOAA (John Calder and Kathy Crane) for one month of Polar Star time for Beaufort Gyre in 2002 for Ocean Exploration. There are also some NOAA base funds that could be used to support an activity, such as a joint US-Russian activity in that area.
- Mike Ledbetter reported that he thought all the 2002 Healy and Polar Star time has been purchased by OPP so there would not be any opportunity to support any other projects. This led to some discussion about the scheduling process and the mechanisms for establishing priorities in scheduling the available time.

ONR report

- Dennis Conlon reported that the Scranton surfaced at the North Pole in June. This is an "improved" 688 sub with retractable bow planes and the first of its class to surface through the ice. It did an XCTD section across the arctic, There will be an ice camp in the spring of 2003. It's in the budget and there will be an announcement on the ONR web page. It will be turned over to ONR for science use after an operational testing phase. There was a workshop sponsored by the Oceanographer of the Navy on operations in an "ice free" Arctic.

USCG Headquarters

- Captain Charles Lancaster: CDR George Dupree has retired to his shrimp farm in Georgia. CDR Joe Bodenstedt has relieved George in HQ Icebreaker section. Chuck is concerned that expectations are managed for paid science on Deep Freeze cruises and for SOO cruises on the POLAR's. SOO is part of the RIP program and it is starting to fade out and the SOO program may have to adapt to the changing scheduling parameters. Captain Lancaster is happy to see the AICC evolve into a broader focus and feels that everything is going well.

USCG Pacific Area

- April Brown reported that they are very busy, with four major missions being planned or underway. Will be supporting the search for the Endurance by Bob Ballard with the POLAR SEA at the same time that the POLAR STAR is working at McMurdo. The SBI program is going to be very

demanding. With scheduled dry-docks and maintenance plus training things will be very busy. HEALY must make an emergency dry-dock to replace some SS pipe that has corroded and allowed water into the fuel tanks. POLAR SEA and POLAR STAR are both in dry-dock, but scheduled to come out of the yard later this week.

Training Video

- Kelly Falkner introduced the Healy training video "draft", a portion of which was shown to the committee. This video is meant to introduce the HEALY to science users, and is being assembled by a team at Oregon State. The portion shown to the AICC focused on coring operations.

Current Operations

- Dave Forcucci - HEALY has been having a very successful first science cruise. Despite some coring cable losses early on they have succeeded in getting all coring work completed. On September 6 they made it to the North Pole. SeaBeam has been working great during the entire cruise. They are due in port from this leg on October 3rd. Lisa Clough reported that between the operational web site and the TEAA web site it is possible to keep up with the ship's activities.
- Dave Forcucci further reported that Jim Bellingham has a cruise beginning October 6th. They will not be doing the original fuel cell test as part of their AUV tests. They will start in fjords in Norway (Svalbard), then go north to the ice edge and do some under the ice testing of the AUV. They will test their data buoy probes (these penetrate the ice and transmit to satellites), and test their ice thickness algorithm, returning to Tromso November 7th. Discussed the problems with science operations in the area of the EEZ that is disputed between Norway and Russia.

SeaBeam Performance and processing

- Margo Edwards reported that the HEALY's SeaBeam 2112 system is not only working well, but it seems to be doing a much better job than the POLARSTERN's HydroSweep system. To process the data Margo's group is using software rather than manual ping editing. A comparison of new HEALY SeaBeam data to the SCAMP data from SCICEX was shown to the AICC, showing improved data quality and reduced noise. The submarine navigation data are also obviously off by a couple of kilometers. Part of the reason for the good data was relatively light ice conditions over the science area in summer 2002. The data are such high quality that there is a growing call for leaving the SeaBeam on at all times in the Arctic. This will carry a processing responsibility as well as the need to man the system, and the effort and cost for this must be addressed. Jeff Garrett pointed out that in 24-hour underway mode without science groups supporting the SeaBeam, the ship can collect the raw SeaBeam data, but in present configuration cannot carry out any processing. Dale Chayes pointed out that it is unknown what the increase in scientifically useable raw data is when there is a dedicated watch stander as opposed to simply switching on the system and recording.

Polar Star 2001 operations

- Captain David McKenzie - Jackie Grebmeier's St. Lawrence Island (SLIP) cruise was successful, and a post cruise assessment report was submitted through the UNOLS system.

Polar Sea 2001 operations

- Captain Keith Johnson - The Polar Sea did some mooring recoveries and replacements in the Gulf of Alaska for NOAA (paid science), and some NMFS/Alaska Fish and Wildlife work off the Yukon River delta. The Russian portion of the SOO cruises with Sheehan et. al. was cancelled due to lack of a clearance, and then a rudder problem was discovered, so the remainder of the SOO cruise was cancelled. POLAR SEA returned to Seattle and went into dry-dock.

Russian Trip

- Glen Sheehan reported on the failed work with the Russians. Despite pressure from the top and the bottom of the Russian system, the Federal Border service people did nothing to process the permit since it was apparently not a priority for them. There is some reason for optimism, but so solution is yet in place. It is rumored that even Russian ships have had the same problems working within these waters. Terry Whitledge reported that the Alpha Helix, despite submitting paperwork a year ahead (six months are required), had to leave on a cruise without any response in hand regarding their permit.

Post Cruise Assessments

- Simon Stephenson noted that NSF would like the AICC's input regarding assessment of performance on the vessels. Al Sutherland noted that for the Antarctic, he, the PI, and an ARVOC rep used to do a conference call shortly after the cruise, but ARVOC now has reverted to a written report due to the time it was taking to make and work up the verbal reports. ARVOC members may still contact PIs. post cruise. Dale Chayes reported that this is also a more general issue within UNOLS, so the AICC should try to coordinate with this.

Scheduling and Planning for 2002 and beyond.

(Dave Forcucci, April Brown, and Mike Prince) - (refer to web sites for UNOLS and Coast Guard <www.uscg.mil/pacarea/iceops/schedule/wagbskd1.htm>) (Note, these have been removed after the incidents of September 11th)

HEALY

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|---------------------------|----------------|
| • Jan 3 - Jan 21 | Dry-docking |
| • April 27 | Depart Seattle |
| • May 6 - June 15 | SBI |
| • June 20- July 10 | Kegwin |
| • July 13- August 22 | SBI |
| • August 27- September 29 | Kegwin |

Polar Star

- | | |
|------------------------------|-----------------------------|
| • 15 April 2002 | Return from Deep Freeze |
| • July 7 - August 27 | Arctic science availability |
| • or, if RIP can be delayed, | |
| • 16 July - 14 August | SBI moorings |
| • 25 August - 28 September | Woodgate |

Polar Sea

- Underway early January for National Geographic search for ENDURANCE
- Return to Seattle in April
- Dry-dock & dockside availability to early August 2002
- Not available for additional science in 2002

Scheduling Process:

- There are problems in 2002 because science users other than NSF sponsored need icebreaker time and feel as though they did not have an equal chance at obtaining that time. NSF's position is that the Coast Guard "owns" the schedule and ultimately must decide. In the case of the coming year, NSF was ahead of the other agencies in making a funding commitment for the long planned SBI and already funded Kegwin cruises. One problem for other agencies in scheduling is that NSF has its money on the table at scheduling time but the other agencies often do not. Mike Prince noted that this issue comes up routinely with the UNOLS fleet scheduling, but there are a lot more UNOLS vessels, so there can be more give and take. But UNOLS does bring to the table

representatives of all the Federal agencies that planning to fund cruises in the coming year. In the Arctic there is the possibility of turning to the Canadians for scheduling assistance. Kathy Crane noted the value of formally establishing to NOAA that funding should be in place by approximately June of the year ahead, so that in times of fewer ship days available than requested/funded they can compete on equal footing. Subsequent discussion made it clear that there needs to be improvement in getting representatives of all the agencies present at the scheduling meetings. In the future all agencies would be notified of the scheduling meeting time and location.

- The following is a description of the scheduling process written by Simon Stephenson at NSF-OPP:

The AICC will play a critical role in developing proposals and projects that will use US Coast Guard Ice Breakers by enhancing communication within the community, and where appropriate, provide organization and coordination.

Proposals will be received and reviewed by funding agencies. The Coast Guard Icebreaking Program/USCG (CDR Joseph Bodenstedt) and the Office of Polar Programs/NSF (Simon Stephenson) will lead a group of program managers (from NSF, NOAA, DOD, etc) wishing to sponsor projects on ice breakers to determine, principally through consensus, which projects can be funded, and the resulting schedule. Currently it is envisioned that the main scheduling period will be in the spring of each year following the review of OPP/NSF proposals from the February 15 deadline. This calendar may need adjustment to fit with other divisions and agencies timelines. Initial ship scheduling for the 2003 cruises on ice breakers will occur in early June, 2002 at NSF. In order to develop a workable schedule, individual project timetables will undoubtedly need adjustment, and US Coast Guard will be primarily responsible for leading this process. The adjustment will usually involve US Coast Guard, the sponsoring program managers and the affected PIs. When the schedule is agreed upon, final funding actions can be made. USCG will maintain the schedule for ice breakers on the UNOLS ship schedule system. Questions on detailed scheduling should be addressed to US Coast Guard's Pacific Area ice breaker operations office at (510) 437-3850/3807/5355 (Brown/Forcucci/McGillivray). General questions on the funding and scheduling process and status should be address to the appropriate agency program manager.

USCG Polar Aviation report

- Ed Cubanski presented an overview of Coast Guard polar aviation operations. CDR Cubanski is now the contact for icebreaker aviation at Coast Guard Headquarters. Contacts and web site info can be distributed by the AICC. There is a great deal of information about helicopter operations on the web site. There are special considerations regarding helicopter ops during over the side science operations. Basically there can only be spooling of wire, with no personnel on deck, and with both A-frames in the outboard position, plus the winds must be in the appropriate direction.
- POPDIV Web site: <http://www.uscg.mil/hq/atcmobil/popdiv/>

International Cooperation

- Chief Scientist needs to be primary contact, but it would be good to have an oversight committee for disputes of science objectives. NSF can't make a deal to swap ship time for ships that they don't control, however there are MOU's with other countries including Britain and France that might serve as a method for making these type of arrangements.
- Germans allow other citizens to apply for use of POLARSTERN. Maybe US could do that to. OIAA calls for closer coordination with the Canadians. Forum of Arctic Research Operators (group that Tom Pyle is convening) might be the group to start this effort. It currently only involves the US and Canada but could be expanded, possibly with help of the International Ship Operators (ISOM).
- Getting two vessels from different countries to coordinate is difficult with the long US sponsor lead times and the lack of information about other countries ship schedules.
- Scientists have to be the impetus for international collaborations.

Data Issues

- The recent AMORE cruise with Peter Michael is one model for how coordinate the sharing of data. It could be reviewed to see what worked and what did not.
- Margo to contact Peter Michael for the MOU used on that cruise. Kathy Crane to provide an example from her experiences. AICC can review these models and recommend appropriate coverage of data issues in the "chief scientist" section of the cruise planning manual.
- NSF *does* have data release policies that should be honored and referenced in cruise planning documents.
- These are issues that have been dealt with outside of the Arctic and the consensus is that this doesn't need to be something for which AICC needs to take direct responsibility other than to be sure it is covered in cruise planning documents.

Piggy-backing

- There is no role for AICC in this effort. Left to the purview of the scientists.

Russian Experiment that didn't succeed

- Glenn Sheehan reported on a meeting with Governor Abramoich of Chukotka during which they expressed a desire to keep up the momentum for a visit to his state next year. Glenn circulated letters to himself and ADM Loy of the Coast Guard. (Letters attached as Appendix ??)
- Discussed the idea of a port call by a US ship (Icebreaker) in a Russian port next year to break the ice (pun intended) with getting permission to enter Russian waters.
- USCG: Either HEALY or POLAR STAR might be available. A Russian port call is being discussed among HEALY folks, but there's no firm answer on whether or not it's possible. Generally it is easier for the Coast Guard to get permission for a port call than it is to conduct a science cruise.
- USCG has been into Russian ports before, and each experience is unique, therefore this might not be "ground-breaking."

Science of Opportunity (SOO)

- Avoid the odd years success for SOO seems to come only in even years.
- However, in 2002 there will not be an opportunity for SOO. The amount of paid science work and scheduled RIP work will prevent any opportunity for a Shakedown cruise involving SOO.
- The Coast Guard still thinks that there will be a role for SOO cruises in the future, especially if funded work is limited. These should continue to be open to any interested scientists and there is a role for AICC in coordinating Arctic SOO cruises. As the RIP program changes the SOO concept may need to evolve.
- The SOO's are announced on the AICC web site. AICC should add some statistics about the chances that SOO will actually take place and should otherwise work with scientists to help manage expectations. Also, need to ask for volunteers to be chief scientist at the time that SOO requests are submitted.
- Lupton's letter. USCG says there was a disconnect. Is AICC responsible for all ice breaker SOO work, even when they go south? CG says AICC can advise, but in general the AICC area of purview is work in the Arctic.
- Jim will raise the issue of SOO at next ARVOC meeting to make sure that Southern Ocean work doesn't fall through the cracks.

Science Mods, Infrastructure and Equipment - HEALY

- HEALY going in to emergency dry dock in January, 2002.
- One of the things that will be worked on during the HEALY's dry dock is the ADCP; the windows leak, etc. Plan to replace 300 kHz unit with 75 kHz unit. The justification for this change has been written and he now needs to identify the source of funds on the order of about \$115K to purchase equipment. Simon needs to see plan from USCG re: procurement if NSF is to fund this. Timing will be tight. Letter to NSF from ADCP group of SBI to support this may help. There will be a limited opportunity to test the system after installation. If necessary, ADCP installation can be done at dockside. SBI group is also interested in a lowered ADCP. Various sources of this unit were

discussed; Jim Swift is in charge of contacting them.

- Uncontaminated seawater system on HEALY clogs up in ice. The designer of the Palmer's system is coming out to give some ideas. No action plan yet. The emergency dry dock is the opportunity to develop this plan. The work won't be performed until the scheduled 2004 dry dock.
- NASA Tilt satellite is used above 80 degrees for communications. It cost NSF \$70K for two test cruises. Science side has had problems, but these are mostly related to a virus that was brought onboard. Iridium available on HEALY and both POLARS; presently it is paid for via a DOD contract. What happens when scientists have to pay for it? Also, Iridium won't allow folks to send large volumes of data like they are now. NASA isn't using Tilt, but NSF is interested for polar research. There's a potential that the system will go away and won't be available for future trips. Or, it might be made available to NSF & USCG to support OPP research. Questions were asked about the available bandwidth for Tilt. Could underway data be transferred for shore-base processing?
- SDN issues are still being worked on and some of the issues are recurring. AICC needs to make a strongly worded statement regarding the need to put together a functioning science data network on the HEALY and POLARS. There needs to be a well defined framework for what the system should accomplish and then the expertise should be brought on board to put the system in place. AICC should agree on what the system should do properly. Science Data networks that work well appear to have a marine technician that has been working on the system for several years and takes some ownership of the system. The Coast Guard does not necessarily have the ability to keep that level of expertise on board the ship continuously. Some ideas were discussed such as using contractors or having talented technicians that sail with the vessel and understand and own the system that could keep it working. AICC should review the status of the HEALY system with off-going scientists and make a recommendation for the importance of the SDN, what it should accomplish and how to do it.
- HEALY needs transducer alignment survey to be completed during the January emergency dry dock.
- Terry Whitley asked about the status of the winch control and sheave alignments for doing CTD work. The sheave alignment work needs to be added to the work list and the system tested before SBI.
- Coast Guard will replace the damaged and shortened 9/16" wire with new 9/16" wire for the SBI cruises. Future dredging cruises will probably need 3/4" wire. Discussed whether or not the .680 wire could be used for SBI since it is being used for dredging this summer. The end of the cable should be sealed while dredging. Base line measurements on attenuation should be taken or available and wire tension data should be recorded. The wire will have to be inspected after this summer's use for dredging to determine if it should be replaced as well.

Science Mods, Infrastructure and Equipment - POLARS

- Some lab renovations on both ships.
- Winch modifications for the Ballard trip.

Equipment Purchase Procedures

- Coast Guard needs help with sole source justification for science equipment that meets the needs of science programs. AICC can provide written recommendations for equipment purchases when needed.

Underway Data Collection

- Discussion about the science data networks on the CG Icebreakers, what they should be collecting, how to disseminate the data, ensure the data is useful several years later and whether or not to collect certain data on a continuous basis.
- Need to record raw data.
- Need to record meta data, calibration co-efficients, etc. in order for data to be useful in the future.
- Need a statement of what information is necessary for useful data logging
- Need to define areas where certain data is needed.
- In the Arctic all areas could benefit from collection of bathymetric data.

- A need for a PI or interested person to monitor the data and determine it's value and accuracy appears to be a key to a good continuous data collection program.
- Antarctic Polar Program model: Operator is not responsible for most of the data collection and there are PI's responsible for certain data collections.
- UNOLS model: Operator provides the data collection function.
- NSF would like AICC to make a recommendation about what type of data collection should take place in the Arctic on board Coast Guard Icebreakers.

Recommendations:

- AICC will make a recommendation on the importance of the Science Data Network, the important factors to be considered for the design, maintenance and operation of the system, the parameters that should be delivered on a routine basis and those that should be collected on a continuous basis.
- Post Cruise assessments:
- Comment on new equipment acquisitions.
- Look at new technologies
- Meeting was interrupted by the terrorist attacks on the World Trade Center and the Pentagon. Meeting adjourned.