

UNOLS AICC MEETING
November 18 & 19, 2004
Bear Room - USCG Integrated Support Center
Pier 36 - 1519 Alaskan Way
Seattle, WA

Executive summary

The Arctic Icebreaker Coordinating Committee (AICC) held their fall 2004 meeting in the Bear Room of the USCG Integrated Support Center, Seattle Washington on November 18 and 19, 2004. In addition to committee members, representatives of NSF, the National Oceanographic and Atmospheric Administration (NOAA), the Arctic Research Commission (ARC) and the United States Coast Guard (USCG) participated in the meeting. The AICC is a standing committee of the University-National Oceanographic Laboratory System (UNOLS) with a primary purpose of providing oversight and advice to the U.S. Coast Guard for the purpose of enhancing facilities and science aboard their icebreaker fleet. During the meeting previous recommendations and action items were reviewed and new ones developed. Major issues discussed included a review of 2004 science operations on the HEALY as well as recent and planned maintenance and overhaul of all three Coast Guard icebreakers. Accomplished and planned equipment/outfitting upgrades were reported. Reports, with discussion, were made on the status of the POLAR class icebreakers and the various planning and management efforts regarding the funding and operation of the icebreaker fleet. The planned HEALY operations for 2005, including a trans-Arctic voyage in company with the Swedish icebreaker Oden were reviewed as was the potential projects for 2006. A discussion about whether or not to schedule the HEALY more than one year ahead of time was held, with the conclusion that for the time being, schedules would continue to remain tentative until late in the year prior. Also covered were topics related to towing seismic streamers in ice, continuous underway data collection and providing real-time sea-ice condition information to the ship.

Recommendations

No new recommendations

AICC Action items

Task	Assignment
Discuss development of AUV's with other UNOLS committees and make recommendations for deployment from icebreakers in the future.	AICC – DESSC Liaison
AICC to provide USCG and BAH with one consolidated reponse after reviewing the Draft Mission Needs Analysis Report. Jim Swift will contribute as the ARVOC representative to AICC. The report should be treated as confidential and not considered to be Coast Guard policy while in the Draft form.	AICC and Jim Swift
AICC to endorse and/or comment on the new lab layout.	AICC
After the new equipment list has been completed, AICC should provide input on the priority of various items.	Dale Chayes and AICC
Provide feedback on where to set up public access computers	AICC
After 2004 debriefs, provide AICC recommendations for SDN improvements to Jim Wilson.	AICC
AICC should figure out how to make development and updating of the online cruise planning manual a high enough priority to warrant adequate funding.	AICC and Dave Forcucci
AICC (specifically Peter Minnett) needs to provide expertise in terms of what is the best available ice data.	Peter Minnett
AICC to invite an NIC representative to attend the next AICC meeting.	Margo Edwards

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Welcome and Introductions

The UNOLS AICC meeting was held on Thursday and Friday, November 18 and 19, 2004, at the USCG Integrated Support Center, Pier 36, Seattle, Washington. Dr. Margo Edwards, AICC Chair, called the meeting to order at 0830. RADM Jeffery Garrett, USCG District 13 Commander welcomed AICC to Seattle on behalf of the Coast Guard. An opportunity was provided for introductions around the room. A list of participants is included as Appendix II

Accept the minutes of the March 2004 AICC Meeting

A motion was made and approved to accept the minutes of the March 2004 AICC meeting.

Previous Action Items and Recommendations - update

Margo reviewed action items and recommendations from the last meeting (Appendix III).

UNOLS Report – Peter Wiebe, UNOLS Chair

Peter covered issues facing UNOLS including fleet renewal, Regional and Ocean Class hull studies, Global Class SMR's, observatory requirements for ships and submersibles, retirement dates and service life extension cost estimates for older UNOLS vessels, and the planned update of the Fleet Improvement Plan to augment the FOFC fleet renewal plan. This update, which is targeted for completion by September 2005, would address utilization versus capacity, declining capacity and potentially increased demand. Deep submergence renewal plans, SCOAR activities, handling UAV's and other issues for UNOLS were reviewed. SCOAR recently published articles in EOS and Oceanography. Peter's report can be found in **Appendix IV**.

DESSC report follow-up by Hedy Edmonds:

Mentioned new DESSC Chair, Debbie Kelley of UW, HROV development and new HOV to replace ALVIN. Garry Brass raised the issue of whether or not UNOLS was looking at the use of submersibles such as nuclear submarines, ROVs and AUVs in ice covered regions. For instance, is DESSC considering the use of AUV's under the ice. It was thought that AICC, FIC and DESSC should all consider the possibilities and challenges raised by this issue. This is an action item and future agenda item for AICC.

RVOC – Dan Schwartz:

Most of the major items were covered by Peter, biggest issues include Vessel Security Plans and development of Global Class SMRs.

RVTEC – Dale Chayes:

Bill Martin elected as Chair of RVTEC, Dale will continue as liaison to AICC. They are dealing with level of service and quality, cables, and other technical issues.

Agency Reports

NSF – Simon Stephenson

International Polar Year (IPY) – planning and communication going forward, NSF Arctic and Antarctic programs are still sorting out how they will implement IPY programs.

Planning is being led by International Council for Science (ICSU) and in the U.S. by the NAS. See:

http://www.icsu.org/1_icsuinscience/INIT_Ipy_1.html

<http://www.ipy.org/>

<http://www.us-ipy.org/>

Current OPP/Arctic solicitation has IPY and SEARCH written into them, so they are open to those type of programs. They will probably put out an additional solicitation specific to IPY. They have an advisory committee (Jim Swift serves on it). They are debating whether or not the solicitation should be broad or narrowly focused and would appreciate AICC input. Tom Pyle's current view is that the IPY solicitation should be narrow, and that broader activities would fall under the general Arctic solicitation.

Discussed the relationship between ICSU and NSF processes. There is not a direct relationship. Bernie asked if an ICSU blessing (stamp of approval) would be required for successful NSF projects. It will not be a requirement, but the ICSU criteria will be a basis for evaluation, most likely. PI's can submit expressions of interest for ICSU IPY projects online before January 14, 2005 at:

<http://www.ipy.org/concept/framework/form/>

Scheduling – There is enough work in hand to potentially fill out most of a 2006 schedule. Deferred requested 2005 projects for Lawver (NSF) and Mayer (NOAA) as well as a USF&WS project and potentially a NOAA OE project, which could easily use all the available time in 2006. Simon is looking for input from AICC on whether or not the schedule should be set early when we know there is a lot of work already funded for future years. This issue was discussed later in the meeting.

Tom, Dave and Simon have drafted a discussion white paper on the subject of NSF science support funding. It will address what should be funded by NSF and how. When they have made a few more changes, they will circulate to AICC for comment.

USCG Program Update – CDR Tom Wojahn (Appendix V)

Deep Freeze 2005 (DF05) - POLAR STAR is currently heading south for Deep Freeze 2005 (DF05) to break through more than 100 nm of ice unless conditions around McMurdo change. This is far more ice than either STAR or SEA have had to break through in the past decade. The historical average breakout distance has been around 22nm and this year could be as much as 100nm. At least 50 nm of this is 5' thick ice; only a small portion is greater than 8' thick. There is also a potential for interference from the iceberg B-15. It remains to be seen whether a long channel can be cut for the supply ship. The primary backup plan involves a Russian icebreaker that is available in March. There is presently no plan to send HEALY south. The USCG icebreaker fleet is presently funded at a certain level, but more funds are needed to keep the icebreakers functioning properly. USCG is driving the effort to set a funding policy that supports the nation's strategic icebreaker policy as defined in the 1990 (PRB) report. This effort is making its way to the Congressional level. The next significant deadline will be in December 2004 when out year and next year funding and reimbursement levels will be decided.

USCG has second draft of the Booz Allen Hamilton (BAH) mission analysis report and will distribute to AICC members tomorrow. Congress has also asked the National Academy of Science for a polar icebreaker study (later it was mentioned that this effort has not been funded).

Action Item: AICC to provide USCG and BAH with one consolidated response after reviewing the Draft Mission Analysis Report. Jim Swift will contribute as the ARVOC representative to AICC. The report should be treated as confidential and not considered to be Coast Guard policy while in the Draft form.

NSF/CG Relationship (MOU) - Discussions regarding the USCG/NSF MOU are going on at the upper levels of the present administration and do not require an AICC response – there is no active role that can be used to influence this process. Simon emphasized that this is NOT just an NSF MOU anymore – much of the work that has been accomplished by HEALY in the Arctic recently has been funded by other agencies (NOAA, NASA, and potentially USF&W). Also, the discussions will NOT impact what is happening with HEALY. HEALY has played a very positive role in changing the funding agencies mindset regarding how science is conducted in the Arctic, and NSF really wants HEALY to continue to operate in this way. Margo asked if AICC should use their forum to advocate for science support on icebreakers in the Antarctic. Simon believes that AICC should not need to address science support in the Antarctic. The AICC is and should continue to be concerned with the year-to-year performance of HEALY as a science

support vessel as well as with the POLARs to the extent that they will again support Arctic science. Jim Swift thought that the fact that AICC is under the UNOLS umbrella is very important to making sure the science community is represented and he could conceive of Antarctic UNOLS involvement. AICC should remember that its constituency is the scientific community and not the ship operators. In the capacity, AICC can serve as a community advocate for accomplishing arctic science on the POLARS.

ARVOC Report – Jim Swift (Appendix VI)

The good news is that all is well with the GOULD. “End of good news.”

The same cannot be said with regard to other US icebreaker assets used in the Antarctic. The POLAR SEA is laid up for an unknown number of seasons and the POLAR STAR may not be significantly healthier than was POLAR SEA prior to the equipment failures. Icebreaker support for McMurdo is in a critical stage, because a one time miss of the break in will exacerbate the ice conditions further and a one time miss of the refueling and resupply would threaten the entire US Antarctic program. PALMER has been restricted to legs of 30-day duration or less between refuelings. Modifications to PALMER over the past twelve years have resulted in some loss of buoyancy and the ship’s center of gravity has moved up. Although intact stability has not been compromised, in order to maintain damage stability criteria, 40 to 50% fuel load must be kept on board until weight modifications can be made. This is significantly affecting her performance. Modifications are scheduled to take place in early 2005, with the goal of meeting PALMER’S endurance specifications and to potentially allow additional weight for planned drilling operations. Getting this all done with the PALMER’s tight schedule will be difficult.

ARVOC discussions regarding planning for a next-generation polar research vessel (PRV) were temporarily tabled earlier this year for possible high level review, for example by the OPP Office Advisory Committee (OAC) and/or by the National Academy/Polar Research Board. Further development of scientific planning for a PRV remains tabled.

Margo and Jim agreed that they still plan to conduct a debrief about the latter’s Arctic trip on PALMER.

Arctic Research Commission – Garry Brass

ARC publishes a bi-annual report on the goals and objectives for U.S. arctic research. The report, which will be sent to the White House, is due around the end of January. The report emphasizes projects like SEARCH, BEST, and a National Institute of Health report of the health of arctic native communities. It also specifies the need to expand the program on arctic infrastructure. Go to www.arctic.gov for reports and research agendas. There is a separate but related research agenda from the Climate Change Group available at the ACIA website at UA Fairbanks. Garry felt that the Ocean Commission report was mostly coastal in its approach and largely ignored blue ocean and Arctic research. Garry is moderately optimistic that Congress will enact UNCLAS 76 in this session. The budget deficit, however, is a real problem for the POLAR SLEP – there just isn’t much money, and \$0.5B is a big bite. This year the deficit will be 420 Billion and will probably exceed 500 Billion next year. Service on the debt uses 25% of the tax dollars. New starts and major programs will be a hard sell.

There will be a Department of State workshop soon to discuss future arctic policy issues.

USCG Pacific Area – LCDR Peltonen

Don made a presentation to Margo from AWI/Bremen. There has been a sizable change in staff at USCG PACAREA. HEALY is doing well. POLAR STAR is scheduled to reach the ice outside of McMurdo Sound in late December. POLAR SEA is dockside for maintenance. USCG continues to hope that funds will be provided in time to get SEA ready to support Deep Freeze (DF) in 2007, but so far there is no money. It will take at least two years to complete repairs on the POLAR SEA from the time that the funding becomes available. The schedule for HEALY is dependent on what happens during DF05. Normally NSF (as the customer) would make the decision about whether or not the HEALY was needed to assist, unless it was an emergency situation where the POLAR STAR gets in trouble, then it is possible that the USCG would send HEALY south to help; however, this is considered a last case scenario. POLAR STAR is due for significant dockside work in about four years. The most optimistic version of the POLAR maintenance schedules is that both ships will be available to work together on DF again around 2012.

Simon Stephenson’s advice to the community is to keep writing proposals and let NSF’s Office of Polar Programs determine how to field them.

2004 HEALY Operations. (Appendix VII)

Dave Forcucci noted that in 2004 there were 137 science days on USCGC Healy (a NOAA DART Mooring leg, 3 NSF legs for SBI, and a NOAA mapping leg). An opportunity program (gravimeter) was supported during the entire field season. The mapping legs succeeded in obtaining detailed maps of the foot of the slope. There was more NOAA funded time than in previous years. The season started with the NOAA Dart mooring turnaround cruise south of the Aleutians, followed by the SBI Spring Process cruise. During this cruise they used an ice thickness sensor with some success and also the new science seawater system was put to the test. It was an improvement over the previous system, however it still clogs up in heavy ice

conditions and therefore they still used a makeshift system out the stern of the ship for some of the time. There is a need to more carefully define the various “use cases” for science sea water. During the SBI Summer Process cruise they conducted a ½ day search and rescue operation with the Helos. During the SBI mooring cruise all moorings were recovered using SBI’s own mooring winch.

The NOAA LOS mapping cruise started in October and worked deep in multi-year ice. They still have some areas to map, however some of this is even further North, so they will defer until they can go in August. This year they went south and filled in 100% coverage on the base of the slope in an area where there was some data, but not complete.

John Reeves (new EO on Healy) reviewed the status of Healy's science seawater system. The new system works well in moderate ice conditions, but still does not provide seawater in all conditions. The system delivers 55 gallons/minute. Notes: there is no flow for the thermosalinograph in heavy ice; the ballast tank is used in heavy ice for incubator cooling; coordination is required between ship and scientists on seawater service; and consumption budgeting is critical for incubator users. To maximize water availability, each seawater need should be matched to an appropriate source. (Appendix VIII)

Lee Cooper (SBI program PI) was in town for another meeting, and he volunteered to come by and give an informal debrief about the SBI cruises. Generally, things went very well. There were constructive criticisms that were made by the PI's but most of these were minor. (see Appendix IX)

SBI has “self-supported” navigation processing through JOSS over the duration of their program and they thought this significantly contributed to the success of their program. Dale emphasized that the JOSS work was based on data collected by sensors that are already installed on HEALY and not from additional sensors that they brought on board. There are still issues with the seawater system and how to keep this water cold enough for some science needs. Need to have more UPSs for future trips, and if these won't be provided by the USCG, the cruise planning manual needs to be updated to advise future science parties to bring their own UPS units and provide information as to what kind of unit is acceptable/compatible with ship systems. Public outreach included KNOM radio, News hour with Jim Lehrer, BBC, US news and World Report, Tours/Open House Support from several sources led to the success of this cruise.

Medevac – Margo Edwards

There were two Medevacs during the 2004 field season. Glenn Sheehan (at BASC) spoke to Margo prior to the November AICC meeting and asked her to reiterate that BASC is always happy to provide shore-side support in the event of a medical emergency. He also asked her to remind science parties that it is important to act quickly when it appears that there is a medical problem on board, and not wait until the situation becomes critical.

2005 Strawman Schedule (Appendix X)

Dave reviewed the 2005 schedule including the remaining question marks associated with NOAA OE cruise and the possibility of moving Darby into the later time slot. These issues will be resolved in early January when reimbursement costs and OE objectives/budget are better known.

There are three tentative science programs:

- A two-week leg for Dennis Darby
- A one-month NOAA OE cruise in Canada Basin
- The 52-day cross-basin joint operation with the Swedish icebreaker Oden. Darby and Coakley are co-PIs.
- Return through Panama Canal

Larry Mayer had been scheduled to accomplish another NOAA mapping cruise but opted to defer that program for one year in the hopes of getting a better weather window.

Whaling Discussion – Margo Edwards (Appendix XI)

Unfortunately no one from BASC was able to attend the Seattle AICC meeting, but they have promised to attend the next meeting and to address the following points:

- Constrain the timing and location of whale migrations
- Discuss how US icebreakers have performed in the past
- Discuss how US icebreakers can improve in the future
- Explain how far in advance whaling parameters can be predicted
- Distinguish between U.S. and foreign icebreakers
- Discuss the impact of helicopters

Glenn Sheehan also offered some insights regarding why the native communities aren't pushing the federal agenda. They have worked long and hard to develop strict guidelines with industry and don't want to damage those efforts by too quickly embracing the science-based efforts. Also, they think that the science community does not yet fully understand that whale migrations are not perfectly predictable (just as weather conditions aren't). There was a brief discussion about the decision and process of obtaining an

Incidental Harrassment Authorization for work this coming summer.

Helo costs – Carin Ashjian

Asked about the costs of proficiency flights and whether this was passed on to the science program. The cost of the helo being on board is a standard rate. Proficiency flights are only necessary if the helo has not flown for other reasons. If there weren't any modifications necessary and there was room on the helo, then science could use the proficiency flights.

2005 cruises – planned operations

Darby leg 1 and towing IMI-30 – Margo Edwards (Appendix XII)

Margo showed a picture of the IMI-30 being launched in the tropics and described plans to use the system during the two-week Darby leg. The system will use a fiber/optic cable and winch that will be installed on the back deck of HEALY. It was recommended that the computers for the system be set up near or in the aft conning station so that the ship can be steered from there during tows. That will allow several sets of eyes to watch the tow wire and will facilitate near instantaneous stopping.

Cross-Basin leg and seismic gear – Bernie Coakley and Yngve Kristoffersen

Bernie presented the proposed tracklines for HEALY and Oden during the joint U.S.-Swedish leg from Barrow, AK to Tromso, Norway. Yngve described the approach used for towing the seismic streamer in ice-covered waters. Seismic operations will use small airguns and short streamers. Towing at the surface yields better data (frequency coverage), but is much more dangerous for the equipment (suicide mode). It is safer to weight the airgun down and tow it at deeper depth, but the data is compromised. Seismic compressors are diesel and will come in their own vans. These operations will require continuous observation of the wires and hoses. Use of aft/science con will probably be the best approach. There was a discussion of how recent, high-resolution images of the ice pack would be provided to HEALY began and was followed up in more detail later in the meeting.

The subject of clearance requirements was raised. Although outside the 200 mile EEZ, they will be beyond the convention line. Dave Forcucci will follow up with State Department.

Rebecca Woodgate reported for Ignatius Rigor, International Buoy Program

They have a few buoys that they would like deployed during the trans-Arctic leg. They will contact Bernie and should submit a shiptime request for having these buoys deployed.

2006 Planning and Scheduling (Appendix XIII) Programs already funded that could be scheduled in 2006 include:

- Lawver - July 15th for 42 days
- Mayer NOAA Mapping - August 24th for 30 days
- USFWS/Schliebe – Polar Bear surveys, 42 days starting September 15th
- BEST Bering Sea Spring Biology cruise

A discussion followed about long term scheduling. Simon asked for AICC input about whether to schedule HEALY two years in advance or maintain flexibility until other funded programs were determined. For the time being, the process will probably continue to maintain flexibility by not setting final schedules too far in advance. Any process should incorporate the ability to schedule multi-ship commitments earlier when necessary. The committee also discussed priorities for deferred projects and the possibility of using other resources/vessels.

Friday Morning

Update on Action items – Margo Edwards

POLARS

- o No action for OSTP/OMB discussions
- o AICC should advocate for POLAR science

BAH 2nd draft comments

- o Coordinate AICC response
- o Also coordinate with Jim Swift

AUV development coordinated across UNOLS committees including AICC, DESSC, etc.

Scheduling future programs

- o Letter to NSF/USCG and cc other schedulers (NOAA, NAVY, USFWS) with AICC recommendation for scheduling flexibility.

Guidelines for interaction with native communities

- o Coordinated response to Renee from AICC

LDEO/CU Science support – Dale Chayes (Appendix XIV)

Dale reviewed the contract for providing HEALY science support. The LDEO group participated in the pre-underway preparations and shakedown with Val Schmidt and Dale Chayes. They did not sail with people on all transits, but may need to think about whether or not that is needed in the future.

The systems/projects that they worked on included:

Science seawater system

TSG & fluorometer

Webcam for the “board of lies” (whiteboard with up to date science plan)

Install POS/MV-320 (Position and Orientation Systems for Marine Vessels)

Evaluate climate control chambers and science reefers

Temperature stability is not good, now confirmed by data loggers, not yet a high priority, but should be dealt with before it is.

Planning for 2005 field season

Data & Sensor metadata inventory

AC Power evaluation

Ship – ship communications (Oden)

Ship – shore communications (Barrow)

Set up a plan for directional (or is it direct?) high speed connection when in the vicinity of Barrow

High latitude science communications

Will be out of INMARSAT footprint for about six weeks during this summer. Iridium should provide reasonable email support during this period.

Science network upgrade

With new hardware installation, should be able to implement a system upgrade to the science network.

Design for lab upgrades (off-season)

Looking at better design for watch-standing and maintenance (see appendix XVII for draft plans)

Provided support for the gravimeter installation and operation, and dealt with a failure.

POS/MV installation

Co-located on top of the Helo Control Room (HCO) with the Ashtech ADU antennas. Put in a cross bar for rigid installation in a site with clear horizon. Also added a PAR sensor there. Room for more. POS/MV hardware is in a rack in the HCO with an extension of the Fiber-Optic network to the HCO. See pictures in Dale’s report.

High Latitude Communications – Dale Chayes and Carin Ashjian

Much better having email over Iridium on HEALY during 2004 field season. Dale encouraged 2005 PIs to start thinking about HEALY-ODEN ship communications. There are efforts underway to establish a wireless connection in Barrow for all incoming icebreakers.

Multibeam System Status and Sensors – Dale Chayes

Draft proposal for upgrading the multibeam is sitting on Margo’s desktop. Needs to be sent to Simon to begin effort. Need to try and coordinate with HEALY’s three-year cycle for drydock as it would mean no extra shipyard costs if the new multibeam installation coincided with a regular drydock.

HEALY Lab Plans – Dale Chayes

Lab layouts on HEALY are not good for data collection and its hard to add computers for embarking science parties. Dale has redesigned the computer and futures labs and plans to try and upgrade other labs in the future. A deck plan showing lab locations is available in the HEALY cruise planning manual at: <http://www.uscg.mil/pacarea/healy/scienceplanning/cpguide/section2/01deck.htm> Proposed lab layouts were shown by Dale. (Appendix XV)

Future lab: Remove racks with network upgrade and install work surface with three work stations.

Suggestion was made to make the worksurfaces height adjustable. They are, but cabinets underneath prevent actually doing so.

Computer lab:

Driver is to pull all the electronics racks together with improved cable management between them facing forward. Install work stations that face towards the racks for better communications. Add storage space along the starboard bulkhead. Two workstations forward on the port side where the SeaBeam rack is now. The discussion centered around maintaining flexibility for workstations. Also need to incorporate the ability to view instrumentation output in a variety of places.

**Action Item: Simon would like AICC to endorse and/or comment on the new lab layout.
POLAR Class Icebreakers Engineering brief – LCDR Greory Stanclik and LCDR Don Peltonen.
(Appendix XVI)**

POLAR SEA was cannibalized to provide parts for POLAR STAR. Don and Greg gave a slide show of SEA's engines to show the problems they face – space is so tight that it is virtually impossible to maintain some parts of the engine. The reason two of SEA's engines were condemned is that the insulation is so bad, the engines can't be run. USCG needs funding to get the engines cleaned and repaired. The RIP is officially finished with only \$46M of the requested \$81M having been provided for the effort. Repairs to SEA now are just a bridge to the SLEP. USCG estimates that they need \$1.5M just to discover all of the problems with SEA's engines, \$9M to repair them and a total of \$23M to get POLAR SEA back on the job in two years. POLAR STAR's health is better than SEA's, but it is not clear that she will last more than a few years. It is not possible to predict how long it will be until STAR fails as that is dependent on variable ice conditions at McMurdo. There was further discussion about how far behind the SEA the STAR is. The STAR has about 5000 hours less service since 1990, meg-ohm readings were above the acceptable range and they have done as many back to back deep freeze operations as the SEA. They have about a season and a half before they have the same level of operations as the SEA. Only the readings will tell for sure what the status of the motors are. On the other hand, there are many other potential failures that could have the same result on STAR's availability.

Booz Allen Hamilton report – Tom Wohajin

Tom handed out CD's with copies of the 300-page mission needs analysis report. He reiterated the desire to keep this information confidential, to recognize that the report does not represent the opinions of the USCG and to provide a coordinated response from AICC.

Equipment Purchases – Dale Chayes

Dale's support from the USCG includes money for equipment. He will wait for input from the 2004 debriefs and then develop a list for equipment to purchase and/or repair. A preliminary list of near term and longer term items was presented.

- Near Term plans
 - o Missing cables and fluourometers
 - o PAR sensor
 - o Lab upgrades
 - o Additional web cams
 - o DI system
 - o UPS systems for instrumentation
 - o Need information out of the debriefs
- Long term plans
 - o Replacement Multi-Beam
 - o Process for determining what gets replaced/repared, etc still needs to be sorted out more carefully.

Action item: After the equipment list has been completed, AICC should provide input on the priority of various items.

Action item: Provide feedback on where to set up public access computers.

HEALY Science Data Network – ATG report Jim Wilson (Appendix XVII)

Jim Wilson reported on action taken during 2004 to improve the science data network, email connectivity, data collection and communications. The new Iridium/Soho software allowed 24/7 email access. Snap servers were added for additional data storage.

There were some problems with email reliability this past season. It took a lot of effort to convince people that the systems were not working correctly. The debriefs will bring this up as a major issue. It seems that corrections were made during the season and more are planned so that the problems should be corrected.

In 2005 there should be two returning ESU contractors to support the systems. At the present time email w/viruses attached are deleted with no notification to the receiving party. This might be improved in 2005. New fiber cabling has been installed on HEALY but it is not yet working on the science side. Next year's Iridium modem will move from 2400 to 9600 BAUD.

Action item: After 2004 debriefs, provide AICC recommendations for SDN improvements to Jim Wilson.

Discussion followed about how these activities and upgrades to science equipment are funded. CG PACAREA has a budget for ongoing support and small equipment repairs and upgrades. Larger or more expensive equipment needs go up the chain to HQ and then to NSF or other science agencies for support. NSF sees their role as supporting the science system upgrades. Simon reiterated that USCG pays to make ships run, NSF pays for science including equipment and operations. An important AICC role is to identify future and nagging needs. Rolf asked about infrastructure to support HROV and other portable instrumentation systems that bring control vans, etc. Need to incorporate them in the communications and network systems. Carin Ashjian brought up a safety issue at this point - the people working in vans on the back deck can't hear the PA system. This is problematic as they don't know when flight operations are taking place.

Cruise Planning Manual/Web site – Dave Forcucci

New manual/website still under development, not a priority for next season, but it should be scheduled as a work item for next off-season. A system requirements design is needed and provisions for making content current and accurate should be incorporated. Considering moving to database backed content.

Action Item: AICC should figure out how to make development and updating of the online cruise planning manual a high enough priority to warrant adequate funding.

Underway data collection – Dale Chayes

LDEO has improved HEALY's abilities at collecting underway data and most science parties now get off the ship with some form of underway data provided to them (DVD or other media). This is made difficult by the nature of the turn-around procedures for HEALY cruises, which allows about four hours to produce the DVD's. Adequate lead time for planning is needed in order to recognize and solve problems prior to a cruise. HEALY actually does a better job than a lot of UNOLS ships in archiving and distributing continuous u/w data. Data is distributed to chief scientists, with copies kept at ESU and at LDEO. They are not putting the data into the national archives, because none of it is old enough yet, but they are planning to be able to do that. OCE does not consider routinely collected ship's Met data as proprietary. Jim Swift suggests that the Chief Scientist be provided a simple one page document that tells them what data they will receive and tells them where and how to archive their data with national archives. Long-range solutions for underway data collection will require stable funding for doing the work. Furthermore, the group that ultimately leads this effort needs to "own it" so that they have a vested interest in continually monitoring and improving the approach. At this point it is too late to make any improvements during the 2004/2005 off-season; rather, there needs to be an effort to acquire funding and ideas for the 2005/2006 off-season.

Sea-ice data for planning and operations – Simon Stephenson

NSF wants the HEALY to get good sea ice data/imagery for the Arctic Ocean for both planning and operations. We need to develop a path to get the best high-resolution satellite data on the ship. Dan Oliver said that they normally try to work out coverage with the National Ice Center (NIC) for the area they plan to work in. They have also used the Canadian Ice Service and have sailed with ice observers on board. The issue seems to be the resolution of the images they were receiving. High resolution RADARSAT and Terra Scan are available. Access to high resolution Radar Sat data is a social/political problem to a large extent. There are at least two paths for this data to get to the ship. Terra Scan directly for some images, but not well supported at the moment. Real time images from RADARSAT go ashore and then must be transmitted or ftp'd to the ship. There are legal barriers to getting the raw data and the usual method is to get jpegs. What is needed is some consistent level of support that would meet most PI's needs using consistent quality, timely, high resolution geo-referenced RADAR images, with visual imaging as a supplement. Paying for the data is a factor in getting these data. Coast Guard currently buys images for the POLARS and can do so for the HEALY. The problem seems to be asking for the right level of data. Need a plan to get the images and it requires greater lead time than being done during the cruise. Needs to be part of the early cruise planning process. In the longer term, AICC should consider adding an ice history link to the cruise planning website. As ice conditions are highly variable, this information would need to be presented with strong caveats. The website could show averages and current status of ice coverage, etc. that can be used by PI's and schedulers for planning purposes. Simon would like to do this and is prepared to support it with funds. Such a web site could also include information about planned, proposed and funded projects for the icebreakers.

Action item: AICC (specifically Peter Minnett) needs to provide expertise in terms of what is the best available ice data.

Action item: AICC to invite an NIC representative to attend the next AICC meeting.

2004 Cruise Debriefs – Margo Edwards

Tentatively scheduled to take place at the end of December, after the AGU meeting in San Francisco. HEALY group, Dave Forcucci, Dale Chayes, Simon Stephenson and Margo Edwards will take part in all meetings. Tentative additional participants are:

NOAA DART

o Rolf and Carin

NOAA Mapping

o Carin and Hedy

SBI process (Grebmeier)

o Hedy and Rebecca

SBI process (Cooper)

o Bernie and Bob

SBI mooring

o Peter and Bob

Other AICC Business

AGU Posters were reviewed briefly

ARRV Status – report by Bernie Coakley

See ARRV Website at: <http://www.sfos.uaf.edu/arrv/>

Next Meeting

March 30 and 31 in Washington D.C.

New Members

No new members needed for 2-3 years, but there is already a long list of interested candidates.

Welcome again to new member Rolf Gradinger.

Outreach

- Margo encouraged AICC members to give talks when traveling
- Margo will put here talk powerpoint on the ftp site
- Finish EOS article
- Report from Arctic Technology meeting at MBARI published recently
- Workshop in Barrow on cabled seafloor observatories in the Arctic
- Other outcomes that are being pursued independently.

The meeting adjourned at 1300.