UNOLS AICC MEETING
March 30 & 31, 2005

National Science Foundation
Arlington, VA

Executive summary

The UNOLS Arctic Icebreaker Coordinating Committee (AICC) held a committee meeting at the National Science Foundation on March 30 and 31, 2005. Participants included committee members and representatives from the U.S. Coast Guard, NSF, NOAA, the Arctic Research Commission and the National Ice Center. Major topics of discussion included post cruise debriefs from last year's HEALY Operations, planned schedules and operations for the coming season and the status of ongoing and planned upgrades to laboratories and science instrumentation on HEALY. Of particular interest was planning and coordination necessary to provide adequate real-time ice condition information during the trans-arctic expeditions scheduled for this summer. A report was provided on the development of a Hybrid Remote Operated Vehicle by WHOI that would operate as a remotely operated vehicle and autonomous vehicle. This technology holds considerable promise for work under the ice. Reports on ice conditions and Deep Freeze operations were also provided.

Recommendations – State Department (Liz Tirpak) should ensure that the Barrow Arctic Science Consortium (BASC) is notified of foreign research vessels (icebreakers) working in the North Slope area and also to make sure that the foreign research party be informed of the need for local community interactions and of the help that BASC can provide.

Council Action items

Task	***Assignment***
Provide final comments on the BAH Mission Analysis document to the Coast Guard	Margo Edwards
Provide recommendations on ice service as a standard item in the future. Need to make recommendations on both short-term and long-term solutions, including communications methods.	Peter Minnett, Dale Chayes, Bernie Coakley, Daryl Peloquin, Jim Dalitsch, Don Peltonen, Dave Forcucci, and NIC people
Review the UNOLS PCAR to see how questions/recommendations can be incorporated into the debrief process.	Margo and AICC Committee
Generate prioritized list of action items and recommendations from 2004 debriefs and deliver that to Coast Guard and NSF or others. Have a system for follow-up	Margo and AICC Committee
Review the current HEALY cruise planning manual and provide comments to Dave.	AICC
Investigate whether or not Laura (UNOLS Office) is interested in adding to her time to work on HEALY website. Give costs to Dave, Don and Tom/Simon.	Mike Prince
Review guidelines for working with arctic communities	Rebecca Woodgate and AICC

and provide feedback to NSF	
Conduct 2005 debriefs prior to next AICC meeting	Margo and AICC
Review proposed lab layouts and provide AICC recommendations to NSF (Simon)	Margo and AICC
Establish priorities for 2006 science system upgrades	Margo and AICC
Make recommendations regarding upgrade of multibeam system	Margo and Dale
Plan a future meeting with ARVOC	Margo
Finalize and publish EOS article about native concerns	Margo
Provide AICC briefing on future USCG icebreaker needs to NAS panel	Margo and AICC

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Proceedings of the meeting

Welcome and Introductions

The UNOLS Arctic Icebreaker Coordinating Committee (AICC) meeting was held on Wednesday March 30 and Thursday March 31, 2005, at the National Science Foundation in Arlington, VA. Margo Edwards, AICC Chair, called the meeting to order at 1:00 pm and provided an opportunity for introductions. A list of participants is included as Appendix II

Accept the minutes of the November 2004 AICC Meeting

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

Review of AICC Action Items

Margo presented past action items with current status (Appendix III).

AICC provided comments on first draft of the Booze Allen Hamilton Mission Needs Study. They are requesting AICC comments on the current draft by April 15th. Margo requested AICC members respond to her by April 10th so that she can combine comments and send one response to USCG/BAH.

Margo reported that the AGU poster session and booth generated interest in an article in Sea Technology, which Tom Wojahn and Jon Berkson are drafting.

Other completed AICC items included bringing AUV developers and ice data support personnel to this meeting. Several other action items will be covered during this meeting and several others are still pending.

UNOLS reports

Mike gave overview of Ocean Class Hull form, Regional Class acquisition, and advice to NSF on meeting budget shortfalls.

Dave Hebert, FIC Chair, reviewed the Fleet Improvement Plan and the FOFC integrated fleet renewal plan.

Annette DeSilva reviewed DESSC activities including the fall meeting, new members and the plans for the spring meeting. An important agenda item will be defining how new facilities are added to the National Deep Submergence Facility.

Ongoing issues for the Research Vessel Operators Committee include the completion of regulatory requirements for Vessel Security Plans and Non-Tank Vessel Oil Spill Response Plans.

NSF - Simon Stephenson

The agenda covers areas of interest for NSF.

Debriefs - Simon participated in the three debriefs, they were generally positive and NSF appreciates the efforts of the Coast Guard.

This year's schedule is challenging and will be pushing some new activities. Planning has gone well with the Captain attending both planning meetings, which also included representatives from Oden.

NOAA - Kathy Crane

NOAA has two major programs coming up in the next two years on HEALY. First is OE program to Canadian Basin and Chukchi Plateau. In 2006 the UNH mapping program for UNCLOS will concentrate on areas not previously mapped on the Chukchi Plateau and neighboring areas.

NOAA plans to take a very active role in the International Polar Year (IPY) and have submitted an expression of intent for ten different programs for IPY. All branches of NOAA will be involved in the IPY programs. This will probably necessitate the use of icebreakers by NOAA, although at this point they are not sure to what extent this will be U.S. icebreakers and to what extent they will share in the resources from other countries.

NOAA continues to have interest in using the POLARs for observations in the Southern Ocean. NOAA will have expanded interest during the IPY in using icebreaking vessels in the Arctic for observations and exploration.

Pacific Arctic Group; U.S., Japan, China, Russia, Canada and South Korea, intends to coordinate programs under IASC. Garry Brass thought that this coordinated effort should be brought up with AOSB more properly. This will probably be a minimum of six months of ship time using icebreakers of various countries. The furthest progressed program is the Russian-American census of arctic resources. Garry would like to have a discussion of IPY during this agenda.

USCG - CDR Tom Wojahn

The feedback process of the post cruise debriefs are very important to evaluate how effective the icebreaker program is. Some discussion ensued about the "percentage success" rating system and how it can potentially downgrade HEALY's performance even though the ship/crew performed well. For example, if ice conditions or bad weather contributed to some percentage of goals not being met, AICC thought that the CG should be able to stipulate this. The committee looked at the UNOLS form and agreed to incorporate similar rankings into a revised set of debrief questions.

BAH report is online for AICC review and comment by April 15th. This is a draft report and does not yet represent the Coast Guard's point of view.

This report will serve as a good starting point or basis for the NAS study. The report/study was also a starting point for the Federal Acquisition Process for refurbishing or replacing the Polar Class Icebreakers.

NSF - USCG MOU - Simon Stephenson

At present there is no longer an MOU discussion until the change of "owner" for the icebreakers presented in the President's budget is resolved. That document says:

MAKING GOVERNMENT MORE EFFECTIVE

Coast Guard Polar Icebreaking

"The Program Assessment Rating Tool (PART) assessment of the Coast Guard Polar Icebreaking Program yielded an outcome of Results Not Demonstrated, due to a combination of poor alignment of the program with the user community and inadequate performance measures. By contrast, the National Science Foundation's Polar Tools, Facilities, and Logistics program received an Effective PART score.

The Budget proposes to transfer funding for the Polar Icebreaking Program to the National Science Foundation to better align resources with those who benefit from the program. While the Coast Guard will continue to operate the polar icebreaking fleet on a reimbursable basis, the National Science Foundation will ultimately be responsible for the long-range planning required to refurbish or replace the ships, as necessary, which are nearing the end of their serviceable lives."

Discussion about making sure that AICC members are aware of major policy/funding decisions/news followed. NSF's position is that AICC should know about public information but not necessarily all private discussions. When AICC input is important, they will be included in the discussion.

ARVOC - Jim Swift (Appendix IV)

Palmer's problem with damage stability has been corrected and ABS will approve them for full operations in the near future. They are currently going forward with preparations for the "drilling" program.

Ice conditions in Antarctic still require at least one "heavy" icebreaker. The POLAR SEA is indefinitely out of service and the POLAR STAR is fragile. HEALY is solidly committed to the Arctic. NSF contracted for the Russian icebreaker Krasin to assist POLAR STAR with both vessels doing a good job and all vessels made it in for resupply. Ice conditions are changing with a polynya currently clearing ice from the area around McMurdo, but we cannot count on these conditions staying benign. There is no reasonable long-term solution to the need for heavy icebreaking around McMurdo.

POLAR STAR did have a casualty on one propeller during DF05.

Jim Swift is now the chair of the OPP advisory committee and also the chair of the subcommittee on Antarctic Logistics and a co-chair with Antarctic logistics experience may be appointed. They have a short fuse on reporting to NSF with recommendations. They want to make sure that NSF's interests are collated and vetted by the community. There is an active interest in the PALMER replacement, even though the design process is on hold.

ARRV - Bernie Coakley

Funding for the Alaska Region Research Vessel (ARRV) was not included in the FY06 MREFC account and presumably would be in the FY07 MREFC account which would bring it on line after IPY. The design is 100% done. Alpha Helix should be able to stay in use until 2009.

Arctic Research Commission (ARC) - Garry Brass

Doesn’t have any information about the new PRB panel on icebreakers.

Sent letter to the President recommending that the polar icebreaker capability to support science be retained.

Went to Finland (Aker shipyard) to visit icebreaker ship builders.

Commission's goals and objectives for arctic research is in final draft form and will be posted in the near future.

Garry plans to retire on the 31st of January. Selection process has just begun for choosing new Director for ARC.

There are azipods on the new Great Lakes icebreaker, which gets launched this week. Since these drives were considered for the ARRV and may be considered for future designs, we should watch what happens as they get used. Empirical data show azipods break ice better going backwards.

Northern Sea Route - Arctic Operating Plan ARCOP Northern sea route for the transport of oil. Industry expects 100 million tons per year and we will probably see commercial icebreakers operating in the arctic. The Arctic Council has impaneled with IASC an assessment of arctic marine transport.

SCICEX operations will continue with the possibility of new sensors, CTD, ADCP and other continuous u/w sensors.

Drilling on the Lomonosov Ridge story is fantastic. Kate Moran's presentation is astonishing.

Ice Service - Peter Minnett

Peter Minnett provided a nice summary of the requirements for ice coverage data and methods for getting that information to the ship in a timely manner. His summary and recommendations are contained in Appendix V. His recommended steps for this year's expedition included urging the Coast Guard to take steps to ensure a competent TeraScan Operator is on board for the voyage. This could be a specially-trained MST, a contractor, or a student or scientist with the necessary skills. He also recommended that detailed discussions should be started between the National Ice Center (NIC) and the Coast Guard on how best to make use of NIC expertise and facilities to ensure the timely provision of correct and appropriately located SAR data to the ship. Other imagery, such as from MODIS or QuickScat should also be made available. It may be necessary to supplement NIC skills and facilities with those from additional organizations.

Ice information to the HEALY for the joint Oden (now called HOTRAX) Expedition is for more than just navigation, but also needed for science planning. There was more discussion about the ability to get good resolution Synthetic Aperture RADAR (SAR) images to the ship based on a real time or recent position. Ordering products of sufficient resolution ahead of time and then getting that to the ship takes careful coordination to ensure it is recent enough and covers the intended track of the vessel.

Communications to the ship seems to be limited to Iridium, although Simon will look into whether or not the NASA Tracking and Data Relay Satellite system (TDRS) is available for communications. Communications to get high-resolution data to the ship is really limited and probably the critical issue for making ice maps available in a timely fashion. There was a brief discussion about getting interpreted products (showing fractures, leads and polynyas), but these are not normally produced in real time by NIC.

Based on experience in 2003 with the Nares Strait cruise, Dave Forcucci was confident that the dedicated Iridium channels would provide a robust, albeit slow, conduit for getting large (2 megabytes) high resolution SAR images to Healy above the Inmarsat foot print.

Bernie has received approval to have a Canadian Ice Service person on board for the trans-arctic program. This will have an impact on what is needed from the NIC.

ACTION ITEM: Peter Minnett, Dale Chayes, Bernie Coakley, Daryl Peloquin, Jim Dalitsch, Don Peltonen, Dave Forcucci, and NIC people constitute a working group to provide recommendations on ice service as a standard item in the future. Simon will look into TDRS. Need to make recommendations on both short-term and long-term solutions.

CG PACAREA - LCDR Don Peltonen (Appendix VI)

Don Peltonen reported on personnel changes at PACAREA and on the icebreakers. He then described the Deep Freeze breakout, which was about 84 nm. They did this entire breakout in about 3 days. During the refueling, they discovered leaks in the Polar Star's propellor hubs and decided with NSF to effect repairs, which took place over 20 days with Navy contracted divers who re-torqued the hubs. The Krasin arrived and they worked out the plans for the remainder of the season. Escorts went quickly this year due to the temperature and the soft ice conditions preventing any ships from becoming stuck. The Tanker Paul Buck offloaded 6M gallons of fuel and returned to open water. The American Tern arrived when the tanker departed and made it to McMurdo in a day. Average speeds of supply vessels was 7 - 8 knots instead of the usual 2 - 3 knots. Done with re-supply in 8 days and then left. Icebreakers left a day later.

After breakout, a polynya formed and ice moved out of all but the very south channel area.

They sent MSTs for at sea training on the James Clark Ross and for training in San Diego on Terrascan.

Air conditioning problems on POLAR STAR are still being worked on. They are purchasing small portable air conditioning units for the lab areas to make the transit periods more bearable.

Listed other improvements/fixes being made to POLAR STAR.

Showed some faults in the Ross Ice Shelf that could lead to future icebergs. This is a situation that bears monitoring as it may impact access to McMurdo Sound in the future.

Good news is that there are observable acoustic events that happen prior to the calving of a large berg and these have given as much as six months advance warning when there are potential problems coming.

Margo asked for a brief status report on the Polar Star's condition after it has been evaluated. It was reported that the #3 main gas turbine did fail in ice but that Polar Star was still able to break more ice with two turbines than Krasin.

STATUS OF POLAR CLASS ICEBREAKERS

Rebecca Woodgate asked whether or not it would be a good idea to publish a note in the Arctic Info newsletter setting straight some of the facts about icebreaker budgets and the status of the Coast Guard icebreakers.

Discussion about whether this is a role of the AICC and many thought yes. Suggestion by Margo that her AICC report for the UNOLS newsletter/website should include a brief report on the successful breakout and Arctic season as well as prospects for the new season and the status of the President's budget and NAS study. It should be reported that NSF is planning to contract for Antarctic icebreaker support for the next few years.

Day Two

Margo reviewed action items from yesterday

- AICC comments on BAH report
- Standards for ice imagery products - Peter, Dale, Ops,, Bernie, Don Peltonen, NIC, Forcucci
- UNOLS report on HEALY/POLAR status/success and post to ArcticInfo

2004 Debriefs - Margo Edwards

Overall the debriefs were very positive and good news for the Coast Guard. See Appendix VII for a complete summary of 2004 cruise debrief issues and recommendations. The list of suggestions and recommendations include:

- All funded PI's should have meetings prior to deployment in Seattle on the HEALY with the ship's crew to discuss scientific procedures, equipment use, and logistics for cargo transfer and chemical use.
- It would be better to have one person be the contact for overall operations questions.

- Strongly recommend engaging the native community early for future field campaigns.

- AICC should help facilitate transfers of HAZMAT to the ship from UW by assisting if necessary with determining the appropriate certifications and procedures that should be in place for transporting HAZMATs to HEALY. For example, the delivery truck/driver should have the appropriate certifications to get material on base.

- The new USCG internet tracking system for cargo and chemical shipments was valuable, but it still needs some improvements. Storage of some shipments on board was not exactly as desired, but these problems were solved or minor.

- In the future, the details of the on-load, when not in Seattle, should be discussed more carefully and in a more timely fashion.

- Consider making it routine to have the oncoming science party carry a marine radio so that they can contact the ship in case they are called away from port (S&R).

- Having the Iridium connectivity become standard in the future is highly desirable. Sending out short emails on Iridium also helped to speed up communications.

- It would be nice to see more than 2 hours per day of connectivity given to the science party. Splitting live internet time into two one-hour-long segments improved the utility of the service.

- NSF agrees that it will be willing to pay for more time if it is needed, so it is recommended that this information be provided to future PI's prior to the cruise.

- USCG says that the cruise planning form does specifically request "communications requirements," but it was not well established that the two-hour connections could be increased, even while at sea, with justification.

- During the two hours per day that the scientists are allowed access to the internet, if the CG folks can limit their use (which they have available for all of the remaining hours) then it frees bandwidth for the science party during their limited access time. When this request was made the effect was discernable.

- The computer support system needs to bolster its UNIX capability significantly.

- The shipboard backup system had a major failure and we lost data at one point, so that system needs work.

- Dale Chayes from LDEO was an extremely valuable resource to the SBI PIs concerning ship instrumentation and systems.

- USCG also now has a full time person for science data network computer support, who was essential to solve daily computer issues and periodic system crashes, as occurred during the spring SBI cruise. The team support of the LDEO and USCG personnel was a real improvement to general science and computer network support.

- There was some uncertainty about doing non-standard things that were not on the "plan of the day." An approach for implementing program changes in response to real-time events/findings could be better defined.

- We suggest that specific MSTs be assigned responsibility for specific instruments. The USCG should consider how to provide MSTs ratings, schools, rotations, retention, etc. The MSTs do well presently, but a huge improvement in their effectiveness as partners with the science party is possible. The MST-UNOLS exchange program should be continued. Can the MSTs get more recognition from the USCG hierarchy for the work that they do supporting science?

- It would be wise to select officers for deployment on the Polar Class icebreakers partly on the basis of interest in and suitability for science support. Could USCG consider making UNOLS experience part of icebreaker officers' training?

- Consider a cart/track system to move the CTD rosette in and out of starboard staging bay to launch point.

- Add a bathymetry repeater screen for the CTD operator, and navigation and other data displays in the main lab, computer lab, etc.

- Regarding hydraulic system capacity - some users had to wait for other users to complete their work. Consider upgrading the hydraulic system.

- Use of the SeaSpace Terascan system was a constant headache during the SBI cruises. SeaSpace should make sure that the system is checked out and fully operational and reliable under cruise conditions.

- There were three instruments that measured the ship heading and each gave a different answer during HLY04-03. They need to be consistent and correct.

- The aft XCTD launch tube is not at a steep enough angle, so the XCTD cannot drop. We could not find the spare hand-held launcher.

- AICC/USCG should determine what hull-mounted systems operate on other icebreakers and how they perform before making the final decision about replacing the SB2112.

- As mentioned previously, USCG needs to improve communications to some places (like vans on the fantail) so that scientists are aware of helo ops that might affect their work/safety. NOAA Mapping would have preferred to have two helos available.

- Consider new traffic patterns on the 02 deck near science conference room so that day sleepers on that deck can sleep. Soundproofing could also be implemented in the affected staterooms.

- Improve the sewage/toilet situation (long, daily shut-downs were the norm), particularly on the spring cruise, so by the second cruise, the problem had abated.

- Make sure that stateroom, head, and lab cleaning supplies are kept in good order, and that scientists know where the appropriate cleaning items are located for each space.

- There should be adequate towel racks, lights, and storage space for full 3-person occupancy in the staterooms.

- Some standard method for linen washing should be implemented to streamline the offload of personnel, considering the early departure time often required. Encourage people to bring their own sheets – this would reduce the problems with getting linens clean prior to offload.

- When gear is over the side protocol should insure there is someone on deck with a radio.

- In the event of future SAR events, we recommend that USCG set a time for "standby" so that science personnel can make hotel arrangements if necessary and avoid them if not.

- USCG should bear in mind the central role that command plays in science program success when it's time for officers to rotate.

- Nightly meetings are imperative to program success!

- All compliments to ship, officers and crew.

There was further discussion about how to implement procedures that ensure that non-chief scientists have reasonable access to command/bridge watch for their over-the-side procedures.

AICC will be adding new question at USCG request regarding the percentage of objectives met? We would add this as a standard question at the request of the Coast Guard to be used for their Government Performance and Results Act (GPRA) reporting requirements.

ACTION ITEM: Margo and committee review the UNOLS PCAR to see how they can incorporate these questions into the debrief process.

Simon thought that it was useful to continue having AICC do the debriefs as a neutral party. The debriefs are part of a process that is intended to make improvements and NSF/USCG need to demonstrate that they are taking action and using these recommendations for improvement.

ACTION ITEM: generate a prioritized list of action items and recommendations and deliver that to Coast Guard and NSF or others. Have a system for follow-up.

2005 HEALY Operations

HLY-05-01

This cruise involves towing a sonar for the first 3-5 days and then coring with box cores and jumbo piston cores. The ROV winch will be on board. They will be mobilizing next week and will be putting on a fiber-optic cable drum and traction winch. The winch will be mounted fore and aft and the fairlead sheave turned aft. They may need to borrow or rent an overboard sheave. The slip ring will probably be a single fiber type, which will require physically changing fibers if there are problems. Plan to map from Barrow canyon to the base of the Northwind ridge and then take cores. This cruise will take place from June 12th to June 26th, Barrow to Barrow. They are looking at paleoclimate in high sedimentation environments. They will attempt to tow continuously for 3-5 days, which is normal for the tropics, remains to be seen how well this works in the ice. Ice conditions are predicted to be less severe.

HLY-05-02

Rolf Gradinger - With NOAA OE funding they will use ice coring devices and divers. They will also use CTDs and plankton nets and an ROV from Deep Sea Systems international, which is rated to 3000 meters. They plan to take benthic samples with the box corer. Most stations will be at water depths of greater than 2000 meters with 1-2 days on station. Priority is to work in the Canada Basin and perhaps in the shallower portions of the shelf (lower priority). They have held logistics and planning discussions with the Coast Guard that were very useful. They will have the ROV and winch on board along with

large nets and box cores. Offload from this cruise will be on Monday August 1st in Dutch Harbor.

HLY-05-03 (a.k.a. HOTRAX)

Dennis Darby is lead PI - This leg will sail from Dutch Harbor and cross the Arctic in company with the Swedish icebreaker Oden. The science program consists of three different components including underway marine geophysics program (for Coakley) employing seismics, sonobuoys, and multibeam. They are particularly interested in the Mendeleyev ridge and also in the Alpha Ridge. Secondly, Darby will core at nine different sites, building on the Lomonosov ridge drilling from last year. The third program, for Don Perovich from CRREL, involves doing ice characterization with ice coring. Coordinating ship operations and planning routes will be based on ice conditions. They will have an internet connection and cell phone connections between ships. They are the first Arctic science party to apply for an Incidental Harassment Authorization (IHA) under the Marine Mammals Protection Act. This has been completed and is being sent to NMFS. There was a question about the Russian "Red Zone", their claim for an extended continental shelf, which has not been approved for technical reasons. State department will not make a request for clearance, but is also planning to deny permission to enter. Bernie feels this is outrageous and it is being appealed to higher levels in State Department (note: permission to enter was eventually granted). Gravity will be collected with a gravimeter left on board. Kathy Crane asked about a request she made for an atmospheric chemist to monitor atmospheric mercury. Bernie had not heard of this request, which Kathy apparently made to Simon. Need to sort out with Simon and Bernie, who did not see any reason why this couldn't happen. Just need to work out the details of the science party size and who pays for this. Current science party size is 40 planned, with another potential 8 scientists, including marine mammal observers for a total of 48. The crew will use any open berths, but there could be room for one more.

2005 Schedule and plans - Dave Forcucci and Don Peltonen

HEALY

Some personnel changes are taking place on HEALY such as XO, OPS, but CO, Dan Oliver, will stay for an additional year.

LDEO is funded through Ocean Technical Services for this years ops by Simon. OSU coring group funded by Simon to help with planning and carrying out the coring program. Chris Moser will sail on first leg and perhaps Pete Kalk on the Trans-arctic leg. MST's were sent out on UNOLS ships for some coring experience.

Dave showed the 2005 schedule. Transit home will include several stops enroute and will also be used for training and installation of upgrades if funding can be made available soon enough although this is probably too early for NSF funding. Dave also reported on pre-cruise planning and coordination trip to Sweden. Appendix VIII.

Will be submitting a clearance request to Norway for station off of Svalbard.

POLARS

Deep Freeze 05 provided the opportunity for several science programs in addition to the breakout, including work in the Ross Sea/McMurdo area and the deployment of NOAA Global Ocean Observing System (GOOS) floats as well as several sampling programs. In the past (2003 - 2004) the POLARS

have been involved with deploying ARGO floats, but this was cancelled due to production problems. For Deep Freeze 06 there is the possibility of several science projects being supported including the deployment of additional ARGOS and GOOS floats. See Appendix IX.

Jim Swift asked who keeps track of science missions done on Deep Freeze. These are in trip reports and Tom Wojahn can provide Jim this info.

Native Community concerns for 2005 - Glenn Sheehan

Importance of getting together with whalers - under international treaties they have to prove every year that they have the right to hunt whales. They have also caused the oil industry to consult with them every year about offshore activities, even though it is not required by law. They fear that if they don't hold the research community to the same standard, they will lose the ability to keep having the oil industry consult with them. They do have a concern about the whales being relocated due to avoidance of noise generated by ships. They are also concerned about ships traveling or working in the areas of the whale migration. The prospect of an IHA adds another layer of interaction over and above the informal consultations. Some scientists might ask why there is a need to continue these consultations when it has already been done. Each cruise is different and the local culture requires that each situation be described and consulted on.

Bernie talked about his experiences with whaling Captains. In general, if the work doesn't interfere with the hunt, they are not concerned. Some specific whaling captains were not convinced that they should let icebreakers come to their area at all, what use was it to them. Others said that the process was very important to the local community.

NSF and NOAA have cooperative agreements with BASC and they are available to help with consultations with local communities. They will help with creating a simple hand-out and by preparing a large chart with the planned track line and stations. The local people are an incredible resource of information about the ice and ocean conditions.

A recurring problem is that foreign icebreakers come into the region around Barrow without communicating with the native community. To those in Barrow, all “red ships” are the same and thus HEALY, which does an excellent job of communicating with BASC, etc., has its reputation tarnished by icebreakers from other countries. The State Department knows in advance (thanks to clearances) that these icebreakers are arriving, but doesn’t communicate this information to BASC.

ACTION item: Recommendation to State Department (Liz Tirpak) that BASC be notified of foreign research vessels (icebreakers) working in the north slope area and also to make sure that the foreign research party be informed of the need for local community interactions and of the help that BASC can provide.

Science Modifications, Infrastructure and Equipment

Dale Chayes joined by phone conference (because he was snowed-in in Utah) and reported on several completed and planned repairs and improvements to science systems.

Seawater systems (Chayes)

Science Seawater system upgrades and fixes to be tested next week with dock water to avoid contaminating the system with harbor water. They are presently considering modifications that should

help in heavy ice conditions. Plan to get input at the HLY-05-02 meeting in Fairbanks on April 4th.

Have minor mod to propose for next shipyard that might improve performance in heavy ice. Need to upgrade plumbing that leads to the Bio-Chem lab in the long term.

Environmentally controlled rooms (Chayes)

The compressors are currently being overhauled. Nothing has been done about the temperature control, in part because there was no expressed need for the '05 season until a very short time ago. Rolf's cruise will need to use these rooms.

Lab Space redesigns (Chayes)

The plans for the Computer Lab and the Future Lab were not funded this year. We hope to get them as well as the Met lab and some work in Aft Con done in the 2005-06 off-season. Plan is for AICC to review the plans, then submit a recommendation to Simon about funding the effort. At that point somebody (probably Dale) will submit a proposal to make the improvements to the lab spaces. One critical point not shown in the drawings is that the new design is based on Unistrut and deck bolts to allow future flexibility in re-arranging the labs.

The drawings for the Future Lab and the Computer Lab are at:

http://www.ldeo.columbia.edu/~dale/projects/healy/lab-plan/

We hope to experiment with a prototype watch stander workstation this summer and roll the lessons learned into the proposed upgrade of the Computer Lab.

Update on equipment needs for 2005

The fact that this is on the agenda is a leading indicator that science support on the HEALY is well behind the eight ball.

Longer range plans

- Re-engineer the environmental chambers
- Seawater systems - differentiating between various seawater needs still requires discussion
- New or improved multibeam (Chayes) the plan has been overwhelmed by shorter-term issues. The desire is still there. We need to do a survey of what is presently installed on other ships and how these systems are performing in the Arctic. In particular, the Oden is right now working to get a multibeam installed, and AICC should watch what is going on with them.
- ADCP 153KHz
- SeaBeam improvements

Underway data (Dale Chayes)

2005 plans

Dale reported that he was scrambling to scrape together a team to provide support for this season. Plan to put 2 people on each leg.

He also expects to propose upgrades to NSF in the next few months to address:

- Lab renovations (Computer Lab, Future Lab, Aft Con, Met Lab)
- Computer and network upgrades
- Environmental chambers
- Sea water system
- Data display
- What else?

Need to understand what the timeline might look like and where the money comes from. Getting a plan in place. Need to make a list of equipment and upgrade requirements and have prioritize these with AICC input, keeping in mind what is required for 2006 operations. Generate a finalized list of requirements by the Dutch Harbor port stop, send it out for AICC prioritization informed by the 2006 schedule. Not likely to have money in place for the transit home, but work then might not be expensive items.

Carin asked about ADCP data that wasn't right in certain bins. Andreas Muenchow is helping with resolving this problem.

Terascan

Terrascan is (finally) bolted in place (rather then using c-clamps and Vicegrips) and SeaSpace will sail on the shakedown to make sure everything works. The new mounting is to provide both better safety and better access to the unit. Dale is trying hard to get support for Steve Roberts to participate in the shoreside and at sea shakedown and then in the 01 and 03 legs of the summer program. The need for a qualified operator has been pointed out as critical to getting good use out of the Terrascan. Dale is working with the ex-JOSS folks about implementing the GIS component of the data system that JOSS supplied to SBI. JOSS is going away as part of a reorganization at UCAR, but probably exists in some other form.

OPS pointed out that the next haulout for HEALY is in about two years, so any components of multibeam upgrade/repair need to be put into the package within the next year. Dale is uncomfortable with the HEALY getting a 2112 upgrade.

2006 requests

Dave briefly reviewed the funded requests for 2006 use of the HEALY. Appendix X

These requests could fully utilize the ship in 2006. Some question about the amount of funding available to support the USFWS project over the $400K they have in hand. Took a quick look at the UNOLS request, which shows that they still only have five bodies for this leg.

A couple of these projects were deferred from 2005.

IPY

The Coast Guard is happy to support these programs, but NSF and NOAA have not published their solicitations yet. Bernie pointed out that there likely will be no additional (new) $ for IPY, so the budgets and programs will look similar to what has been done in the past.

Coast Guard Helicopter support

Tom Wojahn discussed dissolving POPDIV, partly to make helicopters available for re-engining. They are looking at other options for putting helicopters on the icebreakers. For 2005 helos will come from Kodiak and Mobile and will still follow the Polar Helo procedures. Deep Freeze 06 will not have CG helos and maybe not any, but likely they will use contract helos with contract pilots. Options for the future on the HEALY could also include contract helo support.

Glenn mentioned that they have had great success with coordinating flight ops so that they do not interfere with native community activities. Glenn requests that this coordination continue, no matter who provides the helo capabilities.

The south trips will definitely not use Coast Guard Helos, but it is still an open question for the Arctic. They are conducting an investigation on the requirements and solutions.

Equipment:

Dave Forcucci mentioned that the Iridium system has been upgraded and the POS-MV was installed and tested last summer.

Seismic gear for Bernie Coakley was described. This includes four compressors, streamers and airgun, "simple seismic" system and LOTS of spare streamer.

Ice Data (revisited)

Ice Data (and in particular communications) were revisited by Tom Wojahn with regards to the ATG contract support. It is not certain that SDN/IT services will be provided by the current contractor or an outside contractor. The Coast Guard will look at the possible solutions pending the higher-level decisions.

For the current season, a working group should look at the 05 operational and science needs, with OPS, Peter Minnett, Don Peltonen, NIC, Dave Forcucci, Dale and ATG/ESU people present/consulted.

MODIS

Jim Swift presented info from SeaSpace Corp. on higher resolution onboard satellite images using MODIS (Appendix XI).

Peter Minnett is skeptical about the feasibility of the MODIS to operate successfully, there are risks. If there is no cost and a backup, it might be worth doing. Alternate sources of this imagery are available in near real time from U. of Miami and the University of Wisconsin.

HEALY Cruise Planning Manual and Website

Discussed keeping the website up to date. Forcucci says that current Operations Officer has been giving input on his parts of the manual but it is still difficult to keep everything up to date.

ACTION ITEM: review the current HEALY cruise planning manual and provide comments to Dave.

Dave/USCG presently have a webmaster, but he will be leaving shortly. Investigate whether or not Laura (UNOLS office) is interested in adding to her time to work on HEALY website. Mike Prince to give costs to Dave, Don and Tom/Simon.

Medical History Forms

Resistance to filling out the Medical History and Clearance form (by one person) led to a discussion of whether or not the medical form should be changed or new procedures should be instituted. Decided there are safeguards in place and advertised on the HEALY cruise planning manual, so no actions are necessary. NSF supports USCG policy that if you want to participate in a trip, you must complete the form. An alternative is to make an appointment to visit the Physician Assistant or Medical Officer prior to your trip.

Arctic Communities Guidelines

Guidelines for dealing with arctic communities. Action item is to get comments to Rebecca by mid-May on the guidelines, keep in mind questions asked on the web page by Renee. Margo needs to send out a reminder to do this after all of the other quick turnaround action items have been completed.

HROV - Louis Whitcomb, JHU and WHOI adjunct

Louis provided an overview of the Hybrid Remotely Operated Vehicle (HROV) (Appendix XII). He described the project team and the advisory committee. He then gave a history of JASON development from Jason I to JASON II as well as ABE, the Autonomous Benthic Explorer. Discussed the options of getting to the over 7,000 meter areas of the ocean. Trieste is the scale of a HOV capable of this depth. JAMSTEC's Kaiko is a large ROV with a synthetic large diameter cable that requires a very large ship to handle the very long and large cable. Questions asked about endurance, in ROV mode 48 hours. Time on deck is estimated at around 12 hours.

AAGRUUK

Aagruuk - Arctic Archive for Geophysical Research: Unlocking undersea knowledge - Margo described her database of Arctic seismic data. See web site at: http://www.soest.hawaii.edu/HMRG/arctic/.

Membership Changes

No need to deal with any membership changes this year, but at the end of 2006 Margo, Peter and Bob will all have completed their second terms, so we need to start the process soon, probably after the next AICC meeting.

Next Meeting

Next meeting in Seattle the week of December 12 & 13. Healy returns on 11/28 and AGU is Dec. 5 - 9.

The meeting adjourned at 1700.