

**Arctic Icebreaker Coordinating Committee (AICC) Meeting
June 24 and 25, 2009
National Science Foundation, Room 770
Arlington, VA**

Meeting Minutes

Executive Summary

The UNOLS Arctic Icebreaker Coordinating Committee met on June 24th & June 25th, 2009 at the National Science Foundation, Room 770. This was the summer meeting and was attended by the AICC Committee, funding agencies representatives, USCG and the UNOLS office.

Action Items

#	Item	Point Person	Status	Comments
1	Radioisotope Use Policy	Dave F./Renee C.	In progress	
2	Bank Interactions	Carin Ashjian		
3	Inspect USCG vans	Dave Forcucci	Done	Mike Prince assisted
4	MMS Program Mgr to AICC Mtgs			(2) were in attendance today
5	Cruise Debriefs	Cooper/Ashjian	Done	No major issues
6	Icelfloe cruise questionnaire	Dave Forcucci		In progress
7	Document Tracking system	UNOLS		Jon to work on
8	Foreign Vessels in Alaskan Waters	Renee		
9	Science of Opportunity	Phil McGillivray		Need more open process
10	Icelfloe Berthing Policy		In progress	
11	Healy Equipment Inventory	Dave		
12	Bibliography of past cruises	Phil M.		
13	Cruise Scheduling/Cruise Planning			Need to do earlier
14	Identify retreat for Alameda			Not yet endorsed by PacArea.
15	Protocol for major equipment	Lisa Mack & Renee Crain		

16	Acting on potential industry offers for science			
17.	Invite Raytheon to UNOLS Scheduling Meetings	Jon/UNOLS	Done	
18	Add link to ARVOC on UNOLS/AICC web site	Jon/UNOLS		
19	Find out history of NOAA as science officer	Carin		
20	Cruise Planning support for Chief Scientist.	??		
21	Clarification on repairs to UNOLS vans	Jon		
22	AICC & Science Mission Req.	AICC		For ARRV?
23	Formalize Observer program	AICC		
24	<i>Polar Sea</i> Upgrades/AICC input	AICC		
25	ADCP 150 replacement	AICC		
26	Deck Incubator Hose Schematic added to Icefloe	Dave		
27	Transmitting Excel files			
28	Council approval for Robin Muench as new Chair & Lee Cooper as Vice-Chair	Jon		

Notes on Action Items-

Renee Crain & Dave Forcucci have been working on Isotope Use policy. Dave Forcucci has talked to Scripps about continuing to help with this and Phil McGillivary pointed out that foreign scientists would not be covered under SIO license.

Cruise Questionnaire- The modification of the cruise questionnaire is being worked on by Dave Forcucci and Dale Chayes. This is in progress, with focus on computers

Informing Alaskan communities on working around Alaska- Renee said this was a State Dept. issue and she will work on it.

AICC berthing policy- some suggestion to make changes, Kate Moran has worked on it and will discuss later in the meeting.

Old Items from 2008

- Develop bibliography of publications on past Healy and Polar Star and Polar Sea research cruises. Phil McGillivary has done some of this highlighting some great research.

- Recommend earlier scheduling and selection of who the Chief Scientist will be.
- Retreat- explored, but not endorsed by Pac area, Phil, we have a new Admiral and will look at this again
- Dev protocol for for getting majority

Appendices

I	Meeting Agenda
II	Attendance Sheet
III	AICC Chair Report
IV	USGS Report - ECS Plans for 2009 and 2010 (1.9 MB)
V	NASA Report (22 MB)
VI	Pacific Area - USCG Modernization
VII	D17 Update
VIII	Healy 2009 Cruises, Post-Cruise Debriefs and New Form
IX	Polar Icebreaker Update
X	Healy Seawater Ballast Delivery System
XI	Science Equipment Inventory and Laboratory Vans
XII	Electronic Systems Support Unit Seattle - Report
XII	AICC Membership
XIII	AICC Future Meetings

Meeting Minutes

June 24, 2009

Welcome and Introductions:

Dr. Carin Ashjian- AICC Chair called the meeting to order at 0830 with introductions. Dr. Rebecca Woodgate would join by telephone and Dr. Bernie Coakley's flight was delayed.

General Business and Reports:

Minutes for June 2008 meeting were discussed and Lee Cooper made motion to accept, seconded by Robin Muench; all in favor with none opposed.

Chair Report: Carin Ashjian

Committee Activities:

1. AGU Town Hall with presentations on Arctic research, event was well attended.
2. Attended USARC meeting in Alameda to discuss icebreaker science with USCG VADM Pekoske (spelling?)
3. Two debriefs were held for HLY0901 & HLY0902
4. Continued discussions with AEW/C/ Harry Brower and Healy 2009 cruises. Good relations continue with AEW/C.
5. AICC provided feedback to USCG Ops on various items including water fountain.
6. Revised post-cruise questionnaire, trying out new draft.
7. AICC is looking for new members
8. Robin Muench reported he is on the planning committee for AGU 2010 if AICC wants to go hold a Town Hall Meeting in February 2010 in Portland, Oregon.

UNOLS Reports: Jon Alberts

UNOLS Executive Secretary reported that UNOLS office has moved to URI campus from Moss Landing on May 1, 2009. Annette De Silva will stay on as Assistant Executive Secretary of UNOLS. Kate Sawyer was replaced by Pam Thompson. Project Assistant is being hired to replace Laura Dippold. The new UNOLS offices are in the new Ocean Sciences Exploration Center, a new and appealing quad suite for UNOLS.

The RVOC Committee published the new edition of the Research Vessel Safety Standards.

Dan Schwartz/Marine Superintendent at UW is the new chair of SCOAR and they are re-energizing the committee by education community of aircraft assets and their use in oceanography.

DESSC is working on Alvin replacement and conducting preliminary design review meetings.

Ship Scheduling Committee is working on 2010 schedules.

FIC has accepted the new Fleet Improvement Plan with online periodic updates. NSF now looking at what's needed to keep existing fleet operating at minimal expense. ONR building two new ocean class ships, involved in shipyard selection. NSF also looking at a couple of new regional class ships.

Steve Hartz: RVTEC rep to AICC. RVTEC met in October 2008 in Tallahassee. RVTEC Chair Bill Martin (UW) passed away unexpectedly and Rich Findley(RSMAS) was named new chair. Steve Hartz- RVTEC representative to AICC, reported on recent RVTEC activities which included:

- RVSS edits
- Education subcommittee formed for manuals & training

- Satellite Workshop held last month at WHOI

ARRV Update: Ship is funded and underway. Z-drive contract should be awarded soon. Shipyard proposals under review and shipyards being toured by project reps. Anticipate shipyard contract by autumn. 2014 estimated date for first science cruise.

Agency Reports

Deb Hutchinson:USGS

The goal of her report was to define the Extended Continental Shelf (ECS) program. The reason for the ECS program is to define outer limit of extended continental shelf where we have sovereign rights over the seafloor. Basically, to base of continental slope which extends the normal 200 mile limit in many areas. There are many issues including Law of the Sea, permitting, seismic activities and international collaboration. It can be confusing because ambiguities and definitions of legal and geological terminology. Large distances to north because of the Chukchi Plateau, and conflicts with Canada in the Beaufort. Canada ratified the treaty in 2003 and is ahead of US on these areas in the Beaufort. Trying to work with Canada in view of mutual research and resource interests. Seismic work uses a towed source and reflection technique with sonobuoys. Airguns used on St. Laurent. Involves a lot of towed, heavy gear off fantail. System is owned by Geological Survey of Canada. Towing gear in ice is tricky, as don't want the vessel to have to stop because of ice: two-vessel operations work well in this respect. Ops can take place in either open or ice covered water. Only one ship required in open water. More work wanted by Canadians along Alpha Rise, and 2009 planned tracks head in that direction. Larry Mayer is the contact for Canada. State Dept. heads interagency task force, while actual agreement is between US and Canada geological surveys. State is however a key player. Two highest priority planned lines will connect existing and new data. Canada doesn't need a US permit as long as outside the US EEZ: they have very similar permit policies to the US in any case. Concerned groups such as AEWC, industry and agencies have met to discuss related issues. Harry Brower keeps coming up in the discussions. NOAA is a collaborator in all this, as well. Industry sets a high bar for quality of seismic information. Question at present is Who is the *lead* agency for all this (response to Renee question). Canadians hold their seismic data closely for 5 years, and have been criticized for this. Antarctic has a 4-year embargo on data. Then up until 8 years must work with country collecting data. Canadians don't want industry to access data, and want Canadian scientists to have first access to publish the data. They might however entertain individual requests. Individual data release issues are discussed prior to each individual cruise. [PowerPoint shows location maps, areas of interest, etc.]

There are 15 areas around the margins of US where Continental Shelf could be extended including some areas of significant overlapping with Canada
US has not ratified yet, Canada has and is developing their claims.
The US and Canada have been working together sharing various data sets.
Seismic work and multiyear surveys to be done.

R/V Louis St. Laurent Seismic Acquisition – built a special handling system for seismic system, 16 channels, 10 meter long, build by GS of Canada.

Used the *Healy* as a lead ship ahead of the *Louis St. Laurent* for breaking ice, this made a huge difference. Then the *Louis* broke ice for *Healy* to allow a multibeam survey.

Plans for 2010 are North Slope offshore lines - don't need a US permit from NMFS as Canada gets the permit. If we are in the US EEZ , we do need a permit.

Dept of State has started permit, IHA process with NOAA. USGS will develop SOW to get permit.

Kate Moran inquired about access to data.

Canadian are picky on access to data.

Jacob Veerhoff is the contact on the Canadian side and Deb Hutchinson on the US side.

Barrow discussions set up ahead of time with Harry Browsers, Craig George, Robert Sutiman not there. Meeting was only 15 minutes, everyone was too busy.

Renee Crane: NSF/OPP Report

Renee reported on some new personnel at NSF/OPP. Lisa Clough, Hedy Edmonds, and Erika Key recently joined NSF/OPP.

Health and Safety Issues- Accidents remain the highest risk for Arctic operations and highest risk for OPP. Pat Haggerty and I are investigating where qualification need to be improved. NSF will get outside advice on remote medical clearance process. The medical clearance process will not become as restrictive as the Antarctic wintering over process. Accidents while working happen and medevacs happen due to bad judgment and accidents. Programmatically, Pat Haggerty and I are looking at this on a case by case basis and consider remoteness and length of cruise.

Renee reported that NSF doesn't have the statistics on accidents in the Arctic.

The question was asked if there been a need for a more extensive screening process.

Lee Cooper thought just once in the past decade.

Phil McGillivray stated that the USCG has screened people out.

Renee Crain- NSF doesn't have a medical officer looking at medical history on the research ship program.

Healy Drydock- multibeam replacement on target. This will be addressed later by the Coast Guard.

Foreign Research Vessel Clearances- The issue on how to insure foreign ships are held to the same US regulations that are followed by US ships was discussed. Researchers come into US waters and impact local communities. There is no official US policy requiring foreign ships to cooperate with local communities. Arctic communities have felt that foreign ships have arrived unanticipated and they would like to be kept more in the information loop. Renee reported she has sent letters to foreign chief scientists with help of State Department but didn't have any replies.

Kate Moran asked if the AICC Chair could help with this.

At present the State Department is sending the requests to Bob Houtman, NSF/OCE who then forwards the Arctic clearances to Renee Crain to keep track of these foreign programs.

Marine Mammal Observer:

These are required by the local villages rather than by an agency. Present mode is for a community observer to join a vessel rather than actually creating a formal program whereby a person is hired from a community. This process needs a closer look at the observers, their interests, motives, and who they report to. We encourage people to participate, but NSF doesn't endorse hiring a local to be the observers. Bob Pickart (WHOI) has had some experience with these local observers.

Phil McGillivary was on this cruise and reported this was the first time this observer had been a cruise and he was only picked the day before the cruise. His main job was to look for whales and report back to community.

Phil McGillivary said this was an ONR requirement to have a native observer.

Glen Sheehan at BASC knows the background on this.

Lee Cooper has had some positive experience with these observers.

Carin Ashjian thought we needed to formalize the observer program and Renee stated that this isn't an NSF requirement.

NSF Cooperative Agreement with BASC

NSF has decided not to continue the Cooperative Agreement with BASC which will end in a month. NSF will task our logistics contractor CH2MHill Polar Services (CPS) to provide support in Barrow. BASC may continue as a subcontractor to CPS.

They will then use subcontractors for various contracts. Renee Crain stated that NSF will contract for support by the pound, not for the year. This will require more work by other agencies.

Robin Muench asked if BASC is a research or a logistics organization to which Renee replied they are a logistics company with some research experience.

New NSF Solicitation

An RFP for ongoing technical support for the Healy solicitation is out there now with Dave Forcucci named as the contact person. This contract may provide other kinds of support. Renee will let AICC know when solicitation will be on street. It will be a 3-5 year contract which could turn into a long term relationship.

Renee reported that NSF did approve upgrades to Polar Sea as NSF wants to keep this ship operational. NSF asking USCG for input.

JMS and Pat Haggerty are going to look at ship and are working through details as to what can be done. Blake Howell is the NSF Ship Inspector.

Polar Class

In response to letter from AICC to NSF on the Ship of Opportunity process and science upgrades, some NSF funding for Polar Sea to make it a little more science ready. AICC feels that if we have an ice-capable asset it should be able to support science. The list from AICC has always been helpful. Renee is the point of contact on this and remains

open to suggestions. One science of opportunity cruise was done last year in association with a Coast Guard training mission and worked reasonably well. Would be good for NSF to have greater lead time on Coast Guard plans for training missions that might be available for SOO cruises.

Rajhiv stated that NSF holds the budget for the Polar's SOO. Only way we can get Polar Sea out for SOO is to do proficiency training cruise.

Another issue is the use of the C-130 aircraft on SOO missions. This issue hasn't been addressed in a formal way. The discussion turned to a UNOLS committee, SCOAR, which was organized to educate community on the use of aircraft for their research.

Renee asked if SCOAR could be involved in reviewing proposals.

Phil McGillivray is the poc for C-130 SOO and will get in touch with SCOAR.

Carin: AICC is trying to encourage these opportunities.

Phil: No opportunities on buoy tenders this year, they are too busy.

AICC urges getting the word out sooner

Renee: dialog could go smoother and SCOAR could help AICC with this effort. I will focus on science support items, cranes, winches, etc.

Antarctic Ships

Alex Isern- NSF reported that we have put the *Gould* and *Palmer* into the UNOLS scheduling system. Raytheon Polar Services Company has been encouraged to join in scheduling meeting.

The *Gould* charter ends in 2010 and there is an RFP that has closed to get a vessel of similar capabilities, ice strengthened, and capable to service Palmer Station. The recommendation is due by next week. The plan is to keep two in operation as before. *Palmer* charter ends in 2012, and appears that this charter will extend for another three years in order to bring a replacement on line.

Action item: Confirm that Raytheon is coming to the UNOLS Ship Scheduling Meeting on 14 July 2009.

Renee Crain asked the question can we get ARVOC and AICC talking.

ARVOC- The Antarctic Research Vessel Advisory Committee is an advisory committee to Raytheon Polar Services ship operations with Dr. John Anderson as the current chair.

Lot of things going on and cross-talk between AICC and ARVOC would be helpful

Action Item: Add link on UNOLS web site to ARVOC

Alex Isern asked whether ARVOC could be a standing committee of UNOLS

Renee- we are looking at ways to be more UNOLS like.

Renee also reported on the BEST program, i.e. we have brought *Palmer* north in the past and this is on the table. There are some scheduling problems and *Palmer* is standing down for 110 days in 2009. BEST program has not found a ship for the March 2010 BEST cruise. Need a ship for 40 scientists that is ice-strengthened.

Bernie Coakley ask if we had talked to the Koreans?

Alex Isern reported that OPP is not after OCE ship funds and the *Palmer* is at the dock for 110 days this year. We can arrange the money internally and the change in support contractors may be a good opportunity.

Dave Forcucci asked the question whether the *Gould* and *Palmer* might be available in the Arctic to which Renee and Alex replied that we have talked about it, but the season overlap doesn't work for BEST in 2010, but it will stay on the table.

24 June 12:00

Bill Lang- NSF Environmental permitting joined meeting.

Andy Armstrong: NOAA

See Appendices for Andy's power point presentation

Bathymetric mapping a major priority, in Arctic as well as many other locations. Use SeaBeam on *Healy* for Arctic mapping, as well as 3.5 kHz sub-bottom profiler. Ice conditions north of the Chukchi haven't typically been major issues. A major task has been mapping the 2500 m isobath, per law of the sea requirements. This impacts how far out the US can claim rights. All bathy data are available at NCDC, LDEO and the NOAA law of the sea website. At present, ~6% of the Arctic Ocean has been mapped with multibeam. Strategic plan for the continental shelf taskforce has just been released. Bathymetric data available at LDEO GeoMapApp and www.ccom.unh.edu

www.flipseekllc.com/mmsextendedshelf.html-- task force brochure just released today (website is up). Some rock samples were also collected, and are available for analyses by interested persons.

Other NOAA News

NOAA is starting a new ocean exploration program with the *Okeanos Explorer*. Will start with bathymetric mapping and some water column work. Work to be interdisciplinary, with most science teams participating from shore via telepresence. Focal areas will be areas having high potential for new discoveries. Plan to use a mother ship/ROV combination. Video, voice and data transmission will connect ship to command centers. Year 1 will be for sea-trials and Year 2 will focus on Western Pacific based on advisory board recommendations. This will not be a hypothesis driven program but more survey type work. Bob Ballard had a lot to do to getting ship,

Other NOAA Projects:

NOAA is planning other work in Arctic in the years to come. Kathy Crane is the contact on these projects:

CO2 Variability

Arctic Observing Network

Marine Biodiversity Monitoring

Enhanced Ice Forecasting

Freshwater Studies

Atmospheric Observations

Carin inquired on the outcome of the NOAA/RUSALKA cruise and it was reported that rock samples from Arctic are in Stamford and Michigan right now.

Jim Cimato: Mineral Management Service

See appendices for Jim's power point presentation.

Research to support oil and gas management activities is planned for the next five years with a focus on marine mammals e.g. right whales and bow head surveys, but also seabird studies especially in Norton and Hope basin areas. Most work within 20 miles of shore.

Some anticipated industry activities: Conoco plans Chukchi coring and bio sampling in summer 2009; Shell will do multibeam and sidescan in leased areas of the Chukchi.

Renee Crain asked about data sharing in which Jim replied that data is held proprietary for an uncertain period, depending on nature of data. Shell expected to submit exploratory plans in Beaufort. In general, Beaufort-Chukchi development will continue.

Healy will be used for one meso-met study joint with UAF this summer-fall. Ken Dunton (U. Texas) leading a study on *Helix* to the region, with participation by Shell as well as MMS. Lee Cooper is also involved in this work. (*Helix* is now owned by an offshore drilling outfit.) Tom Weingartner deploying UHF radar along the Chukchi coast this summer, similar to past work in Beaufort. NOAA to do passive acoustic monitoring this summer, including deploying some oceanographic arrays for data collection (this is still in early discussion phase). Hajo Eicken mapping/characterizing spring leads in land fast ice.

Renee asked: How does MMS solicit work ?

Jim: We like to use NOPP partnership, announced as Broad Agency Announcements (BAA). We also announce an RFP in grants.gov. We use single source cooperative agreements and interagency agreements.

Renee asked: can researchers publish?

Jim: yes, we require a report and encourage publishing. We want the environmental data to make these resources management decisions. Peer reviewed pubs are encouraged, and funds are available for working existing data up for full publication.

Robin: In work done 20 years ago it was difficult to get funding from MMS to complete the analysis and processing required to publish data.

Jim: MMS has recently been funding "data mining" to use old data and publish results.

Lee: we are clearly hearing a different story from MMS now.

Jim: Our culture, going back decades has been to develop relationships with local (proximal) university labs. I've been asking our program managers to make announcements. Our authorizing legislation limits us to using universities in coastal states.

Fred Lipschultz: NASA

Power point presentation in appendices

With FY 09 funding in hand for a field program in 2010 & 2011, NASA held a recent solicitation which closed on June 1st. NASA received 36 proposals. Don Perovich and Kevin Arrigo will be lead PI's on this. Ocean biology and biogeochemical program has applied for icebreaker use in Chukchi-Beaufort region. One focus is the new ice-free pelagic habitat and resultant increased productivity. Time period is summer 2010 and spring 2011 (spring bloom). Program will include data assimilation and modeling, and will address bio and biogeochemical impacts of melting sea ice. Funded programs will be 4-year research projects. Satellite imagery will be correlated with in simultaneous *in situ* data. Algorithm tuning for the Arctic is also needed. Climate active gases are another focus, sampled in the atmosphere by satellite. No benthic work, but an emphasis on the upper ocean boundary layer that can easily be seen from space. Possibly some marine mammal work from satellite observations. Collaborate with MALINA, a French program having same bio-optical focus, will have joint science meetings. Collaboration also with Canadian and NSF-funded researchers. Overarching requirement is that projects utilize satellite data. Ship time requirement is order 35 days per cruise.

Renee stated that the match up between science and available ships looks good for the coming year. Project funding decisions are due within the next few weeks.

Renee: we are making final decisions on 4 programs now and are working on a draft schedule. I think we can cover with US assets, schedule will be full. NASA around 35 days for each year. Kevin Arrigo will be Ch. Sci. and is already on UNOLS form. It would be best if he knows by Aug 2009 which ship.

Jim Holik: NSF Report

Pilot program for technician development on research vessels, with potential interest to Arctic vessel users. This will be funded as a pilot program and is planned to continue onward. Pilot will be funded through UNOLS. Longer-term program might be situated at a suitable institution. The more buy-in from people outside UNOLS, the better, and this includes those from outside the major institutions. Goal is to augment existing programs, not to dismantle them or replace existing technicians. The US Antarctic Program has a similar program.

Satellite communications from ship are a contentious issue for UNOLS ships. Full-time, functional internet is provided, but is slow if reliable. An alternative is faster, but more expensive. Antarctic uses Inmarsat (but only two user vessels). Will likely fund an experiment to use fleet broadband which is pay-as-you-go, at significantly reduced prices (\$1/megabyte-\$2/megabyte) Idea is to evaluate and understand the available options.

John Farrell: US Arctic Commission-

No slides

John met with VADM Pecoske to share minutes from the last USARC meeting. Coast Guard is very interested in oil spills in ice. The interagency group looking at this hasn't been all that productive, due in large part to lack of funding for that type of work.

Arctic policy review was released in January 2009, and it seems likely that this will move forward under the new administration. Not much in the policy about new funding e.g. for icebreakers.

8-nation Arctic Council met in April. Produced an Arctic Marine Shipping Assessment as a set of recommendations, including suggested research topics. First comprehensive review of shipping in ice and contains recommendations as to what we need to maintain to support shipping.

Bills are in the works requesting funds for construction of two new icebreakers, but this is still at a very early stage. There is some support among senators (Alaska, Washington, and any states containing a shipyard that might get a construction contract).

Had a very good meeting with VADM Pecoske.

Did a Town hall meeting and will talk with Robin to see if we should do this again.

Commission in discuss with USCG with oil spill in ice research program. This is a hot button in Arctic, and there is an interagency group, but not as active due to funding shortages, USARC is trying to get more funding.

Interagency looking at oil spills in ice. The interagency group looking at this hasn't been all that productive, due in large part to lack of funding for that type of work.

Recent meeting on impact to naval operations, in Science.

Navy/ONR is taken a renewed look at Arctic,. Created a task force for arctic road map, We work closely with Congress on various subcommittees to determine

Don Young- Bill Hr2864 & HR 2865 – has money in them to build two new ice-breakers

Personnel- we may have two new commissioners- and Kate Moran has been named as IPA to Arctic Research Commission in the OSTP

Dale Chayes: The Healy E-22 Multibeam Replacement

Power point presentation is available

The system has been ordered and is now undergoing detailed engineering prior to planned 2009-2010 installation during drydock. Hoping for operational status by 2011. Sea trials will require 5 days of dedicated time off the Washington Coast. Sea acceptance and performance characterizations will need to be done in coordination with science operations in the Sub-Arctic and Arctic regions, to encompass shallow and deep water, and ice covered conditions. Summary is that we are on track but there is still a lot of work to do before installation and trials.

Some potential with regulating the multibeam as a sound source, as for a much more potential source. Will need a write-up of the sound levels, etc in order to deal with

potential regulatory issues. This might conceivably require observations of the actual sound pressure levels associated with the multibeam.

Capt Sommer stated that he wants to group engineering tests separate from training trials, keep it as two separate cruises.

Bill Lang: Fisheries is making noise about making multibeam a permitting issue.

Dale: We have spoken Kongsberg about beam patterns.

Bill Lang: We may have to go through a more extensive process to prove there is not an issue. NOAA has been unable to give us operating parameters for multibeam.

Andy: NOAA is also purchasing a 12 kHz multibeam for Ron Brown.

Lisa Mack:USCG Report

Budget authority retained by NSF and has discontinued support for Polar Star.

USCG wants budget authority returned to them in order to align with operational authority and 2011 appears to be the soonest this could happen. The MOA expires in 2010 and the revised MOA does not include language to return budget authority, it may still happen through an amendment, but not likely.

CG Arctic Initiatives- Participated in policy review and talks with Homeland Security. Polar Ice Breaker Mission analysis report was last done in 2005, it is felt it is important to update in support of a service life extension program.

Congressional Report requires the CG to do a high-latitude study of all 11 CG statutory missions to complete end of 2009.

Icebreaker Issues

USCG got 30 million to reactivate Polar Star for 2009, but this is about half of what is required for a detailed reactivation plan. This is a bridging strategy to maintain a heavy icebreaker presence. Mostly for an engine replacement, hull machinery and ship electronics. If we don't get the 30 million for phase two, we will be very conservative with the first 30 million.

Carin asked: are you looking at science capabilities?

Mike Ciaglo responded: not yet, just looking at hull machinery and engineering.

Polar Sea is due for drydock in 2010, but is being held up by tight budgets.

Healy is limited to 185-200 days of operation away from home port. The Office of Cutter Forces looks at this and Healy can't do more than 185-200 days away from home port. Of which 20-25 days for training comes out of this. Required maintenance impact this-

Rahjiv: If we looked at more than 200 days, we would need to look at two crews.

Captain Greg Somers: PACAREA

Power point presentation in appendices

The USCG is reorganizing and has a new organizational chart. All areas in the CG will do business in the same way. The high level position changes require congressional approval.

Renee asked if the change is from a geographic focus to an organizational focus.

Capt Somers: no one has raised that issue; we don't expect the public to see any differences.

Phil McGillivary: PACAREA

Power point presentation in appendices.

Decided not to do a SOO after consulting with AICC chair.

Phil is the POC for these SOO programs on the C130.

Arctic Domain Awareness flights to help familiarize CG for weather conditions, landing areas etc will be run from March to October every 2 weeks, Nome to Barrow to Prudhoe. A few scientists which have taken advantage of these include Colm Sweeney with ESRL continuing bi-weekly. Also Jim Maslanik was funded to install a LIDAR, Many of these flights are along the coast and up ice leads.

Dale asked if they will fly these transects offshore and Phil thought perhaps.

Renee asked if CG is going to increase their presence in Barrow and Phil reported the discussion is going on.

1555- Adjourn General Meeting

25 June 2009, Day 2

Commence Meeting- 0830

Review of Past Programs, Recommendations and Responses

Healy Debriefs

BEST Cruise- March 10-31, 2009. Lee Cooper was Ch Scientist. They left Kodiak and work just south of St. Lawrence Island. Tagging of walrus with 20 tags and 17 were successful, and a very successful cruise.

Long BEST Cruise- April 3- May 12, 2009 Carin Ashjian and Evelyn Lessard, NSF funded through education grant. Geared for general public, lots of communication, project website: www.polartrec.org

Debriefs of two cruise done last week, Lee and Carin filled out the forms ahead of time and then during a telephone conversation details were discussed.

HLY 09-01-Lee Cooper- 99% accomplished, many thanks to all MST's

Few issues that need discussion:

Pre-cruise questionnaire and other cruise planning materials could use some clarification, especially, for the benefit of new users. Specific due dates need to be provided, and tracking information is needed on updates to forms. (All on IceFloe).

Would be worth making cruise planning duties for Chief Scientist a bit easier. At present it takes up a lot of time in terms of reporting and communications. This difficulty is much greater than for any other UNOLS cruises. Suggestion that additional salary/time needs to be provided for chief scientists on large project cruises.

Concerns about weather protection of gear on dock or during on/offload. Renee - could scientist provide tarps for gear on dock? The CG has tarps and should be able to take care of this.

Issues with trucks being turned away from gates, and difficulty in locating some ship science gear. Make sure to keep files on tracking numbers that are signed off on delivery. Need some updates to tracking system to reflect arrival on base/on dock/on ship.

Malfunctions of UNOLS vans. Needs clarification on responsibilities for this. Renee - should be part of UNOLS responsibility to maintain and repair vans. This is covered by the day rate charged for van use. Dale - one van was new and never been used, untested, etc. Never safe to assume van is working as when originally shipped, so checking just before deployment is essential. Some question as to who does repairs remotely or when in use aboard ship. Wave damage is another issue: beyond normal wear and tear. There is a whole host of van issues.

Other Issues:

Closed circuit TVs need upgrading

Web access issues

Sensor Calibration

Environmental chamber problems and questions as to why not test prior to cruise

Freezing seawater hoses on fantail

Helo arrangements were made too late to plan all proper science usage. An issue with responsible agencies and paperwork submission.

Elevator safety (Lee). Minor injuries associated with elevator operation: closing and dogging the doors issue.

Chief scientists should be appointed as early as possible, given extent of duties.

Teleconferences are very useful during cruise preparation and planning.

Process of procuring vans needs to be better spelled out on IceFloe. Jon/UNOLS has at present a form for requesting a van for a specific cruise. First come-first served, and applies to all potential users. CG and party need to identify needs early on. *Healy* can hold 3 vans safely, 5 at an absolute max although two may not be stored in optimal areas in the latter case. Cruise planning protocols with respect to e.g. vans need to extend to any vessel working in the Arctic - not just *Healy*. Van heaters are an issue. Bow is a bad place to stow vans when underway.

Big incubators not holding temperature properly, but not CG property since purchased in the past by OPP. Need replacement, and so a list needs to be provided to Renee. Forcucci has a list of such gear that needs attention/replacement.

AICC will discuss debrief issues by email and rank them in order of importance. Van procurement clarification issues will be a high priority.

New Debrief Form

Clarification issues with regard to individual questions. New form has been distributed, and new form was used on the two Hly09 debriefs. First point, on success ranking of cruise, was the only point remaining unclear. CGHq had asked for the percentage success ranking, but this ranking can be misleading. Need an explanation to explain why any ranking fell below 100%, e.g., initial plans were overly optimistic, weather or ice conditions interfered, etc. Important to see whether any CG issue was responsible for less than 100% ranking. Use of percentage followed by a comment box is fairly standard. Techs typically don't fill out the forms: it's up to the scientists to fill them out.

Carin: This needs to be revised and agreed upon by 1 August. Sooner is better.

Dale: form has underlying assumptions perhaps not apparent to the user. Should there be a list of all equipment along with checkboxes: used or not? If used, did it work? Etc. Both planning and debrief forms needs to be generated from a common check list.

Debrief phone calls are much more useful if the written materials are available prior to the phone calls, and this needs to be enforced. Debrief forms and tech logs should be generated from the same list.

Kate Moran: the questions are important but to make sense it needs more information such as weather, ice, equipment, time.

Renee: It might be helpful to estimate days lost due to CG, as NSF and many other parts of the government does for their contractors.

Captain Sommer: the debrief forms are second only to the 1815 meeting, we appreciate the written feedback.

Renee: The telephone call to discuss debriefs is a good part of the communication process.

Dave Forcucci: *Healy 2009* schedule

- *HLY0901* Cooper
- *HLY0902* Ashjian
- *HLY0903* Cancelled

- *HLY0904* 13 days July 25-Aug 6 Bob Pickart 13 days mooring recovery, redeploy some of them and put up an MMS surface met buoy over one of his moorings.
- *HLY0905* Aug 7 - Sept 16 Larry Mayer 41 days. UNCLOS mission, dredging and multibeam work. Looking for some wireless comms between *Healy* and *St. Laurent*, for use of CS. This is a two-ship cruise, so is there an "expedition leader" in this case? This is presumed to be worked out by the two CS on both ships. May recover MMS met buoy deployed by Pickart, serving as a backup for planned pickup by *Polar Sea*. Buoy is 12-hours steaming open water from Barrow.

- *Healy* drydock starts 20 October

Dave Forcucci: 2010 Plans and Projected Availability

23 March 2010 should be out of drydock
Healy plans to be underway by May 11, 2010 after 14 day shakedown cruise then a multibeam testing cruise for 20 days.

Ashjian ONR 3 days starting 1 June.
NASA 30 days from ~1 July.
UNCLOS 40 days from 7 August.

Still awaiting NSF funding for period following this.

Fall 2010 tactical training in fall for 3 weeks underway in Seattle area.

Phil McGillivray: Summary of *Polar Sea* 2009 Activities to date

Polar Sea SOO cruise cancelled this spring.

8/24-12/3 Shakedown, Science & Training

On standby for Deep Freeze 15 Dec-Jan 2010.

Available for science in spring 2010 following Deep-Freeze standby

2010 scheduled triennial drydock, but schedule still not fixed. *Polar Sea* may be only option for the 2010 BEST cruise (Ashjian). Availability past the end of April. *Polar Sea* can carry up to 32 scientists with a little pushing. (25 was standard science capacity)

Presently at dockside with a lot of work being done.

Autumn schedule may include Chinese mooring retrieval, methane hydrate cruise, and polar bear cruise. NB permitting is not an issue here, as already taken care of for both US

and Canada. NB methane hydrates are very patchy offshore, so some uncertainty as to where he should focus his cruise, basically, will be just north of Deadhorse.

Chinese mooring cruise: Collaboration with Chinese can have significant payoff down the road, as theirs is a multiyear program with invites for US participation.

Methane Hydrate cruise: No discussion regarding need of a CAA for the AEWG, but there will likely be a native observer aboard the methane hydrate cruise. The area had already been moved eastward into deeper waters.

Polar Bear cruise: Nobody knows where the polar bears will be, so there is no option to meet with Canadian vessels. They need ~50% ice cover and can be expected in those areas. Op area for this cruise will depend on bear locations. Dive and sea ice teams will be aboard ship. Will be a National Geographic guy aboard and a Google Oceans ice cam. This will be a fairly long cruise.

Wave glider ASV (Navy, Google) launch prior to whale migration. Use to track smaller whales that are less likely to have been tagged.

New 700 MHz wireless units received from NSF for installation on *Polar Sea* and *Healy*. Range will be about 100 miles with whip antenna.

A continuous pCO₂ system will be supplied next year by Wanninkhof and installed on *Sea*. A demo atmospheric pCO₂ install is also anticipated.

Conoco Phillips has a big Chukchi lease site where they will start work in Fall 2010. They have agreed to openly share all ocean data.

Polar Star:

\$32.5M in hand for refit. Scoping currently being done for engineering, and preliminary results show that this amount should be adequate for needs. These funds are not for science; rather, they are for the refit. Possibly that if some funds remained they could be used for science support. AICC will become reinvolved with the vessel following this work.

\$40M proposed for design of a new icebreaker. Personnel for design work have been identified within and outside the CG. Canadians will be involved, and AICC should be involved. Present stage is a mission analysis report, and actual funding will be quite a bit in the future. This is speculative at present, but a potential future issue.

USN is also looking at the possibility of some ice strengthened warships for use in the Arctic, but this is also in a very preliminary phase.

Some interest in mapping currents and ice movement simultaneously.

Other - autonomous a/c and other vehicles:

Cost suggests use of unmanned aircraft for marine mammal and other observations, at least, for industry.

In general, project a growing use of unmanned vehicles for marine mammal census. "Global Hawk" is one such vehicle. Canadians have nothing along these lines planned for 2009.

Role for AICC in Polar Sea upgrades: In August we will get a report from CG
Action item: AICC to request opportunity to provide input

Sen. Murkowski 40 million for a design of new icebreaker.

Lisa Mack: we are looking at what our resource requirements are.

This is not a CG request, but started with Congress.

Carin: Will this ship be a multi-purpose vessel?

Lisa Mack: we don't know yet.

Mike Ciaglo: *Healy* drydock and multibeam replacement is the big one. And pull of both shafts. We don't know how long this will take.

Polar Sea- 6 months for drydock, all 3 cargo cranes replaced, been a 10 year effort and the plan is for a 3 ton crane on bow and a 15 ton crane aft.

Rescue Boat to be replaced- with a new davit

Pulling shafts and looking at bearings, also hydraulics and pitch setters, J-frames, winches,

Polar Star- need to get a handle on where we are at, sitting for 3 years with little maintenance.

Carin- Interaction with others

AEWC has a new executive secretary and she continues to work with other chief scientists and Harry Brower and will attend their meeting in July.

Nothing done for Polar Sea, Phil has been doing it-

Healy for the first two cruises Carin spoke with Eskimo Walrus Commission.

We need to talk with tribal governments as well as AEW. On Carin's cruise she sent e-mails documenting marine mammals sightings during the cruise and updated them on progress on the cruise which helped to engage them in the science.

IRA- Indian Reorganization Act- Branson Tunigyan

Gay Sheffield- also helpful.

Lee reported that he wrote as well and went to Savoonga in January.

Talked to whaler captains, called them when getting close to island.

We had a teacher for Indian Head, Maryland and teacher explained science. Lee is also involved in outreach efforts with a group of native Alaskan students to visit the Wash DC area and possibly going out onto Chesapeake Bay

Carin- I think the Healy has done a good job communicating with local communities, Renee” I think the people are being diligent with this responsibility.

Phil- On Pickart’s cruise, we had an observer, and there were some problems until He was shown how to do e-mail and then he did send back some reports.

Kate: mentor for observers

Renee- Very interested in developing a pool of potential observers If someone wanted to submit a proposal to organize this pool of observers, I would be happy to entertain this.

Science Modifications, Infrastructure and Equipment

Four-person stateroom was designed to address lack of privacy when three people are in the room. Forcucci and VanPelt were in it for part of a cruise this past spring.

Healy Seawater System- Carin and Steve Roberts reported on the this. Ice ingested into system at volumes greater than 80 gal/min when in an ice cover leads to system freeze-up. It was possible at low T to use ballast tank seawater supply system to provide water while ship was underway. This last required a lot of coordination. Ballast tanks had to be filled when on station and not moving through the ice. At increasing ambient T the ballast water T increased excessively, and it was necessary to revert to the previous pumped system with a heated manifold. Important to document all these fixes so that knowledge is retained and various pieces stowed in known places. A number of more elegant solutions or partial solutions were presented. Originally used in 2004 for the SBI project and is documented in the HLY0902 cruise report by LT Jacobs.

Non-Coast Guard Science Equipment Inventory- Dave Forcucci reported on this. Relates only to aboard ship items that are not maintained by the CG. The CTD and related sensors is not *Healy* property, it was purchased by a contractor, (Chan Corporation) but is maintained by contractors from SIO. It will eventually be added to the property list. TSG systems (2) and flow-through sensors (6) are owned by SIO, as are the met sensors, (6) and a DI system. Other items were sleds, (3), upright incubators, vans, rock dredges (4), CTD Sensors ~ 40, and POS/MV (1), LDEO’s

There are science vans (3) of which two are beyond repair and one could be grandfathered. Originally outfitted by SIO in 1992 and purchased by USCG per Phil.

Van placement (Forcucci): Bow storage leads to van damage while underway, so move them up one level to remove from green water threat.

UNOLS van pool (Alberts): went over policies. Still need to specify who does repairs, so that NSF knows who to pay. Question as to how subscribed the van pool is at present, in order to determine whether another van purchase is necessary.

TSG/PCO2 upgrade (Dale): Plus multibeam work, testing, computer lab and ADCP in late 2010. Refer to presentation.

ADCPs and future lab renovations are immediate future issues (Dale): multibeam has parts for a few more months of operation. ADCPs are noisy because of cable runs and high EMI environs. Shorter cables helped a lot. Acoustic interference is a problem, both with each other and with other sonar units. The ADCP150 is broken with no spares and should be replaced in CY2010. The 75 is working, and some spares are available. The 75 is newer than the 150. Action item: Need to solicit input from the PO community on what to use as a replacement system.

Science Operations and Technical Support

Sciencenet on *Healy* and *Polar Sea* (Jim Wilson): both have Iridium, VSAT (WAN). Parts are purchased but not installed, service contract not done yet. Looking for October install date before yard period. INMARSAT B replacements are underway. These involve hardware (antenna) replacements in same locations as old ones. Sciencenet support has been excellent on HLY-09 cruises. Might be useful to put the mean email traffic on the IceFloe site as an example of email usage during a large cruise. Mean email was 15K in length, with ~39,000 emails sent during the entire *HLY01* cruise (Carin's). This relates to question on form that requests an estimate of internet usage.

Healy still has no firewall between CG and civilian nets aboard ship, so no cross-communication. Intership comms network is now good up beyond 6 miles. No changes to LAN are planned for this summer. SIO has been contracted to provide science support for *Polar Sea*. Renee wonders why they've gone through SIO rather than through the UNOLS arrangement for *Polar Sea*.

Dave Forcucci: Website & cruise planning manual: Notes that since UNOLS office move there's no basic web support. Position has been advertised by UNOLS, and position is currently filled by a temporary person. Ice imagery dialogue is still open, and imagery is being used to close to its full potential.

Dale Chayes: Science Technical Support
Power point in appendices
Typical LDEO support- Pre-depart- 2-4 people

Support for 2009-2010

Approximate same level of support plus multibeam related, planning, installation, integration, acceptance, testing, and performance evaluation. (Planning is just about done, so it may be time to push on the planning or tsg/pco2

Planning for TSG- begin now

Upgrades and Improvement slide- equipment and current status on where this gear is at and what is needed.

ADCP- been a problem on Healy from the start-
Acoustic interference, high EM environment
ADCP 150 is broken.- spares not on board,
ADCP -75 is working and we have spares- new in 2002, phased array

Jim Wilson- Healy Network

Power point presentation
Wide Area Network- same on *Healy* as *Polar Sea*
VSAT Completed,

HLY 09-01- debrief-

We did not let people know about the firewall issues, it needs to be there, but we need to
Communicate this better.

Excel files- we did not know about this issue, will look into this.

E-mail stats on Carin cruises- 36,900 e-mails, about 15 k per e-mail, just science network

HLY-08- slide

Science Support Polar Icebreaker fleet- slide

This subcontract for tech support goes through USCG

Other Business

The Committee commented on the medical guidelines for deployment that had been presented to the Committee as a document from Capt. Sommer and discussed by the Committee in Executive Session. The Committee thought that all of the guidelines were reasonable with the exception of the absolute prohibition on pregnant women participating in cruises. The CG (Capt. Sommer) said that this issue is not negotiable and that the guideline was established at a much higher level.

Renee would like to show the guidelines to the NSF Medical Director.

AICC Membership

Carin's slide

Robin as new Chair when Carin steps down and Lee Cooper as Vice Chair,

Action item: Jon to ask Council for approvals and send out announcement

Next meeting-winter meeting

Dec 8-9, 2009 in Seattle

Action Item: Set up meeting with new USCG Admiral in Alameda-

Ask Phil McGilivray to help

Motion to adjourn made by Lee Cooper and Robin Muench seconded

DRAFT