

Arctic Icebreaker Coordinating Committee (AICC)

February 6 & 7 2003 Meeting

Bear Room

USCG Integrated Support Center

Pier 36 – 1519 Alaskan Way

Seattle, WA

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Summary:

The 2003 winter meeting of the Arctic Icebreaker Coordinating Committee was hosted by the USCG in Seattle. The committee members met with members of the USCG, representatives of NSF, NOAA, ONR, ARC and with guests from the SBI project, the Swedish Polar Secretariat, JAMSTEC, and the SeaKeepers program. The agenda included reports from UNOLS committees, the Federal Agencies, the Arctic Research Commission, ARVOC, and the Coast Guard. Summaries of the debriefs of Principal Investigators for last year's cruises on the HEALY and POLAR STAR were reviewed. The action items and recommendations from these debriefs were discussed with the Coast Guard. Plans for the 2003 operating year on HEALY and potential expeditions in future years were discussed, in particular, the possibility of having HEALY join an expedition in 2005 with the Swedish Icebreaker ODEN was discussed. Specifically, Magnus Augner reported on Sweden's plans for the "Berengia 2005" expedition, and Bernie Coakley presented plans for proposals that might generate a companion HEALY expedition if funded. Additionally, a PowerPoint report was provided by Martin Fortier (presented by Lisa Clough) regarding future Canadian research plans including the Canadian Arctic Shelf Exchange Study (CASES) and refit of the Canadian vessel Franklin. Such presentations help move the discussion on how to conduct long range expeditionary planning forward.

A major issue presented by the Coast Guard was the need for decisions and planning to extend the life of the POLAR class icebreakers. These vessels are nearing 30 years of operation and are faced with increasingly difficult Antarctic ice conditions and a very limited life for the existing machinery (~5-10 years remaining). The hulls are in good shape, but a program to extend their life will be costly and will be competing for funds in a tough fiscal environment. The need for science input into refit plans and to help justify refit or replacement was identified as a priority issue for AICC and ARVOC.

Other issues discussed include interactions with native communities, equipment requirements and plans, high latitude communications, medical protocols, underway data collection, multibeam system status, SeaKeepers meteorological data collection, helicopter support, cruise planning information and the status of the Alaska Region Research Vessel design. Recommendations and action items from this meeting and those outstanding from previous meetings are provided below.

Recommendations for USCG and Science Funding Agencies:

New recommendations from the AICC meeting:

- Recommend that the winch control systems be simplified and unnecessary complicated equipment from the equipment that needs to be maintained by the Coast Guard.
- Kelly Falkner, NOAA, Rebecca Woodgate and Coast Guard need to work together and ensure that the proposal to collect quality multibeam data continuously gets funded. Need to find out who will fund this effort, when it can start and whether or not it will be possible for this effort to support this summer's cruises.
- The recommendation is that the Coast Guard standardize Medical Requirements Policy between ships and publish procedures, such as for returning forms, etc.
- Use RVTEC and UNOLS to locate shared use equipment that might be needed and not available from Coast Guard.

Past Recommendations with Status:

- Make sure documentation and equipment for "Meister/Forcucci" seawater systems are onboard. **Status:** Continuing recommendation until system is replaced.
- Consider moving icebreaker scheduling meeting to July, schedule adjacent in time to the UNOLS ship scheduling meeting. **Status:** Moved scheduling meeting to September, just before second UNOLS scheduling meeting and this seemed to work well.
- Retain procedures for use of the ADCP system on board HEALY for future users. **Status:** Continuing recommendation.
- The ultimate goal for the future of high latitude communications is to work towards 100% connectivity at a reasonable cost and reasonably high data rate. The Coast Guard should work with the funding agencies and other ship operators, especially those in the Arctic to achieve this goal. **Status:** Continuing recommendation.
- Recommended that the use of cruise planning forms continue and that all PIs fill them out if necessary and send to the Chief Scientist and Coast Guard. **Status:** Continuing recommendation.
- Coast Guard should add a pre-cruise planning statement about the responsibility for equipment and considering the impact on subsequent science programs. **Status:** continuing recommendation.
- Coast Guard should clarify policies and capabilities regarding logistics in limited ports, van capacity, berthing arrangements and science party swap out. **Status:** Continuing recommendation.

Recommendations from POLAR STAR Debriefs:

1. Keep everyone in the pre-cruise loop (ship, PACAREA, Helo Detachment).
2. Fix the CTD interference issues.
3. Improve Navigation displays.
4. Improve lab/winch room communications.
5. Deionized water in the web labs.
6. Lab upgrades, increase # of outlets, more ship provided computers/ports, increase storage space.
7. Winch Wire readout into data stream.
8. Provide science party with maps, signs in head.
9. Better mattresses.
10. Locking arm for CTD. Use an alternative system for safely recovering and deploying CTD without taglines and people.
11. Add Temperature control space for the Salinometer.

Recommendations from HEALY debriefs:

1. Investigate Russian Issues, Clarify convention line. Make sure that this information is available in cruise planning manual, based on 1990 agreement with Russia. Garry Brass can provide the source information for this line.
2. Refine Radiation Policy (Clarify exceptions, such as core loggers containing cesium source).
3. Clarify/Discuss what the capabilities for logistics are at Nome versus Dutch. Recommendation is that Nome not be planned as a major logistic stop for vans and large items and would only be used for personnel or equipment in an emergency situation.
4. Clarify/Discuss transit and weather days. (PIs, program managers, and the Coast Guard).
5. Improve interactions between science parties working in the same season.
6. Request for improved SeaBeam support.
7. Request to improve HEALY's station-keeping capabilities.
8. Remove towing bitt.
9. Add sound powered phone to aft deck for emergency comms.
10. Fix Sea Water system.
11. Discuss SeaBeam upgrades (AICC recommendations regarding proposed upgrade by SeaBeam).
12. Include scientists in more drills, especially early in the cruise, which would include trying on immersion suits and going to stations.
13. Discuss Science party swap-out day "schedules." When does the ship get turned over to the next science party?
14. Color code oncoming equipment by science party.
15. Split email access into two shorter time slots.
16. Improve computer hook-ups (Macs in particular).
17. Lead scientist on deck needs a radio.
18. Improved storage for compressed gas cylinders.
19. Science Ice Machine.
20. Keep a board of lies (planned activities board to keep everyone up to date on current plans).
21. Find a home for the science oven that is in a hood.
22. Make med forms electronic.
23. Improve comms between ship and logistics person while in port.
24. Find a solution other than MOCNESS for somewhat vertical towing in the ice. Use of MOCNESS was problematic and difficult in ice. Multinet might be a possible solution and could be used when MOCNESS can't be used due to ice/weather conditions.
25. Need improved access to distilled water (see POLAR STAR debrief).
26. Repeat monitor in the main lab for ship info and CTD. (Repeat from STAR)
27. No emergency lighting in the after-steering area where the continuous flow system was installed. This space was not planned to be an occupied space.
28. Add to cruise planning document:
 - a. The need to budget for pre-cruise meeting.
 - b. Specific # of vans to be accommodated.
 - c. Specify weather limits & associated issues.
 - d. Diet issues to ship ASAP.
 - e. Chief Scientist should meet with ship at least every other night. Maybe change to a recommendation to have the PI meet with the Captain and officers on a regular basis.
 - f. If large science party, coordinate pre cruise comms, use logistics specialist.
 - g. Include dive policies.
 - h. Mid-rat policies.
 - i. Trash separation procedures.

Action Items for AICC and UNOLS:

New Action Items:

- Formulate a working group, advertise to the science community, hold a discussion or workshop, include the ARVOC to make recommendations to the Coast Guard and funding agencies regarding science needs for POLAR Class refit or replacement.
- Small meeting with ARC, NSF, Coast Guard, ARVOC and AICC chair to determine requirements and options for POLAR SLEP or Replacement. ARC will be asked to prepare a report to the President and Congress.
- Get a copy of the MOU between NSF and Coast Guard and determine what it says about technical support. Make recommendations regarding changes needed to the MOU to provide for funding of technical services through a day rate of its own.
- Consolidate and review list of cruise planning manual recommendations and provide a current and prioritized list to Dave.
- Terry Whitley, Renee Crain, Dave Forcucci and Phil McGillivray will work on an article for EOS and/or ARCUS about planning for native community concerns.
- Write a short blurb for Newsletter that says that an earlier proposal deadline is being considered for 2005 field work due to the opportunity for cooperating with a trans basin transect with the ODEN which is also still in planning stages. Run this text by NSF (Pyle, Stephenson, Tupas).
- Phil will find the previous submission to State regarding Barrow as a port of entry and forward that to Lisa. Lisa will raise issue with Council.
- Set up web space: Create web space on AICC for information about international icebreaker schedules, long term planning exercises and expeditionary efforts, etc. are displayed. Jon Berkeson has web sites for IGY.
- Interact with ARCUS and invite them to AICC meetings in the future.
- Organize a working group to focus on improving high latitude communications options: Dave Forcucci, Garry Brass, Robin Muench, and AICC reps.
- Provide a written justification for a GPS aided inertial navigation system. (Dale Chayes).
- AICC to contact new users of HEALY (from debrief)

Past Action Items with Status:

- Make recommendation to NSF and other funding agencies regarding requirements for continuous collection of multi-beam and other data. **Status:** letter sent to Tom Pyle at NSF on 10 January, 2003.
- AICC develop information and guidelines to promote expeditionary planning for use of HEALY. Promote the use of "Heroes" for expeditionary work. Encourage potential PIs to talk with program managers about long term planning. AICC chair confer with DESSC Chair about expeditionary planning. **Status:** Process and ideas explored further by Hedy Edmonds and reported at this meeting. Poster requesting community input at AGU December 2003. Revised action item above to improve web page content.
- Guidance should be made available on communicating with native communities, Renee Crain at NSF is developing. Link to Coast Guard and AICC websites. **Status:** Will post when complete.
- Bill Martin will give sample specification and report from a survey of multi-beam transducers and other sensors to Dave Forcucci so that the specifications can be written for the next drydock period. **Status:** Information sent to Coast Guard.
- AICC should get any input from debriefs to Neil Meister for drydock items as soon as possible. **Status:** Completed as of this meeting.
- AICC review statement of work for science data network administrator/support personnel and make recommendations for modifications to the statement of work and for the need to employ a network administrator. **Status:** Done and contract has been let.
- The UNOLS office will add Lisa Clough to CG PCAR distribution. **Status:** Done.
- AICC will schedule de-briefs after mid October with Terry Whitley, Hedy Edmonds, Larry Lawver and Bob Bourke volunteering to be included in one each. **Status:** Complete
- Invite new Coast Guard Commanding officers and other key personnel to next AICC meeting when identified.

Status: Done

- Determine from Neil Meister what the target capabilities for the seawater system are (original specification or SBI demand) and whether the plan is for two separate systems to support incubations and flow through requirements or if one system will support both needs. **Status:** Unknown
- Need information on the justification for improved navigation input (including GPS aided inertial navigation system) to SeaBeam, ADCP and other systems, description of the improvements necessary, the cost of the improvements and what needs to be done during the drydock (i.e. installation and survey of the sensors and unit). AICC should form this into a coherent recommendation for the Coast Guard. **Status:** Still pending, recommendations have been made in pieces, but not in one coherent statement. New action for Dale is related to this item.
- AICC and ARVOC should send a joint letter or complimentary letters to the Polar Research Board supporting the service life extension work and eventual replacement of the POLAR class icebreakers to support science operations in the Arctic and Antarctic. **Status:** Letter sent to Commandant of the Coast Guard on April 6, 2003
- AICC should also examine the SMRs for the Alaska Region Research Vessel and the FIC SMRs for Ocean Class vessels, evaluate the post cruise debriefs for the POLAR STAR and generate a list of potential science upgrades that might be considered as part of the mid life work on the POLARS. **Status:** Done to some extent as part of the Polar Class Workshop
- AICC assist Coast Guard as needed with radiation use policies and procedures. **Status:** Ongoing
- AICC formally call PIs to make sure they were aware of pre-cruise planning requirements and the sources of information that AICC can provide. Also putting new PIs in touch with previous PIs doing similar work could be undertaken. AICC to make a punch list and contact info for previous PIs to provide to new PIs. **Status:** 2003 PI's contacted by Chair, list of key issues to be developed.
- Make plans for AICC town hall meeting and UNOLS booth at AGU to promote expeditionary planning. **Status:** Town Hall meeting cancelled due to lack of meeting location and too many conflicting meetings. Booth and AICC poster provided at AGU meeting.
- Check on SOO possibility next January or February **Status:** None for foreseeable future.
- SBI PIs to provide a list of equipment needs and technical services for next year. **Status:** Complete as of Feb. 2003 meeting
- Check on availability of mooring and dredging videos. **Status:** Videos/DVDs available on HEALY and from UNOLS office.
- Recruit new members of AICC from SBI and other areas. Will need three in the next year. Use Arctic Info: **Status:** new members recruited.

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- IV. [PACAREA Report](#) – Neil Meister (1.1 MB)
- V. [ONR Report](#) - Robin Muench (3.4 MB)
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- VII. [Dredge Videos](#) (3.2 MB)

Minutes of the AICC Meeting – February 6 & 7, 2003

0830 Meeting called to order by Lisa Clough.

Introductions made around the room, participants list attached
Announcements regarding lunch, dinner and book signing by Kathy Crane

Reviewed the agenda.

Approved the minutes from September with minor edits to be provided by Lisa
Lisa reviewed the status of action items and recommendations (see attached list)

UNOLS report: Mike Prince introduced the organization and Peter Wiebe as chair elect. Peter talked about his interests and background. Reviewed the other committees, their relationship to AICC and the Coast Guard

FIC Report: Terry Whitledge (Alaska) reviewed the SMRs and their purpose and the call for community input. He discussed the two different class vessels (OCEAN and REGIONAL). Terry urged people to review the draft documents and provide feedback.

DESSC Report: ([PDF file of report 2MB](#)) Hedy Edmonds (UT) discussed the problem of expeditionary planning with the ALVIN and the YO-YO and how well expeditionary planning worked. Arctic research will be somewhat different than the problem for DESSC. There are only two areas to consider and there are not any alternative assets other than icebreakers from other countries. Kathy raised the idea that international cooperation seems to be a solution and wondered if there was a formal mechanism within DESSC to promote the international trading of asset time. Will work later on the idea of a “hero” approach.

RVOC: Dan Schwartz invited the Coast Guard folks to attend the RVOC meeting in Duluth October 8 - 10 and discussed what the organization deals with.

RVTEC: Dale reviewed the organization and purpose of RVTEC. He addressed the issues being addressed by RVTEC, which include developing specifications for a “new” CTD cable, developing standards of services and equipment and increasing the involvement of RVTEC people in other UNOLS activities through formal liaisons. Next meeting will be November 18 – 20 and will be hosted by the Coast Guard in Seattle.

Agency Reports

NSF: Luis Tupas thanked the U.S. Coast Guard for their support of the science programs this past summer. He particularly thanked the HEALY for hosting the open house in Nome and the support for the media during these programs. NSF is looking forward to the 2003 field season, which includes SBI and a fresh water program starting up in the eastern arctic. The fresh water cruise will take place in Baffin Bay and Nares Strait. The SBI cruise will follow. For 2004 SBI is the only program funded so far.

Renee Crain will cover interactions with the native communities later.

Medical requirements for work in the Arctic are not as formal as the Antarctic

Planning for the 2005 field season is an important issue and may be an opportunity to explore how to apply expeditionary planning. There is the possibility to coordinate with the Swedish expedition, which will be covered later in the meeting.

NSF is very interested in the other topics of discussion for this meeting and the AICC recommendations.

NOAA: Kathy Crane reported that NOAA is very excited by the opportunity to work with the Coast Guard this summer with 10 days of work of multibeam mapping of the Chukchi Plateau and Northwind Ridge using funding from Ocean Exploration. There are opportunities to participate onboard for people that have work that can be accomplished during the mapping cruise without stopping the ship. In future years, NOAA also hopes to sponsor further mapping and exploration in the Canadian basin.

NOAA is also hoping to sponsor XCTD profiles during the northwest passage transect from Thule to Barrow following Kelly Falkner's cruise.

NOAA will be sending 2-3 scientists to participate on the Chinese Icebreaker Xue Long expedition, which will take place in the Chukchi Sea. This is part of an effort to strengthen oceanographic ties between the U.S. and China. The Chinese Arctic and Antarctic Agency has also invited Canada, Finland, Japan and Korea to participate.

NOAA is taking an active role in resolving Russian cooperative issues. It is hoped that during the spring of 2003 the Department of State will put together an interim working group whose mission will be to revive the lapsed U.S. - Russian Federation World Ocean Agreement and to include a Polar Regions agenda in the new agreement. John Calder of the NOAA Arctic Research Office will be the point person in the United States. Alexander Novikov from the Russian Ministry of Industry, Science and Technology will act as the point person for the Russian Federation.

The next International Geophysical and Polar Year will be 2007. Efforts are getting started and present wonderful opportunities for international cooperation in the Arctic

ONR: Robin Muench, who just finished an IPO assignment at ONR, reported on behalf of Dennis Conlon. ([Report – Large 3MB PDF](#))

The annual budget for Arctic research is approximately \$3.1M and is expected to be fairly constant. At the same time, ONR funds about \$10M a year in UNOLS vessel operations. A basic research issue of importance to ONR is the climatic role of the arctic regions as are the fresh water budget and deepwater production. Shelf basins and boundary issues are also important.

Overarching Objectives

- Understand processes, such as ice dynamics, that are unique to ice-covered seas
- Understand basic ocean physics, emphasizing the mesoscale and smaller processes
- Develop prediction models for the Arctic ice cover
- Develop improved instrumentation and techniques for use in the Arctic
- Build up our emerging awareness of environmental change

Topical Areas

- Sea ice dynamics and thermodynamics
- Ocean margin processes, emphasizing shelf/basin exchange and continental slope processes
- Central basin processes, emphasizing mesoscale and smaller phenomena
- Predictive modeling, emphasizing short-term ice and winds
- Newly developed technology, and new uses for existing technology

Ice Cover Issues

- Air-Sea-Ice interaction processes and feedback
- Ocean turbulence and heat fluxes
- Internal ice dynamics
- Operational issues, such as lead field and MIZ location prediction.

Polar Ice Prediction System (PIPS) – big Navy ice modeling system. There is a lot of Navy emphasis on the ice cover.

Operational Issues: A basin-scale “bastion”, no clearly defined enemy.

High Latitude Dynamics are carried out through collaborations with NSF

- Surface Heat Budget of the Arctic (SHEBA) (1997-2003)
- Shelf-Basin Interactions (SBI) (1999-2008)
- Long-term observational programs
 - ACOUS feasibility
 - ALTEX AUV preliminary studies
 - Submarine deployments
 - Bering Strait mooring program
- Arctic Freshwater Cycle

Summary

- Navigable Arctic Scenario is a concern
- Studies are planned to focus increasingly on processes
- Continental and sea ice boundary regions are a high priority.
- Mode development emphasizes operational prediction
- Field measurements will rely on new technology and platforms of opportunity.
- Opportunistic collaborations are sought with NSF and other agency programs and with foreign activities.

Phil McGillivary asked how ONR interacts with NRL. Robin said that most of the interaction is with modeling and equipment. Tom Curtin is the main point of contact for NRL Arctic operations.

ARVOC Report – Jim Swift

Jim is a newly elected member of ARVOC and gave a report about their activities, although they did not hold their 2002 meeting due to the west coast dock strike and he has not yet attended a meeting as a member. Last meeting was in September 2001, but business has continued. Jim covered issues such as the new multibeam on PALMER, science use on the POLARS, replacement of PALMER and GOULD, and future use of PALMER. Robin Ross of UCSB is the chair of ARVOC. The feeling is that the PALMER will be replaced rather than modified so that a vessel more like HEALY can be provided.

ARCTIC RESEARCH COMMISSION – Garry Brass

Reported on the annual report of goals and priorities which includes:

- Study of Climate Change (extend SEARC)
- Comprehensive study of the Bering Sea Region
- Interagency study of Arctic Health Issues, major causes of sickness and death and environmental contaminants.

- Resource evaluations
- Study Arctic Infrastructure as climate change impacts it. What are the vulnerabilities for the infrastructure.
- The report has specific recommendations for U.S. Agencies

SCICEX, Garry is the chair of the science committee, which will be giving the Navy Arctic Science Laboratory a list of priorities that the Navy will try to accommodate.

A study of the noise from the HEALY in the “hotel” mode will be proposed to determine the suitability of HEALY as an alternative to an Ice Camp.

Capt. (Dr.) Lawson Brigham is the deputy director of ARC and is tracking the IMO regulations for the Arctic region.

International Polar Year idea is that there be a grand procession of all capable Arctic vessels in FY 2007 in the Arctic.

There may be a coalition forming to look at making serious improvements to high latitude communications. There is widespread interest, including aircraft operators, Alaskan Arctic villages, and the Coast Guard.

USCG - Headquarters – CDR Joe Bodenstedt

POLAR SEA arrived just after Christmas to begin the break in. Because of the two large icebergs it became apparent that the ice conditions warranted a second icebreaker. HEALY deployed on the 9th of January and arrived yesterday (Feb 5). The channel is not yet open and the re-supply ships are not yet able to get in. There was 52 miles of fast ice and more heavy pack. B-19 has re-oriented in the N-S direction, which has helped some, but B-15 is still an issue. The Coast Guard will recommend that two icebreakers be sent next year as well. HEALY will not be one of them due to the shipyard period. They will try to get both POLAR Class vessels to deep-freeze every year until B-19 is out of the way.

A contractor was hired to look at extending the life of the POLAR icebreakers. For somewhere between 350 – 500 million dollars these vessels could be operated for another 30 years, which is about half the price of two new icebreakers. This cost does not include any significant improvements to the science capabilities. Recommendations for requirements to support science operations that are beyond the current capabilities would need to be well documented and supported and could drive the decision towards replacement. This would be a tough sell in the current budget climate. The refurbishment plan would be to re-power and change out all the machinery infrastructure. First ship would start in 2008 and be finished in 2010, the second ship would be in overhaul from 2010 to 2012.

There was a discussion about the need for changes to the science infrastructure. The community needs to identify the requirements that are not currently being met and would be required for future operations. This should be a joint effort between AICC and ARVOC and interested members of the community. Need to find out what changes to the science infrastructure the Coast Guard has included in their plans, if any. Although late in the study, it might not be too late to interact with the Coast Guard and the contractor about the need for improvements to the POLAR class or to justify new ships or perhaps improvements to one and replacement of the other.

Action Item: formulate a working group, advertise to the science community, hold a discussion or workshop, include ARVOC and make recommendations to the Coast Guard and science funding agencies regarding science requirements for POLAR Class refit or replacement.

USCG PACIFIC AREA – Dave Forcucci

Deployed January 9th, fuel stop in Sydney for 24 hours, will be in the area for about 2 weeks, return to Hobart and back in Seattle in early April. Total deployment will be around 80 days. NSF requested collection of multibeam data. There is a “small” problem with the vertical reference sensor but they will collect the multibeam data.

Phil McGillivray reported on a study of long term ice conditions and temperature changes. It is colder now than in the past. Channel is re-freezing at night.

Garry reported that the free RADAR SAT data will be going away and the next RADAR SAT provider will charge for the data. This could limit the amount of data in the future.

Phil McGillivray reported on the launch of ICE SAT, which will start producing data in about six months. They are continuing to try and obtain available ice coverage data. He also reported that they will need to replace a CTD that was lost and that they have installed a Knudsen depth sounder on POLAR SEA that will allow them to contribute to the international bathymetric effort.

POLAR STAR – XO reported that they just finished 4 months dock-side availability in the shipyard. They will be at the dock for about 3 days and then will return for a dry-docking of 4 months. Next deployment will be Deep Freeze.

JAMSTEC – www.jamstec.go.jp for information on these activities. Kyohiko Mitsuzawa reported.

Joint Western Arctic Climate Study (JWACS) is a program that JAMSTEC has joined with and have deployed monitoring stations on the ice in the Canadian Basin and Eastern Arctic. They also deployed three research vessels in the western arctic in summer of 2002. R/V MIRAI will conduct a cruise in 2003 and 2004 of the entire southern hemisphere. There may be an Arctic cruise for MIRAI in 2004 – 2005.

Post Cruise Debriefs – Introduced by Lisa Clough

Questions were taken from the ARVOC de-brief process.

Lisa distributed summaries of the debriefs and showed action items.

POLAR STAR Debriefs

1. Discuss Native Community Concerns (NSF, CG, D-17 & Pac Area) including ship operations, helicopters, and small boats.
2. Investigate better high latitude communications
3. Discuss if any science drivers for computer controlled winches.
4. Discuss medical requirements.

1. Native Community concerns – Renee Crain

Renee Crain introduced the issues that are important to the arctic communities, such as the whale-hunting season, safety of their people on the ice, etc. Based on discussions and their experience with setting up the agreements for the 2002 field season, NSF has been working on a set of guidelines for interaction with native communities. There are 13

principals for being a good neighbor and citizen. These are on the NSF website. There will be maps of critical areas and times. Native communities need to be informed about activities being planned and many times they can be valuable sources of information regarding conditions and locations of fauna. NSF is working through BASC to incorporate native community concerns in the research guidelines.

Science information meetings are being held with the native communities. They are for the most part very interested in the scientific activities for a variety of reasons.

AICC should remind the community that every researcher that works in the Arctic has a long term impact on the relationship between the native communities and those that will work their in the future. We are working now to overcome negative impacts from many years ago and it is taking a lot of effort and will continue to take effort to maintain good relations.

Canada has an excellent set of guidelines for working in the arctic.

The NSF guidelines will be implemented through interactions between the program manager and the PI. The scientist is still responsible for obtaining the permits and clearances for their work, but should coordinate right from the beginning with the funding agency, the Coast Guard and the permitting entities and native communities.

The situation is much improved based on the efforts last year. It still remains very important to have representatives of the science program visit the native communities and meet the leaders face to face. NSF will support the funding for this travel as part of the science program.

Contacting the BASC facility is the best way to establish times and places for setting up meetings.

The post mortem on the SBI program is that the fieldwork did not have any negative impacts for the native community. Kathy mentioned that members of the native community were invited on the Canadian Icebreaker expedition. This proved to be valuable. Invitations were made for SBI but it was during the Bowhead whale season and they did want to go for more than a day or two.

This issue is not just an issue for Barrow, but extends from Gambell on up and includes areas in the Northern Bering Sea.

Phil McGillivary has a concern about the Chinese vessel that will be working in the vicinity of Barrow doing seismic work. Their needs to be a real effort to make sure this type of communication and coordination take place with foreign vessels. Kathy Crane and Renee Crain will be at the meetings where this operation will be discussed and the issue will be addressed. The State Department should probably do a better job of informing foreign vessels of the Native Community requirements.

Peter Minnett mentioned that a similar problem existed with an expedition in Canadian coastal regions.

Action item:

Terry Whitledge, Renee Crain, Dave Forcucci and Phil McGilviarry will work on an article for EOS and/or ARCUS about planning for native community concerns.

2. High latitude communications will be addressed later as a separate agenda item.

3. Science Drivers for computer control winches.

Dale introduced the topic by reviewing the system that was delivered with the HEALY, which was very complicated

and sophisticated and did not work correctly. Also there was not a simple over-ride and manual backup. The manual control alternative was implemented on both the POLAR's and on HEALY.

Are there any science drivers for computer controlled or programmable parameter driven winch controls?

Peter Wiebe mentioned that tow-yo operations such as with the Bio-Mapper 2 require programmable control.

Dale does not see the need for this level of system for most or all of the operations on the Icebreakers.

Recommendation:

Recommend that the winch control systems be simplified and eliminate any unnecessary complicated equipment from the equipment that needs to be maintained by the Coast Guard.

4. Medical Requirements Policy

What forms should be used? Coast Guard uses a form that has the same content as NOAA forms (SF 93) and has been using the same form for thirty years. Robin recommends that we do not use the same protocol as the Antarctic. Discussion centered on whether or not to change the process the Coast Guard now uses for Arctic cruises. The sense was that their current process was reasonable. A suggestion was made that the contact information for a person's doctor be included. The chief scientists are responsible for getting the forms filled out. The Coast Guard reviews and decides whether or not someone can sail.

Recommendation:

The recommendation is that the Coast Guard standardize Medical Requirements Policy between ships and publish procedures, such as for returning forms, etc.

Additional suggestions from debriefs for POLARS:

1. Keep everyone in the pre-cruise loop (ship, PACAREA, Helo Detachment).
2. Fix the CTD interference issues.
3. Improve Navigation displays
4. Improve lab/winch room communications
 - a. Is this a problem with the method or how the equipment works. Dale suggested that radios should be used as a temporary solution and not for a fixed need between two stations.
5. Deionized water in the web labs
6. Lab upgrades, increase # of outlets, more ship provided computers/ports, increase storage space.
7. Winch Wire readout into data stream.
8. Provide science party with maps, signs in head and better mattresses.
9. Locking arm for CTD. Use an alternative system for safely recovering and deploying CTD without taglines and people.
10. Add Temperature control space for the Salinometer.

HEALY Debriefs

Keigwin (debrief and HEALY input)

1. Investigate Russian Issues, Clarify convention line. Garry believes the correct line info is on the ship. Make sure that this information is available in cruise planning manual, based on 1990 agreement with Russia. Garry will provide the source information for this line.
2. Refine Radiation Policy (Clarify exceptions, such as core loggers containing cesium source).
3. Clarify/Discuss what the capabilities for logistics are at Nome versus Dutch. HEALY personnel believe that this

port should be restricted to transfer of personnel and personal effects. Using barges to transfer vans from Nome is not a good thing to plan on. Recommendation is that Nome not be planned as a major logistic stop for vans and large items and would only be used for personnel or equipment in an emergency situation.

4. Clarify/Discuss transit and weather days. Not an action item for AICC, left to PIs program managers and the Coast Guard.
5. AICC to contact new users of HEALY.

Recommendations:

1. Add to cruise planning document:
 - a. The need to budget for pre-cruise meeting.
 - b. Specific # of vans to be accommodated.
 - c. Specify weather limits & associated issues.
 - d. Diet issues to ship ASAP.
 - e. Chief Scientist should meet with ship at least every other night. Maybe change to a recommendation to have the PI meet with the
 - f. Captain and officers on a regular basis.
2. Other (to-do)
 - a. Improve interactions between science parties working in the same season.
 - b. Request for improved SeaBeam support.
 - c. Request to improve HEALY's station-keeping capabilities.
 - d. Remove towing bitt.
 - e. Add sound powered phone to aft deck for emergency comms.

SBI (debrief, PCA and HEALY input)

Action Items

1. Fix Sea Water system.
2. Discuss SeaBeam upgrades (AICC recommendations regarding proposed upgrade by SeaBeam).
3. Include scientists in more drills, especially early in the cruise, which would include trying on immersion suits and going to stations.
4. Discuss Science party swap-out day "schedules." When does the ship get turned over to the next science party?

Recommendations:

1. Cruise Planning
 - a. If large science party, coordinate pre cruise comms, use logistics specialist.
 - b. Include dive policies.
 - c. Mid-rat policies.
 - d. Trash separation procedures.
2. Recommendations/suggestions
 - a. Color code oncoming equipment by science party.
 - b. Split email access into two shorter time slots.
 - c. Improve computer hook-ups (Macs in particular).
 - d. Lead scientist on deck needs a radio.
 - e. Improved storage for compressed gas cylinders.
 - f. Science Ice Machine.
 - g. Keep a board of lies (planned activities board to keep everyone up to date on current plans).
 - h. Find a home for the science oven that is in a hood.

- i. Make med forms electronic.
- j. Improve comms between ship and logistics person while in port.
- k. Find a solution other than MOCNESS for somewhat vertical towing in the ice. Use of MOCNESS was problematic and difficult in ice. Multinet might be a possible solution and could be used when MOCNESS can't be used due to ice/weather conditions.
- l. Need improved access to distilled water (see POLAR STAR debrief).
- m. Repeat monitor in the main lab for ship info and CTD. (Repeat from STAR)
- n. No emergency lighting in the after-steering area where the continuous flow system was installed. This space was not planned to be an occupied space.

2003 Schedule – Dave Forcucci

HEALY

- June 13 depart for St. John's through the Panama Canal
- July 21st depart from St. John's for Kelly Falkner's cruise. Baffin Bay and then into Nares Strait between Greenland and Ellesmere Island.
- 19 August depart Thule for northwest passage
- 29 August arrive Barrow, refuel and loading
- 1 Sept. Depart Barrow for NOAA mapping cruise
- 10 Sept. Arrive Barrow
- 13 Sept. Start SBI mooring cruise
- 18 Oct. end SBI in Nome
- 20 Oct depart Nome
- 31 Oct arrive Seattle

POLAR STAR

Out of service until August, ready for sea by 1 November.
Sea trials in November

POLAR SEA

Ready for sea by 1 December after emergency and normal drydocking work

Swedish Polar Research Organization – Beringia 2005 – Magnus Augner

The Swedish Polar Research Secretariat is a government agency that promotes and coordinates both Arctic and Antarctic research. The Polar Research Committee, which is part of the Swedish Science Research Council coordinates research activities based on applications for government funding.

In 1994 they cooperated with Russia and made an expedition along the northern coast of Russia and Europe. In 1999 they cooperated with Canada for a similar trip on the northern boundary of Canada. They used the Research vessel as a moving "home base." Helicopters were used for local transport to field camps on the tundra. They made short stops at many sites extended over a large geographical area.

The two previous expeditions left a gap along the Alaska coastline and in the Beringia area. Also, if they are going to bring a ship all the way from Scandinavia, it makes sense to do research on the trip over and on the way back. The plan is to cover the Russian coast on the way over and over the pole on the way back.

An initial response from the Swedish scientific community in 2001 followed by a workshop in November 2002 identified scientific priorities.

Overall objective: Beringian biocomplexity with marine and terrestrial programs.

Call for proposals is out now and by April they will have more detail on plans.

Marine Objective is the role of Arctic Ocean in the climate. In the Bering Sea area, the objectives cover too large an area to complete with one ship.

The window of opportunity is from around June 10 through the end of September, based on predicted ice conditions along the planned route.

Logistical requirements: Icebreaker Oden for transects and in support of operations on the northern slope of Beringia. A research vessel to operate in open water in Bering Sea and Kamtchatka supporting land based research. (Alternate is to use land and air transport).

They hope for international cooperation:

- Joint scientific projects
- Division of labor, coordinated work
- Cost sharing of common resources such as vessels and helicopters.

Two icebreakers are necessary for the transect across the North Pole.

Bernie Coakley – possible US involvement

First arctic drilling might take place, if the funding is found in 2004, on the Lomonosov Ridge. The current theory about the track is that it would start from Barrow ahead of the ODEN in early August. HEALY would do coring, multi-channel and chirp data.

The problem comes in trying to “claim” HEALY for 2005. Bernie and others are serving as de-facto “heroes” to generate proposal pressure that might lead to scheduling HEALY for this expedition. They have commitments from various PIs to submit proposals and others are interested in proposing work for this transect. Funding from other sources is also being sought. There is also an interest in using the HEALY while transiting North to Barrow.

NSF is considering the idea of allowing proposals to be submitted for the August 2003 deadline to be reviewed for the 2005 fieldwork. Luis asked AICC for input on this issue and how to make sure this is known. They would appreciate a specific recommendation that this is appropriate for expeditionary planning purposes to receive proposals at the August deadline. Also any recommendations about making this change public, such as the UNOLS newsletter, Arctic Info, NSF publications, EOS and etc.

ACTION ITEM:

Write a short blurb for Newsletter that says that an earlier proposal deadline is being considered for 2005 field work due to the opportunity for cooperating with a trans basic transect with the ODEN which is also still in planning stages. Run this text by NSF (Pyle, Stephenson, Tupas)

Kathy Crane raised the issue again about making Barrow a point of entry for the US, which would facilitate the logistics and science cooperation with other vessels. Phil mentioned that he had previously submitted a request for action on this to State Department, but that seems to be lost.

ACTION ITEM: Phil will find the previous submission and forward that to Lisa. Lisa will raise this issue with Council.

Other 2005 requests:

Reviewed requests in the system for various areas of the Arctic. There was some discussion about requests that are out of date and how to remove them. The answer is to adapt changes to the system planned for the future.

CASES (Canadian Arctic Shelf Exchange Study). Lisa reviewed presentation provided by Louis Fortier. Canadians will be freezing a ship in September 2003 for about a year.

Expeditionary Planning:

Use lessons learned from 2005 Expeditionary planning exercises.

Create web space on AICC where information about international icebreaker schedules, long-term planning exercises and expeditionary efforts, etc. are displayed. Jon Berkson has web sites for IGY.

Jim Swift discussed the idea of having an organized community forum or workshop that would allow a reviewable and approved call for proposals that would allow long term planning for expeditions in certain years (not necessarily every year). Jim thought that NSF should take the lead. ARCUS is already an organization that has taken this role for planning large efforts such as SHEBA and SEARCH.

Kathy Crane suggested that the idea of having geographical constraints for each year's proposal would have some merit in allowing people to focus on opportunities in a year when the ship will go to a certain region.

Jackie discussed an open meeting this fall for SEARCH that will address long range opportunities.

Action items:

Set up web space: Create web space on AICC where information about international icebreaker schedules, long term planning exercises and expeditionary efforts, etc. are displayed. Jon Berkson has web sites for IGY.

Interact with ARCUS and invite them to AICC meetings in the future.

Impact Of Antarctic operations on Arctic Science.

CDR Bodenstedt stated there will be no impact and HEALY will sail on the summer Arctic field program as planned. Dale mentioned that there will be some impact due to the lesser amount of time to test and ready equipment.

ODEN – Magnus Augner. Magnus gave a brief overview of the R/V ODEN. Built in 1989 and conceived as a capable icebreaking research vessel.

- High class icebreaker. Works mostly in the Baltic but outfitted for science. Built 1989. Conceived after Ymer expedition.
- 110 meters 4,500m³ fuel. 50 scientists, 23 crew (counting helicopter crew).
- 13 lab containers plus 12 more storage containers and 90m² lab space (under the foredeck) which was built for the 2001 cruise. There is space for lab containers on the foredeck.
- Two 50 liters per minute of seawater. One of stainless and one of PVC pipe.
- Helo deck but no hanger. Can put up a small tent. Mi-8 can land but not stay.
- No multibeam.
- Big rudders, very maneuverable
- Moon pool is mid-ships but on one side. The moon pool was targeted for Lomonosov in '96 but it didn't work. Slightly less than one meter (about 30 inches)
- Unusual hull design (for it's age) with wide bow.
- There is a small moon pool. She has a stern A-frame and multiple winches. Winches are fitted in container frames and can be moved. 18mm (0.7") heavy cable
- First conventional breaker to get to the pole on her own (1991). Not so good in open water. Transit at 11 knots. Average in high arctic 4 knots, max speed 16 knots.
- 24,000 horse power (four diesel and spare). Heating, water flushing systems for breaking ice.
- Background data sampling system with displays in all lab spaces.

FRANKLIN – Lisa presented information from Louis Fortier about the Franklin.

- Will be re-fit and then shared by science and CG. Will (likely) be renamed
- Louis Fortier (PI). Martin Fortier (science coordinator)
- Funded at \$27.7M Cdn
- Science mods: + moon pool, DP, winches and A-frames labs
- Adding EM300, Ek50....
- 100m by 20m Arctic Class 3
- Sister ship of the Radison. 18,000 HP
- Helo support
- Moon pool will be center of the foredeck. Hope to deploy CTD through moon pool during frozen in periods. Perhaps not accessible from above.
- 46 science berths, 8 lab
- Will use Azipods
- Acoustic well
- Zodiacs, landing barge, internal labs, internal science network
- There was wide poling of national science community. That process seems to be working well.
- Also purchasing a huge collection of mooring equipment
- Purchase a moving profiler for mutlibeam
- ADCPs
- Lots of nets and trawls. Video plankton recorder.
- Meteorology
- ROV (SeaEye Panther ROV) through the moon pool.
- On ice equipment: cat, snowmobiles, Parcoll shelters,
- Microscopes, N plan, freezers, Milliq
- Winches, etc.
- Order of \$30K CDN/day. Managed by DFO with steering committee of science. Not clear yet how the science equipment will be operated and/or maintained, nor how that will get funded/supported.

Equipment request list from SBI – Jackie Grebmeirer

- Multi core
 - Liquid Scintillation Counter
 - Walkie Talkies
 - Vertical opening and closing net
 - Radiation Van (two)
 - Ice machine for lab
 - Scale device for Ice.
 - Flow Through seawater system
 - Modular use of SeaBeam to make space avail when not needed.
- Jim Swift's interpretation of this requirement is that ship's installed systems should take the minimum amount of space required so that the maximum space is available for science use.

Recommendation: Use RVTEC and UNOLS to locate shared use equipment that might be needed and not available from Coast Guard.

ICEBREAKER Maintenance, repair and upgrade status – Neil Meister

HEALY

Drydock scheduled for 05 Nov 03 – 03 Feb 04

- Science seawater system modification
 - Design incorporates Palmer successes
 - Three dedicated pumping loops: Labs, Incubators, Flushing
 - Seachest port side of Motor Room
 - Use screw type pumps that are reversible
- Working Deck Tie Down Socket mods – put in monel insert
- A-Frame pivot pins – change to non-corroding system
- SeaBeam Transducer Precision Survey
- Tow Bitt: Still under study, not included
 - First cut was a non-starter. Towing capability must be retained and the solution that will be accepted has not been identified.
- SDN/Science System Support contract

POLAR

- POLAR SEA Propeller Casualties
 - #1 Blade on Stbd hub fell off
 - Port propeller has an oil leak
 - Repair plan assumes both ships are scheduled for DF04.
- PSEA regular drydocking moves from winter 04 to July – Sept. 03.
 - Prop Hubs off of PSTAR in March 03, accelerated overhaul for reinstall on PSEA.
 - PSTAR ready for sea 1 Nov 03
 - PSEA ready for sea on 1 Dec.
 - They were fortunate to have a spare blade in Germany.

Reliability Improvement Project (RIP)

- Project Manager passed away in November. He was the driving force for the project.
- Then all money zeroed in FY 04-05.
- Alternate funding source identified.
- Next phase of work is highly intrusive and upgrades systems that would be removed in SLEP.
- Work would have to be completed in the summer season in two ship DF scenario.

Service Life Extension Project (SLEP) also SLE Board (SLEB)

- Ship Structure & Machinery Evaluation Board (SSMEB): Internal CG Assessment of Capital Asset Status
- 5+ years Remaining in the hulls
- 10 years remaining in science systems
- 0 – 7 years left in machinery

Analysis of Alternatives

- Existing Configuration
 - Finish RIP, New GTs , New Prop Hubs
 - ++ Low Tech Risk, --- CPP remains
- Hybrid configuration
 - Replace/Reduce Diesels (5 instead of 9), GTs. Common Bus
 - ++ Lowest cost, fewer engines, --- CPP remains
- Integrated Electric Drive (HEALY Style)
 - Replaces all prime movers, AC motor propulsion, all new electrical distribution system.

- +++ No CPPP, fewest engines
- --- most expensive and technically risky

Sticker Shock

- \$400M for both ships
- need to lock in money very soon (FY 07)
- Competes against sea change in CG
 - DHS move
 - Deepwater (\$20) rescue 21 (\$800M)

Mitigating Factors

- Reduce Power (75K SHP down to 45K SHP) 95% of requirements (6 inches of icebreaking capability)
- SLEP only one ship (not a good option with current environmental conditions)
- HEALY into DF mix on a regular basis (seal has been broken on this issue)

PERFECT STORM CONDITIONS

- Little or no remaining service life
 - Major casualties now the norm on both ships, every mission
- Doubling of the Op Tempo
 - Both ships now on Tap to do the hardest mission year in and year out.
- Unfriendly fiscal environmental within the Coast Guard
 - Effectively cancelled RIP, No SLEP money ID'd

Science community will need to identify and prioritize the requirements for Deep Freeze and Arctic science support and provide the motivation for funding the requirements. How many people understand that the entire Antarctic program relies on the icebreakers opening the channel?

Garry suggested the ARC prepare a report on the requirements for Icebreakers to the President.

One idea for acquiring a new vessel would be a fast track build of a HEALY clone.

Action Item: Small meeting with ARC, NSF, Coast Guard, ARVOC and AICC chair to determine requirements and options for POLAR SLEP or Replacement. UNOLS Office to include funding request for a twenty-person workshop between May and mid October. ARC will be asked to prepare a report to the President and Congress.

High Latitude communications:

Will use Iridium for ops above INMARSAT range.

Fred Carig at APL is using Iridium to Iridium, which is slow but cheap and works.

Garry recommends a committee of interested agency and community people to work on requirements and potential joint solutions.

Action Item: Organize a working group to focus on improving high latitude communications options: Dave Forcucci, Garry Brass, Robin Muench, and AICC reps.

SeaBeam data update:

When HEALY went south, Larry Lawver tried to find out if data could be collected in the Ross Sea as a prelude to a

funded project next year. It turned out that the system was not working right and despite efforts onboard to get it going it will not be possible to get someone there to salvage this trip. Larry Lawver pointed out that whenever the system is not working this should be reported and a solution sought right away to return it to service.

At the September meeting a group consisting of Larry Mayer, Margo Edwards, Dale Chayes and Dave Forcucci was tasked to develop the methods and a proposal to collect multibeam data on the continuous and permanent basis.

People are set up to work on this, but budgets are not all clearly in place. They hope to have everything in place by this summer. They would like to replace the damaged sound velocity unit prior to the Hobart to Seattle run to make sure it is working correctly. Then if funding and scheduling can be put in place for a remedial effort for the transit to St. Johns and then set it up for operations during this summer. Both Kelly Falkner's cruise and NOAA's mapping cruise will require a working high quality multibeam system.

Action Item: Kelly Falkner, NOAA, Rebecca Woodgate and Coast Guard need to work together and ensure that the proposal to collect quality multibeam data continuously gets funded. Need to find out who will fund this effort, when it can start and whether or not it will be possible for this effort to support this summer's cruises.

Sea Keepers Society and Met Sensors – Rod Zika (See VIEW GRAPHS)

This program is a model for a global ocean observing system that is a true public-private partnership. The Sea Keepers coordinating office is located at RSMAS. The Sea Keepers Society provides funding with Government contacts through NOAA primarily.

Sea Keepers System: Completely self contained sampling and data collection system that can be installed on ships. Intake through hull with temperature sensor and automated detoxification. Water pumped through Teflon lined stainless steel hose. Unit consists of a lower box containing various sensors. Top box contains the data collection unit. Data is transmitted by INMARSAT, Iridium or cell. Units are identical and can be removed, sent back for calibration and replaced by another unit. Up to five submodules can be installed on the manifold in the sampling unit containing different types of sensors such as Thermosalinographs, trace metals, fluorescence, etc.

Sea Keepers Data modes

- Real time display
- Regularly transmitted
- Transmitted intermittently on Request or programmed alert message
- Long-term record, recorded continuously

Data goes through an automated QA/QC program and then released to public.

Sea Keepers module is on Walton Smith? What about other UNOLS vessels?

Terry asked whether or not any of these systems were deployed in the ice? There have been some reports from near the ice edge but not on a regular basis. Terry asked about the processes used to ensure that wind data is accurate and obtained from the best location.

Dale asked about how position data is obtained. For these systems the position fix is obtained through the INMARSAT C link or from the Iridium system.

Installing this system on icebreakers will provide the data to the Sea Keepers program, provide a completely autonomous redundant met and seawater data collection. The SCS system could also be configured to provide data to

Sea Keepers.

SDN Contract – Richard Saunders/ESU

Contracting officer, J. Altice (206)- 217 – 6815, www.eps.gov, DTICG85-03-R-65S030 for the statement of work.

The hope is that the contract will be awarded in February and to have the contractor in place for this summer's mission. They will work through Dave Forcucci to determine where support is needed. The contract is designed to be flexible.

Helo Support – Don Marinello POPDIV assistant division chief, division chief in summer.

Looking at ways to simplify methods to conduct helo ops while conducting science ops. CDR Marinello reviewed some changes and upgrades to aircraft that will be available in the near future that will result in better navigation and comms, higher payloads and greater speed.

Plea to the scientists that they make their science requirements for helicopters known as early as possible so they have the lead time to make any modifications or changes in procedures.

Terry mentioned that when there are any science briefings or meetings for native communities or pre-cruise planning meetings, aviation people should be there.

CAPSTONE automated air traffic control system being tested in Alaska by FAA was mentioned by Garry Brass and Dan Schwartz as a system that POPDIV should investigate.

Alaska Region Research Vessel:

Terry gave an update on the design process for the ARRV. The design meeting held earlier this week was a fish or cut bait moment. They had to make final decisions about propulsion and hull form. They made these decisions based on open water model tests and noise prediction models/tests. The hull form will be very good for sea keeping and station keeping in open water. The noise tests showed that the level of noise from the azipods was significantly greater than the noise curve for the REVELLE's Z-Drive system. The Azipods were well above the ISES curve and the Z-Drives come very close. They decided to go with Z-drives for a variety of science and potential regulatory reasons. To do this they will have to add about 4 feet of length to fit the Z-drive units. This will have the added benefit of being able to meet the 100 ton variable science load. They are looking at putting in a z-drive unit that will exceed the power requirements as an attempt to keep the operation of the units in the 75% level, which will minimize the possibility of drive failures that have impacted the AGOR's.

Operator selection and homeport will be determined by a competitive process. University of Alaska is making plans to be ready to homeport the vessel in Seward.

The hope for funding is that this project will be selected and proposed to the NSB as an MRE project this summer. Still hoping to have this in the 05 budget and online by 07.

FIC will try to get noise curves from the GLIB which will have azipods and to get noise curves on all new and existing vessels in order to make better decisions about design.

Dan asked about whether or not the Helicopter issue could be revisited with the addition of 4 extra feet. Terry said that they could not find any small helicopters with the capability to operate where the ship operates that could be accommodated on this size ship. Medivacs and other operations are preferable in the hover mode.

GPS aided inertial navigation system. Need a written justification. ACTION ITEM for Dale.

Radiation use policy and rad vans. – Dave Forcucci

Policy remains that no radiation work will take place inside the ship with some exceptions such as core loggers with contained sealed sources.

Dave will get UNOLS radiation vans for future work and will retire the Coast Guard van as a rad van. May use it for other purposes after some cleanup and modification.

Cruise planning manual and web site.

Dave is working on a standardized web site and manual through a contractor. Dale made the suggestion that forms and content be available as pdf files.

Action Item: Consolidate and review list of cruise planning manual recommendations and provide a current and prioritized list to Dave.

Integration of continuous underway data collection. – Dale Chayes

The current approach is somewhat ad-hoc. Each data oriented group will have their own requirements and demands on MST time and this will probably not be supportable. The support of the interest groups is necessary, but to make it all work a stable group of competent people to integrate and operate all the systems is required.

Action Item: Get a copy of the MOU between NSF and Coast Guard and determine what it says about technical support. Make recommendations regarding changes needed to the MOU to provide for funding of technical services through a day rate of its own.

Next Meeting: Tentatively schedule next meeting in November in Seattle and winter meeting in DC.

Need to advertise for members and new chair.

Reviewed the lists.

Outreach – ASLO or Ocean Sciences

Terry suggested a poster session at these meetings. Also suggested was a booth that was available throughout the meeting. Make an effort to integrate and become involved with IGY and other AGU activities.