

AICC Action Items from 11/03

| Item | Status | Comment |
|--------------------------|--------------------------|--|
| TEAA letter | done | need approval |
| EOS article | pending | |
| 2003 debriefs | done | disseminate to AICC |
| ARVOC/AICC meeting | not possible this spring | trying again for fall |
| Multibeam position paper | pending | |
| Radiation policy | done | www.icefloe.net |
| SBI equipment requests | update from Dave F. | |
| U/way data collection | desirables/letter done | need to approve |
| New member for Lisa | pending | |
| Other? | | |

AICC Recommendations from 11/03

- That for at least one of the meetings with the native community that representatives of PACAREA, HEALY, AVDET and D17 be included in the meeting. State Department should be included in discussions.
- It will be important to get to deep water during shakedown. If you don't do the deepwater multibeam and other system testing during the shakedown, you run a technical risk.
- The POLAR SLEB engineering feasibility study should be made available to the PRB and the public.
- The Coast Guard should strive to provide open, standards based access to an email server so that scientists can access email through their own email clients. Local mail server should be independent of the communications mode (e.g., satellite system).
- The process being used by ATG and the Coast Guard to prioritize areas to focus their efforts should be articulated so that we can determine that AICC is being used effectively in helping to prioritize the need for change and improvements.



New Generation Polar Research Vessel

(www.polar.org/prv/) *Draft Feasibility Design*

Comments or feedback? Visit the web-based PRV forum @ www.polar.org/prv

Operational Characteristics

- Level Icebreaking @ 3 kts – 4.5 feet (ABS A3)
- Endurance @ 12 kts – 80 days/20,000 miles
- Total Science Complement – 50
- Independent operation in multi-year ice,
- Podded propulsion provides added maneuverability without rudders
- Diesel exhaust emissions reduced by 90% compared to existing research vessels



Conceptual Enhancements

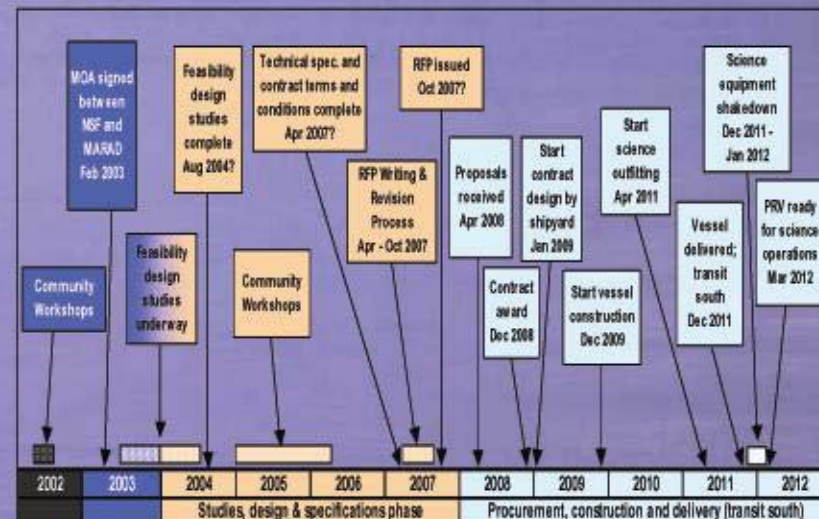
- 50% increase in ice-breaking capability
- 62% increase in displacement
- 79% shaft power increase
- 128% lab space increase
- 33% longer endurance



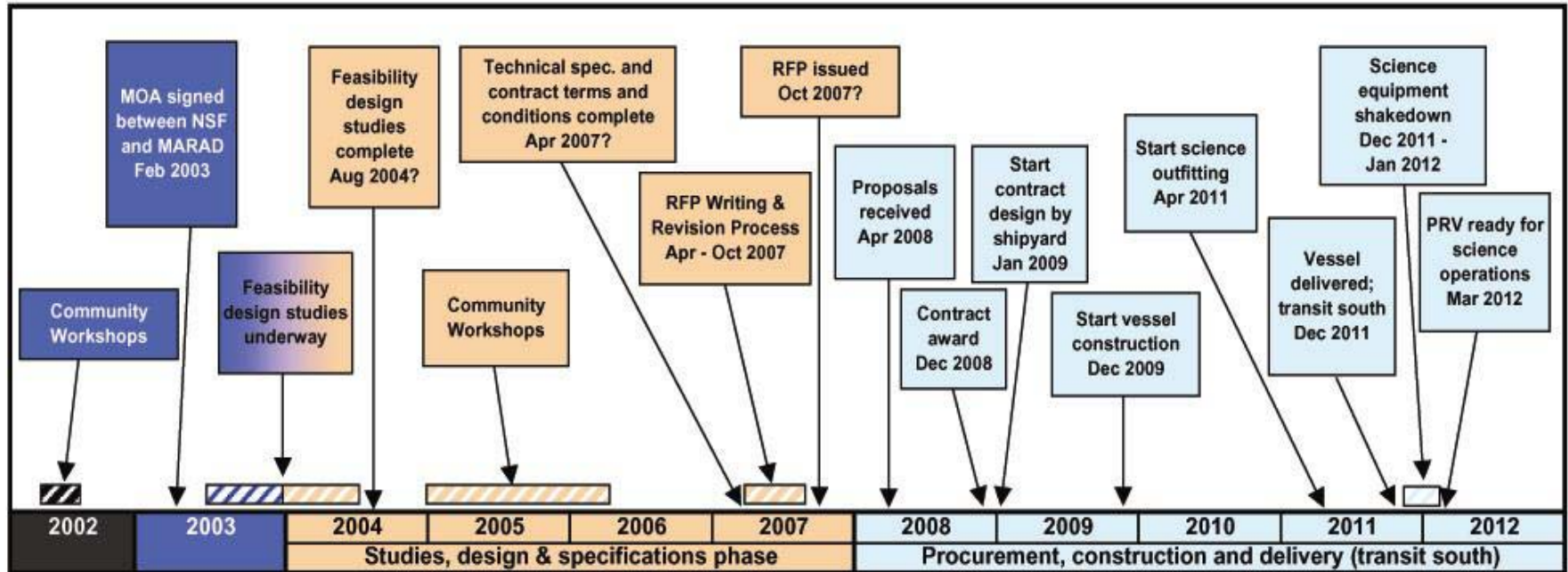
- 50% increase in design service life of vessel
- 32% increase in accommodations for scientists & technicians

Science & Design & Construction Timeline Characteristics

- Bottom mapping during icebreaking
- Box keel sized for enhanced acoustic arrays
- Clear view aft from starboard pilot house
- Enhanced equipment towing in ice
- Flexible container and van arrangements
- Geotechnical drilling capability
- Helicopter complex
- Inter-deck science/cargo elevator
- Long coring capability
- Moon pool for AUV/ROV, CTD, diving, drilling and OBS deployment
- Uninterrupted sea water intake during icebreaking



New-Generation Polar Research Vessel Timeline



(<http://www.polar.org/prv/>)

2003 Debrief Summary

- Many kudos for Healy:
 - Falkner: 90% of science goals accomplished.
 - Mayer: 120% of surface mapping accomplished, but subbottom data weren't up to expectations.
 - Woodgate: Record number of moorings recovered.
- Punch list of comments and constructive criticisms...

Communications

1. Trip south did impact on the first program of 2003.
2. On-line planning manual was very helpful. Some minor suggested additions, including:
 - a. A chart of Healy hierarchy to cruise planning manual.
 - b. A photo gallery of the main lab spaces.
 - c. A summary of routine ship evolutions (e.g. helicopter proficiency flights, pumping of grey water, etc.) that affect continuous science operations.
 - d. Explanation of the rubbish sorting and burning routines.
 - e. Clarification of expectations of cleaning etc. to be done by science party.
 - f. A summary of agreements for data archived for others than the onboard science.
3. Need better flow of information between outgoing/incoming COs.

Permitting

1. Whaling was a big issue, discussed later.

Logistics

1. USCG needs to clarify/make available their definitions of HazMat.
2. Some issues with agents on first leg.

Construction

1. Nothing but praise from scientists.
2. USCG would like advance warning on mods.

IT/Comms

1. More bandwidth/drops at high latitudes.
2. More reliable email system.
3. Need more personnel (not MSTs) to support SDN.

Lab Operations

1. High praise for experienced MSTs.
2. Some concerns that junior MSTs don't have much experience with many systems.
3. Falkner thought deck operations during gravity corings were "dicey," but Mayer thought coring went smoothly (only one core taken).
4. Aft conning station didn't work well for first survey.
5. Healy shouldn't depend on "casual scientists" to repair systems.
6. Took a while to learn how to communicate via chain of command – suggest ship address at first onboard briefing.

Lab Equipment

1. Seabeam
 - a. Antiquated system.
 - b. Didn't work well in shallow water.
 - c. Dedicated support personnel were valuable, but...
 - d. ...Seabeam berth an issue for SBI programs
2. Knudsen/ODEC subbottom sonars didn't work well— sea chest was dry.
3. 150 Khz ADCP not working.
4. Need to clarify who maintains CTD rosette.
5. Address distilled water system water purity.

Diving

1. Used only on Falkner trip.
2. Divers were great, but a bigger survey boat would have helped speed up operations.

Science Technical Services

1. Deck capstan was too slow.
2. Tie down points on deck were drilled before use.
3. Illumination for aft-deck needs fixing.
4. Moving the CTD console to nearer the winch control would be advantageous for CTD operator/winch operator communications.
5. Better drainage in the CTD sampling room would also be an improvement
6. Make navigation display available in the main lab for science planning.
7. A technical library on board, with general information and manuals, would be useful.

Small boat operations

1. Supplement communications with an Iridium phone.
2. Climbing the long ladder into and out of the boat is dangerous. Work out alternate loading strategy.

Helo operations

1. The helicopter was used to transfer of science party to and from shore or for science reconnaissance.
2. Things went smoothly and pilots had good attitudes.
3. Some issues with routing to Barrow/whaling.

Food Service

1. Great, but can snacks be left out between midrats and breakfast?

Housing/Janitorial

1. Streamline check-in procedures.
2. Some staterooms need soundproofing.
3. Provide expectations for the science party involvement in rubbish burning and lab cleaning (during and at the end of the cruise).
4. Mattresses lumpy.

Safety

1. Safety awareness was commendably high.
2. Adequate number of drills during programs.
3. Hazards on the ship appear to be structural. For example, emergency breathing device boxes are mounted in hazardous locations. Remove the tripping hazards in the CTD rosette room where people have to circulate. Likewise consider tripping hazards on the aft working deck.
4. It would be helpful to list the range of sizes for the science-available mustang suits so that people with extreme size requests know to bring their own.

Miscellaneous Supplies

1. Provide an inventory of available printers, supplies, etc.
2. Final program ran out of some supplies.
3. Provide whiteboard for messages in main lab.

Medical

1. Require a physician's signature to participate on Healy.
2. Electronic submission of forms was problematic due to filesize limitations for email attachments.

Travel

1. Thanks to ship/BASC for in-port shuttling.

Ship/Science Interactions

1. Daily/nightly meetings very helpful.
2. The Chief Scientist and Officer of the Deck need to be clear about whether positioning or wire angle is more important for a given over-the-side operation. This information needs to be passed between watches.

TEA Support Letter

Dear Tom,

The AICC would like to express our support for the steps you are taking to continue educational outreach despite the loss of the TEA program. This letter was originally intended to protest the loss of the TEA program, as the AICC was able to directly see the benefits of the TEA program during the testing of the USCGC HEALY in summer 2000. Since that time TEA participants have been a very important part of several of the cruises on board the HEALY. In fact, AICC members often turn to the teacher's websites to keep up with on-going shipboard activities.

We hope programs such as TREC (Teachers and Researchers Exploring and Collaborating) and the EdEn (the Innovation in Environmental Science and Engineering Education) venture will be able to fill the void left by the discontinuation of the TEA program. We encourage the continuing placement of teachers on board the USCG icebreakers, and will be happy to help facilitate when appropriate. Outreach is certainly a critical component of any successful science program in the Arctic.