

**POLAR SEA 0901 telecon debrief 1015-1110 PST on 01/07/10 (Rev 05/09)**

**Present:** Robin Muench (Chair, AICC), Lee Cooper (Asst. Chair, AICC), Jeremy Mathis, (AICC), Robert Campbell (AICC), Rick Coffin (Chief Scientist, NRL), Jon Alberts (UNOLS), Renee Crain (OPP. NSF), CAPT D. Vaughn (CO Polar Sea), CDR J. Hamilton (XO Polar Sea), LCDR F. Seaton (OPS Polar Sea), LTJG C. Verlinden (Science Officer, Polar Sea), LT T.J. Riley (CG HQ Icebreaker Ops.), Dr. Philip McGillivary (Science Liaison), LCDR G.M. Somers (Icebreaker Program Mgr., PACAREA).

*Please provide comments on the topics and questions that are appropriate for your cruise.*

***1) How satisfied were you with meeting the overall science objectives of the cruise?  
(Categorize 1-10, and/or comment)***

7 – All coring and water column operations were successful. Small boat work including the multibeam was not successful. The multibeam was not a UNOLS issue. Small boat should have been available more. In addition operation hours were only 8:00AM to 11:00. Full 24 hr operations had been planned. Approximately 70% of the planned operations were successful.

**Added during debrief:** Rick - Ship crew was good and tried very hard, addressing each problem as it arose, but were not large enough or sufficiently well prepared for 24 hr ops. Ship coring not adequate. Ship lighting was horrendous, we could not see the piston core trigger. Ship computer systems did not work early in the cruise. Several laboratories lacked running water. Small boat use was difficult and challenging. Electric power was inadequate.

Ship - Crew is large enough, but not adequately trained. This reflects the short spinup time for this science cruise after more than a decade of inactivity. In future we can cycle in more people who are trained. When ship was laid up for a few years, this was a problem. We will take this feedback and make improvements. We are currently addressing lighting and water issues. The ship is capable of small boat ops, but on-scene conditions were not conducive to small boat ops. New cranes will improve ship's ability to launch and recover small boats, but only within established launch and recovery parameters. In the future, more pre-cruise planning is needed preparatory to small boat operations, ideally, involving a pre-cruise test with full gear load.

Lee - asked for more details on lost core, was loss avoidable, and what were the circumstances.

Rick claimed work was in shallow water that limited the scope of the working wire, coupled with winch control problems.

Ship disagreed, feeling that the core became stuck in hard sediments rather than being a wire angle issue.

Phil -A contract is presently out for work on the coring and trawling winch repairs.

***1) What percentage of the planned science objectives was met during this cruise?***

***Please specify contributing factors that affected the completion of the science objectives, especially if not all of the objectives were met (ie. weather, equipment failure, etc.).***

Ship coring was not adequate and resulted in the loss of one of the piston cores that we put on board. Ship night lighting was very inadequate and dangerous. Some labs were not set up with running water.

**Added during debrief:** Foregoing was addressed under the preceding point. This redundant question will be removed from 2010 and newer versions of this debrief form.

## **2) Pre-Cruise Planning**

*a) How beneficial and useful is the cruise planning form and the Icefloe web site?*

**Added during debrief:** Rick - I went there often and worked out many details. I did not use your website extensively for planning.

Lee - asked if not having the planning form filled out was an issue for ship.

Phil - some complications arose with respect to non-US scientists; these issues have not yet been satisfactorily resolved.

Ship - Felt they had a good idea of what was needed for the science but that a better job might have been done of what the day plan would be. Pre-cruise expectations for 24-hour science operations were not strongly communicated, and this was the only significant pre-cruise communications breakdown.

*b) Is it clear what is required to be provided to the ship and the schedule for receipt of that information (schedules, lists, plans, forms)?*

When it was used it was clear. However, the 24 hr plan that was presented was not followed. The CG needs a larger science party for support.

**Added during debrief:** Ship - Adequate personnel are assigned to assist the scientists, but limited training and a 10 year absence from science work did not provide optimal crewing for this mission. Additional u/w time conducting science missions will enable POLAR SEA to better support the science mission.

*c) Were the questions on the pre-cruise questionnaire appropriate and easy to respond to?*

*d) Were you able to submit the questionnaire fairly early in the planning process?*

Yes.

*e) Did an operations (cruise?) plan get submitted in a timely manner? Was it useful for you and the ship before and during the cruise?*

No, and changes were made through the planning that resulted in schedule changes for the science team.

**Added during debrief:** Rick - ship responses to changes were very prompt.

Phil - Level of planning detail was adequate from the ship viewpoint, and all science requirements were understood by the ship with the exception of the 24-hour ops issue.

*f) Do you have suggestions for how the website and questionnaire might be improved?*

### **3) Pre-Cruise Communications**

*a) How were pre-cruise communications between the Coast Guard and the Science Party, especially the Chief Scientist?*

Outstanding and a key to the success that was accomplished.

**Added during debrief:** Rick - Pre-cruise communications were outstanding, with continual telephone contact with Science Officer. Other point is that we spent 4-5 days to load in Seattle before ship departure.

*b) Were points of responsibility easily identified?*

Yes.

*c) Were responses to questions and concerns received in a timely manner?*

Yes.

*d) How were communications within the science party and did that impact communications between the Chief Scientist and the CG?*

For this effort the Chief Scientist maintained the lead correspondence with the CG. This was successful.

### **4) Communications and Coordination During the Cruise**

*a) How were communications and coordination during the cruise?*

Good

**Added during debrief:** Rick - I think it went well overall. I think the ship could have some other ways to locate people, as I was going all over the ship to find someone.

Phil - On Healy we use small walkie-talkies that are not available on Polar Sea.

Ship - Ship has some walkie-talkies for senior science party members, but not at present enough for all members of the science party, and is working on correcting this situation.

*b) Were lines of responsibility clear?*

Yes

**Added during debrief:** Rick - A lot of time was spent in locating others aboard ship, in the absence of an adequate shipboard comms system (cf previous point).

*c) Were the evening planning meetings effective for communicating information between the Coast Guard and the Science Party?*

Evening and morning meetings were conducted. Results were responded to well by the CG crew.

### **5) Environmental Permitting**

*a) Was any environmental permitting required?*

No.

*b) If so, were these requirements identified at an early date and were there clear means to accomplishing those needs? In other words, how well did it go?*

### **6) Communications with Local Alaskan Native Communities**

*How well did communications between the CG and science and local Alaska Native communities go during the cruise? (Examples: notifications to local communication centers, communications between Chief Scientists and/or CG and entities such as village tribal governments (e.g. IRAs), village corporations, the Alaska Eskimo Whaling Commission and other appropriate wildlife co-management organizations, , village whaling captains' associations, and other locally based interest groups.)*

All communications were suggested by Phil McGillivray and established by the Chief Scientist (Coffin) and Glenn Sheehan at BASC. Meetings in Barrow and Nuiqsut were held to inform planning. This resulted in an observer supported by NRL, from Nuiqsut joining the expedition.

**Added during debrief:** Rick - BASC was very helpful in this respect: set up meetings in Barrow, etc., and put a good observer aboard. Ship managed to take care of most related issues. Phil (ship) and Glen Sheehan(BASC) did a fantastic job getting me in touch with Native groups. The observer was fantastic to work with and very necessary. We had no problems, and I learned a great deal about their culture.

Renee - There are some issues NSF will continue to address.

### **7) Cargo/Hazmat/Materials Handling**

*a) How did any and all aspects (scheduling, communication, etc.) of the cruise onload and offload go?*

Good

**Added during debrief:** Rick- No problems at all, although our lab van was wired incorrectly here and ship helped correct this. It was very valuable to be able to load in Seattle. We did not take a lot off in Barrow.

b) How did materials handling, including hazmat, go during onload/offload and during the cruise? Good

### **8) Laboratory and Other Vans**

a) Did you use vans from the UNOLS van pool or from another source (specify)?

Yes, UNOLS rad van and NRL geochem van.

**Added during debrief:** Rick - The NRL van had electrical problems, but these were a result of contractor work at NRL. The UNOLS van was fine.

b) How did the procurement go?

c) Were lines of responsibility clear for obtaining appropriate vans and for setting up and maintaining the vans on board?

d) Was adequate time available to obtain the vans?

e) How well did the vans perform?

f) Were they appropriately equipped with ship connections?

g) How well did load and offload go?

b through g were successful.

### **9) Lab and Your Science Equipment Setup/Installation**

a) How well did set-up of the labs and science equipment go? For example, were you able to have the lab counters and unistrut adjusted appropriately to fit your needs?

The CG worked thoroughly to get the lab set up. This was outstanding. However not all of the labs had the needed sinks and water supply was not working. This needs to be addressed by UNOLS.

**Added during debrief:** Rick Coffin - Some sinks were not functioning, as discussed above.

b) Did installation of science equipment outside of the ship's equipment go well? Were there any unexpected surprises in terms of needs or ability to support such scientific equipment? How clearly were special requirements for science equipment defined prior to the cruise?

Yes this went well. Our van did have a power issue and the crew addressed the problem quickly and successfully.

c) Was anything identified during your cruise that should be recommended as a permanent addition to the ship's science equipment?

Full time lighting in the ship and on the deck. Needs to be available when needed around the clock. Piston core launching off the fan tail at night was dangerous. Lights put on the deck did

not help. While operating the piston core we were holding flashlights in our hands for deployment and retrieval.

### ***10) Information Technology On Board and On Shore***

**Added during debrief:** Rick - Wasn't working on board very well at first, but better towards the end, but overall did not work well. Email didn't work, regardless of file size.

Phil - Electronic Support Group in Seattle were busy with Healy and they weren't able to get to the Polar Sea until a month before departure. Both hardware and software issues were involved. Slow comms are typical at high latitudes, however, and are not necessary hardware or software issues.

Ship - About half way through we got things working and functional e-mails were working but not until a week into the cruise. It was a legitimate concern but it just took time to get it all working.

Lee - It will be an aside on our cruise. I don't foresee the need to transfer large files

*a) Communications (Local and remote E-mail, account set-up, internet access, data transfer on/off and within ship or between ships, Inmarsat and Iridium, radio). Were you satisfied with the capabilities? Were there computing resources or communications enhancements that you could have used but that were not available on board?*

This was late, slow and not helpful. This needs thorough attention.

*b) How did the shipboard data collection, management, and archiving go? Were these services provided efficiently and made available in ways that promote rapid transfer of data to users?*

Same as above. This also needs to be addressed.

*c) How well did operational technology work? (Map Server, board of lies, web cameras on board, monitors for changing among closed-circuit cameras, functionality of the closed-circuit cameras on board, winch display on back deck)*

### ***11) Shipboard Science Systems***

*a) How well did these perform? This includes deionized water, multibeam, winches, environmental chambers, freezers, refrigeration, science seawater, underway data acquisition systems, ADCPs, depth sounders, etc.)*

We brought our freezers, there was trouble setting power for the freezers. DI was fine. Back deck winch needs upgrade. Braking was not working. Winch failed a number of times with equipment over board.

**Added during debrief:** Rick - There were power distribution problems, but crew dealt with it.  
Ship - We do have some limited power breakers, but we addressed them as best we could.

Phil- we try to solve this issue by good advance notification of what power is needed and where on the ship. In this case, there were six freezers added to the hold, which was two more than expected.

*b) Do you think anything needs to be upgraded?*

Power, winches and lighting.

**Added during debrief:** Rick - Power problems were an issue. Crew dealt effectively with these issues.

Ship - POLAR SEA is capable of providing the power needed. The personnel needs of our dockside availability coupled with the extensive amount of work needed to repair or replace science machinery and equipment in a limited time period created a challenge to re-path cables to areas needing increased power requirements.

## ***12) Deck Operations and Deployment/Recovery of Science Gear***

**Added during debrief:** Rick - The crew were very patient with us and worked well with our approach, with focus on safety. Operating hours were an issue.

*a) How well did the planning, understanding of responsibilities and approaches, and implementation go for both science and crew?*

Outstanding.

*b) Was appropriate and appropriately sized safety equipment available?*

Yes

*c) Were operations safe? Did everyone comply with safety requirements? Were any unexpected safety issues identified and were they dealt with?*

Day time yes, night time no.

**Added during debrief:** Ship - they would prefer to cross-train crew who were not marine science technicians to help with deck evolutions, but they need to gain that experience.

*d) Was there enough assistance as needed and/or requested with deployments and recoveries?*

For the hours that we could work. Yes. There is a need for more in the CG science team.

*e) Were communications effective with the bridge and winch control during deployments? **Yes***

*g) Other*

**Added during debrief:** Rick - Crew was excellent. Good safety overall despite lighting issues. Ops hours were an issue, but still think a couple of more people would help.  
Ship - try to use regular crew to help out where possible, but they were thin on this for this cruise. Underway experience will help in future.

### ***13) Ice Conditions***

**Added during debrief:** Rick - no issues, no ice

*How well was information about the ice conditions in the area of operations provided to the ship and to the scientific party?*

Good

### ***14) Small Boat Operations***

**Added during debrief:** Rick - our system was at fault, not the ship's system. Rough seas due to lack of ice also hampered operations.

Ship - Concurs with the open water issue, and notes that the newer cranes will really help with this sort of operation.

*If appropriate, please comment on:*

- a) Adequacy of boat briefs-good*
- b) Provision and availability of appropriate safety equipment-good*
- c) Identification of science needs and requirements –seas did not allow operations*
- d) How well the operations went –seas did not allow operations*
- e) Other*

### ***15) Helicopter Operations***

**Added during debrief:** Rick - Conditions were tough going off, but no ones fault, weather issues

*If appropriate, please comment on:*

- a) Adequacy of flight briefs-good*
- b) Provision and availability of appropriate safety equipment-good*
- c) Identification of science needs and requirements. -good*
- d) Other problem with getting off/on in Barrow.*

### ***16) Food Service***

**Added during debrief:** Rick - I hated to have to go around and bill people for food.

Ship - We have changed this policy.

Greg -Yes are working to change this with headquarters and NSF. The revised policy will be changed to the model used on Healy, with direct billing to NSF.



- a) How well were special dietary requirements (vegetarian, vegan, low-fat, etc.) identified and met? -good
- b) How was the quality of service and food, including outside of the three main meals of the day (e.g., (quality and availability of food/experience for those working overnight)? -good
- c) Other – it was very inconvenient for the chief scientist to collect money to pay the food bill during off loading operations. I have never experienced this before. This needs to be changed.

**17) Berthing and shared spaces (science conference room, gyms, laundry)**

**Added during debrief:** Rick - no issues

Phil - Did you use the science library?

Rick - Yes we used it a lot and found it to be adequate: it worked well for us.

- a) How did all aspects of housekeeping go? -good
- b) How did the berth assignments go? -good
- c) How were the check-in/check-out processes? -good
- d) Other

**18) Medical**

**Added during debrief:** Rick - no issues arose.

a) Were needs, if any, met? Yes.

b) Medical history questionnaires

i) Could the forms be improved? No.

ii) How did the submission process go? (timing, acknowledgement of receipt, etc.) No issues.

**19) Any other comments?**

Serious issues included ship lighting, available CG science party, updating winches, water in science labs

-----  
**Appendix – Additional Questions for Specific Activities or Instruments. Do not answer unless appropriate for your cruise.**

**1) Multibeam**

a) How much real-time watchstander effort was required?

b) How much onboard ping editing was done in the post-processing?

c) In both cases, who provided the people? Who was responsible for training the people?

*d) Other Multi -Beam issues?*

**2) Diving**

*If you conducted scientific diving on your cruise, how did it go?*