

**HLY09-05 debrief, held via teleconference October 19, 2009 (Rev 05/09)**

**Present:** Carin Ashjian (AICC Chair), Bernie Coakley (AICC), Lee Cooper (AICC), L. Mayer (Chief Scientist), Renee Crain (NSF), Jon Alberts (UNOLS), Dave Forcucci (USCG), Dale Chayes (LDEO), Captain Fred Sommer (Healy), CDR John Reeves (Healy XO), LCDR Eric St. Pierre (Healy OPS), LT Silas Ayers (Healy MSO), MSTC Mark Rieg (Healy)

*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)*

HLY-0905 was a very different type of cruise in that it was part of a two-ship operation with objectives that were shared by the two science parties (and nations). While this led to some uncertainties in terms of expectations and actions on the part of each vessel, the bottom line is that all science objectives were more than met – it was a very successful cruise, in no small way due to cooperation and support of HEALY crew.

*Additional Comments during Debrief:* There was no question that the science objectives on Healy were secondary to the international cooperation. Even with the complications of a 2nd science team and ship, it was clearly a good cruise. Larry recommends a more elaborate discussion between the science teams to ensure expectations are similar.

*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.).*

**2) Pre-Cruise Planning**

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

Of little benefit to me – I assume it is of some use to the ship.

*Additional Comments during Debrief:* The cruise track was dependent upon ice and so Mayer couldn't provide definite cruise track beforehand.

*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)?*

Some of it – some appears very redundant.

*Additional Comments during Debrief:* Mayer noted redundancies with questions 16, 23/24 and 26. Also he was not able to distinguish among area of operations, operations plan, cruise plan, etc. This probably works better with other types of cruise.

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

Some were – some were redundant.

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

Yes but it needed to be revised constantly as science party members changed and plans changed.

*Additional Comments during Debrief:* Larry was concerned that the CG might not appreciate how cruise plans are continuously updated. Updating the cruise plan generates an email but there is no indication of what changes were done to the plan in the emails.

*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?*

Same as above – we have a very flexible operation and need flexibility – forms appear to require much more detail than we can often provide.

*Additional Comments during Debrief::* Larry felt somewhat constrained in projecting what the ship would do and where it would do it. There were many contingencies, based on the MCS system and the ice conditions, so it was hard to plan what was going to be done next. USCG was flexible in responding to these events.

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

Ship and Dave Forcucci responded that they were happy with the feedback and Dave will take a look at the form. Carin suggested posting some as examples.

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

*How were pre-cruise communications between the Coast Guard and the Science Party, especially the Chief Scientist? Were points of responsibility easily identified? Were responses to questions and concerns received in a timely manner? How were communications within the science party and did that impact communications between the Chief Scientist and the CG?*

Mostly OK but again some issues with berthing arrangements – though much better than in previous years.

*Additional Comments during Debrief:*

There are still uncertainties about the number of berths available. The ship was setting up for triplets when they had fewer than 30 in the science party. The ship's position (CO) was that this was intelligent negotiating over the resources. This is a national asset. The CG will use empty staterooms for their purposes. Singles are not permitted. They want NIC observers onboard and

other CG folks to fully utilize the available berths and make best use of the deployment. Larry thinks we should start with understanding that there are 18 staterooms for science. Then the question is when do we decide some of those rooms are available for the CG.

The CG would like 2-3 month lead-time to identify and utilize potentially unused science berths, assumes no one in science party will be in 3 person rooms if all can be accommodated in doubles. Initially 15-16 people identified as participants, so CG requested a few science party berths. Later, other science party participants were identified, putting a squeeze on available berths, at least on a two person per room basis. Coast Guard responded that they would not take science berths if it set up a situation with three scientists to a room, but they needed a dialogue with sufficient planning time to efficiently use berths if they were available.

Added by Ship: Mayer's party had 3 singles and actually planned for a fourth (the unplanned return of a NIC Ice Observer turned the fourth into a double). Accordingly, it can be articulated that the advertised berthing conditions were not only met, but were exceeded with respect to the science party.

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

*How were communications and coordination during the cruise? Were lines of responsibility clear? Were the evening planning meetings effective for communicating information between the Coast Guard and the Science Party?*

Yes --

*Additional Comments during Debrief:* The VOIP connection between the two ships helped a lot. They were able to have a least a regularly (daily) scheduled communication and as necessary and transmit data back and forth.

#### ***5) Environmental Permitting***

*a) Was any environmental permitting required?*

Some with NOAA

*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?*

ECS Taskforce knew what was needed and took care of it.

*Additional Comments during Debrief:* NOAA went to the effort for seeking an exclusion for the multibeam, perhaps establishing an unfortunate precedent. Renee Crain stated that the NSF's position is that this is an agency by agency decision without precedents for NSF. They do not support identifying or excluding research activities as subject to permitting.

#### ***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.)*

We kept AEWEC informed of our plans and activities and remained in contact through AICC.

*Additional Comments during Debrief:* Carin Ashjian as AICC Chair directly communicated information to the AEWEC and other interested parties. Larry wrote AEWEC and offered to brief them on their planned activities. They never invited him up. He thinks they have developed a good rapport with the Commission and has made sure to mitigate any possible issues. Debbie Hutchinson did go to Barrow to talk with folks there about the research.

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

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

No problems with onload – offload arrangements were difficult and very strained.

*Additional Comments during Debrief:*

Mayer brought up the issue of storing gear (e.g., XBTs) that will be used in ensuing years in Seattle, is it rationale to ship them back and forth from NH? Clearly some local storage solutions should be explored. Potential storage locations in Seattle were discussed including Sand Point and University of Washington, commercial storage units. The Coast Guard has warehouse, but this is not viewed as being an option Current arrangements for overwinter storage in Seattle are ad hoc by individual PIs with PIs calling in favors from colleagues to get gear stored. NSF felt this was the most appropriate. It was asked if the NSF could provide storage? Renee said that the NSF could consider renting a place however there is so much change from year to year that it may not make sense for NSF to take care of a storage space. Alternatively, some storage options could be outlined in the cruise planning manual, including one-stop options, e.g. Ballard Transfer Co. that would also move gear from ship to storage.

One of the difficulties with this cruise was adequate assistance getting gear moved; the lack of an agent, what an agent could do for the individual scientist, etc. The model is different than for UNOLS ships, as the scientist would contract directly with the agent, and the expense was acknowledged.

In some cases, PIs should definitely send representatives to Seattle to undertake off-load, but this cruise didn't apparently rise to the volume and complexity that was required.

The CG will look into local storage and get back to the AICC in December.

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

NA

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

NA

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

*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?*

### **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?*

Yes

*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?*

Went well

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

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

*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?*

Improving each year

*Added during Debrief:* Always frustrations about lack of bandwidth, but it is getting better. We got lucky. The satellite wandered north giving 12 hours a day of comms.

CG: They are working the CG side to improve connections.

*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?*

Fine

*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)*

Fine

## **11) Healy 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.)*

Mainly used multibeam – worked as well as it can – but replacement will be appreciated. Acquisition systems were fine. TSG gave some trouble

*Added during Debrief:* There are problems with ice clogging the TSG. There is a plan to fix it, but there are no funds to do so. Under some ice conditions it will always clog up. One thing that was clear from this cruise is that ice clogging is a problem even without on-deck water bath demand on the system. This is because for the TSG to work well and remain clear, we have to pull (and dump) a lot of water over the side so the volume is still high even without on-deck water baths. The Coast Guard response is that no ship can operate in ice without problems with ice clogging flow through systems.

The hull mounted transducer that was used to communicate with moorings did not work very well because it is not matched to the deck unit. Had to put a hydrophone over the side after heaving to. In previous years, we have used a science party supplied ORE 8011 deck unit in IC/Gyro temporarily connected to the ship's (science) hull-mounted 12 kilohertz transducer to range on and send release commands to acoustic releases in moorings. While this arrangement has worked in some situations, we determined during HLY0904, that the impedance match was poor and a properly matched transducer in one of the spare wells would work much better. It would also be a significant improvement if the deck unit were integrated into the Lamont Data System (LDS) so that transponder ranges could be integrated into the Mapserver in real-time. Chayes included the costs for a suitable transducer and deck unit in this year's funding request

but they were removed in order to match the available funds. Renee agreed to revisit this with Dale.

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

Multibeam, TSG

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

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

Went well.

*Added by Coakley:* We used the WHOI winch for mooring recoveries and that was very helpful.

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

Yes

*Added during Debrief:* The CTD rosette was removed because there was no requirement for bottle samples and as a result the CTD, in a cage, was a bit light and was difficult to lower. Recommend adding weight (up to 1200 lbs.) to lower the CTD effectively.

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

Yes

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

Yes

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

Yes

*g) Other*

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

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

We were fortunate to have Canadian ice observer on board – seem to be better skilled in prediction of ice conditions.

*Added during Debrief:* The Canadian ice observers provided detailed maps and interpretation. The CG and science have high levels of confidence in their abilities. There are differences between Canadian and US ice observers, with the Canadians have a lot of at-sea practical experience and the US ice center personnel are more academic and go to sea primarily for training.

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

*If appropriate, please comment on:*

*a) Adequacy of boat briefs*

Yes

*b) Provision and availability of appropriate safety equipment*

Yes

*c) Identification of science needs and requirements*

Yes

*d) How well the operations went*

Fine

*e) Other*

### **15) Helicopter Operations**

Only Canadian helo ops – no HEALY helos except for a couple of disembarkation flights.

*If appropriate, please comment on:*

*a) Adequacy of flight briefs*

*b) Provision and availability of appropriate safety equipment*

*c) Identification of science needs and requirements.*

*d) Other*

### **16) Food Service**

*a) How well were special dietary requirements (vegetarian, vegan, low-fat, etc.) identified and met?*

OK

*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)?*

Improving each year – still wonder why there cant be cold-cuts and cheese for sandwiches overnight.

*Added during Debrief:* Mid rats were a real meal this time, an improvement. Coast Guard agreed to look into what would be required for implementation of overnight cold cuts.

*c) Other*

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

*a) How did all aspects of housekeeping go?*

Yes

*b) How did the berth assignments go?*

Worked out eventually but there was still some misunderstandings.

*c) How were the check-in/check-out processes?*

Fine

*d) Other*



## ***18) Medical***

*a) Were needs, if any, met?*

Yes

*b) Medical history questionnaires*

*i) Could the forms be improved?*

*ii) How did the submission process go? (timing, acknowledgement of receipt, etc.)*

*Added during Debrief:* Larry wonders why the forms don't need to be signed by a physician. Carin asked Renee about the NSF looking into this. Renee said that they have talked about it but have not done anything. Hand sanitizers seemed to reduce frequency of colds and so forth.

## ***19) Any other comments?***

Larry felt that the debrief form is much too long. He also suggested providing it to the chief scientists prior to the cruise so that they can work on it while at sea.

*Added during Debrief:* The embarkation and disembarkation at Barrow was a common problem for both science and CG. One big problem was that the helicopter couldn't make it to Barrow for the embarkation because it was stuck in Fairbanks due to forest fires. For this, Bowhead transport provided a landing craft free-of-charge and was a good solution for embarkation

For disembarkation, there was fog at Barrow. The helicopter could only do a couple of flights before fog precluded flight ops. The remaining transfers were accomplished by the ship's LCVP. This can be difficult and dangerous because of increased risks with using a Jacob's ladder to enter the LCVP from Healy. A large landing craft solution as for embarkation is a good idea. Pre-planning by NSF and/or CHM2M Hill would be required to make sure a landing craft would be available. Vessel might have to come from Prudhoe. Note however that the large landing craft and the smaller ship's boats all can be limited by sea state.

The DOI helicopter contract required a 500' ceiling, Maritime Helicopters policy is less stringent and they usually can fly with a 100' ceiling. This limited the opportunities for flight operations since the ceiling was at 300'. Renee will look into the condition restrictions in the DOI contract. Having scientists ride to next practical port such as Kodiak should be kept as a fallback option.

It was suggested that transfers might be more effective at Prudhoe, although access to the oil fields will require greater coordination and potentially training of members of the science party. Prudhoe is not a particularly practical place to get on or off ships because of oil field security issues and safety training requirements, but could for some be an option. Having scientists ride to next practical port such as Kodiak should be kept as a fallback option.

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***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?*

We maintain several person watch round clock

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

Much – we do our own

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

We did and were.

*d) Other Multibeam issues?*

***2) Diving***

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

N/A