Healy and Polar class cruise debrief (Rev 03/2012)

Date of post-cruise teleconference debrief:
Chief Scientist Jackie Grebmeier will attend the AICC January 2013 to debrief the AICC and USCG on the HLY1201 cruise.

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Name of Project: Hanna Shoal Ecosystem Study

Name of Ship & Cruise Number: USCGC Healy 1201

Start and end dates of cruise: August 5-25, 2012

Please provide comments on the topics and questions that are appropriate for your cruise.
NOTE: This form must be submitted as either a *.doc or *.docx file.

1) Overall Success of Cruise:

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

A majority (~70%) of the planned objectives were met during the cruise, though the number of stations visited was reduced due to a ~4 day delay in Dutch Harbor for mechanical repairs to fix a propeller shaft leak on the Healy and ice conditions around Hanna Shoal.

b) Please summarize positive and negative factors that impacted completion of the science objectives (for example, personnel issues, equipment performance, ice and weather conditions).

Positive factors:

1. The STARC personnel, (Hiller, Roberts and Martin) were extremely helpful when problems arose in planning, at sea, and for the offload.
2. The MSTs were hard working and competent, which greatly facilitated the scientific work during the cruise and the offload activities. In particular, Liz received compliments from a wide range of the science party for doing a very good job working with the scientists.
3. The senior command structure worked to facilitate the science operations. We found that we did have to explain planned operations multiple times in order to address concerns.
4. Concerns about other shipboard activities, both science and housing related, were addressed in a timely manner.
5. The Operations Officer was initially concerned about our requested small boat operation to Barrow for a small personnel offload as we started the cruise because of current limited boat capabilities and/or trained personnel on Healy for that type of activity. However, as it turned, no problems were encountered with that offload.

6. There continues to be an issue with the temperature controlled incubation chamber with temperature rising due to condensation and freezing of the cooling system when used for experimental purposes. This and any other issue with incubation chamber operations such as freezing pipes or fixing outlets that became non-operational were addressed and fixed in a very timely manner. The technician that helped troubleshoot issues with the incubation chamber was very helpful.
7. For the trawling team, equipment and personnel were efficient and sufficient. The very few times that we did have equipment problems, we were able to remedy them fairly easily. There were a several members of the MST team who received almost universal praise from the science party. These MSTs included Kurt, Liz, and Jeremy.

Negative factors:

1. Although we had a pre-cruise planning meeting in Seattle where most PIs participated in person and others by phone, we did not have very many of the senior ship personnel at the meeting. Neither the Captain nor the new Operations Officer attended the meeting, only the Executive Officer, so this led to the situation described above (point 3, positive factors), where plans for deployment of gear and operations had to be discussed again in detail once we were aboard the ship.
2. The ship was unfortunately not ready for the on-load on the designated date for our cruise due to last minute repairs on the ship. Although we had both PIs and technicians in Seattle to make sure the gear was loaded, almost no gear was loaded until later in the week after everyone had left.
3. No one in the science party was informed about the mechanical delay in Dutch Harbor until after the science party had left for Dutch Harbor. It is not clear that we could have done anything with earlier notification due to full flights, but we were told informally that the possible or probable need for a delay in Dutch Harbor was recognized before the shp left Seattle.
4. Heavy ice coverage encountered over Hanna Shoal also had a small negative impact on the work.
5. Our science objective completion was lower than anticipated because in general, deck activities took longer than anticipated.
6. The port arm on the A-frame snapped due to a metal fatigue issue and had to be re-welded. Sample collection was delayed several hours.
7. The offload, unfortunately, didn't go as smoothly as it should have by helicopter, the costs of which were shared by the incoming and outgoing science parties. A detailed plan for the science personnel and equipment offload was provided by the Coast Guard and it was projected to start at 0800 on August 25, 2012. However, the previous night a decision was made by the upper Healy command to not initiate operations until 1000, based on the assumption there would be fog. No fog materialized, however and no adjustments were made to shipboard departure requirements. For example, all science personnel with frozen ice samples were told to be available at 0600 for off-load weighing, but we ended up putting the samples back in the freezer until departure. Despite the original projected time of flight operations (0800), which was revised to 1000, the first offload of science personnel under excellent weather conditions did not occur until 1251, and thereafter included both intermixed personnel and cargo offloads to facilitate boarding evening flights on Alaska Airlines and the pending closure of their air

cargo office. In spite of these delays, it seemed likely in early-to-mid afternoon that all science personnel would get ashore with their luggage in time to check in for the two evening outbound flights from Barrow. However, a decision was made by Healy command about this time that the highest priority for transport would be to bring groceries to the ship from shore that were apparently shipped to Barrow the previous day. The result of this change in the off-load plan resulted in a number of science personnel missing their outbound flights, with people stranded in Barrow for as long as 48 hours. A significant expense was also incurred in locating baggage left behind in the Barrow staging area that could have been checked as luggage. These items were shipped as air cargo at later dates. Also of great concern to the science party were security and care for frozen samples that could have easily been compromised given the length of the offload period.

8. There were comments expressed by some of the scientific party, but not universally shared, that a standoffish attitude prevailed onboard from some Coast Guard personnel. These perceptions included a lack of recognition that some of the scientists had sailed many times on the Healy and could serve as sources of knowledge continuity for shipboard sampling.
9. There were some difficulties and delays in unloading and reloading gear from the hold of the ship and lab set-up.

2) Pre-Cruise Planning

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

The pre-cruise form and icefloe website are very useful. The science party found it useful in terms getting contact information and basics about the Healy.

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)?

Yes, the pre-cruise information is clear, although we did have extensive rescheduling issues prior to confirmation of our cruise.

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

Yes, the form is clear.

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

The form was submitted once the cruise dates were confirmed, although in retrospect it should probably have been submitted in draft form at the start of the process and modified as time went on. It was submitted by the time of the in-person planning meeting in Seattle.

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?

The cruise plan was submitted in draft form by the cruise planning meeting in May, and a more operational one by the time the shipped sailed from Seattle.

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

The website and questionnaire seem fine.

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?

Based on my prior experience, there was less communication with Healy personnel than in the past. Instead, my communication as Chief Scientist was with the STARC lead, Scott Hiller. I had no connection with the lead MST as in the past nor direct correspondence with the Captain, XO or Operations officer. The Operations Officer was changing just as the Healy sailed and I believe this lack of personnel discussion had an impact of operations since we were the first leg on the Healy and had a very interdisciplinary research cruise to undertake.

From the financial end, we did not receive CG responses to requests for detailed cost estimates in advance. This produced some surprises when the bills arrived.

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?

Most of my discussions as Chief Scientist were with the Operations Officer, beyond the daily meeting with the Captain, Executive Office and leads of the other sections of the ship. Since OPS was new at the position, there were more discussions and concerns than I have had in the past. Also, there were new MSTs on the ship, so the experience level was more limited to start, but it improved over time. I think the evening planning meetings were very important as it gave us a time to exchange plans and operational concerns.

It was helpful to know which MST was in charge on the deck (during each specific activity) as it seemed to change depending on activity and time. With respect to trawling operations, a concern was expressed that multiple people were involved without a clear single line of authority.

5) Environmental Permitting

a) Was any environmental permitting required?

No. It was also clarified at the planning meeting, with follow-up by the funding agency, BOEM, that NEPA evaluation was not necessary and documentation was forwarded to the CG. A similar effort was made to provide information on the scientific exception to the plastic disposal convention for deployment of satellite tracked drifters.

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.)

We had no issues with the local communities. As Chief Scientist I sent a one page description of our activities to members of the AEWC (Alaska Eskimo Whaling Commission), had a meeting, along with Lee Cooper, with a member of the AEWC and Borough Wildlife Department in Barrow in May 2012, as well as sent flyers to the EWC (Eskimo Walrus Commission). Most all activities were offshore and out of the bowhead whaling period.

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

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

Scheduling was complicated due to the delays incurred by the overwinter Nome fuel delivery and subsequent cancellation of our cruise in the winter of 2012. Once a shortened cruise supporting our project was restored to the schedule, a more normal pre-cruise planning period ensued, but the tens of changes to the scheduled on-load and sailing dates complicated planning. The on-load was also limited by the lack of available personnel and access on the day we were scheduled to onload our equipment due to ship repairs in progress.

As described previously, the offload had problems and the lack of clear communications was a factor. Our assumption as one of the two chartering parties for the helicopters was that it was primarily for use in transporting the scientific party and essential samples ashore, and return use by the oncoming science party. There was no timely communication to the science party that the Coast Guard had its own specific needs for use of the helicopter.

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

Chemical, hazmat and gases were onloaded and offload were fine. The offload in Seattle went well. The cargo was very organized, palletized and ready for us upon our arrival. The MSTs

were clearly ready for the offload and helpful. We thank Scott Hiller for his assistance in working out a solution for storing hazmat over the winter in Seattle.

8) Laboratory and Other Vans

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

No.

b) How did the procurement go?
NA.

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

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?

The setup of labs and science equipment went well. With the assistance of Scott Hiller and the MSTS, along with ship personnel, new tables were built and other science support needs met. Lab set-up went fine. The crew was very helpful and accommodating.

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?

Most equipment operations went well on the deck and we thank the STARC, MST and deck personnel for their assistance. Our equipment type was basic for oceanographic sampling by a multidisciplinary team and all equipment was used previously off the Healy. There were some issues with the trawling net not easily being deployed or retrieved with the ships equipment, but this was quickly and efficiently addressed and remedied in Dutch Harbor.

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

No.

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?

Internet access was operational and adequate during the cruise. We had assistance for any additional needs for connectivity between land and the ship. Sara, USCG IT, was very helpful.

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?

The STARC personnel collected the standard required sensor and CTD data planned at the start of the cruise. We received all data on a portable hard drive at the end of the cruise, and the data have been re-distributed to all interested science party members. Some use of the ADCP data on board occurred and there were no problems with access to it.

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)

The Map Server, Board of Lies, web cameras and monitors worked well. The availability of the outdoor scoreboards was good. The cameras on the back deck were great.

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 did have a problem with the wrong wire deployment depth due to the lack of land-based calibration of the winches. USCG should calibrate all wires to be used during ship operations to make sure the readings are correct. It would also be nice to have more confidence on the speed that the winch was deploying the wire. Also, we had problems maintaining temperature with the environmental chambers (also discussed above). It would be a good working practice if both chambers could be set to the usable temperature in transit to Dutch Harbor so that any problems can be identified and subsequently repaired at sea. We thank the ship personnel for their continued efforts to maintain these chambers during the cruise.

b) Do you think anything needs to be upgraded?

After more than a decade of use, and continual issues, some modernization of the environmental chambers should be considered.

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?

I think the STARC, MSTs and science party were comfortable with the operations on the deck areas. This went well, particularly when Kurt, Liz, and Jeremy were the lead MSTs. The MSTs did a very good job. While there seemed to be some morale issues on occasion, they still had a positive attitude when they came out on deck to work with us.

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?

Yes, overall. There were some unexpected safety issues (winch cable snap, A-frame hydraulic failure) that were dealt with appropriately.

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, overall, but for reasons that are not clear to us, communication/approvals from the bridge for deployments were sometimes quite slow (commonly several minutes), leading to delays.

g) Other

The winch was improperly calibrated and resulted in an exciting Bongo tow. No permanent damage. However, this is something to watch in the future, to make sure the contractors get the calibrations in appropriately.

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?

Very good information on ice conditions was made available. The Mapserver was very helpful and was kept up to date with the ice imagery, although some information was obtained from a fellow science PI (Tom Weingartner).

14) Small Boat Operations

If appropriate, please comment on:

a) Adequacy of boat briefs

Fine when a small contingent left the ship in Barrow several days early due to other science commitments. However, there was a lot of reluctance about small boat operations that was surprising for the USCG in general operation and our past experience on this vessel specifically.

b) Provision and availability of appropriate safety equipment

Fine.

c) Identification of science needs and requirements

We outlined the need to offload a few science personnel by small boat, weather permitting, both in the pre-cruise planning forms and during the onsite cruise planning meeting with USCG on the Healy.

d) How well the operations went

The small boat operation offload in Barrow went very well as the weather was calm. However, there was uncertainty of USCG capability or willingness to engage in this activity from the start, but the fact it happened was very good.

e) Other

A USCG vessel should have small boat operational capability and willingness to use them, as feasible. The concern from the start was the lack of experienced personnel to operate them, which was surprising to us.

15) Helicopter Operations

If appropriate, please comment on:

Please see prior comments on the helicopter operational concerns for the offload at the end of the cruise mentioned previously.

a) Adequacy of flight briefs

Initially, flight briefs were fine, but the extensive delay in starting the operations and subsequent confusion of the offload timeline and order of personnel and cargo, probably led to fatigue on the part of a large number of people that was not optimal.

b) Provision and availability of appropriate safety equipment

Satisfactory.

c) Identification of science needs and requirements.

The time needs for science personnel to offload, time sensitive frozen sample cargo offload, and other science cargo offload needs were identified in the USCG operational plan. However, there were issues with the disembarkation, as mentioned earlier.

d) Other

The helicopter was hired by the science party for the offload of science gear and cargo, shared with the onload of the next science party. However, the USCG required use of the helicopter for grocery transfer in the middle of our offload. With the USCG having a presence in Barrow, it seems a sling operation using a USCG helo for groceries and their personnel transfer would have alleviated the use of the science-supported helo for those activities and would have allowed for a more efficient transfer to the science party and gear between ship and shore.

16) Food Service

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

In general, food quality was judged to be fine.

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)?

Since science runs a 24-hour operation, having snacks (e.g. bread, sandwich meat, cheese, fruit) available outside meal times in the mess is essential. It was necessary to have discussions with the USCG prior to departure, but we reached a satisfactory resolution. The availability and quality of food was fine. The galley crew was great about saving meals (particularly mid-rats) when those were missed because we were working on the deck.

c) Other

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

a) How did all aspects of housekeeping go?

Overall the housekeeping activities were fine, but more extensive requirements for the science party occurred than in my past 6 cruises on the Healy. This was the first year I, as the Chief Scientist, had to go on inspections into the science quarters.

b) How did the berth assignments go?

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

This went smoothly.

d) Other

18) Medical

a) Were needs, if any, met?

Yes. The medical team was very helpful and competent. One veteran scientist went to sick bay this trip for perhaps the first time and had a great experience. She stated: "I got medication for my "plague" and felt better almost immediately. I always bring stuff with me but I would have had an inadequate supply to deal with that nightmare."

b) Medical history questionnaires

i) Could the forms be improved?

They are fine.

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

Satisfactory. Prompt acknowledgement of receipt was appreciated.

19) Other comments (if any)

Appendix – Additional Questions for Specific Activities or Instruments. Answer only if 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?

3) Operations on the ice

a) Were on-ice operation briefings adequate?

b) Was appropriate safety equipment provided and readily available?

c) Were science needs and requirements adequately identified?

d) How well did the operations go overall?

e) Other on-ice operations issues?

4) Science Support in Barrow

Not used.