Healy debrief for cruise HLY1203

***Date of post-cruise teleconference debrief*:** N/A

Chief Scientist: Robert Pickart

Name of Project: North Slope Mooring Cruise (AON)

Name of Ship & Cruise Number: Healy 1203

Start and end dates of cruise: Oct 5 – Oct 24

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? 90%

Overall the cruise was a great success, but we did not complete one of the planned CTD sections and did not recover one of the moorings (a surface mooring at the end of the cruise).

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: No ice; the ship often steamed at best speed (much appreciated!); the ship's crew worked diligently and efficiently to accomplish all tasks; informative planning meetings before the evolutions.

Negative factors: Weather, CTD winch issues.

2) Pre-Cruise Planning

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

The cruise planning form is useful from my end because it forces me to outline the entire cruise beforehand and make sure that nothing is falling through the cracks. I like that fact that one can continually update the form.

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.

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

Yes.

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?

Yes I was made aware of the cruise plan in a timely fashion.

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

No.

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?

In my opinion the communication between the chief scientist and USCG was excellent.

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?

From my end the communication between science and the USCG was excellent throughout the cruise. The operations officer was available 24/7 (literally!) and incredibly responsive. The nightly meetings were very effective, and, as mentioned above, so were the planning meetings for the various operations carried out during the mission. It was clear that the officers and crew were engaged in the work and wanted our science to succeed, for which I am extremely thankful.

5) Environmental Permitting

a) Was any environmental permitting required?

I needed to get a permit from the Aurora Research Institute for carrying out work along the Canadian North Slope.

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?

It went seamlessly.

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.)

This cruise took place during the autumn whale hunt along the North Slope. We opened the lines of communication early by attending the February AEWC meeting in Barrow and presenting our plans. Then I communicated with the pertinent people in Barrow as we embarked from Dutch Harbor. We stayed out of the whaling zone until receiving the green light from Johnny Aiken (AEWC Executive Director). I would like to commend our community observer, Leanna Russell, who did a fantastic job liaising between the ship and the AEWC. All parties were pleased with the way things unfolded.

Since we worked in Canadian waters I needed to get clearance via the state department; I would like to thank Dave Forcucci for his help with this.

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

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

The on-load and off-load went well. I would like to thank the USCG for their flexibility in the loading process.

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

There were no issues with hazmat.

8) Laboratory and Other Vans

This question is not applicable to the cruise.

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?

We had one issue where one of the science groups usurped space intended for a different science group. This suggests the need for better communication among the science groups, but also perhaps better communication between the science party and STARC when setting up the science spaces (since STARC was part of the mix up).

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

The TSE mooring winch. This is a discussion that we seem to have every year. Other cruises besides the North Slope mooring cruise carry out mooring operations (e.g. last year the BOEM cruise did moorings, and in 2013 the BOEM cruise will again do moorings). It would make great sense for the USCG to get a mooring winch.

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?

1. I received a few complaints at the beginning of the cruise about IT1 showing a lack of urgency with problems. However, as the cruise progressed he made it a point to check in with me on a regular basis (so perhaps someone talked to him).

2. It appears that one of our frequently used file formats for data sharing, .mat files generated by the computational software "matlab", cannot be shared via web pages over the ship's network. In its root, this is likely due to a Microsoft feature (as we have anecdotal evidence that .mat files could not be attached to emails both on the Healy as well as to other locations). Presumably the Healy's recent switch to windows web servers extended these limitations to our web sharing. We are trying to learn more about the issue from our end. In the meantime, we are hoping that one of the very resourceful network support folks from the USCG can find a work-around.

3. Here is input from the co-chief scientist (J. Mathis): "The crew used the computers in the science conference lounge at all times and it was difficult for the scientist to get computer/internet time. On several occasions I had to sit in the lounge for a couple of hours to wait for a computer to become free."

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?

This was excellent. The science party was able to share data readily amongst themselves. The data collected from the ship's systems (e.g. CTD, bathymetry, vessel-mounted ADCP) were easily and quickly accessible.

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)

MapServer is simply brilliant; it impacts our operations in such a positive way. The Healy is in a class by itself in this regard. Steve Roberts was once again tremendously helpful (e.g. with imagery, bathymetry, Linux programming, etc.).

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.)

1. Degradation of the shipboard ADCP data, presumably by electrical interference, remains an issue. In 2011, the ADCP deck units had been moved from their original location to a new, temporary one, which led to a significant improvement over previous years' performance. For 2012, a new permanent location of the deck units had been established. Unfortunately, the ADCP's performed less well than they had under the temporary locations of 2011. We very much appreciate the efforts of Master Chief Lippmann's group to identify the potential interference source during our cruise through a set of hardware modifications (straightening and re-routing cables, investigating grounding issues etc., as well as yet another temporary deck unit location). Unfortunately, it is very hard to dissect the ADCP behavior under the constraints of a research cruise, particularly in our shallow and highly variable Arctic work area. However, initial results, shared with ADCP specialist Dr. Julia Hummon, suggest that relocating the deck units is

the most promising approach. We hope that these results, possibly with the addition of more rigorous tests, could return the ADCPs to their 2011 performance levels.

2. Because there was no spare no spare fluorometer for the CTD, and we lost the primary sensor when the CTD crashed on deck, this caused a problem. Luckily we could swap out the underway fluorometer, but that unit had a limited depth-rating which meant there was a loss of data for the chemists. The CTD needed to be re-terminated after the incident on deck, and I am thankful for the expertise of the two STARC technicians who performed this task effectively and quickly.

3. Here is input from the co-chief scientist (J. Mathis): "The environmental chambers and flowing seawater system worked well. As always, the STARC technicians are a major asset to have onboard and they fill gaps that the MSTs have been leaving."

b) Do you think anything needs to be upgraded?

It would be good if the deck tie-down plugs on the fantail could be replaced with stainless plugs. Some of the ones that are in place now are steel and are in pretty bad shape. There is not much thread left, making this a concern for securing our winch, fair-lead plate, and deck cleats.

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?

This was a bit rough at the start, since the ship was transitioning to having Bosun-mates (rather than MSTs) carry out most of the duties on deck during the mooring operations. However, as the cruise progressed, routines were established and things went quite smoothly. Our mooring technicians (and I) greatly appreciate the hard work and dedicated efforts by the deck crew.

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?

1. Twice during the cruise the CTD package fell hard on the deck, each time for a different reason (the second time this happened the fluorometer was destroyed and the CTD required re-termination). I don't need to elaborate further because the crew dealt effectively with this issue.

2. Here is input from the co-chief scientist (J. Mathis): "The requirement that the hatch from the main science lab to the upper hold has to be closed at all times was dangerous because we have to make many trips (after every cast) to the freezers down there. It is very difficult for the shorter folks to step from the manhole to the ladder below, especially when carrying things. In the 10 years that I have been sailing on the Healy this hatch has never been closed. Why now?"

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

Absolutely. The mooring deployments and recoveries went well, including the ship handling, use of the small boat to attach to the top floats, and the work by the deck crew. A great job all around; we are greatly appreciative.

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?

There was no ice throughout the entire cruise! However, freeze up was imminent and Steve Roberts kept us abreast of the situation (we were literally days away from having local ice formation).

14) Small Boat Operations

We used the small boat on every mooring recovery to attach a messenger line to the top float of the mooring. The crewmembers doing this were skilled and communicative, and helped make this process go very smoothly. I will also add that the weather was marginal in some cases for small boat ops. The USCG did an excellent job assessing the situation each time, and, within the proper safety bounds, always tried their best to accommodate us.

If appropriate, please comment on:

a) Adequacy of boat briefs

b) Provision and availability of appropriate safety equipment

c) Identification of science needs and requirements

d) How well the operations went

e) Other

15) Helicopter Operations

There were no helicopter operations during the cruise.

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?

There was always a vegetarian option, which was greatly appreciated.

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)?

The quality of the food and the service were superb. I want to offer my sincere thanks to the food service department for doing such an outstanding job.

c) Other

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

a) How did all aspects of housekeeping go?

Very well.

b) How did the berth assignments go?

I want to thank ENS Follmer for effectively and graciously dealing with a last second berthing problem (caused by me).

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

This went very smoothly.

d) Other

18) Medical

a) Were needs, if any, met? No issues here.

b) Medical history questionnaires

i) Could the forms be improved?

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

The entire process went very smoothly. I have no recommendations.

19) Other comments (if any)

Appendix – Additional Questions for Specific Activities or Instruments. Answer only if appropriate for your cruise.

1) Multibeam

There were no issues with the multi-beam.

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

There were no diving operations.

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

3) Operations on the ice

There were no on-ice operations.

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 Applicable.