

AICC Town Hall Meeting
San Francisco Marriott Hotel ≠ December 10, 2001

6:45PM Lisa Clough called the meeting to order and introduced the AICC Committee members. Others in the room introduced themselves. [A list of attendees](#) is attached.

The Committee Structure is currently:

- ← Lisa Clough, East Carolina U (Chair)
- ← Jim Swift, SIO
- ← Kelly Kenison Falkner, OSU
- ← Larry Lawver, U Texas
- ← Terry Whitley, U Alaska
- ← Peter Minnett, RSMAS
- ← Margo Edwards, U Hawaii
- ← Robert Bourke, NPS
- ← Dale Chayes, LDEO (RTVEC)
- ← Dan Schwartz, U Washington (RVOC)

AICC Purpose:

~ First years were spent getting the HEALY ready for science.

~ Reviewed AICC Mission

- ← provide Arctic polar science projects with planning and scheduling assistance
- ← facilitate communications between scientists, science funders and facility providers
- ← provide oversight and advice to the CG to enhance facilities and science aboard their icebreaker fleet
- ← fulfill an ombudsman role for the high latitude science community
- ← championing the utilization of high latitude assets
- ← promote new technology for high latitude assets and to maintain cutting edge capability for these facilities.

U.S. Coast Guard Icebreaker websites:

USCGC HEALY	http://www.uscg.mil/pacarea/healy/
USCGC POLAR STAR	http://www.polarstar.org/
USCGC POLAR SEA	http://www.oz.net/polarsea/

HEALY 2002 Schedule - Dave Forcucci reviewed HEALY's schedule. The schedule is not posted on the web, but details can be obtained by contacting Dave.

In Port

- ← 21 Dec, 2001 Arrive Seattle
- ← 3 Jan- 14 Feb - Dockside Maintenance
- ← 24-25 Jan - AICC @ UW
- ← 29-31 Jan - Cruise Planning meetings
- ← 19 Feb- March 26 - Dry dock
- ← 26 Mar- 27 April - Loading

Underway

- ← 27 April - Depart Seattle
- ← May - Depart Nome – Nome - SBI 40 days
- ← June - Depart Nome – Dutch - Keigwin 20 days
- ← July - Depart Nome – Nome - SBI 40 days
- ← Aug - Depart Nome – Barrow-Keigwin 20 days
- ← 29 Sep - Arrive Seattle

POLAR STAR ≠ Late Summer

- ← Borders Project
- ← Deploying Moorings for SBI

All NSF-funded programs in 2002

2003 Ship Time Request (STR) forms:

- Showed maps with requests currently submitted
- All requests must be submitted by 2/15/02 for 2003 operations

2003 Requests for Eastern and Western Arctic

(*NOTE ≠ The POLARS will also be available.)

There is a request for NOAA Arctic Ocean Exploration program that is a place holder for projects that will be funded at a later date and there are two requests to use an ROV such as JASON II from HEALY in 2003.

2004 Requests

Most for western Arctic, with most of those as part of SBI.

2005 Requests

A few, and they are for western Arctic

UNOLS Ship Time Request form ≠ Mike reviewed the request system and how to create a listing plus a map of requests. There is now an option for indicating long-range planning on the UNOLS STR form.

Lisa gave the Website for the HEALY Cruise Planning Manual

<http://www.uscg.mil/pacarea/iceops/cpmanual/cpmanual.htm>

Dr. Peter Michael: report on AMORE cruise (HY-01-02)

30 July ≠ 3 Oct 2001 Tromsø, Norway to Tromsø, Norway

HEALY worked with the German Research Vessel POLARSTERN. The program used Hydrosweep data from POLARSTERN and SeaBeam data from HEALY to create maps that were essential to locating sampling locations. HEALY conducted rock dredges at stations all along the Gaakel Ridge and both vessels made a trip to the North pole.

This cruise was very successful: 200+ dredges, 3 times the rock samples expected, SeaBeam worked great. Hydro-thermal vent activity data and biological samples were obtained.

HEALY did not have and did not need any icebreaking assistance. Icebreaking capability was very good due to a number of factors. The vessel also rode well in open water.

P. Michael emphasized that *Planning* is essential. The April shakedown cruise was very valuable in preparing the vessel and the science party for the upcoming cruise. This was

particularly important because this was the first science cruise on HEALY.

Peter then discussed what was learned as a result of the planning and conduct of this cruise.

There will be a complete cruise report prepared which Peter thinks, based on his own experience planning this cruise, should be available for anyone planning a cruise in the future.

The icebreaking capability and SeaBeam worked better than expected.

Map Making

They found they could make good maps in near real time, but in the ice you have to be creative, doing things such as stopping the ship and rotating in place in order to get some map features.

You also have to start planning early in order to get all factors in place for success. There is a great deal more planning needed for use of the icebreaker for map making than might be normal otherwise. They needed the extra personnel keeping a 24 hour per day watch in order to do map making.

Science Support.

MSTs do not normally have the twenty years experience you might expect on a UNOLS vessel, but there are more of them and they work hard to learn their craft and get the job done. The culture is that the Coast Guard personnel are always training and learning as the cruise proceeds. There are enough of the Coast Guard personnel that they could deal with changes in schedule and extra work loads.

It is unrealistic to expect the Coast Guard to provide the personnel necessary to make maps. You can expect them to keep the equipment running and to repair the equipment.

Make sure you budget for food in your proposal (currently \$6.65/day per person).

HEALY is not just a good icebreaker, but a good science icebreaker because of the ice clear area astern resulting from the wide beam and hull form.

They lost wire early on due to human error and inexperience with keeping the ice away from the wire, but after learning the proper procedure for dredging in ice, they did not lose anymore equipment. Need to make sure that procedures are followed for working in ice.

Coast Guard also worked with the science party to make systems that allowed the maps to be made and effectively used in the sampling process. The CG people were persistent and worked hard to solve problems.

Winches worked well. Launching CTD's over the side in the ice was resisted by the Coast Guard because of concerns that there would be problems with keeping the ice away from wire. Launching over the stern was used because of a need to tow-yo and then they did not switch back to the starboard side. This meant moving the CTD on an icy deck with a pallet jack to the bay, which in the cold weather meant that there were problems with freezing and it was an awkward process. (CTD operations were shifted back to the starboard side for the next cruise).

The NASA Satellite communications (TDRS) system worked well for the high latitude communications. They had router problems and Peter recommend a back up router. System used for high speed data between ships worked well.

All their worked relied on having the computer network set up and operating. Set up was done by Roger Davies enroute to Tromso and this was instrumental in making sure systems worked. Mapping activities

would not have been able to keep up with the pace if this system was not ready to go at the beginning. A computer network administrator or technician is necessary for successful science work and the level of support needs to be improved. The network supported PC's fairly well, but was less useful for MAC's and UNIX machines of which there were several.

Helicopter Operations: Helo ops on the CG Icebreaker are not possible coincident with some other operations and take longer than on other vessels. Because the operational methods for the Coast Guard will probably not change, PI's need to plan Helo Ops carefully if they are going to be a regular part of the science program.

POLARSTERN labs are far better than any UNOLS vessel or the HEALY. The HEALY's labs are as good as any UNOLS vessel. Vibration was manageable for sensitive instruments and the lab layout worked well.

Almost daily meetings with the CO and CG personnel were effective for keeping communications going, helping the science to get done and for solving problems.

Peter's final words: PLANNING AND COMMUNICATION ARE ESSENTIAL TO SUCCESS.

Ned Cokelet (PMEL) - Covered for Jim Bellingham, giving the report for the ALTEX Cruise (HY-01-03) Ned used a Power Point presentation with the following key points. (Available on the Coast Guard PACAREA Web Site at:

http://www.uscg.mil/pacarea/iceops/cokelet/AICC_Town_Mtg_files/frame.htm

Build AUV to measure heat flow

Arctic Basin Survey

Autonomy \neq 2 weeks

Range \neq 1500 km

Depth \neq 1500 m (w/buoys), 4500 m (w/o)

Concept \neq Deploy multiple, expendable AUVs. Data would be transmitted to ARGOS.

82°N -, 20° C, 20-knot winds

Darkness at the end of cruise

Worked with:

AUV hydrophone off the stern

CTD off the stbd side

Lessons learned:

Officers and Crew

Want to help

science is important to them

respect scientists

informal atmosphere

everyone dines together

Cruise plan

Written

who we are
why we want to do it
where we will do it (chart)
What we will do
Instruments etc.

Need a written cruise plan as part of the process.

Deck Operations

Want to do a good job & help
Endure hardship doing small boat ops
-20c
20kt winds
24 hour darkness

Small boat freezing was a problem.
Planning for small boat ops requires getting the boat warmed up.

HEALY is a Military Ship, there is a war on,
Security, Day to day military business,
training, advancement, new assignments, muster.
You need to make room for this in your planning.

MST's

5 MST's
Duties - CTD, winch ops, seabeam, terascan, computer network, TSG, weather forecast, hazmat,ã
24 hour/day working, but must schedule.

Icebreaking

1.5m thickness continuously
4 kt
slow at night due to visibility
better lighting might help
Recommends improved lighting forward for ice operations in darkness

Station Keeping

Dynamic Positioning
twin screw
bow thruster
Could not hold heading in 20+ kt winds with DP system and did not try without.
Drifted instead
Station keeping compromised
In ice, bow thruster chokes

Bow thruster may not be adequate.
In future major overhauls this may need to be re-examined

CTD

SBE 911
one MST runs winch
one MST on deck

scientists may run CTD computer
Comprehensive winch display
Noisy data due to winch electronics
 FIXED by technician on board
Freezing of sensors -
 horizontal fish, may need to turn to vertical
 Keep CTD bay door closed for heat
 Need radiant heaters down low

ADCP

Implement Hummon & Firing recommendations
~150 m range due to acoustic window
Transducer angle - 55% original estimate but Ned figured it to be 47 deg.
Needs to be determined which is correct.
GPS position & speed - more significant figures needed
Heading - need Gyro. & GPS - based ADU
 Are they still using the Sperry system for heading input to ADCP?
 What happen to SCS???? or direct input.
 "Check Cables" error in icy water and not in open water, Why?
Looking forward to 75khz ADCP, which has been ordered.

Data Acquisition

NOAA SCS
Very Capable
customizable displays - text and graphics
ASCII data on CD's at cruise end
Can add sensors
Need to connect both port and starboard mechanical wind sensors.

COMPUTERS

Windows NT network
Macs not networked
Can add UNIX computers, but its DIY (Do It Yourself)
No color postscript printing from UNIX machines

EMAIL

USCG has separate system for crew
Scientists used INMARSAT -C
 Twice daily www connection
 Fails north of 81 deg.
 MS Windows Outlook mail tool
 Macs and UNIX not connected.
NASA high latitude satellite did not work for this cruise
There was a discussion on USCG e-mail system. They use a military satellite that is shared. CG mail comes first ≠ Science mail is often lost.

More about the AUV sensors and the cruise track.
Science Sensors on AUV
2 Pumped Seabird CTD's
Nitrate sensor
Oxygen

OBS

Showed data from AUV run under the ice

Temperature charts

Goal will be to heat flux and test AUV

Having clear ice pictures were extremely helpful because they worked in leads.

Showed some data.

Food

Very good

Plentiful

4 meals per day

cook's night off - Saturday

Other departments cook

Scientists took a day and this was extremely beneficial in getting good will from the crew.

Volunteer for this early in cruise.

Summary

HEALY is extremely capable

An Arctic legend in the making, we enjoyed it and you will too.

ADJOURN 8:10PM