Arctic Icebreaker Coordinating Committee (AICC) Meeting

December 8 & 9, 2009
Rainier Room
Coast Guard Integrated Support Unit
Seattle, WA

Schedule

- Day 1: 0830-1700
  - 0800 Continental breakfast
  - 0830 Start meeting
  - 1015-1030 morning break
  - 1130-1300 Lunch (Pyramid)
  - 1430-1445 afternoon break
  - 1530 Adjourn for the Day
  - 1600-1730 AICC Executive Session

- 1900 Group Dinner (Ivar's Acres of Clams)

- Day 2: 0830-1600
  - 0800 Continental breakfast
  - 0830 Start meeting
  - 1015-1030 morning break
  - 1215-1300 Lunch (on your own, on base if you want)
  - 1500-1600 Adjourn

Agenda Update

- Jim Wilson will give the ESU Report
- We need a head count for lunch today
- We need a head count for dinner today

Sub-Healy Tours

- Tuesday PM
  - Crain
  - Garrett
  - Kruse
  - Panowicz
  - Russell
  - Prince
- Wednesday PM
  - Ashjian
  - Campbell
  - Cooper
  - Hartz
  - Muench
  - Rainville

- Wednesday AM (with Dale Chayes)
  - Irinaga

ANYONE ELSE?

AICC Membership

- Four new members:
  - Larry Mayer (UNH) - geophysics
  - Karen Frey (Clark Univ.) - satellite oceanography, remote sensing
  - Jeremy Mathis (UAF) - chemical oceanography
  - Luc Rainville (UW) - physical oceanography
- One additional member to join in January
  - Bob Campbell (URI) - biological oceanography
- Robin Muench to take over as AICC chair at the end of this meeting. Lee Cooper will be vice chair.

Minutes from June 2009 Meeting

Action Items from June 2009 Meeting

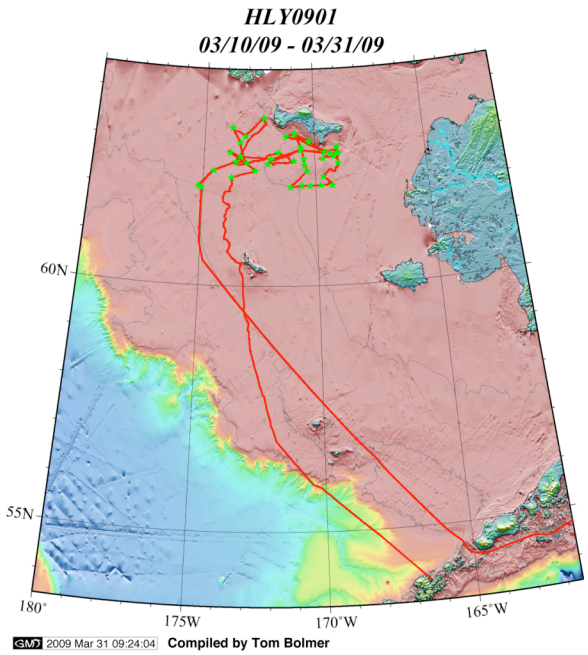
AICC Activities

- Solicited for and selected five new members
- Conducted debriefs of third and fourth Healy cruises
- Together with Capt. Sommer and Dave Forcucci, revised berthing statement and posted it on icefloe
- Provided recommendations to Healy MSO Silas Ayers and Dave Forcucci regarding a plan of action for evaluation of the white incubators
- Together with Dave Forcucci, had medical guidelines posted on icefloe web site.
- Robin Muench, Renee Crain, and Jon Alberts joined an ARVOC meeting by teleconference on Nov. 24. Robin, Jon, and John Anderson (ARVOC chair) will pursue establishing closer ties between AICC and ARVOC
- As BEST Chief Scientist, Carin Ashjian presented BEST science done from Healy to the AEWC at their July meeting. Although not strictly an AICC activity, this was a good thing to do to promote good relationships between the local Alaskan communities, the Healy, and scientists.
- While in Barrow in September, Carin Ashjian met with Harry Brower Jr. (AEWC Chairman) and Janice Meadows (AEWC Executive Director) and discussed various aspects of icebreaker and other science
- Provided advice to scientists planning to use Healy on communicating with local Alaskan communities.

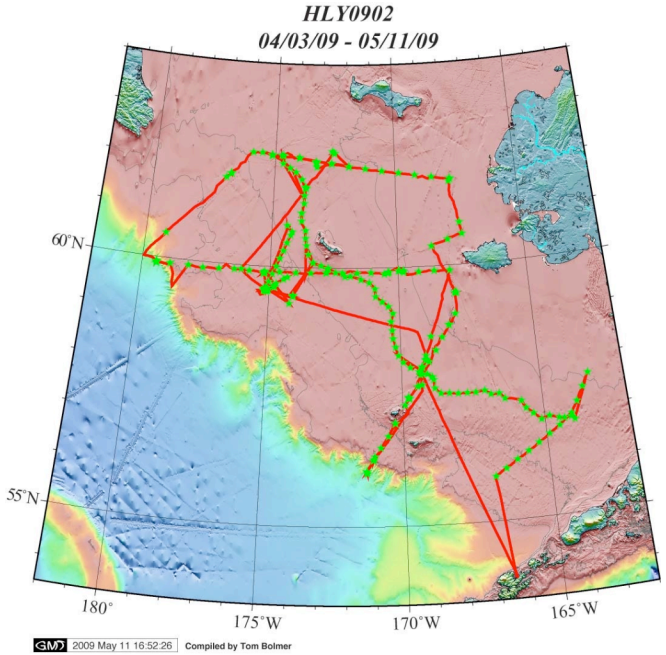
Challenges Looking Forward

- Getting the Polar Sea back up to speed as a research vessel
- Native Communities
  - The unofficial observer program
  - Maintaining good relationships even in the face of increasing pressure from industry
- Re-establishing relationships with ARVOC
- Keeping up with the debriefs and recommendations for two ships rather than one
- Think again about an icebreaker retreat in PACAREA
- NSF to establish science logistics support that will include things like review of radioisotope use on the icebreakers

2009 Healy Cruises



- Short Spring BEST/BSIERP Cruise, March 10-31, 2009
- Lee Cooper, Chief Scientists

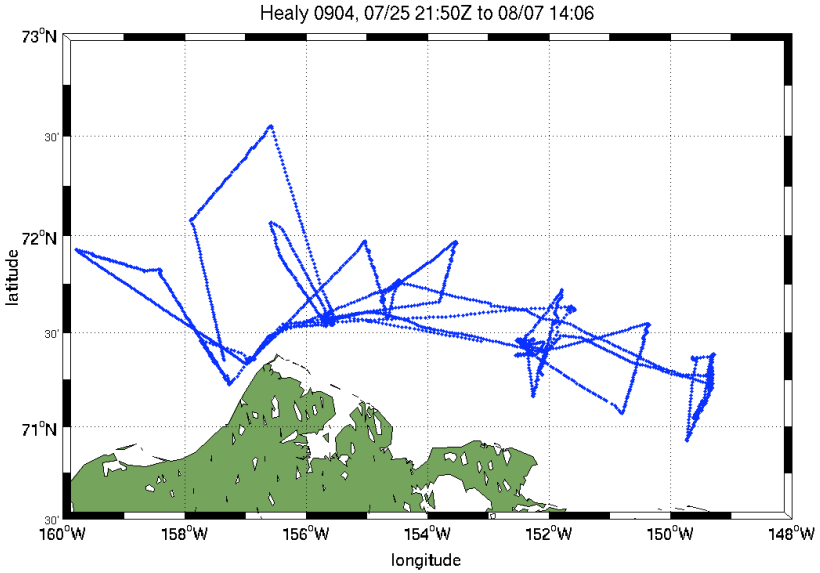


- Long Spring BEST/BSIERP Cruise, April 3 - May 12, 2009
- C. Ashjian and E. Lessard, Chief Scientists

- http://bsierp.nprb.org/index.htm (Project Website)
- http://www.eol.ucar.edu/projects/best/cruise_summary_info.htm (Cruise Reports)
- http://www.polartrec.org/ (Polar Trec Teachers)
- http://polardiscovery.whoi.edu (HLY0902)

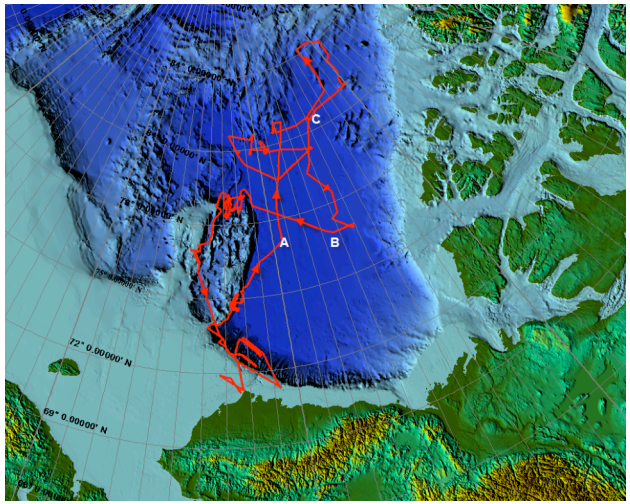
2009 Healy Cruises

HLY0904



July 25 –August 4
R. Pickart, Chief Scientist
Moorings, CTDs

HLY0905



August 5 – September 16
Larry Mayer, Chief Scientist
ECS, operations with Louis St. Laurent, Multibeam, rock dredging

HLY0901 Debrief - Lee Cooper

- Highly successful cruise. 99% of science objectives were accomplished. Those few that were not resulted from decisions made by the scientists rather than any issue with the ship. “It’s always a pleasure to be out on that ship and do science.”
- Many thanks to all, especially the MSTs
- Many positive comments on most aspects of the cruise (communications, safety, ice ops, science equipment, medical, deck operations,etc.)

HLY0902 Debrief - Ashjian

- Very successful cruise, met all science objectives
- Many positive comments on most aspects of the cruise (communications, safety, ice ops, science equipment, medical, deck operations etc.)
- Many thanks to all groups and especially to the MSTs

HLY0904 – Pickart Chief Scientist

- Three projects on-board, all focusing on mooring turnaround/recovery
  - CTDs conducted in addition to mooring work
- Achieved 85-95% of the objectives of the cruise. Could not get back three moorings. Failure to achieve 100% of the objectives was because of mooring release failures.
- Very successful cruise!

Successes

- Excellent communications between science and CG before and during cruise. Transition between operations and executive officers (turnover) appeared seamless
- IT was excellent, Map Server, Steve Roberts did a fantastic job
- Deck operations, small boat operations planning and execution went extremely well
- Ship handling was superb
- Efforts of ship to drag for and retrieve moorings most appreciated
- MSTs, CTD support (Scott Hiller) were excellent

Challenges

- Need a checklist of cruise planning items and when cruise planning items are due
- Recommendation that CG/OPP/Someone get a mooring winch for use on Arctic icebreakers
- 150 kHz ADCP needs replacement
- System for communicating with moorings needs replacement
- Required to take observer; this needs examination
- Difficult to work with BASC

HLY0905 - Chief Scientist Mayer

- Two ship operation with CCGS Louis St. Laurent and Canada. Louis did seismics, Healy broke path and did Multibeam. Some work independent of Louis (rock dredges, Multibeam surveys)
- Very successful cruise

Successes

- Many

Challenges/Suggestions

- Icefloe questionnaire redundant, some issues with differentiating between operations plans, cruise plans
- Gear storage in Seattle between field seasons
- Some difficulties with planning and executing offload
- System for communicating with moorings needs replacement
- TSG clogged with ice
- Embarkation and disembarkation at Barrow
  - Forest fires/fog precluded helicopter use
  - Landing craft use on embarkation, very useful, should be available?
  - Need to discuss ceiling limits with DOI
  - Is Barrow the best place to exchange personnel?
  - Fallback options need to be identified and recognized by CG and by science party

AICC Review and Recommendations

- AICC Chair compiled list of items needing attention and responsible party
- AICC reviewed and provided “ranking” of importance. One metric used was safety and potential to negatively impact science
- Here I will list the items considered to be “important” based on the average of the AICC rankings (1 is most important). These are those that averaged greater than 1.5 in importance
- We will send the NSF and CG the entire matrix for their perusal

ITEM	AVG. RANK	RESPONSIBILITY
Plan for protection of gear on dock in Seattle	1.00	USCG
Better coordination at CG Base for shipments	1.00	USCG
Better follow up on science equipment and facility needs to insure availability and readiness	1.00	USCG
White incubators need evaluation, repair, and/or replacement	1.00	USCG
Elevator is a safey hazard	1.00	USCG
Environmental chambers need repair	1.14	USCG
Procure more hard hats esp. when large parties	1.25	USCG
Test lab vans prior to sailing from Seattle	1.25	USCG

Appropriate equipment for communicating with moorings	1.25	NSF/Chayes
Repair/replace 150 kHz ADCP	1.25	NSF/Chayes
Locating needed science gear (Sleds)	1.29	USCG
- 80 Freezers require periodic defrosting	1.29	USCG
Better communication regarding trucks coming to pick up science gear	1.38	USCG
Better information on vans in general and specifically regarding maintenance/repair while at sea	1.38	USCG, AICC, UNOLS,
Aging UPSs on Healy	1.38	CG, ESU
Get mooring winch	1.38	USCG, NSF
Better protocol for demobilizing science gear post cruise	1.38	USCG

Polar Sea 2009 Cruises Debriefs

Process to Date

- Chief Scientists received debrief questionnaires and completed them
- Because time did not permit, the teleconference between science, AICC, ship, providers, NSF has not yet occurred
- Here I list some of the points from the debriefs
- The ship, NSF, and CG Pacarea have received the written debriefs but there has been no discussion between the parties of the points

PSEA0901 - R. Coffin Chief Scientist

- Work to be conducted during cruise:
  - CTDs
  - Piston coring
  - ROV from small boat
  - Multibeam from small boat
  - ? Anything else

PSEA0901 - R. Coffin Chief Scientist

- Cruise met 70% of the planned science objectives
  - Multibeam work was not successful; multibeam did not work
  - Problems with coring
  - Operation hours were not 24 hours
  - Small boat time to do ROV work was limited/not available

Successes

- Pre-cruise communications with CG were outstanding; good communications during cruise
- Successful communications with local Alaskan communities (McGillivary and Sheehan helped with this)
- Van procurement, setup, and use went well
- CG/MSTs worked hard to get labs set up and was very supportive of science equipment
- Planning for deck operations was outstanding. Safety was great except at night.
- Boat/helo briefs were good
- Food was excellent
- CG Science team was outstanding

Challenges

- Operations were not 24 hour
- Not enough small boat availability
- Need more people to support science
- Lighting on decks was inadequate, especially on fantail
- Some lab sinks did not have running water
- IT was slow to discuss needs pre-cruise. Email was slow. No outside internet access
- Back/trawl winch needs work, braking was not working and winch failed a number of times with equipment overboard
- Problems with coring (related to winch problems?)
- Some issues with ship's power

PSEA0902 - Ben-David Chief Scientist

- Goals of Cruise:
  - Polar bear recapture (helicopter to on-ice with bears)
  - Diversity of life in Arctic pack ice (diving, CTD, on-ice)
  - Optics of seawater affected by loss of sea ice (CTD)
  - Marine mammals/seabirds survey

PSEA0902 - Ben-David Chief Scientist

- 60-70% of planned tasks accomplished
  - Couldn't recapture all of the bears because:
    - The bears were distributed over a wide area
    - Poor ice conditions (thin and slow to freeze)
  - Long transits between bears limited CTD/Dive opportunities
  - Weather - frequently encountered poor flying conditions and at times it was too rough for CTDs and diving
  - Repeated breakdowns of engines and rudder control system
  - Crew inexperienced in navigating in ice
  - Ice images not efficiently transferred to navigation
  - Fuel conservation precluded turbine use until late in cruise

Successes

- Pre-cruise communications with CG were great; good communications during cruise
- Communications by science party with local Alaskan communities successful
- MSTs did a spectacular job with lab setup and helping us, especially with securing equipment
- IT was successful for outreach activities
- Deck operations, esp. for CTD, went very well
- Diving coordination went very well
- Flight operations went very well, everyone was committed to making them a success
- Food was excellent

Challenges

- Engine and rudder control reliability
- Crew experience in ice (driving, ship handling)
- Coordination between departments on ship to plan science activities
- Some operations were rushed because of poor scheduling.
- Make it clear to Chief Scientist that he/she is should collate all the information from all groups for the cruise questionnaire and enter it (system is set up for this)
- Need operations plans from Chief Scientist for each cruise that includes sequence of events at stations
- Clearance for operations in Canadian waters - requirements were not understood until very late
  - Thanks to all who helped make that a success

Challenges

- Little access to outside Internet. Email was slow on NEWER computers (?)
- Need some way to get ice data to navigators/ship drivers more efficiently
- Mapserver had to be updated manually (?)
- Cranes need work, are unreliable
- A few state rooms leaked or flooded
- Science spaces limited (this is the nature of the ship)
- Not enough washing machines

Not Included

- Logistics in Barrow (helicopter, alternatives to helicopter, BASC/CPS/BTS)

Research Cruises in US Arctic 2010

- Alpha Helix, US, Jackie Grebmeier
- Alpha Helix?, US, Tom Weingartner (unconfirmed to date)
- Araon, Korea, Sang Lee
- Xue Long, China, Jinping Zhao
- Mirai, Japan, Itoh
- Sir Wilfrid Laurier, Canada, Bob Fudge
- Healy, US, Kevin Arrigo, Bernie Coakley, ECS
- Polar Sea, US, Lee Cooper (Bering Sea), Bob Pickart

Communication with Local Alaskan Communities

- AICC will send synopsis of science cruises to AEWC
- Individual Chief Scientists will communicate with communities (some have already started)
- Cruises of concern: Pickart and Coakley
- “Observers”

Future Meetings

- Spring/summer 2010 meeting at the NSF, Healy/Polar Sea schedule dependent