

**UNOLS
Committee
Reports**

March 2004

Report for UNOLS Arctic Icebreaker Coordinating Committee September 2003 - March 2004

Having successfully completed three Arctic programs during the 2003 summer field season, plus the first transit of the NW Passage with multibeam. The HEALY spent most of her fall in dry-dock. Some of the tasks accomplished during the dry-dock period include:

- Alignment and offset surveys of most of the ship's systems were completed in response to AICC's encouragement. All sonar transducers, GPS antennas, overboard sheaves and gyros were surveyed. In addition, local reference marks were installed on HEALY to facilitate future instrument installations.
- The multibeam transducer windows were removed, and a significant number damaged hydrophones plus one projector element were replaced, and new windows were installed. All other transducer windows were opened, inspected, and replaced.
- A second seawater intake system and plumbing was installed and the existing internal plumbing was improved, increasing the pipe diameter for flow-through and incubator.
- The ADCP-150, which was not working properly during the 2003 field season, was inspected and a cable was replaced.
- The A-frames were removed and their bearings and pivots were reworked.
- Plumbing for the multibeam header tanks was inspected and their integrity verified.

The science equipment shakedown for the HEALY is scheduled for March 22 - April 3. USCG personnel have organized assistance from a number of vendors and users to participate in the trials. Scheduled tests include a multibeam patch test, check out of the winches, grooming of the CTDs and TSGs and an evaluation of the improved seawater system. NSF has recently recommended funding to purchase a new POS/MV system for HEALY and the PI is guardedly optimistic that this equipment can be installed, integrated and tested in time to support the 2004 field season. The first science cruise of the 2004 season departs mid-spring. Details of the schedule are available from Dave Forcucci with the USCG.

The POLAR class icebreakers had a busy year in the supporting Deep Freeze. Both ships completed the southern tours in reasonably good, but not great, shape. Both POLAR class vessels will require some time in drydock, which is standard after the southern hemisphere summer field season. At the present time it appears that only one of the POLAR class vessels will support Deep Freeze in 2005.

The USCG, with assistance from AICC, NSF, the Arctic Research Commission and the National Academy of Science's Polar Research Board, has begun the process of determining whether to replace or refit the POLAR class icebreakers so that USCG ships can continue to support Deep Freeze and arctic science programs. An engineering feasibility study has been completed, and soon a mission needs analysis report will be undertaken.

AICC continues to work with the Coast Guard and the science user community to orchestrate short- and long-term science systems support for the icebreakers. Presently, USCG personnel are endeavoring to engage support from Lamont-Doherty Earth Observatory to: (i) provide short term planning and technical assistance for the 2004 field season; (ii) provide onboard science support during the 2004 field season; (iii) develop protocols for data and metadata archiving, (iv) develop a forum for post-season review and evaluation of science operations; (v) facilitate the transition to long-term underway science systems support, (vi) initiate a long term science planning effort

AICC reminds the community that requests for cruises on the USCG icebreakers follow procedures identical to those for UNOLS vessels. Proposals for arctic cruises are due on Feb 15th of the year preceding a cruise. Scheduling meetings for the icebreakers are held each summer with participation from several funding agencies including NSF, NOAA, ONR and USFW.

Finally, there have been some changes in AICC and USCG personnel. AICC charter member Larry Lawver and long-term member Terry Whitledge cycled off the committee in December 2003. Long-term member Lisa Clough is scheduled to cycle off in March 2004. Our new members are Rebecca Woodgate (University of Washington Applied Physics Laboratory), Carin Ashjian (Woods Hole Oceanographic Institution) and Bernard Coakley (University of Alaska Fairbanks). Lisa Clough was an exceptional AICC chair and will hopefully retain close ties to the committee. As of 15 January, Margo Edwards assumed the chair position with two vice-chairs, Carin Ashjian and Hedy Edmonds (University of Texas Austin). AICC continues to have formalized ad-hoc representation from RVTEC (Dale Chayes) and RVOC (Daniel Schwartz). USCG CDR Bodenstedt retired in May and was replaced by LCDR Tom Wohjan. Captain Holland has replaced Captain Lancaster.

The AICC can be reached by writing to the Chair (margo@soest.hawaii.edu) or to the UNOLS Office (office@unols.org).

Report submitted by M. Edwards

DESSC Report for the March 2004 UNOLS Council Meeting

Patricia Fryer, Chair

In an activity designed to foster continuing interest in deep submergence research Fryer and D. Fornari convened a special session at the AGU meeting in San Francisco in December 2003. The session was entitled "Recent Advances in Understanding Submarine Environments and the Future of Submergence Research and Facilities." The description of the session was as follows: The use of occupied submersibles and remotely operated vehicles provides a mechanism by which marine geologists, biologists, and geochemists can perform field work in extreme environments, collect samples, run experiments, and establish observatories on the seafloor and in the water column. This session will highlight recent advances in marine studies as pertains to systems investigated with submergence assets including ridge crest studies, convergent and passive margin studies, and research in the water column. Presentations on upgrades to existing vehicles and projected uses for the future will provide attendees with up-to-date information on the state of the art in submergence vehicles and systems. There will also be an opportunity for scientists to exchange feedback with other users of these vehicles and systems and with facility operators. Several members of the DESSC were presenters at the session and operators and users of other facilities participated as well.

The DESSC held its annual Planning Meeting in Portland Or on Sunday Jan. 25, 2004. The meeting was held immediately before the Ocean Sciences meeting in the hopes of reaching more members of the marine biology community. Because the hope was to attract a broader range of users, the meeting format was changed so as to accommodate an afternoon "training session." The format of the meeting did include the standard presentations, but these were shortened by having most summarized by either D Kelley or P. Fryer. The meeting did accommodate science reports from users of the facility for 2003. The users' reports were followed by the usual Operator's report that included an operations summary, scheduling for 2004/2005, updates on the NDSF website, archiving, plans to replace D. Fornari as NDSF Chief Scientist, and the status of the New Alvin Design Study. During the Agency reports that followed the Operator's reports, Jim Yoder of NSF summarized the Ocean Study Board Report "Future Needs in Deep Submergence Science" and commented that NSF intends to go ahead with support for the construction of a new sphere for Alvin, will make an assessment of progress on that front before making a final decision regarding continued support for the replacement of the Alvin. A report by the DESSC chair followed in which summaries of future facility requests and potential for usage of the facility vehicles for MARGINS and RIDGE Related research was described. Summaries of three Ocean Studies Board reports were also presented. A discussion of facility needs, as related to sea-floor observatories (report from the UNOLS Observatories Working Group), was presented by D. Yoerger. Fryer presented a summary of progress toward developing an inventory of submergence vehicles of all types, and sensors and tools that might be needed by the user community. Public outreach and education activities were summarized and brief reports from other facility operators were presented.

After lunch the attendees returned for the training session, which was the first of its kind and was offered to provide detailed information on both the capabilities of the National Deep Submergence Facility vehicles (primarily Alvin, Jason2 ROV, and the DSL-120A sidescan

sonar) and sensor suites, and their at-sea operations procedures. The session was designed to provide information on the effective operating procedures for these systems for both new users of the facility vehicles, as well as those individuals who have had the opportunity to use the systems in recent years. The latest upgrades to the facilities were presented as well as planned improvements. One such improvement is the funded development of the hybrid ROV that will permit users access to full-ocean depths. Handouts with key information, contacts and URL links were provided and were designed to allow the participants to easily look up key information that can help them structure proposals to use the vehicles, or upcoming field programs.

RVOC Report
Tim Askew, RVOC Chair

The RVOC membership had a very successful and productive meeting hosted by the University of Minnesota, Large Lakes Observatory in Duluth. Several issues emerged that have present and future impacts, especially on the Global Class vessel operators as well as Ocean Class operators that go foreign.

Meeting the paperwork deadline of December 29, 2003 for the International Ship and Port Facilities Security (ISPS) Code (33 CFR 105, Facility Security Rule and 33 CFR 104, Vessel Security Rule 104) is a priority for all operators with vessels over 500 GRT (300 GRT old rules) to be fully compliant on July 1, 2004. Voluntary compliance with the Vessel Security Rule is strongly recommended and some operators have already started their Vessel Security Plans.

Automatic Identification System (AIS) went into effect for SOLAS certified vessels on December 21, 2003. Thanks to National Science Foundation's Shipboard Scientific Support Equipment (SSSE) Program, all the Global Class and most of the Ocean Class vessels were able to obtain the AIS equipment via a group purchase.

Another worrisome issue recently presented by U.S. Customs and Border Protection is the Automated Manifest System (AMS), which is a merchandise inventory and cargo release system to record entry and release of imported merchandise. Specifically, the AMS-Sea functions process merchandise imported on vessels. Scientific equipment could fall under AMS. Also coming into effect is the Automated Export System (AES), in which export shipment data required by multiple agencies is filed electronically to Customs and the Advance Passenger Information for Sea Carriers (APIS). AES will replace the Shipper's Export Declarations (SEDs) currently filed by scientists whose gear will return by another shipper. APIS is the electronic filing of crew and passenger data. It is unclear whether or not the UNOLS vessels will have to comply with AMS and/or AES but for now, it appears to be a regional issue.

The RVOC Safety Committee has been tasked with updating the Safety Training Manual to include SOLAS, ISM and all the other new regulations. Also, the issue of "wet weight" handling gear design requirements such as cable, winches, blocks, weak links and shackles that are not currently matched uniformly throughout the fleet is being addressed.

More on these issues will be presented and discussed at this year's Annual RVOC Meeting to be hosted by Bermuda Biological Station for Research October 19-21, 2004.

RVTEC Report
Dale Chayes, RVTEC Chair

RVTEC's fall meeting was hosted by the US Coast Guard and held in Seattle November 17-20, 2003. The meeting included a tour of the HEALY during her maintenance period at Todd Shipyard, and a reception and tour at Sea Bird Electronics. Florida Institution of Oceanography will host the 2004 meeting on the campus of the University of South Florida in November.

Immediately following the 2003 meeting a two-day training class for POS/MV GPS aided inertial attitude, heading reference systems was arranged by Bill Martin and hosted at UW. Peter Stewart of Applnaix taught a classroom session followed by hands-on training in a survey launch provided by NOAA.

At the meeting the level of service working group (Barrie Walden, Woody Sutherland, Stuart Lammerdin and Bill Fanning) provided and updated outline for defining level of service and the approach was endorsed by RVTEC.

A working group from RVTEC including Toby Martin, Val Schmidt, Geoff Davis and Steve Poulos have developed a protocol for ship to ship and ship to shore wireless access protocol. The approach was reviewed at our meeting in November. The first shore-side installation was made in Hawaii at the UH Marine Facility and the Kilo Moana and the Wecoma have been equipped. Discussion is already underway with respect to outfitting additional ships and port sites.

INMARTECH 2004 will be held at BAS in Cambridge England September 20-24, 2004. RVTEC and at least one host institution, most likely WHOI will host the next INMARTECH in the fall of 2006. We need to finalize plans in time to announce them in Cambridge.

SCOAR Report
Submitted by John Bane
March 2004

The newly formed Scientific Committee for Oceanographic Aircraft Research met for the second time on October 14 and 15, 2003 at the offices of Ocean.US in Arlington, VA. John Bane, professor in the Marine Sciences Program at the University of North Carolina-Chapel Hill, was installed as the committee chair following the move of Carl Friehe (UC-Irvine), original SCOAR chair, to ONR's Marine Meteorology Program.

The meeting was held at Ocean.US, because of the committee's interest in learning how research aircraft can best fit into the emerging efforts in ocean observing systems. Presentations were made to the committee by Eric Lindstrom and Larry Atkinson of Ocean.US and by Scott Glenn from Rutgers University. During subsequent committee discussion, it was determined that aircraft will be useful in at least three areas in ocean observing systems: Routine observations in areas that do not have fixed in situ instrumentation (e.g., to gather initialization/verification data for circulation models), observations surrounding fixed instruments sites, and intense observations for specific, short-term events such as an algal bloom, a high runoff episode, an atmospheric storm, a Gulf Stream intrusion or an ocean eddy event. It was noted that long-range aircraft that are operated by agencies such as NOAA, NCAR and NASA will be needed for deep-ocean observatories. In order to best serve the growing coastal observing systems around the country, SCOAR members foresee the need for four regional centers that would operate shorter range aircraft. The Naval Postgraduate School's CIRPAS (located in Monterey, CA) is a good candidate to be the West Coast center. New centers on the East Coast, in Alaska, and on the Gulf of Mexico coast are envisioned.

It was decided that a SCOAR member should attend the upcoming CoOP Pioneer Workshop (November, 2003) and NSF ORION Workshop (January, 2004) to bring aircraft information to these discussions on ocean observatories. John Bane attended both of those meetings, and he presented a poster describing SCOAR at the ORION meeting.

A presentation was made at the October SCOAR meeting by Cheryl Yuhas, from NASA, who described the possibility that several NASA research aircraft, including the P-3B, the DC-8, and the two ER-2s, may be decommissioned. Alternative possibilities include the transfer of one or more of these aircraft to another agency. Carl Friehe spoke briefly about recent ONR activities relevant to aircraft research.

Other topics at the October meeting included a discussion of CIRPAS and how it can become most effective as a UNOLS facility. A tentative standard aircraft oceanographic instrumentation list was constructed, and various ways that CIRPAS aircraft capabilities could be advertised were considered. It is very important to get into place an understandable application procedure for the use of these aircraft. These procedures could then potentially be adopted by other aircraft facilities that receive the UNOLS National Facility designation in the future.

The next SCOAR meeting is planned for March 25, 2004 at CIRPAS. Important items on the docket will be (i) continued development of application procedures for CIRPAS aircraft and facilities, and (ii) finalization of an article for EOS to describe SCOAR, its goals and activities. The ICCAGRA meeting will be held one day prior to the SCOAR meeting at the same location, and John Bane will attend to represent SCOAR.

Ship Scheduling Committee Report
Elizabeth Brenner and Rose Dufour, SSC Co-Chairs

Early in January NSF realized that the proposed UNOLS 2004 schedules were beyond their budget by 6 to 7 million dollars. NSF recommended deferrals of programs on two "large" vessels which in turned enabled vehicle availability on a third ship for further savings. Schedulers went into action re-arranging cruises that would meet the NSF budgetary fall-out while considering austral summer requirements, compulsory IHA permits and once again the arduous task of coordinating the vehicles, i.e. Jason, ABE and DSL120 to the various new schedule options without disrupting other programs already in place. Maintaining a "minimal" impact on 2004 schedules proved to be problematic; soon five large class vessels, and two intermediates were affected, with the net result of deferring, rearranging or loosing cruises. However, once the dust settled, 2004 still showed an increase of 11% over 2003 spread among all agencies, this includes projects listed as pending. Large and regional size vessels project the greatest increases, 17.5%, or 269 days and 19.3% or 215 days respectively, while intermediate and local vessels showed little or no increase from the previous year. However it should not be overlooked that 2003 maybe have been an anomaly with respect to lower than average days on the "large" ships (down by 106 days from 2002 even with 1/2 year schedule for KM).

NSF shows an approximate increase of 18% with 525.5 days, of which 76 days are still pending, NOAA's increase was nearly 17%, with a 13-day increase while the NAVY had a less than 2% increase, or 13 days. Of the 540.5-day increase from 2003 to 2004, 470 days are still showing as pending. Most of the pending days, 186, belong to NOAA and 130 days are attributable to the "Other" category in addition to 44 days pending for State and 29 days pending for the Navy .

The IHA/EA permitting process within some of the UNOLS institutions is still in the novice stage. To date, we have had mixed results. The complicating factor arises in foreign waters, as we learn of dual requirements for marine mammal protection. Scientists must satisfy both US law, and sovereign laws. It is not clear how many of the cruises scheduled and funded that require IHA permits will receive an approval by the time of sailing. This of course will have an affect on the overall percentages.

With a solid start on 2005 scheduling on some of the large ship schedules, due to the earlier mentioned budgetary problems, the task for this summer's meeting will be to weave in the newly approved programs. Mike Prince, in coordination with the funding agencies continue to provide the scheduling community with an MS Excel spreadsheet that includes up-to-date funding decisions. This should make the initial LOI process run smoothly. The Summer UNOLS Ship Scheduling Committee meeting will be held on Wednesday July 21 in D.C.

One last note, Jon Alberts, the newly appointed vice chair of SSC, has resigned from WHOI. Nominees for a new vice chair are being considered from East Coast Institutions. We hope to have a recommendation in place by the time of the Council meeting.