



R/V Revelle approaching an iceberg during the 2007 CLIVAR cruise. Photo by Paul Mauricio.

2006 Annual Report

Message from the UNOLS Chair

No sea-going scientist reading this report needs to be told that these are challenging times for any institution or organization running a research fleet. Our costs for operating the fleet are increasing at more than double the average inflation rate, driven by increased fuel prices, the costs of complying with Homeland Security and Safety of Life at Sea (SOLAS) regulations, and the cascading effects that the latter have on finding appropriately trained people to crew the vessels. Our fleet is aging – the average age of a UNOLS ship is into the 20's – while funding sources that were available 30 years ago no longer appear viable for replacing the larger vessels in particular. To top it off, we find ourselves in one of the most hostile business climates in history in terms of negotiating with shipyards for ship construction and major refits whenever we do find capital funding on account of the current boom in the offshore oil industry.

Despite these challenges, I find myself quite optimistic about the future. Why? To begin with, there is a growing appreciation nationally and internationally that we have ignored the oceans too long, at our peril. Programs are already being put in place to address issues concerning ocean, climate, and environment in my home state of California, and a palpable sense of urgency is rapidly spreading to other coastal states as well. Admiral James Watkins and the Honorable Leon Panetta, chairs of the US Commission on Ocean Policy and the Pew Commission, respectively, have joined forces to continue to advocate for ocean policy reform at the national level, and they continue to have many receptive ears in the halls of the Congress.

While funding for ocean sciences may not have been everything we would have hoped for during this administration, we cannot complain about getting three Major Research Equipment (MRE) initiatives through the National Science Board at the National Science Foundation. Given that the Ocean Sciences Division has never had an MRE, to have three at once is quite amazing! The three MREs will refit the drill ship, build a new Alaska Region Research Vessel (ARRV), and design and install the infrastructure for the Ocean Observatories Initiative (OOI). All three MREs clearly have a large impact on UNOLS by either impacting the way the UNOLS fleet is used or adding to its inventory. In another bit of good news, the Naval Research Advisory Panel (NRAC) reaffirmed the value of the UNOLS fleet to the Navy's mission. Based on that recommendation, the Navy has agreed to find the funds to construct two Ocean Class UNOLS vessels.

Also on the good news front, I am personally very proud to see how we as a community are coming together to advance the oceans on the national agenda, as typified by the pending reintegration of the Consortium for Ocean Research and Education (CORE) with Joint Oceanographic Institutions (JOI). This merger is being driven by the realization that the ocean research and education community is currently represented by too many organizations with sub-critical sizes and budgets, and that we are not broadcasting a consistent message to the public and policy makers. The new organization, which will select a new name and elect an inaugural Board of Trustees at the end of May, 2007, seeks to become a single point of contact between the community and federal agencies, policy makers, the press. It will strive to break down the divide between the management of facilities, such as the drilling program and OOI, and community activities for the benefit of both. It hopes to provide a natural, experienced, and trusted home for new initiatives. The new organization will advocate for the ocean sciences, but only at the highest possible levels. It will not lobby for its own programs or participate in earmarking for either individual institutions or consortiums. Most importantly, with an elected Board, the organization will be more representative of the best interests of the ocean research and education community and of the nation. The Board members for JOI and CORE were appointed by the organizations' members, thus permitting the perception, at least, that decisions were made with the welfare of the institutional members in mind. As UNOLS chair, I look forward to working very closely with this new organization.

Finally, UNOLS continues to be served by a large and diverse group of volunteers on its many standing and ad hoc committees. The universal willingness of oceanographers around the country to say "Yes!" when asked to serve is the best measure I have to go by that UNOLS remains relevant and important to the ocean research community. Thanks for your continuing willingness to be part of the solution to the challenges of operating the fleet of the future!

Marcia McNutt
UNOLS Chair
Monterey Bay Aquarium Research Institute



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FOREWORD

The UNOLS Office would like to acknowledge the many individuals that make up the UNOLS Community: The Committee members who have consistently devoted much of their personal time and efforts to further the mission of this organization. The member representatives who have provided their input and perspective many times over. The Federal Agency Representatives whose vision and support keeps us moving forward. And last but definitely not least, the dedicated crews, technicians and support staff that make it all possible.

-Mike Prince, UNOLS Executive Secretary



UNOLS Vision and Mission Statements

Vision - A healthy and vigorous United States research and education program in the ocean sciences with broad access to the best possible mix of modern, capable and well-operated research vessels, aircraft, submersibles and other major shared-use facilities.

Mission - UNOLS provides a primary forum through which the ocean science research and education community, research facility operators and the supporting Federal agencies can work cooperatively to improve access, scheduling, operation and capabilities of current and future academic oceanographic facilities.



UNOLS elections held in October 2006

The following persons were elected to terms
on the UNOLS Council:

- Dr. Vernon L. Asper, University of Southern Mississippi – Elected as Chair-Elect
- Dr. Robert W. Collier, Oregon State University – Elected as Operator Representative
- Dr. Mary Jane Perry, University of Maine – Elected as Non-Operator Representative
- Dr. John Diebold, Lamont-Doherty Earth Observatory – Elected as At-Large Representative

Arctic Icebreaker Coordinating Committee

By Margo Edwards, UH - AICC Chair
Carin Ashjian, WHOI - AICC Chair-elect

USCGC *Healy* completed two of her four scheduled programs for the summer 2006 field season. As previously reported, the first cruise (HLY0601) was highly successful. For the second cruise, there were difficulties with the installation and operation of the seismic system used to survey the Canada Basin. These difficulties ensued from problems encountered by the outside contractors tasked to set up the system and were not associated with US Coast Guard (USCG) operations. Ice cover was exceptionally heavy near Barrow this year, resulting in delays in executing the cruise track even after the technical difficulties with the seismic system set-up had been resolved. Despite these difficulties, the science mission was reported to be successful by the chief scientist.

During this cruise, a tragic and devastating accident on August 18 claimed the lives of two USCGC *Healy* divers, Lt. Jessica Hill and Petty Officer 2nd Class Steven Duque. All science activities were ended immediately and the ship transited to Barrow and then to Nome, AK, where the scientists disembarked. Because of safety concerns, the USCG decided to end the *Healy*'s 2006 mission and the ship returned to Seattle at the end of August. The investigation into the accident is ongoing. Captain Doug Russell was relieved of command in late August, replaced temporarily first by Captain Dan Oliver and then by the Executive Officer of *Healy* and permanently on September 29th by Captain Tedric Lindstrom. Two cruises remained in the *Healy*'s 2006 schedule and could not be accomplished; a NOAA-funded multibeam mapping project of the continental shelf north of Alaska and an NSF-funded engineering test cruise for an arctic Autonomous Underwater Vehicle (AUV). NOAA and NSF are working to accommodate these cruises with alternative ships or at a later date. While in Seattle, the *Healy* had a thirteen-week long maintenance period that will include 9 weeks in drydock and several significant modifications of the ship's existing systems.

Short-term repairs on the USCGC *Polar Sea* were completed and the ship underwent successful sea trials this summer that included icebreaking. *Polar Sea* will support Deep Freeze in 2007, accompanied by the Swedish icebreaker *Oden*. USCGC *Polar Star* remains in caretaker status at the USCG Base in Seattle.

The final National Academy of Science (NAS) report "Assessment of US Coast Guard Polar Icebreaker Roles and Future Needs" was released on September 27, 2006. The report emphasized the need for the US to "project an active and influential presence" in both polar regions and to maintain a leadership role in polar research, with icebreaking capability to maintain access to polar regions including year-round access to the Arctic.

Accordingly, the report recommended the construction of two new heavy icebreakers to be operated by the USCG. In the interim, the *Polar Sea* should remain mission capable and the *Polar Star* should be ready and available for reactivation if needed. The report recommended that the USCG receive maintenance and operations funds to "support an increased, regular, and influential presence in the Arctic", with other agencies providing incremental support for directed missions such as science.

Finally, the report recognized the importance of the US Icebreakers to US Policy and interests in polar regions and recommended that a Presidential Decision Directive be issued to identify "agency responsibilities and budgetary authorities."

There is increasing concern by local Alaskan communities and the Alaska Eskimo Whaling Commission (AEWC) regarding the impact of ship traffic and noise, especially icebreaking and seismic work, on subsistence animal populations in the Bering, Chukchi, and Beaufort Seas. This is due in part in response to increased exploration and seismic activities by industry as well as increased scientific interest in this region. The AICC strongly encourages all chief scientists to communicate their plans to local communities early. It was suggested informally in July that a single meeting of all concerned parties to be held early in each year would be an effective way to efficiently discuss the science plans and community concerns. The AICC endorses such a meeting, optimally in Barrow, AK, and believes that it is critical that meeting attendees include chief scientists or knowledgeable alternatives for each science cruise, funding agency representatives, the Coast Guard, the AEWC, scientists and operators of foreign icebreakers planning to operate in the Bering, Chukchi, and Beaufort Sea, and all other interested parties or local community members. The AEWC independently proposed such a meeting to the NSF and NOAA.

An "Icebreaker Retreat" was held on December 7th and 8th was held at the USCG Base in

Alameda, California with participation by arctic scientists, AICC, Coast Guard, NSF and NOAA representatives. The purpose of the retreat was to continue to improve USCG/science relations, to discuss the findings of the NAS Icebreaker Report, and to move forward in a constructive manner to best serve the interests of icebreaker science.

Two new members were selected for the AICC to replace outgoing committee members, based on applications in response to a solicitation for new members circulated by the UNOLS office. Robin Muench will replace Robert Bourke at their January 2007 meeting. Kate Moran will replace Margo Edwards in 2007. Carin Ashjian of the Woods Hole Oceanographic Institution will replace Margo Edwards as Chair of the AICC in 2007.

Deep Submergence Science Committee

By Deborah Kelley, UW - DESSC Chair

The DEep Submergence Science Committee (DESSC) met at Woods Hole Oceanographic Institution on May 24-25 for their bi-yearly meeting. The meeting resulted in the formation of numerous action items. Three of the most significant items have been completed and include:

1) the establishment of criteria for incorporating new assets into the Deep Submergence National Facility (NDSF) (see <http://www.unols.org/committees/de-ssc/index.html>) for this document;

2) submission of a recommendation by DESSC to include the autonomous underwater vehicle (AUV) *ABE* into the NDSF, concurrent with the removal of the two towed vehicles *DSL-120A* and *Argos II*;



*ROV Jason2 with Rock Drill.
Photo by: Mitch Elend (UW) &
Deb Kelley (UW)*

3) replace highlighted text with: debrief interviews with NDSF users. In order to better track the status of vehicle and system performance, DESSC will conduct debrief interviews with PIs who use *Jason2*, *Alvin*, and *ABE/Sentry*. Participation in the debriefs will include a DESSC representative, the science user, and the NDSF operator. Future DESSC meetings will include summary reports of

these debrief.

During the June UNOLS meeting, approval was given by the UNOLS Council to accept *ABE* into the NDSF, followed by AUV *Sentry* when it is fully operational. *ABE* will be available as part of NDSF for field programs in 2008 and beyond. Requests for *ABE* as part of NSF proposals can be made online <http://www.gso.uri.edu/unols/ship/shiptime.html> through the UNOLS Ship Time Request form. Researchers interested in using *ABE* can find out more information about its capabilities, data products, and ship requirements at <http://www.who.edu/marops/vehicles/auv>. For current information about *ABE*, please contact the Chief Scientist for Deep Submergence (Chris German: cgerman@who.edu). The key contact for future use of *DSL-120A* is now Margo Edwards at the Hawaii Mapping Research Group (HMRG) of the University of Hawaii (margo@soest.hawaii.edu).

The UNOLS Council also approved two new members of DESSC, Mike Tryon from Scripps Institution of Oceanography, and Marsh Youngbluth from Harbor Branch Oceanographic Institution. DESSC welcomes these two newest members.

The next DESSC meeting, was held November 9th, 2006 at the Seattle Aquarium in conjunction with the Western Society of Naturalists Meeting.

Fleet Improvement Committee

By Dave Hebert, URI - FIC Chair

In 2006 the Fleet Improvement Committee (FIC) continued their work on the Fleet Improvement Plan and provided input to Federal Oceanographic Facilities Committee (FOFC) on their fleet renewal document. The FIC will continue interactions with the ORION Office to determine the observatory facility needs for UNOLS vessels and other assets. They will also continue the process of defining the Global Class SMRs.

A FIC subcommittee was formed to draft Americans with Disabilities Act (ADA) guidelines for research vessels. The tasking for this came from NSF due to their need to ensure that new construction and conversion efforts address ADA requirements. The committee will consider both structural modifications and procedural guidelines for shipboard operations when persons with disabilities are onboard. One task for the subcommittee was to draft preliminary ADA guidelines for the Regional Class Acquisition effort.

Using existing documentation these were completed and provided to NSF in early June 2006.

The ADA committee convened a workshop at WHOI on September 18-19, 2006 that included a tour of *R/V Knorr*. Workshop participants included sea going scientists with vision, hearing, and mobility disabilities. Their input from the ship tour was extremely useful. Some of the suggested solutions would enhance safety for all people on board, such as improving markings of obstructions and the use of a buddy system. It is generally thought that hearing and sight disabilities can be dealt with both in conversions/existing vessels and new construction. Mobility accommodations will be harder to deal with in existing vessels because it could involve passageway widths, room size and layout, and stairs than cannot be easily modified. It is better to deal with these issues in the initial vessel design phase. Procedural ADA issues will be incorporated into the Research Vessel Safety Standards (RVSS) and these topics will improve safety in general. Once the ADA guidelines are finalized, they would be incorporated into the Global, Ocean, and Regional Science Mission Requirements (SMR).

FIC will continue communications with University of Hawaii to learn about the capabilities of their new over-the-side handling system on the *R/V Kilo Moana*.

Goals for 2007 include completing the latest revision to the UNOLS Fleet Improvement Plan, as well as completion of the Global Class SMRs. FIC also plans to incorporate ADA Guidelines into the Regional, Ocean, and Global Class SMRs. The committee will continue to support and provide input when requested to ongoing fleet renewal programs such as the Alaska Region Research Vessel, the Regional Class and the Ocean Class.



Research Vessel Operator's Committee

By Tim Askew, HBOI - RVOC Chair

The University of Washington in Seattle hosted

the 2006 RVOC Meeting on April 25 – 27, after an 18-month hiatus. Thanks go out to Dan Schwartz, Manager of Marine Operations, Dr. Russ McDuff, Director, School of Oceanography and their staff, for hosting the 45th Annual Meeting.

The meeting started off with a presentation by U.W. Associate Professor, Dr. Debbie Kelley who provided an overview of Hydrothermal Vent Systems and the “Endeavor Observatory”. This very informative presentation was in keeping with the practice of giving RVOC Members a glimpse of the science that is taking place on our vessels.

Institutional representatives provided updates on group purchases made during 2005. During the past year life rafts, Doppler speed logs, RADARS, Self Contained Breathing Apparatus (SCBA), firefighting turn out suits, Global Position Indicating Radio Beacon (GPIRB) and UNOLS pooled science vans were purchased through this program. In addition, vessel stability reviews and Non-Tank Vessel Oil Spill Response Plans (NT-OSRP) were contracted for the UNOLS fleet.

Committee reports included presentations by Safety Committee Chair, Tom Althouse, who discussed the new Research Vessel Safety Standards (RVSS) format. The RVSS is currently under review with the possibility of some new chapters and elimination of out-dated ones due to changes in science operations and/or minimal use. Dennis Nixon, UNOLS Legal Advisor will review the RVSS due to his long standing interest in the safety standards and their importance to the UNOLS fleet. New members of the Safety Committee are Pete Zerr (OSU) and Todd Chlaupek (URI). The Safe Working Load (SWL) of wire remains a significant topic for the fleet and RVOC. Mike Prince covered the Ship Scheduling Committee (SSC) report with the outlook for 2007 schedules being at best the same as 2006. Mike also discussed the Deep Submergence Science Committee (DESSC) activities, which include their involvement with the HOV Safety Committee and Science Oversight Committee's for *Alvin* replacement. He also provided a brief report on the Artic Icebreaker Coordinating Committee (AICC). He stated that AICC is conducting telephone de-briefs of every Chief Scientist that comes off the Healy and then generating a list of recommendations. Dolly Dieter (NSF) discussed

the plan for the newly formed Human Occupied Vehicle (HOV) Safety Committee. The thrust of the Committee is to develop safety standards for HOVs similar to the RVSS.



The Research Vessel updates started out with Tom Smith (UAK) showing the completed design for the Alaska Region Research Vessel (ARRV) and stating that funds were requested in the 2007 federal budget to begin construction. Lee Black (BBSR) talked about the *R/V Atlantic Explorer* (ex *R/V Seward Johnson II*), which is providing a more weather capable replacement for the *R/V Weatherbird II*. The new ship was purchased in September of 2005 and converted over the winter in Norfolk, Virginia. A new pilothouse was added and all the oceanographic winches were cross-decked from the *Weatherbird II*. Paul Ljunggren (LDEO) gave a presentation on the *R/V Marcus Langseth* conversion. They are somewhat behind the original work schedule but progressively moving along. Matt Hawkins (UDEL) said that the *R/V Hugh R. Sharp* arrived in January 2006, completed the NSF/UNOLS inspection in mid-March and conducted her first science cruise in late March. The official commissioning and open house was held in May. Beth White and Robert Wilmot gave an update on the NOAA Fisheries vessels *Oscar Dyson*, *Henry B. Bigelow*, FSV3, and FSV4. The FSV3 will be named *Pisces* and they have just started cutting steel for FSV4. Beth also reported on the *Okeanos Explorer*. This 224 foot former Navy ship will be NOAA's only ship with a dedicated science class deep ocean Remotely Operated Vehicle (ROV) and will support Ocean Exploration projects.

Special reports included findings from a survey of students conducted by MIT/WHOI and presented by Liz Caporelli. Over 50% reported experiencing inappropriate gender or sex-related behavior at sea, over 20% reported instances of unwanted sexual advances. The Committee found evidence of unprofessional behavior onboard WHOI, UNOLS, international, and U.S. government vessels. The students observed unprofessional behavior by crewmembers, technicians, and other members of the science party. Women reported more incidences than men. The range of responses to behavior included ignoring the behavior,

avoiding the person, asking the person to stop or telling a co-worker/friend/family member with most choosing not to report incidents for various reasons.

Rick Trask (WHOI) held a discussion on "Wire Testing" and evaluation of UNOLS wire specifications. The specifications and resulting test requirements should better emulate actual use in the field. Field data is necessary to validate actual use for incorporation into the specification.

Vessel Operators from foreign organizations included Ian Sage (NATO) who presented an eye opening account of what happened when the *R/V Alliance* grounded in the Mediterranean Sea. Marieke Reitveld (NIOZ) covered the "Ocean Facilities Exchange Group" (OFEG), European Ocean Research Fleet and new construction and research development in India and China. Per Nieuwejaar (ERVO) is taking the reins as International Ship Operators Meeting (ISOM) Chair in October 2006 from Marieke Reitveld. Per presented an overview of Norway's fleet renewal plan for 18 vessels. Geraint West (NERC) discussed their reorganization and the new National Oceanography Centre. He also gave an update on the *R/V James Cook*, which replaced the *R/V Charles Darwin*. Geraint stated that funding (approximately 100M) was likely for the *R/V Discovery* replacement.

Dennis Nixon, UNOLS Legal Advisor, presented his annual update of marine insurance and admiralty law issues of interest to research vessel operators. We can expect instability for insurance markets due to several major natural disasters and depleted financial reserves. Legal issues remain complex because of new technology and human factors so safety standards must keep pace with evolving industry practices.

A discussion on the "Wood Rules" took place. These new rules would require



Presentation of the Ancient Albatross Award during the UNOLS Annual Meeting. The *R/V Melville* is now the oldest ship the in UNOLS Fleet. Photo by Annette DeSilva.

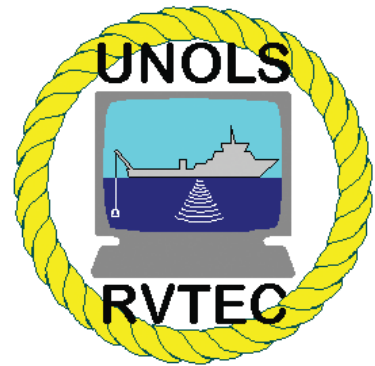
shipping crates and pallets to be plastic or be built of treated/approved materials and stamped bug certified. They took effect September 2005, with full compliance required by July 2006.

This year's workshops included "Load Handling System Design Standards" and "Wire Safe Working Load" as a combined workshop resulting in two main issues. As science continues to push the upper limits of cable and wire capabilities the fatigue strength needs to be addressed so that operations can advise science and crews when "safe" operating limits have been reached. The second issue is to determine at what point existing equipment needs to be modified, upgraded or replaced. Different cable technology needs development in support of new science objectives such as long coring. Al Suchy (WHOI) gave a presentation on the Long Coring Systems developed for *R/V Knorr*. A second workshop focused on alcohol, drug, and sexual harassment policies with the primary objective of creating a uniform policy for UNOLS vessels. A new section on "Personal Safety" to be included in the RVSS is in the works that tailors sexual harassment issues specifically to sea going operations.

Invited speaker, Morgan Turrell, from the National Transportation Safety Board (NTSB), Marine Accident Section, gave an informative presentation on "What To Expect If Your Ship Has An Accident". This eye opener is something all Operators hope never happens. In all cases let the NTSB handle all comments with the media during an investigation.



The final day of the meeting was devoted to the Round Table Discussion and Business Meeting. During which the membership voted to have the next meeting at the Florida Institute of Oceanography (FIO) in St. Petersburg.



Research Vessel Technical Enhancement Committee

By Bill Martin, UW - RVTEC Chair

The 2006 RVTEC meeting was held October 16th in conjunction with International Marine Technician (INMARTECH) Symposium. and was hosted by Woods Hole Oceanographic institution and Barrie Walden. Topics for the afternoon discussions included: Equipment Calibrations, Defined Levels of Technician / Instrumentation Support, An update on Satellite Communication Systems, HiSeasNet, NOAA VSAT Project

INMARTECH 2006 was held on October 17-19, also hosted by Woods Hole Oceanographic Institution. Meeting topics included: Shipboard Handling Systems & Over-the-Side Operations, Innovations in Vehicle Systems, Equipment & Procedure Innovations, Underway Data Collection & Archiving, Long-term Instrumentation Deployment, Equipment tricks, Techniques, and Cool Products, International Shipping – Dealing with new regulations, Ship to Ship/Ship to Shore Wireless Access Protocol (SWAP), Shipboard Networks and Network Security.

Scientific Committee for Oceanographic Aircraft Research Committee

By John M. Bane, UNC - SCOAR Chair

At the SCOAR Spring meeting, SCOAR met jointly with ICCAGRA (the Interagency Coordinating Committee for Airborne Geosciences Research and Activities, chaired by Cheryl Yuhas from NASA) at the Naval Postgraduate School's Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS) in Marina, CA on May 23 and 24, 2006. Discussion items included the following:

1) Scheduling among the various research aircraft operating agencies continues to be of interest. Most research aircraft operators are federal agencies and for the most part are dedicated to agency missions or particular research programs. At present there is no uniform method for requesting, scheduling or for cost reimbursement of aircraft operations across the set of operators. There is still a need to better utilize some of the aircraft facilities and to improve access for users that need aircraft support. Making information about schedules, requesting procedures and costs centrally available will help facilitate access. Moving towards a “UNOLS-like” process might start with an aircraft schedule coordinating group made up of aircraft operators and funding agency representatives.

2) Some good news was presented by several of the agencies, including: the establishment of a “catalog of available aircraft” by NASA, the acquisition of one more Twin Otter and one more P-3 by NOAA, the HIAPER Gulfstream jet being brought into service by NSF-NCAR, and the addition of one more King Air by the Naval Research Lab. Tempering this news is the fact that budgets to operate the fleet of federal research aircraft continue to be tight.

3) A presentation was made to SCOAR by Jim Hain of Associated Scientists at Woods Hole about their interest in using a twin-engine ultralight aircraft called a TwinCam. They have filed a petition with the FAA asking for an exemption to a regulatory limitation within the Experimental category of aircraft certification, and Jim asked if SCOAR would write a letter of support for this, stating that SCOAR recognizes the value of such aircraft in marine scientific research. Following the meeting, John Bane wrote a support letter and circulated it to the SCOAR members. They all approved of the letter’s wording, with several noting that it is the type of thing that SCOAR should be assisting with. Peter Wiebe subsequently gave his UNOLS Chair’s OK, and the letter was submitted to the FAA as part of the exemption-request package submitted by Associated Scientists of Woods Hole. As of this date, a final ruling on their request has not been made by the FAA.

The first UNOLS Airborne Ocean Science Conference. was held the evening of May 24 and all day on May 25, 2006, at the Moss Landing Marine Laboratories. About 40 research aircraft scientists, technicians and agency operators attended the conference, and twenty-five oral and poster presentations were made.



*Airborne Ocean Science Conference Participants.
Photo by Kate Sawyers.*

The general sense from attendees following the meeting was that it was a great success and that SCOAR and UNOLS should continue with plans to have a similar meeting periodically, perhaps every two years. An additional idea was to have a special session for aircraft ocean science results at an AGU or Ocean Sciences meeting and then an evening “Town Hall” meeting on the future of aircraft in ocean sciences.

Ship Scheduling Committee

*By Rose Dufour, Ship Scheduling Committee
Co-Chair*

The UNOLS ship scheduling outlook in early summer was disparaging with the prospect of two large ships and one to two Regional or Intermediate class vessels (one from each coast) slated for lay-ups. Utilization was down by 37% from past years with 3150 total days compared to about 5000 days. By summer’s end ship days had been added to the fleet, bringing the total up to 4074 days. The fleet is still down by about 20%, and nearly all ships are operating below their target days, however the good news is almost all ships will operate in 2007.

Rose showed charts for Fleet Utilization trends and operation costs. Although days funded have gone down significantly, the operating costs have gone up. Charts showing vessel utilization and support by agency were presented for 2006 and 2007. The total fleet support by agency was shown in pie charts for 2006 and 2007.

NSF was able to transfer 2008 Biocomplexity in the Environment Program (BE) ship funds into ship funds for 2007 resulting in the ability to add several cruises that were slated for 2008 or were scheduled on foreign vessels. A better estimate of anticipated carry-forwards (about \$1.5M) all added up to an infusion of \$6.2M into OCE ship funds for 2007. The increase in anticipated carry forwards money can be attributed in part to falling

fuel prices. In order to spend these additional funds NSF approved a one-time exception during the August 15th proposal target deadline of allowing for ship time to be requested in the following year. These proposals will be reviewed in the November panels, and if approved, ship time may be added to the latter half of 2007 schedules. The message to send back to home institutions will be that PIs should continue to write proposals for ship time. To date, NSF is supporting 2499 days of funded ship time in 2007, for a projected total of \$50M (OCE, BE, ODP, OPP).

ONR has worked hard to come up with funds and projects in the Western Pacific in order to utilize Melville. A large Physical Oceanography project slated for 2008 will now have a 2007 component in order to start preliminary studies in the Kurshio Extension and the Luzon Straits. The hope is that by taking Melville out of the scheduling mix for Pacific work, the other Global/Ocean Class vessels could have healthier schedules. ONR will fund approximately \$10 M for ship/technician time in 2007, mostly on the Intermediates and Regional Class ships, with the exception of the Melville's western Pacific work.

NOAA's numbers are down from previous years. The base usage from PMEL/AOML is scheduled, but Ocean Exploration (OE), NURP, Sea Grant, ECOHAB and DART are down. The cruises for 2007 amount to about 344 days compared to 630 days scheduled in 2006. NOAA has taken a wait-and-see approach to scheduling more work in 2007 on UNOLS ships. Their Congressional

appropriation process and timing for known budgets for the upcoming fiscal year forces them to be conservative in their requests to UNOLS. Most of the 2007 DART work will rely on commercial and foreign vessels that take advantage of regional assets and partnerships for future DART maintenance. OE plans to utilize Jason on R/V Ron Brown.

Institutional funds have been used to fill in gaps, and provide days on various schedules that either ensure operations for 2007 or round out schedules towards the target operating days for each class vessel. For example the University of California has augmented the Revelle's Indian Ocean schedule by 68 days, bringing a potentially weak schedule up to the Global vessel target of 275-300 days. University of Washington will continue to fund 45 days for student cruises on the Thompson. WHOI has added approximately 21 days of new institutional/private funds to Oceanus' schedule, thus ensuring operations in 2007 of that vessel. Seward Johnson has 14 days of State Funds scheduled, plus they contribute institutional funds towards supplementing fluctuation in the daily rate. Endeavor has scheduled 42 days of state days. In addition, there are unquantifiable costs subsidized by operating institutions that enable ships to operate, such as OSU's non-charge for hull insurance. Other ships that have state/institutional funds on their schedules for 2007 are Cape Hatteras, Point Sur, Savannah, Barnes, and Urraca, bringing the total contributions to 347 days.



2006/2007 Important Issues and Objectives

Scheduling and Utilization - Address issues related to retirement of research vessels and planned retirements as it relates to fleet renewal and better utilization of the fleet.

- Explore methods for better serving the requirements of NOAA and ONR programs and to better align NOAA funding processes with the UNOLS scheduling and proposal process.

Quality of Fleet Operations - Recruiting and retention of skilled and experienced technical personnel and crewmembers is extremely important to successful science operations.

- Better identify areas needing improvement and successful operations through improved Post Cruise Assessments.

Fleet Renewal - Articulate UNOLS vision for oceanographic facilities of the future through the Fleet Improvement Plan that addresses the infrastructure needed to support new and innovative science.

- Support and participate in ongoing fleet renewal programs such as ARRV, Regional & Ocean Class and new HOV.

Communications - Improve communication within and between the UNOLS subcommittees and the UNOLS Council. Too few people in the academic or congressional ranks really know what UNOLS is or what it does.

- Better communication of important issues to the broader science community.
- Better explain the process of proposing to use a UNOLS vessel and what is expected and the responsibilities of all the different parties (scientists, crew, technical services.)

Data Management - We are entering a new era when PIs or groups of PIs will have to more effectively and efficiently make their data available within prescribed time periods to the community at large (other researchers, managers, and the public). UNOLS should play a role in the dissemination of the information on best practices for the collection of data/metadata when working at sea.

Challenges Ahead

- The projected shortfall in ship availability over the next 5-10 years despite the federal agency plan for fleet renewal.
- The increased demands on the fleet as the Ocean Observatory Initiative is implemented. No room for increased demands made upon the fleet if the vision of the Ocean Commission is realized and ocean science funding is increased as recommended to the President. The projected shortfall in ship availability over the next 5-10 years despite the federal agency plan for fleet renewal.

UNOLS Goals

Promote broad, coordinated access to oceanographic research facilities

- Maintain a system and procedures that facilitate and promote broad access to research vessels and other major ocean science facilities.
- Support coordinated, efficient and effective scheduling of research vessels and facilities.

Support continuous improvement of existing facilities

- Foster co-operation among facility operators, funding agencies and research scientists with the goal of continuously improving the quality and capability of existing ocean science facilities and the quality, reliability and safety of their operation.

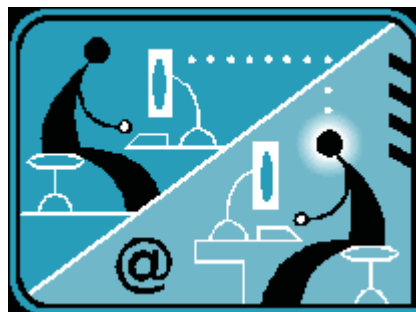
Plan for and foster support for the oceanographic facilities of the future

- Provide leadership and broad community input to the process of planning for and supporting the improvement, renewal and addition of facilities required to support the ocean sciences in the future.



What is UNOLS?

The University-National Oceanographic Laboratory System is an organization of 61 U.S. institutions that have academic research and education programs in the ocean sciences and an interest in promoting the best possible national shared use facilities to support these programs. Eighteen of the UNOLS institutions are operators of these major shared use facilities, including research vessels, submersibles, aircraft and major instrumentation. Facilities are owned either by one of the Federal agencies or by individual institutions. UNOLS serves in an advisory role to the facility operators and to the supporting.



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The National Science Foundation

The Office of Naval Research

The National Oceanic and Atmospheric Administration

U.S. Coast Guard

U.S. Geological Survey

Minerals Management Service



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