University-National Oceanographic Laboratory System

UNOLS NEWS

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Highlights

A Message from the UNOLS Chair….

This is a time of change on many fronts in the oceanographic community and not the least in UNOLS. This fall, the annual meeting marked a change in leadership of UNOLS with Tim Cowles the Chair for the past two years assuming the Past Chair position and Bob Knox, the Past Chair being given UNOLS "emeritus status". Both have served meritoriously and we are extremely grateful for their years of service. Also at the UNOLS Annual Meeting in October, Marcia McNutt was elected to the Chair-elect position, which she shall have for two years. I assumed the Chair position, but not without some trepidation given the challenges that UNOLS faces over the next few years.

It is important to emphasize that UNOLS is a unique organization within the marine community. It coordinates and reviews the access to and utilization of facilities for academic oceanographic research. It reviews the current match of facilities to the needs of academic oceanographic programs and makes appropriate recommendations of priorities for replacing, modifying or improving the numbers and mix of facilities, especially research vessels, for the community of users. It works to foster federal and other support for academic oceanography, thereby continuing and enhancing the excellence of this nation's oceanographic program.

Today there are critical issues facing the oceanographic community, especially those of fleet renewal and ship related issues associated with the establishment of ocean observatories that fall squarely into the UNOLS purview. At the same time, the recommendations put forth by the U.S. Commission on Ocean Policy give rise to a sense of optimism that the support will be forthcoming to enable the improvements to the oceanographic infrastructure that are essential for future ocean research. UNOLS has a central role in providing the leadership and advice necessary to turn the promise into reality.

The UNOLS fleet consists of 27 research vessels including six in the Global Class, eight in the Ocean Class, eight in the Regional Class, and five in the Local Class. Many of these vessels are approaching their 30-year mark when service is expected to end. The Federal Oceanographic Facilities Committee (FOFC) published a plan for academic fleet replacement in 2001, but the schedule for bringing new ships online to replace our aging fleet has been slower than projected. The good news is that the R/V *Ewing*, the global seismic research vessel operated by L-DEO, will soon be replaced by the newly acquired *Western Legend* and will have greatly enhanced seismic survey capabilities. Also, the regional (<40m) vessel *Cape Henlopen* operated by University of Delaware will soon be replaced by a new modern vessel. A plan is in place to replace other aging regional vessels with new ones funded by NSF over the next eight years.

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One major concern has been that the Ocean Class vessels were fast approaching their decommissioning dates without any replacements (or the funds to build them) in sight. Recently the NSF National Science Board approved funding from the Major Research Equipment (MRE) account for the Alaska Region Research Vessel (ARRV). The design is essentially done for this ice capable Ocean Class vessel and we now wait with fingers crossed for Congress to approve the funding to build it. If all goes well, it could be ready to replace the *Alpha Helix*, one of the oldest vessels in the fleet in 2008.

At the UNOLS Annual meeting, RADM Cohen of ONR stepped forward with a plan to fund the construction of additional Ocean Class Research Vessels. He is a strong advocate for a new ship design dubbed the X-Craft, which is a high-speed catamaran. The UNOLS/FIC Ocean Class committee is now charged to look carefully at this hull design in collaboration with the Naval architectural firm JJMA, Inc. and to compare it to the other two hull forms currently under consideration, the monohull and the SWATH. A choice on hull form is needed soon and funds for constructing the first of the new Ocean Class vessels could be in place as early as FY06, in accordance with RADM Cohen's timeline.

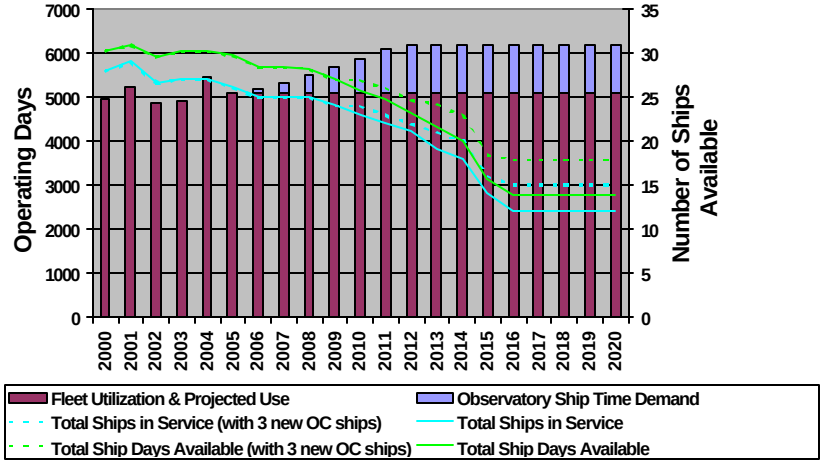
In spite of the new ship construction underway and being planned, a UNOLS review of ship utilization by the academic community both now and projected into the future indicates that there will be fewer ship days available than currently. If the projected needs for installing and maintaining the ocean observatories are included, the projected deficit is even greater (Figure 1). Perhaps the Ocean Commission Report with its call for increased funding for ocean science and infrastructure will provide the impetus to obtain the resources needed to provide for the anticipated demand for increased access to the sea.

UNOLS is moving forward on a number of other fronts. The Arctic Icebreaker Coordinating Committee (AICC) has been working with the USCG to alleviate the problems brought on by the break down of one of the Polar Class icebreakers (*Polar Sea*), which will be out of service for at least two years. AICC is also providing leadership in the planning for the International Polar Year (2007-2009). The Deep Submergence Science Committee (DESSC) has been serving as an advisory group for the National Deep Submergence Facility, which includes *Alvin*, *JASON-II*, and *DSL-120*. Design of a replacement deeper-diving human occupied vehicle (HOV) is now underway and if testing of a new 6500 m sphere is successful, the new HOV will be ready for service in 2008. A hybrid ROV capable of 11,000 meter depths is also under construction with entry into service in 2007. The Research Vessel Operators' Committee (RVOC) and the Research Vessel Technical Enhancement Committee (RVTEC) both are dealing with new Homeland security rules and working on ways to standardize and improve the quality of service experienced by the seagoing academic researchers. Finally, the newest of the UNOLS subcommittees, the Scientific Committee for Oceanographic Aircraft Research (SCOAR), is an advisory group for the UNOLS National Oceanographic Aircraft Facility established at the Center for Interdisciplinary Remotely-Piloted Aircraft Studies (CIRPAS) in Monterey, CA a little over a year ago. This committee, chaired by newly elected John Bane, has recently been working on making the marine community more aware of the opportunities that exist to do research from both manned and unmanned aircraft (See articles in *EOS*, Oct. 12, 2004 and the *Oceanography* magazine, Volume 17, No. 4).

There are other activities and issues being studied and discussed by UNOLS committees that have relevance and impact on the way oceanographic research is conducted. These include ship scheduling, marine mammals and acoustic permitting issues, frequency spectrum management issues, and shipboard over-the-side handling systems. This issue of the newsletter will touch on some of these as well as to expand on topics discussed above.

By Peter Wiebe, UNOLS Chair

Figure 1: **UNOLS Fleet Utilization and Projections (2000 - 2020)**



UNOLS Annual Meeting Highlights

Members of the oceanographic community and Federal agency representatives gathered on October 15, 2004 at the National Science Foundation to participate in the UNOLS Annual Meeting. Tim Cowles, the outgoing UNOLS Chair, presided over the meeting. He began the day with a brief summary of the major accomplishments within UNOLS over the last year. These included various fleet renewal activities, coordination and planning for aircraft, polar vessels, deep submergence assets, quality improvement projects, community outreach, and vessel scheduling. Over the next year these activities will continue to be addressed along with other important issues, such as marine mammal and acoustic permitting, ship security plans, new regulatory requirements, and frequency spectrum management.

Keynote Address - Mr. Robert Winokur, Technical Director for the Oceanographer of the Navy and Chair of the Federal Oceanographic Facilities Committee (FOFC), provided the UNOLS keynote address. His talk focused on the on-going FOFC effort to prepare a coordinated federal oceanographic fleet renewal plan. In April 2004, the FOFC agencies participated in a survey on Fleet renewal plans. Using the survey results, they held a retreat in July to begin drafting a renewal plan. They hope to have a first draft of the plan by 31 March 2005 with a final report release date of 30 September 2005.

The coordinated Federal oceanographic fleet renewal plan will be an update of FOFC's 2001 report, *Charting the Future for the National Academic Research Fleet, A Long-Range Plan for Renewal*. Unlike the original report, the update will include the renewal plans for all FOFC agencies that have renewal plans underway (USCG, NOAA, Navy, and NSF). The update will include agency specific and coordinated funding strategies.

The coordinated fleet renewal plan will identify associated costs and timelines. Only ships greater that 40 meters will be addressed. The report will assess the impact of emerging technologies, i.e., unmanned vehicles. It will also assess the impact of emerging needs, i.e., ORION, IOOS. The Polar vessels will be included in the plan. FOFC will work to identify the fleet size and composition needed to meet current and evolving oceanographic research needs. They will review the lessons learned in drafting the original Academic Fleet Renewal Plan. There will be careful consideration of operation costs and the role of ship service life extension in renewal efforts. Mr. Winokur emphasized the need for FOFC and UNOLS to work together to attain mutual goals and harmonize schedules.

UNOLS Annual Meeting Keynote Speaker – Mr. Robert Winokur

NSF Facility Renewal Plans - The Keynote presentation was followed by agency reports. We were pleased to hear from Margaret Leinen (NSF Geosciences Assistant Director) and RADM Jay Cohen (Chief of Naval Research, ONR). NSF has been a strong supporter of academic facility renewal with many design and conversion projects underway. They have provided support for the Alaska Region Research Vessel (ARRV) design effort. The ARRV is now included in NSF's MRE account. This year NSF established a cooperative agreement with Lamont Doherty Earth Observatory (LDEO) to acquire a modern seismic vessel for replacement of *Ewing*. Plans are proceeding for the design and construction of three new Regional Class vessels. NSF has also funded WHOI to proceed with design and development of a replacement human occupied vehicle (HOV) and a hybrid remotely operated vehicle (HROV).

Navy Ocean Class Acquisition Plans - RADM Cohen presented the Navy's plans for implementing renewal of the Ocean Class. He encouraged the UNOLS community to think about where we will be 30 years from now and the facilities that will be needed to accomplish research. RADM Cohen reported that ONR has a plan for Ocean Class construction and has budgeted the first increment of funds. As visual aids, RADM Cohen displayed three ship models, a monohull, a SWATH, and an X-Craft.

RADM Cohen explained that three years ago the Chief of Naval Operations ordered the construction of an X-Craft (experimental) platform. The vessel has been designed for high speed (50 knots max, 24 knots optimum) and the ability to support air operations (two helicopters). The ship includes a large elevator system to allow flexible modularity. A second elevator could be added in the fantail to allow deployment of underwater

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vehicles and gear. The X-Craft range is 4000 meters. RADM Cohen promoted the advantages of a high-speed vessel.

RADM Cohen displays X-Craft model

He encouraged the UNOLS community to consider the X-Craft hull form as vessel decisions are made. However, if the community desires a monohull, he would support their decision. Platform modularity, as well as an aircraft support capability is required in whichever hull form is selected. The Navy plans to budget funds so that they would be able to build a UNOLS ship every two or three years depending on cost. The cost of the X-Craft currently under construction is $68M. Whichever ship hull form is selected, it would be the design for the entire Class. RADM Cohen offered invitational orders for a small UNOLS group to visit Nichols Bros. Boat Builders where the X-Craft is under construction. ONR would like to have a final recommendation from UNOLS regarding the Ocean Class hull form by early 2005.

Frank Herr (ONR) continued the discussion with additional information about the X-Craft and the Ocean Class acquisition process. There will be a competitive process for selecting the Ocean Class operators. A request for proposals (RFP) will be issued from ONR. The operator candidate pool will need to demonstrate their capability as an operator and will be required to retire a vessel. There would be the need for an ongoing cost share with the institution. The proposal Review Board will include ONR Code 32, N61 (The Oceanographer of the Navy), and UNOLS. The final selection will be made by the CNR. Over the next months ONR would like to select the UNOLS ship operators.

At this time next year ONR would like to be in contract with an Integrated Project Team (or shipyard) for the design and construction of the first Ocean Class vessel.

UNOLS Reports and Elections - The Annual Meeting also included reports from the UNOLS Standing Committees. Reports on important issues facing UNOLS were provided. Elections were held to fill council positions and to vote on proposed charter revisions.

UNOLS thanked Tim Cowles for his leadership and dedication to UNOLS during his term as UNOLS Chair.

Peter Wiebe presents Tim Cowles with a plaque in recognition of his service as UNOLS Chair.

UNOLS 2004 Elections Results

Council Election Results - Elections were held at the UNOLS Annual Meeting to fill three positions on the UNOLS Council. We are pleased to announce the election results:

- **Chair-Elect:** Dr. Marcia McNutt, Monterey Bay Aquarium Research Institute
- **Non-Operator Representative:** Dr. Eileen Hofmann, Old Dominion University
- **At-Large Representative:** Dr. Bruce Corliss, Duke University (re-elected for a second term)

At the Annual Meeting, outgoing UNOLS Chair, Tim Cowles, moved into the position of Immediate Past Chair. In turn, Peter Wiebe (Woods Hole Oceanographic Institution) became the new UNOLS Chair.

The full UNOLS Council membership list can be viewed at: http://www.unols.org/committees/council/index.html

UNOLS Charter Revisions Passed - The UNOLS Membership voted unanimously to re-adopt the UNOLS Charter in accordance with proposed revisions. The revisions included minor editorial changes. Additionally, the Charter and Annex II were revised to indicate that vessel and facility designations would be made by the Council. The RVOC By-laws were added to Annex III, the DESSC Terms of Reference were added as Annex VII, and the SCOAR Terms of Reference were added as Annex VIII.

Selecting an Ocean Class Hull Form

The deadline for selecting a hull form for the Ocean Class vessels is quickly approaching. As reported in the previous article (page 4), the timeline set out by the Office of Naval Research asks that UNOLS provide a hull selection by early 2005. The three hull forms under consideration are the monohull, the SWATH, and the X-Craft. The capabilities of the monohull are well known. Additionally, the FIC has learned much about SWATH performance through detailed debrief interviews with *Kilo Moana* users. The FIC and the Ocean Class Advisory Committee (OCAC) have been working to learn more about the X-Craft. Representatives from these committees visited the X-Craft currently under construction at Nichols Bros. Boat Builders shipyard. They have met with agency representatives, the ship builders, and Naval Architects. The FIC and OCAC have provided the Navy with suggestions on how the X-Craft could be configured for oceanographic research. They have also identified areas and issues that need to be addressed regarding the X-Craft design.

UNOLS representatives visit the X-Craft. Port pontoon shown. Photo by John Freitag.

The Naval Architect, JJMA, is in the process of developing notional designs for X-Craft variants that can be used for comparison with the monohull and SWATH variants. A series of meetings are planned between now and the end of January for UNOLS and agency representatives to review and compare the hull forms.

UNOLS will provide an Ocean Class hull form recommendation by late January 2005. Peter Wiebe, UNOLS Chair, will draft a letter with the recommendation. The draft letter will be made available for community comment. It is important that the community review the recommendation and provide input. We ask that you stay engaged and provide feedback regarding the hull form recommendation; it is a decision that will shape the next 30 years of Ocean Class vessel support.

International Regulations and UNOLS Vessels

By Mike Prince, UNOLS Executive Secretary

Over the past couple of years the large, Global and Ocean Class UNOLS vessels have worked hard to comply with international and U.S. regulations such as ISM (International Safety Management Code) and the ISPS (International Ship & Port Facility Security) Code, and the STCW (Standards of Training and Competency for Watchkeepers) treaty.

Based on a recent revision to Coast Guard guidance on the application of these regulations, they are now using a vessel's international convention tonnage to apply these rules rather than the domestic tonnage used previously. Most of the Intermediate Class UNOLS vessels had domestic tonnage ranges that were below regulatory thresholds for these laws, but they have international tonnages greater than 500 tons. Thus, most of the international conventions linked or related to the SOLAS (the Safety of Life at Sea) convention now apply to vessels larger than 500 tons, hence the ISM, STCW and ISPS requirements must now be applied to most UNOLS vessels larger than the POINT SUR and CAPE HATTERAS, which have international tonnage of around 470 tons.

For scientists using these vessels this primarily means that the planning process for delivery of equipment and personnel to UNOLS vessels, both in their own homeport and when abroad, must be more detailed, formalized and properly documented. While most vessels' ISM plans will have generic over-the-side procedures, any specialized science instrumentation will now require specific operational and written safety plans. These aspects of cruise planning still vary from operator to operator and, in the case of some Intermediate (Ocean Class) vessel operators, they will be evolving over the next few months. It will be increasingly important for Principal Investigators to make contact with marine operators and technician groups early, so there is adequate time to learn and follow the processes for arranging shipments, specifying equipment requirements, identifying personnel and arranging port call logistics carefully and thoroughly, as required by both Vessel Security Plans and Safety Management Plans.

Our vessels are required to notify the Coast Guard 96 hours in advance of arrival from most voyages, in particular those from foreign ports and returning from International waters. When clearing into U.S. and foreign ports it is extremely important that everyone on board is properly identified, accounted for and in possession of valid proof of citizenship and entry authorization.

An excerpt from the cruise planning web site for the *R/V Thompson* gives an indication of what this means.

SECURITY REQUIREMENTS FOR SCIENCE CRUISE PARTICIPANTS – THOMPSON

New U.S. Coast Guard and Department of Homeland Security regulations are being issued frequently and subject to change depending upon the current alert level. For the latest information, and how it may affect your cruise planning, please check with the Marine Operations Office.

Science Personnel: All personnel joining a cruise on the University of Washington research vessels must have proof-of-citizenship. This means a current, up-to-date U.S. Passport for United States citizens. Non-US participants must have a current up-to-date national passport AND a visa that explicitly permits multiple-re-entry into the United States. If their visas or visa-waivers do not explicitly state this, they must have an accompanying letter, on U.S. Immigration stationery, acknowledging that they are going to participate in an at-sea research mission and that they will be re-admitted to a United States port.

Foreign voyages will always require that all participants carry valid passports and that foreign participants carry valid visas for entry into the U.S. and, if leaving and returning to the U.S., they will need to be specifically authorized for multiple re-entry. U.S. participants will need valid visas if their cruise plans take them to foreign ports in countries that require our citizens to possess visas.

Some foreign cruise participants may come from countries such as the U.K and most of the European Union where they have been issued machine-readable passports, which are normally eligible for the Visa Waiver Program (VWP). They may insist that this is all they need. Based on experience with some recent past cruises, the use of the VWP can either be acceptable and present no problem or can result in detainment and substantial fines for the ship's master and traveler. The VWP is valid in only very limited situations, primarily for research cruises that **do not go foreign** AND when the foreign cruise participant enters and leaves the country on a commercial carrier (airline) that participates in the program AND the visitor stays for less than 90 days AND their travel fits under travel valid for the program. Researchers planning on including foreign cruise participants should start early on the paperwork and documentation, and encourage their colleagues to get a regular visa that explicitly permits multiple re-entry into the United States.

Examples of other areas that are affected by these regulatory changes have to do with shipping equipment to the vessel and identifying all hazardous materials. Unidentified shipments, without a manifest or inventory and without someone authorized to receive it, will generally be declined for delivery aboard by the vessel operator. Please work carefully with the ship operator to adhere to their shipping and receiving requirements, both in homeport and abroad.

Equally important to comply with the ship's safety management plans, ALL hazardous material must be properly identified and made known to the ship's personnel, before it shows up at the ship. Typically, an operating institution's technician group can advise PIs on the requirements with respect to 'HazMat.' On a recent cruise, lithium batteries were brought on board without anyone's knowledge. This could have led to serious safety problems in the event of a fire. Science teams and PIs can help the vessel operators maintain a safe working environment for everyone aboard and help them adhere to their safety management plans by providing all the requested information regarding chemicals and other hazardous materials as far in advance as possible before the research cruise. These requirements are also contained in the *UNOLS Research Vessel Safety Standards (RVSS) Chapter 9, Scientific And Shipboard Hazardous Materials.*

As we transition to these new regulations, safety and security procedures, there will be a "learning curve," and some additional work, but just like the security screening at airports, it will get smoother as time goes on (I hope that is a good analogy). The end result should be a safer working environment for the scientists and the crews of our vessels--and more productive cruises where all the proper personnel, documentation, and equipment make it onboard in time to ensure that there will be no delays to the cruise. The key is early contact between scientists and ship operators, and close attention to cruise planning activities.

Radio Frequency Spectrum Management & the Ocean Sciences

By Mike Prince, UNOLS Executive Secretary

The use of radio frequencies is pervasive in our daily lives and also in the conduct of all of our ocean science research projects. We all have cell phones, wireless laptops, televisions, radios and personal GPS navigators (ok, maybe we all don't have those). When we go to sea for a research cruise we rely on the ship's RADAR, radios, GPS (they all have them), satellite phones and cellular phones to get safely to our destinations and to stay in touch with the outside world.

The use of the radio frequency spectrum is important to the research activities of many of you, either directly or indirectly. All sorts of instrumentation uses various bands of the radio spectrum for such things as satellite, aircraft and ship based remote sensing, high speed data communications, CODAR and radio tracking devices just to name a few.

For most of us, we are oblivious and probably don't want to know how the assignment of radio frequency spectrum to various users and applications is managed. However, many of you have paid attention to this process and a growing number are becoming aware that it is necessary in order to protect your ability to use the instrumentation, sensors and communications devices necessary to conduct your research activities.

The decisions about how the frequency band will be used within the U.S. lies with two agencies. The Federal Communications Commission (FCC) rules on assignments for the public and private industry, while the Department of Commerce's National Telecommunications and Information Administration (NTIA) handles the requirements for the Federal Government. Internationally, spectrum management issues are dealt with by the International Telecommunication Union (ITU) and the World Radio communication Conferences (WRC). One of the issues that is confronting all of us is the possibility that this regulatory structure may be changed to streamline it into one agency. This might tilt the balance of power in the favor of industry depending on how this change is managed.

There are many pressures and demands for the use of the radio spectrum and these pressures have increased dramatically in recent times with the advent of wireless technologies and high bandwidth communications requirements. It is a goal of the President's administration to bring high-speed Internet access to all households in the country. Telecommunications companies, wireless providers and other industry factions are working hard to exploit the use of available frequency bands.

- A strong lobby among the "fixed wireless" (microwave industry) that is pushing to shut down or limit transmissions from vessels (buoys, etc) within 300 km of shore as they perceive (but have not demonstrated) there might be interference with their systems.
- An initiative to allow telecom companies and unlicensed users to broadcast broadband Internet as a modulation of the electric power transmission grid in the HF/VHF bands. This also would severely impact coastal observing systems along with amateur radio users and many others.
- The need and desire of the HF radar community to obtain some dedicated frequency allocations that would allow these instruments to operate as primary users rather than "not-to-interfere" users as is the case now.
- Preventing interference with data transmission frequencies and remote sensing frequencies. Maintaining access to existing bandwidth.

Frequency Spectrum Managers

Next you might ask how we can influence the regulatory process or get information about what issues are being considered that might affect your science. It turns out that each of the science funding agencies that most of us deal with have designated "Frequency Spectrum Managers". These include:

- NSF – Tomas E. Gergely (tgergely@nsf.gov)
- Commerce/NOAA – Richard Barth http://www.orfm.noaa.gov/
- Navy – Quan Vu http://www.navemscen.navy.mil/pages/mission.htm

Representatives from each of these agencies along with a representative from CORF briefed the UNOLS Council at their October meeting on the important Radio Frequency Spectrum issues at hand.

NAS Committee on Radio Frequencies (CORF)

The National Academies Committee on Radio Frequencies represents the interests of U.S. scientists who use radio frequencies for research—for example, radio astronomers and remote sensing researchers. The committee deals with radio-frequency requirements and interference protection primarily through filing comments under the aegis of the National Academy of Sciences in public proceedings of the Federal Communications Commission. The committee acts as a channel for representing the interests of U.S. scientists in the work of the Inter-Union Commission on

Frequency Allocations for Radio Astronomy and Space Science (IUCAF) of the International Council of Scientific Unions and in working groups of the Radio communication Sector of the International Telecommunication Union (ITU).

- http://www7.nationalacademies.org/bpa/committees_corf.html
- Staff (Program Associate) – Brian Dewhurst
- Ocean Sciences representative – Dr. Otis Brown, RSMAS

What should UNOLS and the Ocean Science community do to protect their interests?

- Identify a core of knowledgeable ocean scientists to provide feedback to agency spectrum managers and CORF on ocean science related issues that can help keep their community informed about challenges to their access to radio spectrum.
- Periodically communicate with the Agency frequency managers about current regulatory activities that might affect the community (can be done through UNOLS)
- Provide assistance to the CORF in cataloguing Ocean Science use of the frequency spectrum
- Make sure that at least one ocean scientist and if funding allows more than one ocean scientist is part of the CORF.

If you have concerns or interests in helping to protect and preserve the access to appropriate radio spectrum for conducing ocean science research and education, please contact the UNOLS Office so that we can facilitate your collaborative efforts.

UNOLS Committee News

UNOLS Committees were very active this fall. All Committees held meetings; some of these meetings were via phone/web conferencing and others were in person. A brief recap of the Committee activities follows.

Research Vessel Technical Enhancement Committee (RVTEC) – RVTEC met on November 3-5, 2004. The meeting was hosted by Florida Institute of Oceanography on the campus of the University of South Florida – College of Marine Science, St. Petersburg, FL. Dale Chayes presided over the meeting. The meeting included reports by Agency representatives and UNOLS Committee liaisons. A variety of issues were discussed. Progress on the defined Levels of Technician/Instrumentation support was reported. The meeting also included a variety of technical sessions:

- ADCP Survey and Performance Assessment
- Fleet Wide Assessment of Towed Systems
- Organizational Excellence Driven by Customer Satisfaction
- Foreign Clearances for Working in EEZ Waters
- Moving Vessel Profilers
- System Backup and Restoration, Data Dissemination to Scientists.

FIO and USF personnel provided presentations on institution programs including the Alliance for Coastal Technologies (ACT), Coastal Ocean Monitoring and Prediction System (COMPS), and the Ocean Technology Center. Facility tours were provided to the RVTEC meeting participants.

Reports and the status on various technical efforts were reported. These included the High-Resolution Marine Meteorology workshop, SeaNet, HighSeasNet, Seawave, VSAT, dragging for a mooring in 4200 meters of water, Radio Frequency Spectrum, RIDGE 2000 and MARGINs cruise metadata requirements, and *Healy* Communications. Plans for INMARTECH 2006 were discussed, as the meeting will be hosted by the US.

Elections were held for the RVTEC Chair position. Dale Chayes was completing his second term as Chair. The RVTEC membership nominated Bill Martin (University of Washington) to serve as the new RVTEC Chair. We thank Dale for his service and leadership to RVTEC.

Scientific Committee for Oceanographic Aircraft Research (SCOAR) – SCOAR met on Nov 12, 2004 via web/telephone conference. John Bane, SCOAR Chair, led the meeting. The meeting included reports by CIRPAS representatives and Federal agency representatives. There were two major agenda items discussed during the meeting: 1) National Oceanographic Aircraft Facility (NOAF) Safety Regulations & Inspections, and 2) Guidelines for Becoming a NOAF. These items will continue to be a focus for the coming year.

The status of some of the SCOAR activities and projects that were carried out over the past year were reviewed. A CIRPAS Aircraft Request Form has been developed and is now available on the UNOLS website. The form is modeled after the UNOLS ship time request form. Scheduling and funding mechanisms were addressed by the SCOAR. The committee is also working to define a basic instrument

suite for UNOLS ocean science aircraft.

A major objective of SCOAR over the past year was in the area of outreach. They worked to educate the community on the availability and capabilities of the aircraft supporting ocean sciences. Two articles were published, one EOS (Oct 12, 2004) and the other in *Oceanography* (Vol. 17, No. 4). SCOAR will continue in their efforts to promote the National facility.

DEep Submergence Science Committee (DESSC) - As this newsletter goes to press, the DEep Submergence Science Committee is holding their annual community meeting in San Francisco, CA (December 12, 2004). Outgoing Chair, Patty Fryer, and Incoming Chair, Debbie Kelley, will preside over the meeting. Attendance is expected to be high with over 80 people indicating that they plan to participate. Reports will be provided by Principle Investigators who have used deep submergence facilities in the past year, Agency representatives, the National Deep Submergence Facility Operators. The operator's report will include information about vehicle operations, planned upgrades, and future schedules.

Outreach, education and archeology reports will be provided. A summary of vehicle request demand will be provided for 2006 and beyond. Long-range planning issues will be discussed.

Status reports on the design and development of a replacement human occupied vehicle and a hybrid ROV will also be provided.

Ship Scheduling Committee News

By Rose Dufour and Elizabeth Brenner, SSC Co-Chairs

In September the UNOLS scheduling committee reviewed proposed 2005 schedules during a web-conference. Also present were agency representatives from NSF, ONR, and NOAA. The new agency criterion for Global Class ships mandated that schedules would be held at under 300 days, and preferably closer to 270 days, with down time in home ports for maintenance. During this meeting NOAA requested that all NOAA-sponsored cruises be listed as "pending" until a budget was approved by Congress. The flow of cruises for all ships was accepted and the UNOLS operators had the foundation for their impending NSF operating proposals. This will be the first funding cycle in which external merit review of ship operation proposals will take place. The proposal deadline of November 1, along with panel reviews in December should result in January NSF awards.

Subsequently, it became apparent to NOAA OAR that they had over committed on ship time for VENTS, FOCI, and DART notwithstanding Congressional approval, by over 50%. NOAA OAR had scheduled roughly $3.5M in ships days (excluding technicians and other vehicle charges like *ROPOS* or *Jason*), and at the time of this writing, Congress had reduced their appropriations to $1.5M. This discovery and eventual re-traction of DART left *Melville* stranded in Hawaii, and will affect *Alpha Helix*, *Kilo Moana*, *Thompson* and *Wecoma* schedules for 2005. The definition of "pending" and the prospects of a "cancellation" penalty open the debate about when is liability applied. Changes to planned schedules have occurred in the past by all agencies because of budget shortfalls, clearance problems, and more recently due to marine mammal compliance. Once an agency affects the flow of cruises by maneuvering schedules during the regular scheduling process in such a way as to accommodate a pending request (say for seasonal or location considerations), then later withdraws the cruise, should there be any fiscal responsibility? In addition, if a withdrawn cruise produces the unintended affect of leaving a ship stranded from home port without the possibility of picking up work, who should pay for a transit home or onward to the following port? A case in point occurred in 2003 when LWAD withdrew a cruise scheduled in the South China Sea less than six weeks before it was scheduled to start. ONR paid for transits and down time that resulted from this cancellation. It can be argued that if some penalty is not assessed then other funding agencies are left with the burden of subsidizing the offending agency because of the need to re-distribute transit costs and absorb elevated daily ships rates.[1]

The complexity with the current scheduling cycle lies with the different fiscal phases for the various federal agencies that use UNOLS ships. The UNOLS scheduling process coincides with NSF's funding cycle (NSF supports roughly 65% of all sea-going projects) and is based on a calendar year, and works well with ONR's less structured federal fiscal year. NOAA's funding is much less certain during the two UNOLS scheduling meetings (generally held in July and September) and is subject to drastic cuts during the appropriations process in Congress. Waiting until after they have a clear vision of what they can afford would shut them out of the scheduling process. Working outside the parameters of the UNOLS scheduling

process would end up costing more in transit costs because of the financial benefits realized from efficiently stringing together cruises that are regionally concentrated, and would necessitate them settling for less than desirable weather windows. This is a dilemma that will need to be addressed so that ship operators and funding agencies can feel confident all needs will be met, and as stated in the UNOLS Charter:

"with the understanding that UNOLS and UNOLS operating institutions shall make serious efforts to assure that ships and facilities are fully available to all federally-funded users. To assure that ships and facilities are broadly available and that their use is effectively scheduled and coordinated,"

In the meantime, the UNOLS scheduling committee will react to NOAA's fallout as expeditiously as possible in order to start 2005 with concrete schedules. For next year's scheduling we are hoping to have a better assessment of how projected schedules and costs fit within the planned budgets for all agencies.

[1] - NSF (OCE, OPP, ODP, BE) anticipates spending $46M for sea going operations in 2005. If the daily rate is increased because of the fall out of one agency's anticipated commitment then the number of days NSF can afford must be reduced to fit within their budget.

Research Vessel Operators' Committee

By: Tim Askew, RVOC Chair

The Bermuda Biological Station for Research, located in Ferry Reach, St. Georges, Bermuda, hosted the 2004 RVOC Meeting on October 19-21. A big thanks to Lee Black, Marine Superintendent, Diana Scheiner, Marine Operations Coordinator, and Dr. Tony Knap, President and Director for hosting this meeting, which just happened to be 20 years since the last RVOC meeting was held in Bermuda.

A special presentation by Dr. Maureen Conte (WHOI) on findings from the BATS station off Bermuda during the passage of hurricane "Fabian" in September 2003 was very enlightening and demonstrated the role that UNOLS vessels play in supporting science both regional and worldwide.

Committee reports included presentations by Mike Prince, UNOLS Executive Secretary, on the Council and Annual Meetings held the previous week with an emphasis on fleet renewal issues. Mike also covered the ship scheduling process and discussed the advantage of web conferencing and how well it worked. It was also noted by Linda Goad (NSF), that all schedules were set by late September. Tom Althouse (SIO) Chair of the Safety Committee discussed the status of Research Vessel Safety Standards (RVSS) indicating a total rewrite is necessary using a new format to standardize the chapters. Dan Schwartz (UW) discussed ship security and he noted that all the large vessels had met the December 2004 and July 2004 deadlines and are now operating under approved vessel security plans. Al Suchy (WHOI) and RVOC Representative to the Fleet Improvement Committee (FIC) reported on the *Ewing* replacement (*Western Legend*) and the Alaska Region Research Vessel (ARRV) progress, as well as the Regional and Ocean Class vessel replacement outlook. Al also reported on the Service Life Extension Program (SLEP) developed over the summer where each operator was asked to estimate a cost to extend the life of their respective vessels five and ten years. Mike Prince reported on DESSC and said that *Alvin* hit the 4000-dive milestone in 2004. He also said that funds were in place to design and build a new deep diving Human Occupied Vessel (HOV) to be operational in 2008. Other changes were Debbie Kelley (UW) who is replacing Patty Fryer (UH) as DESSC Chair.

The Artic Icebreaker Coordinating Committee (AICC) representative from RVOC, Dan Schwartz (UW), gave a report on 2004 icebreaker activities and Alice Doyle (Raytheon Polar Services) representing Office of Polar Programs (OPP) reported on stability issues with R/V *Palmer* and science cruises on R/V *Gould* in 2005. She also discussed Polar Research Vessel (PRV) replacement plans and that the process has started with science committees. Tim Askew (HBOI) reported on the Ship Operations Cooperative Program (SOCP). He stated that their meeting agenda and other valuable information to operators is available on their website www.socp.org. A DVD titled, "No Room for Error", was viewed during the round table discussion. Maureen Reap (TA&M) said that SOCP contracts with commercial companies for updated safety products, which are available to the members.

Ship reports were presented by Al Suchy (WHOI) who gave an update on their new 60-foot R/V *Tioga*, which is capable of an 18-knot transit speed. Jim Meehan (NMFS) stated that the FSV *Oscar Dyson* was launched last year and will begin field operations in February 2005 off Alaska. The second FSV *Henry Bigelow* is scheduled for launch in March 2005 and delivery in January 2006. Tom Smith (UAK) discussed the Alaska Region Research Vessel status and said that the contract design would be finished in November. Matt Hawkins (UDEL) talked about the shipyard progress of the *Cape Henlopen* replacement. She is expected to be

delivered in October 2005. Jonathan Berkson (USCG) discussed the present status of the USCGC's *Polar Sea* and the *Polar Star*. Both vessels are in dire need of major overhaul. He also said that one of the Ocean Commission recommendations was to replace both Polar icebreakers. Beth White (NOAA) emphasized the need for the FOFC plan and the UNOLS plan for vessel replacement to be in unison. She also said that nine T-AGOS vessels have been transferred from the Navy to NOAA and one TAG and one torpedo test vessel were also transferred. NOAA's older ships are actively being replaced with converted T-AGOS vessels. NOAA will be disposing of the *Ferrel, McArthur* and *Whiting*.

Dennis Nixon, Esq. (URI) presented his annual vessel P&I insurance cost comparison and discussed other areas of possible liability for operators. One area of concern is persons other than crew who may fall under the "unseaworthiness" doctrine if they spend more than 30% of time at sea. Proof of health insurance for all members of the science party as well as release forms must be in place on all cruises. Dennis also raised the Autonomous Underwater Vehicle (AUV) legal issues. Since an AUV possesses many vessel-like attributes and are becoming more frequently used, who is responsible if damage is caused? He said that NATO believes that an AUV should be considered like a ship's boat, which is part of the ship's equipment and should display submarine lights when on surface.

Several special reports were given. Matt Hawkins (UDEL) brought everyone up to date on the van pool, group purchases, and van standards. Matt also gave a presentation on the "Load Handling System" workshop. Al Suchy provided a brief discussion on the "Long Core System" being designed for R/V *Knorr*. One of the interesting aspects is the 2.24" diameter synthetic rope with break strength of 355,000 lbs. Estimated core pull out is 100,000 lbs.

Mike Prince presented an update on "Winch and Wire" safe working loads, specifications, inventory and fiber optic cable. The problem is there is no clear cut replacement for .322 em wire. There are no clear decisions on prescribed safe working load (SWL) and operational restrictions are being used as the primary safety net. "Computerized Maintenance Management System" (CMMS) was discussed by Bill Hahn (URI) and Dan Schwartz (UW), the general feeling is that the operators using the system are pleased however field engineering support is extremely expensive at $900.00/day and implementation is most costly and time consuming.

Vessel operators from foreign institutions included Ian Sage (NATO) Supreme Allied Commander Transformation (SACT). They operate R/V *Alliance* and R/V *Leonardo*. Ian said they were experiencing severe budget cuts this year and next and were looking for ways to develop charter income. Marieke Rietveld (NIOZ) Netherlands Institute for Sea Research discussed the new ship construction in the European scientific community. She also said that the Europeans are developing a Marine Research Consortium similar to UNOLS.

Invited speakers covered several important topics. Bill Mahaffey with MedAire (formerly Medical Advisory Systems) provided an overview of their services. Basically the telephone contact numbers are the same and are routed through Maryland to the new headquarters in Arizona. One benefit to the UNOLS Fleet is the new company has global coverage on land and can provide assistance for foreign medical evacuation. Dirk Kristensen with Glosten Associates, Inc. talked about weight and stability management for research vessels as well as tonnage (regulatory vs. convention) and its impact on the Ocean Class vessels since the ISPS regulations use convention tonnage for the Vessel Security Plan (VSP) compliance.

This year's meeting schedule provided the opportunity to have a workshop session on the second day. The group broke up into four sessions each with a facilitator. Topics were "Load Handling System Design Standards", Matt Hawkins (UDEL); "Safety", Tom Althouse (SIO); "Uniformity of Fees", Dan Schwartz (UW); and "Security Plans", Tim Askew (HBOI). Each facilitator provided a summary at the end of the day. Since RVOC hasn't had workshops for the last few sessions, everyone felt that it was a very productive way to share ideas and information and develop more uniformity among all the vessel operations.

The final day of the meeting was devoted to the round table discussion in the morning session and the business meeting in the afternoon. Topics of discussion included the X-Craft, which resulted in a RVOC letter to FIC on the positive and negative aspects of the hull design as an Ocean Class research vessel. Also discussed were the Post Cruise Assessment (PCA) results and safety statistics, the winch training program (vendor visits) by Markey and Dynacon, medical standards for new hires, training requirements for AIS, vessel P&I insurance, proposal deadlines, future group purchases, and ISM. The business meeting resulted in numerous suggestions for the 2005 meeting agenda, review of action items and a vote on the location for the 2005 meeting. Dan Schwartz at the University of Washington, in Seattle will be the host. In addition the membership voted to transition the annual meetings to an earlier date so as not be in conflict with other meetings and proposal deadlines.

Arctic Icebreaker Coordinating Committee Report

By Margo Edwards, AICC Chair

USCGC *Healy* returned from her 2004 arctic field season in November having successfully completed five scientific programs, three for the Shelf Basin Interaction (SBI) project, one mapping program for the National Oceanographic and Atmospheric Administration (NOAA), and one NOAA mooring cruise. *Healy* is scheduled to spend the winter and spring in Seattle preparing for a joint operation with the Swedish icebreaker *Oden* in 2005.

The *Polar Star* departed in November to support Deep Freeze 2005. This is presently scheduled to be a solo venture for *Star* as the *Polar Sea* remains tied up due to significant problems with her engines. Ice conditions in McMurdo Sound look to challenge *Polar Star*, as there were over 100 nautical miles of fast ice reported to be blocking McMurdo Sound at the November meeting of the AICC. *Star* is expected to reach the edge of the ice at the end of this month.

Service Life Extension Program (SLEP)

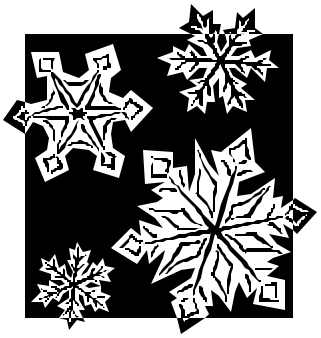
The fate of the *Polar Class* icebreakers and the decision regarding whether to replace or refit them are presently undergoing discussion at the Office of Science and Technology Policy and the Office of Management and Budget. Representatives from the National Science Foundation and the U.S. Coast Guard (USCG) have been in attendance at these ongoing meetings and have advised AICC that a policy decision could be issued as soon as this month. The USCG contractor, Booz Allen Hamilton, has completed the community-input phase of their mission needs analysis report and disseminated drafts of their report to USCG and members of AICC. The UNOLS booth and a poster session entitled "Future of the Arctic Icebreaker Fleet" at the December meeting of the American Geophysical Union included the latest information regarding the USCG icebreaker fleet.

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. Recent improvements to *Healy* include the addition of a POS-MV for improved navigation as well as an upgrade for the Ashtech sensor. High-latitude communications were also improved during the 2004 field season with email often available 24/7 over Iridium. Seawater systems continue to be modified and improved on *Healy*; we expect this work to continue at least into the next field season. The 2005 programs will introduce new capabilities to *Healy* including towing seismic gear and a sidescan/interferometric sonar in ice-covered waters. Longer-term upgrades for *Healy* include improving the laboratory spaces and replacing the present hull-mounted multibeam sonar system.

AICC reminds the community that requests for cruises on the USCG icebreakers follow procedures identical to those for other UNOLS vessels. The proposal deadline for arctic research has recently changed to occur only once per year; proposals for arctic cruises are now due on **JANUARY 24th** 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. The International Polar Year will take place from March 2007 to March 2009, and AICC encourages researchers to develop innovative programs to participate in this event.

An AICC meeting was held November 18th and 19th at the USCG base in Seattle, Washington. At that meeting some changes in AICC and USCG personnel were announced. AICC's newest member is Rolf Gradinger from the University of Alaska Fairbanks. Rolf replaces outgoing Chair Lisa Clough. LCDR April Brown has been replaced by LCDR Don Peltonen as the PACAREA liaison for the *Polar Sea* and *Star*.

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



Fleet Improvement Committee News

By David Hebert, FIC Chair

The Fleet Improvement Committee (FIC) continues to have many items on its plate. Several of them are related to the present fleet renewal plan as laid out by the Federal Oceanographic Facilities Committee (FOFC). Plans for acquisition of both the Regional and Ocean Class vessels are moving forward.

Regional Class Ships - Earlier this year, the National Science Foundation (NSF) announced its plan for the construction of the Regional Class ships. Over the summer, NSF entered an agreement with Naval Sea Systems Command (NAVSEA) to determine an acquisition procedure. In order to produce the necessary documentation for the integrated product teams, it was necessary to prioritize the Science Mission Requirements (SMRs) for this class. In late spring, the Regional Class Advisory Committee (RCAC) and FIC met several times via internet/teleconferencing to produce the prioritization list. This list was posted on the UNOLS web page <http://www.unols.org/committees/fic/regional/regional_smr_priorities.html> and requests for comments were sent out to the community. On July 1, the Regional Class SMR prioritization was completed. FIC and RCAC plans to stay engaged in the acquisition process with NSF and insure community input. As NAVSEA produces the operational requirements and related documentation for a request for proposals, we hope to comment on these documents and provide feedback that represents the interests of the oceanographic community. The actual procedure is uncertain at this time.

Ocean Class - Over the summer, the Ocean Class SMR Committee and FIC had several teleconference meetings with members of the Naval architect firm John J. McMullen Associates (JJMA), NAVSEA and the Office of Naval Research (ONR) concerning the Phase II Study for the Ocean Class. We provided feedback on the concept designs of a monohull, SWATH and X-craft (high speed catamaran design). The goal of this study was to examine which SMRs could be met for each of the different hull forms. At the UNOLS Annual Meeting in October, RADM Cohen announced that he has a plan to construct the Ocean Class vessels but he needs the community to decide on the hull form quickly (see page 2 and 5 for more details).

In November, members of FIC, the Ocean Class Steering Committee, JJMA, and the Navy visited the shipyard where the X-Craft is currently under construction. They had an opportunity to meet with the ship builder, Nichols Bros. Boat Builders, and the Naval Architect, Nigel Gee, Inc. A series of meetings were held in conjunction with the ship tour so that UNOLS representatives could gain a better understanding of the catamaran hull form and aluminum construction. This information will be useful as we move forward with in the hull form selection process. Information about the X-Craft vessel under construction can be found on the Nichols Bros. Website at <http://www.nicholsboats.com/current_projects.htm>

Global Class Ships - Three of the Global Class ships are approaching the age when mid-life refits are considered. In anticipation of this time, FIC has formed a SMR Steering Committee (Chair: Bruce Howe, University of Washington) to develop SMRs using a procedure similar to that used for the Regional and Ocean Classes. That is, to develop mission scenarios, to hold a community workshop (if needed), to draft a set of requirements and desired capabilities and to solicit input and feedback from the larger science and operator community throughout the process. The result will be a SMR document similar to the other two classes. A web site <http://www.unols.org/committees/fic/global/global_smr.html> has been created for posting this information. At this time, the committee is developing a project timeline.

Ocean Observatory Facility Needs - FIC has started to examine the Ocean Observatory Facilities Needs of the UNOLS Fleet. As a first step, the UNOLS working group recommendations (known as the Chave report) were incorporated into the UNOLS Fleet utilization projections. Peter Wiebe presented these projections to FOFC in April. FIC has initiated discussions with the ORION office to determine their timeline and revised plans for the observatory systems. At the October FIC meeting, Ken Brink provided an initial overview of the ORION plan. At this time, they are not far enough along in their planning process to provide detail information on their needs for UNOLS ships. The two groups plan to work closely together on this item.

FOFC Fleet Renewal Plan Update - FOFC is in the process of updating the Academic Fleet Renewal Plan as well as including the plans for the other Federal research vessels operated by NOAA, EPA, USCG, etc. At the October FIC meeting, Mr. Winokur, Chair of FOFC and the keynote speaker at the UNOLS Annual Meeting, gave a brief preview of the FOFC's plan for the upcoming year. They hope to have a final report completed by fall of 2005 and plan to work closely with UNOLS on matters related to the academic fleet. The first step was to examine the retirement dates listed in the present plan.

Revised Vessel Retirement Dates - This summer the UNOLS Vessel Operators were polled to determine if the vessel retirement dates should be extended. If so, what is the Service Life Extension Program (SLEP) cost estimate for a 5 and 10-year extension. These estimates are to keep the vessels operating with present day capabilities and assuming no catastrophic failures (as seen recently with

the Polar Class icebreakers – see the AICC article, page 12, for further updates). Since these SLEPs would not increase the capability of the fleet, we asked the operators to compare the present capabilities to those of the Ocean Class and Regional Class SMRs, the future needs as defined by the scientists.

First, I thank the operators for providing very detailed responses in a very short time during the busy time of ship scheduling. We have provided a preliminary report to the operators for comments and revisions before publishing the report. Some of the results are summarized below:

- Eleven UNOLS ships >40 m have retirement dates prior to 2020 and are potential candidates for a SLEP (excluding *Alpha Helix* and *Ewing*)
- Most of the ships (>40 m) can have their lifetimes extended 5 and possibly 10 years for an estimated cost of $1.025M-$5M per ship for a 5-year life extension. The amount is in addition to the normal maintenance costs.
- Extension of retirement dates for most vessels <40 m is not recommended.
- The SLEP estimates focus on maintaining the ship in an operational condition without enhancing the scientific capabilities of the platform.
- The existing Intermediate Class vessels do not meet most of the desired Ocean Class SMRs. Present Regional Class ships fall short of the Regional Class SMRs in many areas.
- Maintaining the current UNOLS Fleet vessels beyond their designed service life will significantly impede the advance of ocean science relative to that possible with new ships that meet the SMR specifications.

Update UNOLS Fleet Improvement Plan - As mentioned earlier, FOFC is updating their fleet renewal plan. A major assumption in their planning process is that the Federal budget for ocean research for the next five years will remain at present levels. This assumption places limits on the size and structure of the academic fleet. While FIC will work with FOFC on this plan to produce the best fleet for the academic community, it was decided to update the 1995 UNOLS Fleet Improvement Plan (FIP). The plan will identify future science initiatives, describe fleet trends and make future fleet projections. The FIP will look at fleet expansion beyond the FOFC plan that is required to conduct the oceanographic research we envision for the future. This plan would make estimates of the construction and operating costs for these additions. Our ambitious goal is to have a draft report available by late spring for community review.

KILO MOANA Debriefs - There are several continuing topics that FIC has been involved with. Debrief interviews of the chief scientists on the RV *Kilo Moana* were started in 2002. The goals of these debriefs were twofold. First, it provided a method to monitor initial operation of a new vessel and identify recurring problems. In April 2004, FIC sent a letter to the University of Hawaii identifying *Kilo Moana* issues that require attention. Many of these have been or are being addressed. Second, this vessel is the first SWATH vessel in the fleet and there is a need to understand the advantages and disadvantages of a SWATH vessel over a monohull in conducting our research. FIC plans to continue a more focused and selective debrief process. FIC continues to be engaged in the ongoing design and construction efforts for the Alaska Region Research Vessel, the *Cape Henlopen* Replacement Vessel and the *Ewing* replacement.

Committee Membership - Finally, Chris Measures (University of Hawaii) completed his second term. Thanks Chris. Jim Cochran (LDEO) was appointed to the committee as his replacement.

UNOLS Welcomes New Committee Members

Over the past year, new members were appointed to the various UNOLS Standing Committees. They included:

- AICC- Bernard Coakley, UAF; Rebecca Woodgate, UW; Rolf Gradinger, UAF
- DESSC – Kathleen Scott, USF; Bill Chadwick, OSU; Craig Young, UO; Jennifer Reynolds, UAF; Jeff Karson, Duke; and Maurice Tivey, WHOI (ex-officio), Robert Detrick, WHOI (ex-officio)
- FIC- Jim Cochran, Al Suchy (ex-officio RVOC liaison)
- RVOC- Matt Hawkins, U. Delaware (Vice-Chair)
- RVTEC – Bill Martin, UW (Chair)
- SSC- Lee Black, BBSR (Vice-Chair)

New on the UNOLS Web Site: Designing a Deeper-Diving HOV Replacement

A new, deeper-diving research submersible is being designed at the Woods Hole Oceanographic Institution. The replacement human occupied vehicle (HOV) will be capable of reaching depths of 6,500 meters. The community can keep up to date on the project by visiting the UNOLS website at <http://www.unols.org/committees/dessc/new_HOV/replacement_hov.html>. The web page provides information about the vehicle specifications, project timeline, and a photo gallery. As an added feature, the site includes a movie clip of the replacement HOV design.

A Replacement HOV Oversight Committee (RHOC) has been formed that includes scientists, engineers and other research vehicle operators to advise on the project. Karen Von Damm (UNH) is the Chair of the RHOC. The community is welcome to provide feedback on the project by completing the on-line form posted on the website.

UNOLS Says Thank you to departing Council and Committee Members

UNOLS thanks those Council and Committee members who rotated off UNOLS in the past year. They included:

- Council - Robert Knox, SIO, Charles Flagg, SUNYSB
- AICC- Lisa Clough, ECU
- DESSC – Patricia Fryer, UH; Robert Embley, NOAA/PMEL; Anna-Louise Reysenbach, PSU; William B.F. Ryan, WHOI; Timothy Shank, WHOI, Richard Pittenger, WHOI (ex-officio); Daniel Fornari, WHOI (ex-officio)
- FIC- Christopher Measures, UH
- RVTEC- Dale Chayes, LDEO (Chair)
- SSC- Jon Alberts, WHOI (Vice-Chair)

The time and service provided by these individuals is greatly appreciated.

Bob Knox is recognized for his many years of service on the UNOLS Council. From left to right – Bob Knox, Tim Cowles, and Peter Wiebe.

Ship Construction and Conversion

Ewing Replacement Vessel

In October 2002, a community workshop was held to identify requirements for *Ewing's* Midlife Refit. A major workshop recommendation was:

> *"Only a replacement vessel provides all desired capabilities. LDEO should investigate thoroughly the replacement vessel option with the National Science Foundation because it is the ONLY way to obtain the long streamer (6 km+) 3-D seismic capability, linear gun arrays, and improved general-purpose capabilities."*

In response to this recommendation, LDEO searched the industry market and found a modern seismic vessel that could better meet future research needs and serve as a replacement for *Ewing*. The ship has significantly improved scientific capabilities, including improved capabilities for marine mammal mitigation measures. The National Science Foundation entered into a Cooperative Agreement with Lamont Doherty Earth Observatory (LDEO) for acquisition and conversion of this industry seismic survey vessel.

Following an acceptance inspection, the ship was transited to the U.S. over the summer. The replacement vessel will undergo shipyard modifications to convert it for support of academic research. After the conversion, sea trials will be conducted. The ship is scheduled to enter into service in early 2006.

A *Ewing* Replacement Conversion Oversight Committee has been formed and is chaired by Thomas Shipley (UTIG).

The R/V *Ewing* will complete its current schedule and will be taken out of service in early 2005.

Cape Henlopen Replacement Vessel Status

The *Cape Henlopen* Replacement Vessel is under construction at Dakota Creek Industries (DCI), in Washington State. All major equipment has been ordered and is arriving at the yard. In January 2005 major outfitting is to begin. Dock and sea trials are planned for summer 2005.

UNOLS Vision

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

UNOLS 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.

I would like to thank all who contributed information and articles for this issue of UNOLS News. Articles are always welcome and encouraged. Copy can be submitted via mail, FAX or e-mail. Thank you, Annette DeSilva - Editor, UNOLS News

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