



UNOLS NEWS

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Comments from the UNOLS Chair...

The final UNOLS Annual Meeting of the millennium will take place on September 21, 1999. I encourage all UNOLS institutions to send their UNOLS representatives or alternates to attend to business, along with any other interested persons as observers. UNOLS is fundamentally an organization of institutions concerned about marine science and seagoing facilities for marine science. If member institutions take no part in the work of the organization, the organization suffers. While a number of UNOLS institutions are consistently active at the annual meeting and in other UNOLS working groups, many other members hardly ever participate.

The annual meeting deals with some essential organizational matters that the membership should take seriously. One principal item is the election of UNOLS Council members. This year the nominating

committee has worked exceptionally hard and has attracted an unprecedented number of fine candidates. Details of the slates will be forwarded to institutional representatives in advance of the meeting. Additional nominations from the floor at the meeting are also possible under our charter. We can best reward the willingness of so many of our colleagues to stand for election by turning out to vote thoughtfully.

The meeting will also feature a keynote address on an important topic by one of our community leaders. Dr. Peter Brewer of MBARI co-chairs a high-level panel that is advising NSF Ocean Sciences by drawing together and synthesizing the results of the four disciplinary "futures" community workshops (APROPOS, FOCUS, FUMAGES, OEUVRE) held during the past few years. The distillation of this extraordinarily broad exercise in strategic thinking will influence the future path of ocean science, and hence seagoing facilities for ocean science, for many years to come. Dr. Brewer's speech will be an opportunity to hear how that strategic thinking is coming together, from a scientific leader positioned at the apex of the review and advisory process.

I hope these comments serve to attract a larger attendance than in recent years. I would like nothing better than to have a standing-room-only crowd at the meeting, so that the first annual meeting of the new millennium would have to search for a larger room. I look forward to seeing you in Arlington.

By Bob Knox, UNOLS Chair

The Academic Research Fleet *Report is now Available*

The findings of the NSF Academic Research Fleet Review Committee have been published into a report titled *The Academic Research Fleet*. The report is the result of an external review which began in 1998 at the request of NSF's National Science Board. A Fleet Review Committee formed by the Assistant Director for Geosciences was asked (1) "*to evaluate the current and future vessel requirements that are necessary to effectively support NSF-sponsored oceanographic research, and research of other federal agencies, state and local governments and private sources,*" and (2) "*to evaluate the overall structure currently in place to manage the research fleet, and to recommend any changes to the structure that would further optimize operations.*"

The Review Committee was Chaired by Dr. Roland Schmitt (President emeritus, RPI and GE Corp, retired), and included Dr. Hugo Dezdek (NOAA retired), Dr. Chris D'Elia (Univ. at Albany, SUNY), Mr. Earl Doyle (Shell Oil Co, retired), Dr. Ellen Druffle (UC, Irvine), Dr. Larry Mayer (Univ. of New Brunswick), Dr. Steve Ramberg (ONR), and Dr. Georges Weatherly (FSU). Dr. Ellen Kappel and Dr. Ronald Tipper were Committee Assistants. The Committee met in June, September, and December 1998 and March 1999. They received input from NSF and ONR managers; UNOLS managers, ship operators, and members; the scientific user community; and an independent contractor (Tecolote Research, Inc.). The contractor provided a cost analysis of UNOLS vessel operations.

The Committee's review provided eight principal findings and recommendations. These findings are provided below as printed in the report:

1. *"The potential for near-term decrease in utilization of ocean-going research facilities is real. It may represent a transient condition, as new planning for ocean programs identifies the next cycle of field efforts. This provides an opportunity to respond to some management issues in fleet operation and to continue to improve the capability, productivity, and quality of fleet operations as a means of achieving NSF research and educational objectives in ocean sciences.*
1. *NSF must accelerate and expand efforts within the oceanographic research community to articulate a broadly based vision for the future of ocean science and technology requirements. This will provide a much needed foundation on which to plan and procure major facilities for research.*
1. *The UNOLS system should be retained. The NSF-UNOLS current practices, using institutional operators funded by NSF and other federal agencies with centralized scheduling through UNOLS, seems to provide excellent access to the sea for US investigators. To the extent the committee can assess, costs appear comparable to or better than government operators, and not evidently different from costs of contracting commercial platforms.*
1. *The funding agencies and UNOLS need to support fleet improvements by enhancing quality control, expanding training of personnel in technical and safety procedures, and developing even higher standards for shared use facilities.*
1. *NSF should continue the practice of periodically competing the management of the UNOLS office, and should consider funding it by a cooperative agreement rather than a grant to ensure necessary management oversight.*
1. *We ask NSF to consider a trial which includes some commercial operators participating as UNOLS non-member operators to provide unique capabilities not otherwise available.*
1. *There is a need for a strong, continuing program of new technology introduction; steady improvement of existing facilities and technologies; greater, continuing attention to quality control and safety; and a more systematic, standard approach to maintenance, renovation, upgrading, and replacement.*
1. *The Federal agencies funding research in oceanography should prepare and maintain a long range plan for the modernization and composition of the oceanographic research fleet which reaches well into the 21st century. This will avoid the high cost of obsolescent facilities and provide the Congress with a unified roadmap for out-year allocations for vessels to support oceanographic research."*

The full report can be found on the NSF website at, <http://www.geo.nsf.gov/oce/fleetrev.html>
Copies of the report can also be obtained by contacting the UNOLS Office, e-mail: unols@gso.uri.edu or
telephone (401) 874-6825.

University-National Oceanographic Laboratory System

ANNOUNCEMENT

1999

UNOLS ANNUAL MEETING

Tuesday - September 21, 1999 - 8:30 a.m.
National Science Foundation, Room 1235
4201 Wilson Boulevard
Arlington, VA

The UNOLS Annual Meeting is planned for September 21, 1999 at the National Science Foundation. This meeting is open to all investigators, users, operators and sponsors of university oceanographic facilities. It is a public forum for discussing the utilization and scheduling of research vessels and other facilities as well as their support and future planning.

The meeting will include an interesting schedule of events. UNOLS Committee Chairs will report on their activities over the past year and plans for the future. Paul Ljunggren, RVOC Chair, will review the committee's plans for the 2-4 November Annual RVOC meeting at HBOI. Patty Fryer, DESSC Chair, will report on 1998/99 ATLANTIS/ALVIN /ROV operations, upgrades and improvements for the National Deep Submergence Facility. She will also report on deep submergence operations planned for 2000 and beyond. Larry Atkinson, FIC Chair, will discuss plans for the upcoming year including a status report on "The UNOLS Biennial Review of Sea Going Oceanographic Facilities." Mike Prince, SSC Chair, will review the recommendations of the September Ship Scheduling Review meeting and fleet operations for 2000. He will also recap the outcome of the revised scheduling process which was tried in 1999. John Freitag, RVTEC Chair, will report on plans for the RVTEC Annual Meeting scheduled for 20-22 October. Jim Swift, AICC Chair, will provide the status of science modifications and testing for USCG Icebreaker HEALY. He will also review Science of Opportunity operations planned for the future.

Federal agencies representatives will be on hand to report on 1999 activities and forecasts for 2000 and beyond. The Consortium for Oceanographic Research and Education (CORE) will report on various activities of interest to UNOLS.

Dr. Peter Brewer will deliver the meeting's keynote address. He will discuss his activities as Co-Chair of the NSF group to integrate and synthesize the findings of the four disciplinary "*Futures*" workshops.

Other reports will include a summary of the NSF Academic Research Fleet Review findings as well as future implications of its recommendations. An AGOR 26 design and construction status will be provided. Plans for the Winch and Wire Symposium as well as the DESCEND Workshop will be given. There will be a report on the installation and use of SeaNet.

Various issues of interest to UNOLS members will be open for discussion. These issues include future

UNOLS Fleet evolution, moorings as a facility, NOPP - status and outlook, NOAA's fishery needs, an Integrated Ocean Observation Plan, Fleet additions/retirements, white paper on ship scheduling, and UNOLS future public outreach plans.

A proposed revision to the UNOLS Charter will be presented for membership vote. Additionally, two applications for UNOLS membership have been received and will be voted on. The applications are from the Southern California Marine Institute and the New Jersey Marine Sciences Consortium. Elections for UNOLS Council positions will be held.

Dr. Peter Brewer to Deliver Keynote Address at the UNOLS Annual Meeting

Dr. Peter Brewer will deliver this year's keynote address at the UNOLS Annual Meeting in September. Over the past couple of years, NSF has supported four community workshops to identify future research directions in each of the primary disciplines of ocean sciences: Physical Oceanography, Chemical Oceanography, Biological Oceanography and Marine Geology and Geophysics. The resulting four reports can be found at the website: http://www.joss.ucar.edu/joss_psg/project/oce_workshop/ .

Dr. Peter Brewer and Ted Moore of the University of Michigan are co-chairing a working group to integrate the findings of these four reports. Their goal is to provide a focused report of the research areas that have the most potential for increasing our knowledge of the oceans and which feasibly can be addressed during the next ten years.

Dr. Brewer is an ocean chemist, and Senior Scientist, at the Monterey Bay Aquarium Research Institute (MBARI). At MBARI, he served as President and Chief Executive Officer from 1991-1996, before returning to full-time research.

Dr. Brewer's achievements over the years are many. Prior to joining MBARI in 1991 he spent 24 years as a researcher at the Woods Hole Oceanographic Institution, where he rose to the rank of Senior Scientist. Dr. Brewer served as Program Manager for Ocean Chemistry at the National Science Foundation 1981-1983 and received the NSF Sustained Superior Performance Award.

He has taken part in more than 30 deep-sea cruises, and has served as Chief Scientist on major expeditions. Dr. Brewer has authored, or co-authored more than 80 scientific papers.

Dr. Brewer is a Fellow of the American Geophysical Union, and of the American Association for the Advancement of Science. Internationally he has served as a member of SCOR, and as Vice-Chair of JGOFS. Dr. Brewer served as President of the Ocean Sciences Section of AGU from 1994-1996.

1999 UNOLS COUNCIL ELECTIONS

The UNOLS Nominating Committee has assembled a slate of candidates for the UNOLS Council positions to be filled at the 1999 Annual Meeting. The election will be held in accordance with the UNOLS Charter as readopted February 1999.

In February/March 1999, a nominating committee was formed and includes Tom Shipley (U. Texas), Chair; Barbara Prezelin (UCSB) and Larry Atkinson (ODU). A call for nominations was announced in the spring. The announcements were sent out via the UNOLS newsletter and by letters to the UNOLS member institutions.

Nominations may be made from the floor during the Annual Meeting. Such nominations may be made only by designated representatives of UNOLS institutions, and must be accompanied by the nominee's concurrence and qualifications. The nominee must meet the requirements of the UNOLS Council position he/she is nominated to fill.

This year's slate is as follows:

AT-LARGE (3 year term) - individual affiliated with any UNOLS Member Institution:

Dr. James Bauer Virginia Institute of Marine Science

Dr. David Naar University of South Florida

Dr. Denis Wiesenburg University of Southern Mississippi

OPERATOR REPRESENTATIVE (3 year term) - from among designated UNOLS Member Operator institutions:

Dr. Dennis Hansell Bermuda Biological Station for Research, Inc.

Dr. Will Sager Texas A&M

Dr. Marsh Youngbluth Harbor Branch Oceanographic Institution

~ Announcement ~

Winch and Wire Symposium is Planned for December

By Jack Bash, UNOLS Executive Secretary

The National Science Foundation (NSF) has funded UNOLS to conduct a Winch and Wire Symposium that is tentatively scheduled for 1-2 December at the NSF headquarters in Arlington, VA. A steering committee has been formed. Members of this committee are Ken Smith, Bob Pickart, Mark Holmes, Tom Althouse, Bill Hahn, Mike Webb, Rich Findley, Jon Alberts and Jack Bash. The committee has sent out the below questionnaire to the science community to solicit comments as to the future needs of winches, wires and cranes. The input from this questionnaire will provide material for engineers and manufacturers to address the capabilities and future capabilities of equipment to support these needs. Coordinating the questionnaire inputs will be: Ken Smith, biology; Ken Johnson, chemistry; Bob Pickart, physics; Sherm Bloomer, geology; Tom Althouse, operations; and Armand Silva, ocean engineering.

Please feel free to respond to the below questions. A similar questionnaire has been sent out to the 21 UNOLS operators along with a request for inventory information.

Winch & Wire Symposium QUESTIONNAIRE

Later this year the University-National Oceanographic Laboratory System (UNOLS) will sponsor a symposium on the use of winches, wires, and cranes on US research vessels. One of the thrusts of the meeting is to address the future needs and requirements of the sea-going community with regard to such equipment. The symposium will bring together researchers, ship operators, as well as various manufacturers of winches, wires, and cranes. As a result of the meeting a document outlining future requirements will be forwarded to NSF, which has solicited such input.

As part of the planning process for the symposium we are sending out this short questionnaire to oceanographers of all disciplines. This is your chance to tell NSF what you see as the critical capabilities that ought to be routinely available on UNOLS vessels. Please take a minute to respond to the two short questions below (note: question #1 can be answered by all sea-going scientists regardless of technical expertise).

1. What are the future directions of your sea-going research over the next decade? [for example: sea-soaring, laser-line scanner imaging, deep trawling, giant piston coring, etc.]
2. What shipboard requirements will you require to conduct your future at-sea operations (winches, wires and cranes) beyond current capabilities? [for example: instrument size (weight, volume, dimensions), lowering/towing speeds, control precision (depth, speed, tension), data rate on conducting wire, sampling/measurement time (per cast, tow, dredge, corer)].

Please send your responses to the UNOLS Office unols@gso.uri.edu or to one of the coordinators listed below.

Ken Smith – Biology ksmith@ucsd.edu
Ken Johnson – Chemistry johnson@mbari.org
Bob Pickart – Physics rpickart@whoi.edu
Sherm Bloomer - Geology bloomers@geo.orst.edu
Tom Althouse – Operations capt@mpl.ucsd.edu
Armand Silva – Ocean Engineering silva@oce.uri.edu

UNOLS Workshop Announcement

DEveloping Submergence SCienceE for the Next Decade: "DESCEND"

Scientific Challenges, Technology Developments, and Investigative Strategies

During the last two decades, investigators utilizing submersibles, remotely operated vehicles, autonomous underwater instruments, and innovative in situ instrumentation for deep ocean monitoring, imaging and sampling have made fundamental contributions to our understanding of how the earth works; significantly advancing the fields of marine geology, biology, chemistry, and physical oceanography. Currently, compelling and challenging deep submergence scientific questions can only be addressed with advanced investigative strategies that require sophisticated technologies to carry out integrated studies in the global abyss.

Over the past two years Futures Workshops have identified general directions for future research in marine sciences and strategies to best direct efforts. It is timely that a workshop be held to assess the future of submergence science bringing together the diverse community of scientists and engineers who work in this arena. The principal focus of the workshop will be to address the compelling scientific problems, as defined by the research community with regard to submergence work. Technological discussions will provide participants an opportunity to integrate scientific and engineering priorities. These discussions will include the challenges associated with the need for submergence assets capable of accessing 6000+m depths and with the proliferation of and technologies associated with shallow water vehicles. Participants will be invited to address a series of questions about scientific priorities, investigative methodologies, new directions in submergence technology development, and the operation, availability, and scheduling of submergence assets.

The workshop is sponsored by the National Science Foundation, National Oceanic and Atmospheric Administration, and the Office of Naval Research, is organized by the UNOLS Office and will be held at NSF Headquarters in Arlington, VA on October 25-27, 1999.

The workshop is open to all investigators who are interested in carrying out submergence research and/or

who develop technology important to submergence systems. A website has been established to include the latest information regarding the workshop: <http://www.gso.uri.edu/unols/descend/descend.htm>. The workshop agenda, participant application form, and hotel information can be found on the website.

DESCEND Workshop - Steering Committee

CHAIR - Dr. Patricia Fryer, Professor - SOEST/Planetary Geosciences, University of Hawaii
pfryer@soest.hawaii.edu

Dr. Keir Becker – (Ocean Bottom Observatories) - Marine Geology and Geophysics, RSMAS, University of Miami
kbecker@rsmas.miami.edu

Dr. Marv Lilley - Chemistry - University of Washington
lilley@ocean.washington.edu

Dr. Craig Cary – Biology - College of Marine Studies, University of Delaware
carvc@udel.edu

Dr. Lisa Levin – Biology - Marine Life Research Group, Scripps Institution of Oceanography
Llevin@ucsd.edu

Dr. James Bellingham – AUV - Underwater Vehicles Laboratory, MIT Sea Grant Program
belling@mit.edu

Mark your Calendar

Workshop: DEveloping Submergence SCienceE for the Next Decade: "DESCEND"

Date: October 25-27, 1999

Location: National Science Foundation, Arlington, VA

Website: <http://www.gso.uri.edu/unols/descend/descend.htm>

UNOLS Office - Transfer Plans

The current grant to host the UNOLS Office at the University of Rhode Island will expire on 30 April 2000. Only one proposal to host the new office was submitted. This proposal was submitted by the Moss Landing Marine Laboratories and listed Mike Prince as their candidate for UNOLS Executive Secretary. A small advisory committee was assembled in early 1999 to review the proposal and provide any comments/recommendations. A recommendation to accept the proposal was passed to the Council at their summer meeting for concurrence. The Council concurred and the proposal has now been forwarded to the UNOLS membership for concurrence.

A Revision UNOLS Charter is Proposed

At the 1999 UNOLS Annual Meeting, a membership vote to accept proposed revisions to the UNOLS Charter will be on the agenda. The revision provides clarification on the definition of UNOLS membership. It also defines the procedures for membership voting to eliminate the possibility of dual representation by consortium and their constituent institutions.

People in the News

Rear Admiral Richard D. West Takes Over As Oceanographer Of the Navy

Rear Admiral Richard (Dick) West has been assigned as the new Oceanographer of the Navy. He relieves Rear Admiral W. G. "Jerry" Ellis who has been reassigned as Director of the Deep Submergence Branch within the Office of the Chief of Naval Operations.

As Oceanographer, Rear Admiral West is responsible for all Naval operational meteorology and oceanography, as well as mapping, charting, geodesy, precise time and time interval, and astrometry. He will oversee the U.S. Naval Observatory in Washington, DC, and the Naval Meteorology and Oceanography Command in Mississippi. Over 60 oceanographic and meteorological activities around the world, and eight oceanographic survey ships fall under this charge.

Rear Admiral Dick West served most recently as the Deputy Director for the Ballistic Missile Defense Organization. He graduated from the University of Rochester, and received his naval commission through the ROTC program.

Welcome Aboard!

UNOLS Ships & Facilities in the News

MOANA WAVE Retires from the UNOLS Fleet

On May 30, 1999 MOANA WAVE completed its final research cruise as a UNOLS vessel. The ship

leaves the Fleet after almost 26 years in service.

R/V MOANA Wave was built in 1973 by Halter Marine Corporation in New Orleans, Louisiana. The ship was built as an AGOR-class vessel for the United States Navy and was operated by the University of Hawaii in a charter party agreement. MOANA WAVE's first four years were spent operating on various research projects off South America, the west coast of the United States, and Alaska. The ship temporarily left the UNOLS Fleet for a six and half year period starting in January of 1977. During this time, the ship was chartered by the Naval Electronics System Command and operated out Florida and Virginia. MOANA WAVE was used in developing the Navy's Surface Towed Array System and was the model for the present class of TAGOS ships.

Upon completion of this project in February of 1984, MOANA WAVE underwent an extensive overhaul and refit. The refit included adding a 30-ft section amidships, a deck house on the main deck, six staterooms, and additional lab space. A seven foot extension was also added to the main deck aft to provide more machinery space and work area. In September of 1984, MOANA Wave returned to the UNOLS Fleet in its homeport of Honolulu, Hawaii. After additional science outfitting, the newly modified MOANA WAVE departed Honolulu on 16 December 1984 on a research voyage to the Galapagos Islands, Ecuador. Since that time the ship has operated extensively in the Pacific and has served as the primary support platform for the Hawaiian Ocean Time Series (HOTS) program. The ship served the UNOLS science community well throughout its years and was a fine science platform.

R/V Blue Heron Becomes a UNOLS Vessel

In July, the UNOLS Council voted to accept University of Minnesota Duluth's application for UNOLS Vessel Status of their ship, R/V BLUE HERON.

The University of Minnesota Large Lakes Observatory (LLO), operator of BLUE HERON, was established in 1994 and has continued to grow. R/V BLUE HERON is 86 ft LOA and 195 GWT. It is outfitted for science and includes a hull-mounted ADCP and multi-beam sonar.

R/V BLUE HERON was originally built as the F/V FAIRTRY, a stern trawler that operated out of Portland, Maine in the north-western Atlantic Ocean. The vessel was purchased by U. Minnesota and sailed to Duluth in September 1997. The ship was converted to a research vessel during the winter of 1997-98 at Fraser Shipyards, Inc., Superior, Wisconsin.

Since May 1998, BLUE HERON has been operating on Lake Superior. In 1999, the ship had 103 funded operating days. In 2000, BLUE HERON's schedule includes 82 funded days, 35 days pending and 10 days

to be proposed. R/V BLUE HERON successfully completed a UNOLS safety inspection on 17-18 May 1999. The ship is and will be available to all federally funded users.

ALVIN Turns 35 Years Old

The Deep Submergence Research Vehicle, ALVIN, recently celebrated its 35th year in operation. Over these years, ALVIN has accomplished an incredible record of performance. It has completed over 3,400 dives. Well over 10,000 researchers have traveled to the ocean depths in ALVIN's sphere. As a result, the knowledge of our planet, its oceans and the life it holds, have been greatly expanded.

Although one may consider a vehicle of 35 years getting on in years, ALVIN's pace hasn't slowed one bit. In fact the past two years have seen very full schedules for the vehicle, with four Equator crossings and the first ever dives in the Southern Hemisphere. Since March 1997 when WHOI took delivery of ATLANTIS (ALVIN's new support ship), they have achieved impressive statistics with a total of 40,367 nautical miles traveled (up to January '99).

To achieve these accomplishments there is a team of highly talented and dedicated people, who maintain, support and operate the ship and submersible. ALVIN undergoes a complete overhaul every three years. Additionally, the vehicle and its systems are continually being upgraded. These efforts assure that the community will be provided with a superb, research deep submergence vehicle. Congratulations ALVIN and WHOI on 35 years of operation!

HAPPY BIRTHDAY ALVIN!

R/V CLIFFORD A. BARNES at Undersea Explorations '99

In June, the University of Washington sailed R/V CLIFFORD A. BARNES to Portland, OR to take part in Undersea Explorations '99. Participants of the conference were invited to tour the vessel.

Shown above are University of Washington personnel and visitors aboard R/V CLIFFORD A. BARNES (from left to right): Morgan Turrell (UW Marine Ops ISM Coordinator and relief Master R/V THOMPSON G. THOMPSON), Daniel Schwartz (UW Manager of Marine Operations), Capt. Bob Parsons (USCG Ret., Former C.O. USCG Icebreaker POLAR SEA), two attendees of the Undersea Explorations Expo visiting the ship, Nikki Hix (Chief Mate, R/V CLIFFORD A. BARNES), and Don Johnson (AB Seaman/2nd Mate, R/V CLIFFORD A. BARNES). (not in picture: Capt. Ray McQuin, Master, R/V CLIFFORD A. BARNES).

NSF Inspection Program Lessons Learned: Part 2, Safety and Operations

By: T. Blake Powell & Greg Beers
July 23rd, 1999

The JMS Inspection Team has been inspecting UNOLS research vessels on behalf of the National Science Foundation since September of 1997. In January 1999, JMS inspected two of Scripps' research vessels, SPROUL and NEW HORIZON, completing one cycle of the 22 ships in the inspection program. In addition, JMS has inspected several non-UNOLS research vessels for the Office of Naval Research, Great Lakes Science Center, the University of Hawaii, and the University of Minnesota. JMS conducts the NSF inspection for operators who want to qualify for National Science Foundation funding, become members

of UNOLS, or simply desire an independent third party survey by taking advantage of JMS' research vessel expertise. This has provided the inspection team with a unique perspective of the UNOLS fleet.

UNOLS has long maintained a proactive position with regards to safety. In fact, UNOLS first established the RVSS in 1974 with the purpose "to assure that research at sea is conducted in the highest practical standards of safety and prudence and go beyond the legal minimum requirements." The RVSS Safety Training Manual and the NSF Ship Inspection Program contribute to a superior level of safety standards throughout the fleet. Recognizing that any safety program should strive for continuous improvement, this article highlights findings and recommendations from three areas of the NSF Ship Inspection Program: safety equipment inspection and maintenance, emergency preparedness, and stability.

The primary reference for the inspection program is the *RESEARCH VESSEL SAFETY STANDARDS* (RVSS) which is available through the UNOLS Office. Although the majority of the fleet is not inspected by the U.S. Coast Guard and thus not required to meet Subchapter U of Title 46 of the Code of Federal Regulations (CFR), the RVSS urges "uninspected vessels should strive to meet these safety standards as applicable." Therefore, many of the discrepancies below reference this subchapter of the CFR.

Safety Equipment Inspection and Maintenance:

The most significant safety discrepancy is the haphazard nature of firefighting, damage control and life saving equipment maintenance. For example, it's rare to find that all of a ship's CO₂ bottles are past their annual inspection, but we often find that one or two were overlooked. The random inoperative emergency light or fire hose that has not been hydrostatically tested, are both problems that need to be corrected, but are only symptoms of a larger issue. The root cause is a lack of formal procedures and schedules for safety equipment inspection and maintenance.

Specific procedures for equipment inspection and maintenance requirements should exist along with an inventory, schedule, and log to adequately track expiration dates, hydro dates, etc (46CFR196.15-60, 46CFR199.190, RVSS 7.6, 8.2 & 8.10). The inventory should be in agreement with the posted fire control plan. Vessels that adhere to a formal policy and schedule have fewer discrepancies noted during the inspection.

Emergency Preparedness:

During the inspection, the ship's crew is expected to conduct an emergency drill (46CFR196.15 & RVSS 15.3). The inspection team provides the basic scenario to the Master on the morning of the inspection and the inspection team witnesses the Master's ability to organize and execute the drill and conduct a debrief at its conclusion. It is expected that the crew's response will follow the procedures in the established shipboard contingency plan (if it exists).

Shipboard contingency plans should include the allocation of duties and responsibilities and actions to be

taken to gain control in each defined emergency. In addition, it may be helpful to include primary and secondary communication methods, third party support agencies and method of contact, procedures for notifying and maintaining contact with the institution, procedures for handling the media, and extensive list(s) of contacts on a global basis who may be called on to render assistance. Plans should be comprehensive but not so cumbersome that they cannot be carried out during an emergency. The effectiveness of each plan should be determined through the conduct of drills. If a more efficient means of response is determined during a drill, the procedure should be reviewed and changed as necessary.

The following emergency situations should be covered by contingency plans:

- Fire (class A, B and C in machinery spaces, berthing spaces, storage spaces, galley, labs, etc)
- Critical plant failures (main engine, steering gear, generating plant)
- Chemical spill
- Radioisotope spill
- Flooding
- Grounding
- Abandon ship
- Man overboard (immediate and unknown)
- Collision (at sea and inner waterways)
- Personnel injury or illness
- Salvage of own ship
- Oil Pollution

These procedures should be used when planning and conducting drills. Drills serve two purposes: to train the crew, and to evaluate the established emergency procedures.

Effective drills do not happen automatically. A careless effort will result in useless drills which do not improve the crew's capability, and bad drills will reinforce poor habits. The key to conducting a successful drill is preparation. Senior and experienced crewmembers should be members of the shipboard training team. On smaller vessels this may be limited to one individual. The training team must devote the time to develop realistic training scenarios. They must be tailored to the level of the crew being drilled and reflect the limitations and capabilities of the ship. Impositions must be realistic and clear to the personnel being drilled. There should be on-going events leading to continuous improvement of the training process.

Cascading casualties are also common in fires because fires spread and can damage vital services. Realistic, effective drills should include these effects. Machinery space fires can grow out of control in seconds. For this reason, evacuation drills should be conducted. Such drills should emphasize the need to exit using the nearest access or escape trunk on each level, and the need to don an Emergency Escape Breathing Devices (EEBD) on the run on the way out. Some general guidelines for conducting effective drills include:

1. Simulations, though necessary, should be held to a minimum consistent with safety. Evaluate the use of simulations and make a rational decision regarding their use. Using simulations such as the simulation of donning an EEBD or fireman's suit "to save time" is not usually a good practice. The more simulations allowed, the less realistic the drill becomes and the less effective the training.
2. Impositions of casualties must be well thought out. The imposition should be consistent and readily understood by the crewmembers. For example, the use of different color flags to simulate fire out of control, fire under control or fire out, etc., must be understood by the crew members. The object of the imposition is to effect crew response to the desired casualty, not to confuse the crew members. Often several simultaneous impositions may need to be accomplished to ensure each crew member sees the same casualty situation develop. Otherwise, crew members will disagree as to what is happening and the drill will become confused. Impositions must be rehearsed and evaluated by the entire training team. Continually look for more realistic impositions. Whenever possible, try to give the crew member the actual indication he/she would get in an actual casualty; trip alarms, bleed off system pressure, de-energize equipment, use smoke generators, etc.
3. Train for Real Life – It's important for the drill to reflect how the crew will truly respond to an actual emergency and avoid conducting drills solely for the sake of the exercise. Do not create a false sense of accomplishment by keeping drills too easy. Increase the level of challenge as crewmembers become more proficient. Vary the methods of imposition and reduce the number of simulations when possible. It can also be beneficial to rotate junior crewmembers into positions of responsibility during drills. Backups should be identified and trained to fill lead positions when the primary responder is either unavailable or unable to respond to the casualty. Where appropriate, coordinate the drill with shore based personnel.

As soon as practical following the drill, a critique should be conducted. This is the heart of training. The debrief should cover the conduct of the drill, lessons learned, and suggestions on how to improve the emergency procedures. Crewmembers should feel free to discuss problems and make recommendations.

Stability:

The RVSS recommends that all vessels have a computerized ship stability program to aid in the verification of compliance with applicable stability requirements after loading and prior to departure (RVSS 4.3). The advantages of a computerized stability program include accurate calculations of actual loading conditions, and quick and easy modifications to loading scenarios in order to develop the optimum loading condition.

As part of the inspection JMS inspectors typically ask the Master to do the stability calculations for the current load case. This often becomes a tedious process and rarely are drafts calculated to be verified with observed drafts. If stability calculations are not easy to perform, they probably do not get done often. With the aid of a good computerized stability program, even a casual user should be able to enter a load case and

calculate trim, stability, and strength information in less than five minutes.

The vast majority of UNOLS vessels do not have a true stability program. A few use spreadsheets to aid in the hand calculations but this still requires cross referencing with tables and curves in the Trim & Stability Book which takes time and presents opportunities for error. Those programs that have been observed tend to be one of a kind programs which are cumbersome to use and lack the technical support and life cycle upgrades of commercially available programs. Nor are they typically class approved. A useful stability program should have the following capabilities:

- Righting arm (GZ) calculations and allowable.
- Shear force and bending moment calculations (as actual and % of allowable).
- Heel angle calculations resulting from off center weights.
- Drafts given at the marks and perpendiculars.
- Free floating damage stability calculations.
- Graphical interface that is user friendly.
- Ability to enter tankages in weight, % full, soundings/ullages, or volume (consistent with the format of engineer's sounding tables).
- Ability to convert units.
- Classification Society approval.
- Life cycle upgrades and technical support.

Several commercially available programs exist. It is recommended that UNOLS form a consensus on a specific program in order to take advantage of fleet discounting.

Several of the most common discrepancies found in the fleet are discussed above. In an effort to further information exchange between operators, suggestions and positive lessons learned during the inspections follow. The name of a ship that employs each suggestion is also listed so that other operators can contact the ship to learn more.

OCEANUS, MAURICE EWING and CAPE HENLOPEN have implemented good systems for maintaining fire fighting, damage control and life saving equipment. In each case, the system includes policies, procedures and records of the maintenance.

GYRE is operated by Tidewater Marine who has adopted the USCG's Streamlined Inspection Program (SIP) for their OSV fleet. The SIP establishes policies and procedures for safety equipment inspection and maintenance as well as scripted shipboard contingency plans. The crew is in the process of tailoring this program for use aboard GYRE. These plans are a good starting point for the development of ship specific contingency plans for the emergencies listed above.

ALPHA HELIX has been using a computerized ship stability program for more than a decade and the Master has a good system for checking stability before each departure which includes calculating drafts

and comparing them with observed drafts. ENDEAVOR has recently developed a more up to date program which shows promise.

JMS looks forward to continuing to share lessons learned, and lend further insight into safe and efficient operation of the fleet. The JMS Inspection Team is an excellent conduit for facilitating information exchange between operators. Look forward to the final article in this series which will cover the HULL and MACHINERY aspects of the inspection program.

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What Next SeaNet?

Contributed by Ellen Kappel, Andy Maffei, Steve Lerner, Cindy Sellers, Dale Chayes, Richard Perry, Bob Heinmiller, Susan Kubany, Kevin Kimball, and Rex Buddenberg

The two-year SeaNet/NOPP-ONR grant to Joint Oceanographic Institutions and the SeaNet partners expires on August 1, 1999. What have we accomplished? What are the plans?

Accomplishments

SeaNet's most visible accomplishment, and the proposal's main goal, was to build and deploy five SeaNet Communications Nodes (SCNs) on UNOLS vessels, with updated satellite communications. Through peer review of eight proposals received, and recommendations by a SeaNet Advisory Panel, SeaNet units were installed on R/V *Atlantis*, R/V *Ewing*, R/V *Melville*, R/V *Seward Johnson* and R/V *Pelican* over the course of the last year.

The shipboard SeaNet Communications Node (SCN) is the key to the whole system and is one of the things that makes SeaNet unique. It provides Internet services optimized for research vessel operators and investigators doing oceanographic research. SCNs are located both on ships and on the shore. Under shipboard control, a communications link (usually wireless, i.e., satellite) is used to connect a shipboard SCN to a shore-based SCN. Shipboard SCNs provide the following services:

- The Batch File Transfer service is an efficient way to utilize the satellite link. The SCN system packages and compresses files to be transferred before the link is brought up. Once the connection is established, files are transferred to and from the ship simultaneously. One directory is identified as the input source directory, the other as an output destination directory. Such an association is called a DataPipe. Although a DataPipe is one-directional, you can have multiple DataPipes, enabling data transfers to and from the ship. Billing information is associated with each DataPipe.
- When the shipboard SCN connects to a shore-side SCN, files in the input directory are transferred to the output directory in an efficient manner. The link is brought up, files are quickly transferred and then the link is shut down immediately. Distribution of files to a DataPipe destination located somewhere on the Internet occurs after the link is shut down so that costs of any Internet latency do not have an impact on satellite charges. This minimizes costs, but provides shipboard LAN users with a convenient method of transferring data, executable, e-mail and other files between the ship and shore.
- The Interactive IP service connects computers on the shipboard LAN directly to the shore-side Internet when the link is established. This provides the same capability as if you were directly connected to the Internet with a fast modem (64 kbs). Although this gives the user the most flexibility while using the system, it can be quite expensive if the link to the Internet remains up for a long period of time. However, if there are particular items that can be easily accomplished interactively, then it may actually save a reasonable amount of time and effort rather than coordinating with shore support via e-mail. Only authorized interactive user accounts are allowed, which the SCN operator can set up on ship. Billing information is maintained for each interactive connection.
- A web-mirroring service will be implemented by August 1999. This service, when integrated into the SCN software distribution, will provide users with the ability to efficiently mirror a shipboard web site, perhaps representing shipboard research, to a shore-side web site so that it can be viewed when the ship is not connected to the Internet. Only the changes made to the web site since the link was last brought up will be sent over the link. It will also be possible to mirror web sites from shore to the ship.
- A shipboard accounting utility is provided so that users can monitor how much money they have spent on DataPipe and interactive-IP services.
- A SeaNet e-mail service is planned as part of the SCN software package. We are hoping to launch this service in the fall. Although SeaNet has been helping shipboard operators to integrate existing shipboard e-mail systems to use DataPipes, a SeaNet e-mail service, with various enhancements for shipboard applications, will be offered to users and operators who are interested in using it.

In addition to providing ships with the SeaNet hardware and software necessary to make the most efficient

use of ship-shore connections, enhanced billing services are also available by SeaNet collaborators. A shore-side charge-back service is provided by Omnet, Inc. Selected Inmarsat vendors (COMSAT and Station-12) provide Omnet with billing information for calls made to shore-side SCNs from the ships. Omnet then produces detailed bills broken down by individual use of DataPipes and interactive-IP from the various ships. Currently Omnet is working with institutions to provide customized billing and invoicing, though the goal is to ultimately provide a standard invoice. Plans are to provide the ability to generate month-to-date and date/period traffic/cost figures upon request. Omnet is also exploring volume discounts with a number of satellite vendors. Statistics being gathered by the SeaNet SCNs should provide us with a tool to determine quality differences among the various vendors.

SeaNet also proposed to provide help-desk services so that immediate and accurate answers to SeaNet questions are provided. A SeaNet Network Information Center (NIC) is being developed at Omnet, which in the future will provide 24-hour support, seven days a week. Anyone with SeaNet questions can send an e-mail to SeaNet.Service@seanet.int or call Omnet at 540-885-5800. In the interim, before full NIC services are available, SeaNet has provided ship operators with home telephone numbers of key SeaNet staff for use in urgent situations.

Future plans

The SeaNet collaboratory has funding through NSF's Division of Ocean Sciences to continue operations through the end of the calendar year. No innovations are planned for this period, although current development projects such as SeaNet e-mail and enhanced billing services will continue during this period. In addition, SeaNet has had an opportunity to work closely with the American Mobile Satellite Corporation (AMSC) to develop high-speed data transfers for coastal ships (128k bits/second up to 100 miles offshore and a few other areas), and will continue this collaboration during this period. To view AMSC coverage, go to <http://www.ammobile.com/coverage/index.html>. We are hoping to test AMSC high speed links on at least one UNOLS vessel this fall.

SeaNet is currently developing a proposal to NSF for support for three years beginning January 2000. This proposal would provide the UNOLS fleet with additional SeaNet units, enhanced software, and continued technical support. SeaNet has had numerous inquiries from the private sector, and is hoping to develop at least one prospect in the near future to set the stage for wider access to our system.

SeaNet is also working out the best way to add ships to the SeaNet network that have purchased the necessary hardware independent of the SeaNet group. We understand that this is a very real possibility and an excellent opportunity to extend services to more ships. We look forward to working with vessel operators interested in this option. Clearly, expansion of service to more vessels will provide the needed critical mass to support the SeaNet infrastructure and will make the SeaNet operation more cost-effective for all.

UNOLS Committees – News & Activities

UNOLS Arctic Icebreaker Coordinating Committee

By Jim Swift, AICC Chair

The UNOLS Arctic Icebreaker Coordinating Committee (AICC) held its most recent meeting on 24-25 March 1999 in New Orleans.

Delivery of USCGC HEALY has been delayed until late 1999. This is a result of delays in equipment and sensor testing, and will cause some rescheduling of the post delivery trials. Warm water trials should take place in early 2000, after which the ship will make a public relations visit to Baltimore. The AICC plans to assist by providing posters for labs and scientists to explain Arctic research projects. The ship will conduct ice trials in the Arctic later in 2000, and this will include oversight by the AICC and participation by UNOLS marine technical support groups. Present plans call for HEALY's availability for agency-funded Arctic marine science support - the vessel's primary mission - beginning spring 2001. HEALY crew training is well underway. Crew familiarization of the ship is receiving a high priority. Marine Science Technicians (MSTs) continue to be sent on UNOLS vessels.

The March meeting included an in-depth tour of the vessel, during which the AICC noted questions relating to HEALY's science winch systems (the installed system is more complex than the systems which are the norm on UNOLS research vessels); a low overhead clearance in the main lab; some partial blockages to moving large objects on the main deck to and from the science hoist; need for additional science network connections and cable ports for running cable between labs (interior and exterior); and a number of other items. The Coast Guard has taken note and is making or scheduling most of the needed modifications.

John Freitag (RVTEC Chair) continues to coordinate the oceanographic community's participation in HEALY's science systems testing and has kept the AICC up to date. The basic outline of this program includes: (a) Warm water Phase I testing of SeaBeam, ADCP, data network, CTD, Bathy 2000, coring and winch systems and hull and machinery acoustic noise tests; (b) Transit Phase II includes little or no science system testing; (c) Level Ice trial, Phase III is almost exclusively a programmed sequence of ice breaking, with little science systems testing per se except for bathymetry and the data network, though teachers and or wildlife observers might be appropriate for this phase; (d) Science Systems Testing, Phase IV consists of four, one week legs moving to progressively more intense and complex tests of all major science systems in a high arctic environment, and may also include teachers. The Committee is discussing the process by which test evaluation reports will be developed and routed through the system.

The AICC notes that the outlook is positive for NSF's Arctic marine science programs, including both that

it appears operations funding for HEALY will not eat into traditional ocean science funding at NSF and that OPP Arctic science funding looks healthy. The deadline for OPP Arctic proposals will be the same as for other ocean science programs at NSF. NSF agrees that expeditionary planning will be important for developing cohesive programs. The Arctic Section is working on the question of how to handle equipment upgrades and new equipment needs and has hired an Arctic Research Support and Logistic Manager. In response to questions of how technical support, over and above that provided by HEALY, should be handled - i.e., be part of the proposals and come out of science budgets or provided outside the science proposal budgets - it is possible, but not yet in effect, that OPP may adopt practices similar to those in Ocean Sciences, where technical support is shifting over from the research budgets to the technician support budgets.

The AICC has been modeled after DESSC for expeditionary planning. The Committee's responsibility is to pull together a critical mass to give direction for scientists in writing proposals but in no way be meant to influence agency funding decisions. To advance expeditionary planning and to keep the community at large informed, the AICC plans to continue its involvement with the UNOLS booth at AGU and will conduct a town meeting on the day before AGU. Participation in some form will also be necessary at ASLO in San Antonio and at the next OAI meeting in October.

NSF has funded a study to develop capital and operating costs for a SSN operating for science. A steering committee has met to provide the contractor, Rand Corporation, study direction. Two AICC members are on this steering committee and in addition to other business will keep an eye toward possible joint HEALY/SSN science programs. The AICC has been briefed by Dr. Bernie Coakley of Tulane University regarding his recent experience with Arctic bathymetric and sub-bottom surveys. In ice-covered waters it is most effective to use a submarine. With heavy emphasis on central Arctic marine geology and geophysics expected for future HEALY proposals, joint submarine/HEALY ventures could provide a substantial science benefit.

The AICC continues to be represented at Antarctic Research Vessel Oversight Committee meetings when possible, and vice versa. This has proven useful to both committees.

AICC member Dan Lubin and USCG Commander George Dupree provided a presentation about Science of Opportunity cruises and USCGC HEALY at a recent Oceans Studies Board meeting. Commander Dupree explained Coast Guard policy that the Coast Guard seeks \$20,000 as reimbursement for the daily operating cost for HEALY and the Polar-class icebreakers. The specific language in the Arctic Research Policy Act states the USCG can only charge incremental costs for ship use. If full reimbursement were to become necessary this act would need to be changed. The Coast Guard position is to continue with the incremental charge procedure.

Other Coast Guard news includes continuation of plans to keep alternating the polar class ships with six months of a year in the yard and a year operating. The Coast Guard's mission for breaking into Thule remains. Presently the Canadians have been picking up the mission but this may not always be possible.

The AICC completed its 1999 Science of Opportunity (SOO) review and reported to the Coast Guard and scientists. It was likely that, once again, all applicants with active requests would be accommodated. Unfortunately it was later necessary to cancel the 1999 SOO cruise due to vessel problems. The 2000 SOO cruise announcement will be published in September 1999. The AICC is charged with assessing SOO proposals for logistic and overall compatibility with the SOO mission. No decisions are made by the AICC with regard to participation, and AICC comments are specifically not to be used to leverage agency support for any proposal. The AICC continues to caution the community that science support is not necessarily the chief mission of SOO cruises, and the AICC reminds all that the Coast Guard will continue to accept ship-time requests for funded Arctic science missions on the Polar-class vessels and HEALY. On funded science missions the expectation and goal is that science will be supported in a manner and devotion to mission similar to that supported by the operators of large UNOLS vessels.

The AICC sees potential benefit in a direct, funded conduit for supplemental UNOLS technical support for USCG Arctic marine science operations. At least one UNOLS operator has expressed interest in pursuing this and is considering submitting a proposal.

The next AICC meeting will probably be held in the fall of 1999 on the east coast, possibly Virginia Beach in association with the OAI meeting.

Fleet Improvement Committee Activities

The Fleet Improvement Committee is finalizing plans for the document, "*The UNOLS Biennial Review of Sea Going Oceanographic Facilities*". The outline has been under review by the Committee and the Council for several months and was accepted at the Summer Council meeting. Volunteer authors of the various chapters are being contacted and schedules agreed upon. The report will likely be an online document appearing and modified as the situation merits.

FIC has represented the community in the various reviews of AGOR-26, the Hawaii SWATH. While the path to this new ship is a new one, the FIC has managed to have input at critical points to help insure a ship that meets the needs of the oceanographic community. A fall FIC meeting is planned with a major focus on AGOR 26 design review.

Ship Scheduling Committee News

The UNOLS Ship Scheduling Committee (SSC) held a meeting on July 15th at NSF to present, discuss and work on the first drafts of the calendar year 2000 schedules for the UNOLS fleet. Prior to the meeting the schedulers had presented letters of intent to the funding agencies and each other that indicated which science projects they were intending to schedule on their vessels next year. Based on this information the agencies informed the schedulers of funding decisions, when known, and the schedulers worked with each other to build draft schedules. These schedules were published in the days just prior to the meeting and formed the basis for discussion at the meeting. During the first portion of the meeting, the committee broke down into two working groups. One focused on large ship schedules and the schedule for ROVs that would be deployed from the large ships. The other group worked on double bookings and conflicts within the schedules for East Coast and Gulf Coast intermediate and smaller vessels. This group also tried to identify how the needs of the Navy's NAVO and LWAD programs would be accommodated. Following the work group sessions the schedules for each ship were presented and reviewed with discussion devoted to identifying any problems, double bookings, missing projects and the funding status of science projects. Lastly there was a discussion of the changes to the scheduling process and how we could further improve on the business of scheduling. The format and use of the letter of intent versus draft schedules was discussed and it was the sense of the committee that maintaining some of the features of the letters of intent while using a format closer to the standard UNOLS schedule format might work better. We also discussed an online scheduling tool that has recently been implemented by the UNOLS Office and how this would provide benefits for the office and schedulers and could be used to create the initial draft schedules/letters of intent and then edited as time goes to create the final schedules.

Based on these preliminary schedules the overall number of days on 2000 schedules (5,092) for the UNOLS fleet appears to be down slightly from 1999 (5,104). However, it is not yet clear that there will be a need to lay up any of the large vessels for the entire year as has been done in the last couple of years, but there may be a need for periods of time during which some of the large ships will be inactive. Intermediate and smaller vessels, with a few exceptions, have moderate schedules which may also require consolidations or partial lay-ups during certain periods of the year. There is still a significant percentage of projects currently scheduled (33%) for which funding decisions or appropriations are still pending. There will be a scheduling review committee meeting during the week of 7 September during which any remaining issues will be identified and resolved if possible. In the mean time schedulers will work to refine their 2000 schedules. Lastly, an election of a new Chair and Vice-Chair will take place by email between now and September.

Research Vessel Technical Enhancement Committee

RVTEC activities for the first half of this year have focussed on the science trials of the Icebreaker HEALY in conjunction with the AICC (details are provided in the AICC article). RVTEC involvement on

this project has been in the design and staffing of the science ice trials.

The cross training of Coast Guard Technicians on UNOLS vessels, put into place more than a year ago, has been very successful. Technicians have served on board several vessels including REVELLE, MELVILLE, THOMPSON and SEWARD JOHNSON. The feedback from both sides has been uniformly positive and it is anticipated that this interaction will have a positive effect on the level of technical support provided to scientists using HEALY.

Plans are proceeding for the 1999 RVTEC meeting in Port Aransas, Texas on 20-22 October. At this time plans are in the works for a session on data management and the implementation of a common data format among the various operator institutions. The meeting will take place in Port Aransas from 20 through 22 October.

Research Vessel Operators' Committee

By Paul Ljunggren

It has been an active year for the RVOC. In the early part of 1999, NSF requested that RVOC take steps to develop an inventory of portable labs/containers, their use/capabilities, and their condition. Joe Coburn of WHOI has agreed to head up this project. Other areas to be addressed by this study will include:

- *Are these portable labs/vans Coast Guard compliant?*
- *Requirements/standards that our portable vans/labs should be complying with in order to be used onboard R/Vs.*
- *Proposing a schedule for replacement or upgrading of portable vans/labs.*
- *How should portable lab/vans be secured on board research vessels*

As a result of a discussion at the 1998 RVOC Meeting, NSF has agreed to fund the acquisition of Automatic External Defibrillators (AED) for UNOLS vessels. Mike Prince coordinated the acquisition and delivery of Automatic External Defibrillators (AED) for each of vessels. The AEDs have been distributed and personnel at the various institutions have been receiving training in their use.

The 1999 RVOC Meeting will be held at Harbor Branch Oceanographic Institute on 2-4 November. Topics being considered for the agenda include: discussion and demonstration of computerized machinery maintenance and ship stability systems; an update on the new FRVs for NOAA-NMFS; a panel discussion on the implications of issues such as STCW, GMDSS, and ISM for those vessels less than 300 grt; and recommendations of the NSF Academic Fleet Review and the implications of these recommendations for operators.

DEep Submergence Science Committee (DESSC)

The Deep Submergence Science Committee held a summer meeting at Woods Hole Oceanographic Institution on July 27-28, 1999. The meeting included a report by the National Deep Submergence Facility (NDSF) Operator which provided a summary of vehicle operations in 1999 and those planned for 2000. A report on upgrades to National Facility vehicles, science sensors, and ATLANTIS was provided. Reports were also provided by other deep submergence activities, including those of MBARI, MPL, Navy, NURP, and ROPOS. There was a discussion on long range planning issues for the NDSF. DESSC considered mechanisms for disseminating to the scientific community information regarding funded submergence science programs (so as to encourage expeditionary science efforts). The group discussed future global deep submergence initiatives: Western Pacific, Indian Ocean, S.EPR, Mediterranean, Polar Regions, Hawaii and Western Pacific. Heroes for each of these areas were suggested. Lastly, the committee is working toward revision of its Terms of Reference.

One of the major efforts of DESSC thus far this year have been to assist in the planning for the UNOLS Submergence Workshop "Developing Submergence Science for the Next Decade" (DESCEND). Although the DESCEND workshop will be a UNOLS meeting and is designed to tap a broader representation than just the DESSC, several members of the committee were involved in planning. A Steering Committee (Keir Becker, Jim Bellingham, Craig Cary, Patty Fryer (Chair), Lisa Levin, Marv Lilley) was established and held a planning meeting in La Jolla on June 24. The group developed the tentative workshop agenda and provided suggestions for potential session leaders. A DESCEND website has been established to offer the latest information on the workshop (see announcement on page 6).

An Update to the Research Vessel Safety Standards is Adopted

The RVOC Safety Committee has completed the update to the Research Vessel Safety Standards (RVSS). The update was presented to the UNOLS Council at their summer meeting. The Safety Committee is planning to hold a meeting later this year to further examine the application of the Code of Federal Regulations to uninspected oceanographic research vessels in light of new international standards being accepted and implemented.

Calendar for UNOLS Meetings

MEETING LOCATION DATES

Scheduling Review Arlington, VA 9 September 1999

UNOLS Council Arlington, VA 20 September 1999

UNOLS Annual Arlington, VA 21 September 1999

RVTEC Port Aransas, TX 20-22 October 1999

DESCEND Workshop Arlington, VA 25-27 October 1999

RVOC Fort Pierce, FL 2-4 November 1999

FIC Moss Landing, CA Fall, 1999

Winch & Wire Symposium Arlington, VA Tentatively 1-2 December 1999

DESSC San Francisco, CA 12 December 1999

AICC TBA TBA

University-National Oceanographic Laboratory System

ANNOUNCEMENT

1999

UNOLS ANNUAL MEETING

Tuesday - September 21, 1999 - 8:30 a.m.

**National Science Foundation, Room 1235
4201 Wilson Boulevard
Arlington, VA**

***To view UNOLS News on the Web, visit the UNOLS Homepage site:
<http://gso.uri.edu/unols/unols.html>***

I would like to thank all who contributed information and articles for this issue of the Newsletter. Articles are always welcome and encouraged. Copy can be submitted via mail, FAX or e-mail. The next newsletter is planned for fall, 1999.

Thank you,

Annette DeSilva

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