UNOLS NEWS

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VOLUME 16, No. 1 Spring 1999

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HIGHLIGHTS

Comments from the UNOLS Chair…

Dear Colleague,

Since my previous letter there has appeared on the national scene the very faintest of new hopeful signs for our field, as well as for science generally. We have been disappointed by hopeful signs in the past, and this one could end no differently, but at the moment it warrants our awareness, engagement, thought and active

support. It could, if all goes well, turn out to be one of the best things to happen to our research in living memory.

I refer to serious talk at NSF, starting with Director Rita Colwell, about making the case for a major increase in the NSF budget over the next several years. The goal is a multiple, not a small percentage change. Senior NSF officials have begun to talk about this in the scientific community. Bob Corell, the Assistant Director for Geosciences, was at my own institution in February with this message. The fundamental arguments are being assembled and refined. The raw material is there - the scientific challenges exist, they are important to the nation at both intellectual and practical levels, and we not only can but must afford them, for reasons of economic and environmental well-being as well as for the pursuit of knowledge. A piece of the argument also draws comparison with medical research, largely funded by NIH - if the United States finds it important to undertake a strong expansion in that realm, as it has done in recent years, then it also can and should make appropriately balanced investments in non-medical basic research at NSF.

It's a long way from philosophical points like these to additional cash in ship operations or shipboard technical support budgets. But if NSF science is better supported overall, and if a balanced use of that support provides for new and stronger attacks on basic research questions across the sciences, then some fraction of that new effort will go toward ocean sciences, and some of that toward seagoing ocean science. The partitioning of funds down these many steps will take time, and hopefully will be guided by insistence on the best science. But in the end, this is the sort of activity for which the UNOLS fleet was designed in the first place, for which it is ready to work, and on which it naturally demonstrates it unique skills and capabilities. The ships and the time are there, ready and able. Let the grants begin, and the work can proceed to sea.

But it is in the very early days yet. Our main task at this point must be to work supportively with NSF, and to be heard as citizens, so that this new vision of a larger role for NSF in our nation, and in the ocean, can become a reality.

Bob Knox, UNOLS Chair

Call for UNOLS Council Nominations

Individuals who wish to make a direct contribution to strengthening ocean research in the U.S. via support of the research fleet are needed to fill UNOLS Council seats.

Each year seats rotate open on the UNOLS Council. Nominations are being sought now from UNOLS institutions to fill the positions opening in 1999. Two seats will be filled by election in accordance with the UNOLS Charter at the 1999 UNOLS Annual Meeting in September. The seats include one to be filled by an at-large representative (individual affiliated with any UNOLS institution), and one from a UNOLS Operator institution. Terms of office are three years, all with the possibility of reelection for a second term.

The UNOLS Council consists of nine members, including the Chair and the Vice Chair. In addition, the Chairs of six standing UNOLS committees serve as ex-officio members. The Council members represent and

act on behalf of the UNOLS membership as the operating and governing body of UNOLS. The Council meets three times a year to address the critical issues facing the academic research fleet. These issues include the fleet's long-term utilization, its future composition, and its current and future capacity to meet the demands of the oceanographic community.

Nominations for the slate may be submitted by anyone affiliated with a UNOLS institution, in writing to the UNOLS Office (unols@gso.uri.edu) or the Nominating Committee (Chair, Tom Shipley, tom@utig.ig.utexas.edu; Larry Atkinson, atkinson@ccpo.odu.edu; Barbara Prezelin, barbara@icess.ucsb.edu). The Council will review the nominations at their next meeting so please apply by June 1st. Not all individuals nominated will advance to the final slate of candidates. The Nominating Committee must give due consideration to the qualifications of the individuals nominated, as well as maintenance of regional and disciplinary balance on the Council. No more than one elected member of the UNOLS Council shall serve from any one institution. The current membership of the UNOLS Council is provided below:

UNOLS COUNCIL

Council Member Council Term

Robert Knox, SIO, (Chair) 10/94-10/00

Thomas Royer, ODU, (Vice-Chair) 10/93-10/00

Tim Cowles, OSU 09/98-09/01

Charles Flagg, Brookhaven National Lab 09/98-09/01

Dennis Hansell, BBSR 09/96-09/99 *

Tom Lee, U Miami 09/98-09/01

Barbara Prezelin, UCA, SB 09/97-09/00

Clare Reimers, Rutgers 09/96-09/99 *

Tom Shipley, U Texas 09/97-09/00

John Freitag, URI, (Chair, RVTEC) 11/96-11/9X

Patricia Fryer, U Hawaii (Chair, DESSC) 08/98-08/0X

Larry Atkinson, ODU, (Chair, FIC) 10/97-10/9X

Michael Prince, MLML, (Chair, SSC) 05/98-05/0X

Paul Ljunggren, LDEO, (Chair, RVOC) 10/96-10/9X

J. Swift, SIO, (Chair, AICC) 09/96-09/XX

*** First term of Office expiring**

NSF Inspection Program Lessons Learned: Part 1, Oceanographic

By: Greg Beers
February 28th, 1998

The JMS Inspection Team has been inspecting UNOLS research vessels since September of 1997 when it won a competitive bid to inspect the fleet. In January 1999, JMS inspected 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 and other operators who want to qualify for National Science Foundation field program work, become members of UNOLS, or simply desire an independent third party survey taking advantage of JMS' research vessel expertise and UNOLS experience. With a complete inspection cycle under its belt, the JMS Inspection Team would like to take this opportunity to relate some of the common oceanographic discrepancies found in the fleet, as well as many of the positive lessons learned.

JMS (http://www.jmsnet.com) is a full service naval architecture and marine engineering firm located in Groton, Connecticut. JMS personnel possess a unique combination of engineering education and operational experience. JMS' core inspectors are degreed naval architects and marine engineers. All have experience at sea with licenses that include Master and Chief Engineer. Additionally, Bob Dinsmore, who had served as the science inspector since the inception of the inspections, continues to serve as an advisor to JMS.

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 are 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.

Many common discrepancies found during the oceanographic part of the inspection follow. The most common problems are related to Safe Working Loads (SWL) for the weight handling equipment. A-frames, J-frames, hydrobooms and deck cranes must be weight tested by lifting 125% of their maximum SWL every two years (45CFR189.35-5 & RVSS 12.1) and the SWL and date of the last weight test must be stenciled on the frame or crane (46CFR189.35-13 & RVSS 12.1).

Similar rules apply to cranes with non-uniform SWL's such as knuckleboom cranes and telescoping boom cranes. Safe working load tests for cranes with non-uniform SWL's must consist of lifting 125% of any SWL on the loading diagram at the radius that corresponds to that SWL. In other words, if a knuckleboom crane can lift 4,000 lbs. at 30 feet and 10,000 lbs. at 5 feet, the weight test for that crane must consist of lifting either 5,000 lbs. at 30 feet or 12,500 lbs. at 5 feet. There is an additional rule for knuckleboom or telescoping cranes that states that a loading diagram with the non-uniform SWL's must be in plain view of the operator (46CFR189.35-13 & RVSS 12.1). Therefore, only the date of the last weight test needs to be stenciled on a crane with a non-uniform SWL if the loading diagram is posted in plain view of the operator.

Another requirement for weight handling equipment is that it must have an ultimate design strength greater than the breaking strength of the wire or cable that it supports (46CFR189.35-13 & RVSS 12.1). In other words, the wire or cable must be the weak link in the weight handling system so that if the system fails, the wire or cable breaks instead of the frame or crane.

In addition to stenciling the SWL and date on weight handling equipment, logs must be kept of all weight tests (46CFR189.35-13). This requirement is often overlooked, or the operator simply stencils the weight used during the weight test on the equipment and considers the stencil as the log. This is not acceptable since the stencil can wear off or be painted over, and therefore is not a permanent log. Moreover, if the weight used in the weight test is stenciled on the crane, a scientist using the vessel can become confused and think that he or she can lift weight equal to that used in the weight test. To avoid confusion, only the SWL (or a loading diagram for a crane) should be posted on the equipment and the crew should keep a separate permanent log of the actual weight tested aboard the vessel.

Logs of weight tests can be combined with maintenance logs for cranes and frames. Additionally, both running wire logs and wire history logs should be kept for all wires and cables. If wire or cable is on a portable spool, wire logs should follow the spool. Similarly, if a winch is portable, winch maintenance logs and wire logs for the wire or cable on the winch should follow the winch when it is transferred on and off the ship.

Continued on page 4…

Running wire logs can be recorded manually in a logbook or electronically with a Data Acquisition System (DAS). Regardless of recording method, it is important to compare the observed maximum tension with the SWL for the wire or cable and to log the maximum amount of wire or cable out for each cast. This allows the operator to know if a wire or cable has been compromised, and if so, how much was compromised. Good examples of wire and cable logs can be found in the *HANDBOOK OF OCEANOGRAPHIC WINCH, WIRE AND CABLE TECHNOLOGY*, 1989 by Alan Driscoll, which is available from the UNOLS office.

The most common problem found in laboratories is related to labeling. Safety showers and eyewashes must have proper signs and operating instructions, i.e. pull handles labeled "pull" and push levers labeled "push" (46CFR194.15). Freezers used for science cannot be used for foodstuffs and should be so labeled. Chemical storage lockers, uncontaminated sea water systems and electrical receptacles (especially those fed by uninterruptible power supplies) should be properly labeled (RVSS 6.1).

Receptacles that could be exposed to water (either sea water or potable water) should be in water-resistant housings with splash proof covers (46CFR111.01-9). In addition, ground fault circuit interrupters (GFCIs) should be used for electrical receptacles near water or anywhere in a wet lab. ENDEAVOR has an exemplary system installed in the wet lab.

All areas "where the crew or scientific personnel may be quartered or normally employed" are required to have two means of escape (46CFR190.10-5). Lab vans are the most common offenders of this rule; however, it also applies to berthing vans and labs that are integral to the ship.

Vessels engaging in radioisotope work should be equipped with a scintillation counter, Geiger Counter or other proper radioisotope monitoring equipment (RVSS 11.1). Additionally, a crew member should be trained in basic radiation safety and emergency procedures, and SWAB surveys should be considered before and/or after usage of radioisotopes (RVSS 11.4). SWAB surveys are available through the University of Miami's Tritium Laboratory.

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.

Harbor Branch Oceanographic Institution (HBOI) has implemented a good winch wire and cable management system and has excellent forms for logging weight tests. HBOI and University of Miami are also using the Weatherpack system for meteorological sensing and logging. The system is not IMET quality, but appears to be fine for general meteorological data, and the DAS can accept extra inputs providing a good off-the-shelf DAS for smaller ships.

WEATHERBIRD II has a good system for CTD casts. A separate computer is installed next to the CTD computer, which displays pre-cast check lists for the CTD operator and serves as a real time electronic cast log. Additionally, "Black Boxes" that allow multiple computers to share mice and keyboards are employed successfully aboard PELICAN. This system can save a considerable amount of space on smaller vessels.

LAURENTIAN has Plexiglas doors protecting electronics racks in high traffic areas. This simple protective measure keeps computers and systems from being accidentally turned off. Water for Milli-Q systems (or similar) can be provided via a head tank, as on OCEANUS, alleviating the need to carry carboys.

Sensors in flow through sea water systems should be plumbed parallel to one another so that individual sensors can be calibrated without shutting the entire flow through system down. For truly uncontaminated sea water systems, HBOI is using a modified guillotine valve to actually cut the PVC or PVDF pipe rather than clamping down on pipe or tubing running through a regular gate valve. This appears to be a much sounder method for securing an uncontaminated seawater intake.

Durable planking made from recycled plastic has proven successful at the CTD station aboard SEWARD JOHNSON and should be considered for high use decks.

Lastly, procedures for the use, calibration and maintenance of sensors should be developed. WECOMA has excellent written calibration procedures and schedules, and HBOI has excellent instrument procedures.

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 future articles describing other aspects of the inspection including SAFETY and OPERATIONS, and HULL and MACHINERY.

For further information please contact Greg Beers at JMS:

Phone (860) 448-4850 ext. 15

e-mail: greg@jmsnet.com

NSF Announces Changes for Ocean Sciences Field Program Proposals

Changes in Procedures for Budgeting Shipboard Technical Support for Seagoing Projects

The Division of Ocean Sciences (OCE) at NSF has changed procedures for requesting and awarding funds for most shipboard technical services related to NSF supported research projects. **Effective with the February 15, 1999 target date for proposals to OCE, it is no longer necessary to include costs in NSF research proposals for shipboard data acquisition services by institutional Shipboard Technical Support Groups at UNOLS institutions.** Previously, costs for such "specialized services," normally in the form of "user fees," were included as part of NSF research proposal budgets. Costs of ship time, basic shipboard technical services, and national facility submersible/ROV use were excluded from research budgets, and funded instead via annual proposals from each ship operating institution. The new procedures provide that funds for all data acquisition services of the Shipboard Technical Support Groups of the UNOLS operating institutions will be provided by NSF directly to the ship operators annually. Support will be based on a review of full operating year costs of technical support on each vessel, and will be determined after operating schedules are complete and requirements known, near the beginning of each operating year. Costs of data processing, watch standing, data analysis, software development, and other non-acquisition activities, are not included in the facility support, and should be requested via the research proposal.

The change described here recognizes guidance that NSF OCE has received from its advisory committee and reviewers, as well as PI concerns expressed during the ongoing review of the UNOLS fleet requested by the National Science Board. **The new NSF procedures do not affect the manner in which budgets or proposals are prepared for agencies other than NSF.** Institutions will continue to maintain rates for use of some specialized shipboard instruments, and the same rate will be charged to all federal sponsors. The source of NSF support will change from the research programs to the OCE Technical Services Program, but costs will be the same as for a non-NSF user of the vessel.

Decisions regarding shipboard instrumentation required to support an NSF funded research project require the recommendation of the relevant research program at NSF. **Hence, it is important that all PIs adequately describe and justify their instrumentation requirements in the research proposals.** It is also very important that technical support requirements be clearly indicated to ship operators. This will be necessary for scheduling, and to ensure that needed support is available once a project is scheduled.

Research instrumentation which is not supported through an operating institution's Shipboard Technical Support Group does not qualify for facility support as described here. Systems which are "PI-owned" or available at a fee from an individual or group other than an institution's Shipboard Technical Support Group will normally require funds via the NSF research proposal, and should be included in those budgets. In general, it can be assumed that all instruments which are fixed to a vessel (e.g. single and multibeam echo-sounders, acoustic doppler current profilers, winches), "standard" oceanographic systems provided by the ship operator (e.g. CTD systems, GPS units, most plankton nets), and most other "institutional" systems such as seismic reflection systems (single or multichannel), corers, etc., will qualify for facility support and need not be included in a research proposal budget.

If there are questions regarding whether an instrument or service qualifies, please **contact Alexander Shor at ashor@nsf.gov for more details. A list of individuals to contact at the operating institutions is available to assist in planning. In addition, information regarding many operators' available instrumentation and technical support capabilities may be found at the UNOLS RVTEC home page,** http://www.gso.uri.edu/unols/rvtec/rvtec.html, under the heading "UNOLS Resources".

UNOLS Office Transfer Plans

The current UNOLS Office grant runs out on 30 April 2000. One proposal has been received to host the new UNOLS Office. A small advisory committee has been assembled to review the proposal and

provide any comments/ recommendations. Their recommendation will be passed to the Council. It will then forwarded to the membership for concurrence.

UNOLS Charter is Revised

At the 1998 UNOLS Annual Meeting, a vote to accept proposed revisions to the UNOLS Charter was placed on the agenda. Unfortunately, a quorum was not present and the vote could not be taken. Over the winter, the UNOLS membership was asked to vote by mail ballot on proposed revisions to the UNOLS Charter. The ballot for revision of the Charter was split into three separate sections to allow passage of individual sections regardless of the outcome of the other sections. The revision that brought the Charter up-to-date with current operating procedures, provided editorial changes, as well as provided a greater balance between Operator and Non-operator institutions passed. The revision that amends the process for voting on Charter changes also passed. This amendment relaxes the voting requirements for future amendments of the UNOLS Charter. The one revision that did not pass concerned the definition of UNOLS membership. This proposed revision clarified the issue of consortia membership and eliminated the possibility of duel voting by members. It required that membership be by individual institution or by consortium. If a consortium is a UNOLS member, no constituent institution of that consortium may be a member. Although the revision did not pass, the Council recognizes that the wording on this subject in the current charter is rather ambiguous and should be corrected. A change will be proposed for vote at the 1999 Annual Meeting.

Plans for a Winch and Wire Seminar are Underway

The UNOLS Office has a pending NSF proposal to conduct a Winch and Wire Symposium. The proceedings from this symposium will be edited into a manual that will replace the *Second Edition of the Handbook of Oceanographic Winch, Wire and Cable Technology*.

If the proposal is funded a steering committee will be formed later this spring for the purpose of structuring and scheduling the symposium. This committee will also review the edited proceedings before publication. The symposium is envisioned to have speakers from industry and experts from academia give presentations on winch and wire operational safety; explore the next generation requirements of the fleet for winches and wires; provide guidance on winch and wire maintenance and care; generate a new manual for the community and develop an inventory of winches and wires currently in the fleet. If schedules can be worked out the symposium will be held in September of this year.

The steering committee is to be made up of scientists and operational persons actively involved in the use and handling of oceanographic winches and wires. The UNOLS Office would welcome volunteers or names of those persons that would be appropriate for the steering committee. Recommendations for symposium speakers would also be welcome.

UNOLS COMMITTEES - News, Activities, Announcements

The UNOLS Biennial Review of Sea Going Oceanographic Facilities~ Volunteers Needed ~

The UNOLS Fleet Improvement Committee is looking for volunteers to help develop an on-line assessment report of the UNOLS fleet. The report is in the early stages of development and is

titled, *The UNOLS Biennial Review of Sea Going Oceanographic Facilities*. It is intended to look at fleet operation trends and analyze them in regard to future needs. We hope to be able to use the document as a tool for strategic planning of oceanographic facilities.

The report is being developed "on-line." The topics of the Biennial Review document have been posted on the OMNET ScienceNet bulletin board. The bulletin board allows people with access to provide their comments via the World Wide Web. All comments and contributions to the report are posted into the document.

The report topics currently include:

- Goals
- Future research requirements
- State of the fleet
- Trends in fleet use
- New assets
- Facility Upgrades
- New regulations
- Fisheries oceanography and the NOAA fleet
- NOAA hydrographic survey changes
- Technical support
- ROV/AUVs
- Ocean Observatories
- Dynamic positioning
- New sponsorship of coastal and estuarine vessels
- Coring
- Navigation
- Communications
- Summary

Anyone with an interest in viewing the report and contributing to its development, please contact Larry Atkinson, FIC Chair, <atkinson@ccpo.odu.edu> or the UNOLS Office at <unols@gso.uri.edu>. We will add your name to the ScienceNet bulletin board access list.

UNOLS COMMITTEES - News, Activities, Announcements

Ship Scheduling Committee News

The UNOLS Ship Scheduling Committee (SSC) is beginning the process of scheduling the UNOLS fleet for calendar year 2000 projects. Whether or not you consider January 2000 or January 2001 the start of the new millennium and whether or not we survive Y2K we still need to work our way through the many iterations of the scheduling process in order to ensure that all funded science gets to sea. We also need to create schedules that optimize the utilization of the fleet while at the same time matching the science with the appropriate research vessel.

This year we will be working with a slightly modified process for developing our schedules. We have already started the process of gathering ship time requests and will continue to do so throughout the year. During the spring we will be contacting PIs that have submitted requests and making sure that we have all the information necessary for properly scheduling your work. By early May, we will submit letters of intent to the SSC and funding agencies. Letters of intent will be utilized in the early part of the process so that we can ensure that we have a complete inventory of ship time requests, identify which ships intend to schedule the various requests and to identify any requirements or restrictions that would impact the scheduling of the request. We hope to be informed of the funding decisions for most of the requests by the end of June at which time we will generate draft schedules and cruise tracks. A meeting of all schedulers will be held on 15 July to resolve conflicts and make recommendations for changes to the draft schedules. During the remainder of the summer, additional funding decisions will be made and schedules will be refined. By early September, it is our goal to publish final draft schedules, although there may still be some outstanding funding decisions that could have significant impacts on schedules. A scheduling review committee meeting will be held shortly after Labor Day. Final adjustments will be made to schedules and then UNOLS operators will complete their Ship Operations and Technician proposals based on those schedules.

For this process to be successful schedulers and operators will need the cooperation of all PIs planning field work in CY 2000. First and foremost it would help the process if everyone utilized the online ship time request form available through the UNOLS office homepage at:

http://www.gso.uri.edu/unols/ship/mainmenu.html. Using this form ensures that the UNOLS Office has a record of your request, that the appropriate ship operators receive a copy and it can be sent in with your proposal to the funding agencies.

Secondly, PIs and ship schedulers should identify any specific requirements for equipment or ship capabilities and any restrictions such as cruise or teaching conflicts that would have an impact on the scheduling of a project. Any factors that should be taken into account when deciding whether or not a project should be on a particular ship or class of ship should be provided to the ship schedulers. It should be noted that NSF has moved to a system of funding Technician support that will include the normal equipment needs for NSF funded projects in the grants to operators. This will eliminate the problem for PIs that end up on a ship different than the one they used in preparing their research budget. It also means that the ship operators will need to have complete information regarding your shared use equipment needs prior to completing their Technician Support proposals.

Lastly, PIs should realize that the scheduling process is a dynamic and cooperative one, especially with regards to the larger ships. Many times the finalization of a particular schedule cannot take place until funding decisions are made and other factors are all sorted out on that ship and others of its class or working area. Even then, circumstances can change, requiring adjustments. To keep the problems associated with constant changes of schedules to a minimum we are trying to ensure that we get as much information as possible early in the process and to make initial schedules that take into account these factors.

We all thank you in advance for your cooperation and welcome any suggestions for improving the process of making sure your sea going field work is completed successfully.

by Mike Prince, SSC Chair

Marine Superintendent

Moss Landing Marine Labs

Research Vessel Operators' Committee
~ Highlights of the 1998 RVOC Meeting and Committee Activities ~

by Paul Ljunggren, RVOC Chair

The University of Hawaii hosted the 1998 RVOC meeting on 4-6 November. Along with member operators and representatives from U.S. funding agencies; representatives were also on hand from Military Sealift Command, MBARI, Great Lakes Science Center, SACLANT, Antarctic Support Associates (ASA), Medical Advisory Systems (MAS), American Bureau of Shipping (ABS) Integrated Services, Jamestown Marine Services (JMS), Indonesia, Canada, the Netherlands, and Sea Education Association. The topics presented at the meeting included:

- *Marieke Rietveld of Netherlands Institute for Sea Research gave a presentation in which she discussed their experiences over the last years regarding the charter of their vessels to commercial firms. She discussed the pitfalls of dealing with commercial firms and provided examples based on their experiences of how to resolve some of the issues associated with these pitfalls.*

- *T. Blake Powell of JMS gave an update of the NSF Ship Inspection Program. He reviewed common discrepancies, their goals for the inspection program, and their philosophy as they approach these inspections. Among their goals is to facilitate the exchange of information between various operators.*

- *Dr. Dale Hutchinson of Marine Advisory Service (MAS) reviewed the capabilities and services available through MAS. He responded to questions on medical supplies, training, and medical history paperwork. He then discussed new equipment available to the ship operators for emergency medical care. Specifically he discussed the availability of automatic external defibrillators (AED). This equipment is currently being carried on many ships, on airplanes, and by police in some instances. With two to four hours training an individual can be qualified in the use of the AED. (This led to further discussion among operators, which has resulted in funding being made available by NSF to provide each R/V with an AED.)*
- *Captain Kim Parker of ABS Integrated Services gave presentations on two topics. In his first presentation he discussed the implications of the new Standards of Training and Certification of Watchkeeping (STCW) regulations and what would be required to comply with this new law. These regulations have specific requirements for all facets of marine operations from seafarers, to port control states, and to institutions providing training.*

  His second presentation discussed the International Safety Management (ISM) Code. The objectives are to ensure safety at sea, prevent human injury or loss of life, and to avoid damage to the environment. The backbone of ISM is the Safety Management System to be implemented by operators establishing procedures for safe ship operation, environmental protection practices, accident reporting, emergency preparation and response, and internal audits and management.

Several institutions gave presentations in which they shared ship acquisition, construction, and operating experiences:

- *The University of Hawaii reported on the status of the AGOR 26, SWATH, construction.*
- *The Great Lakes Science Center reported on their efforts to update/replace their four vessels.*
- *Skidaway Institute of Oceanography provided an update on R/V SAVANNAH, which when constructed*

will be the replacement vessel for R/V BLUEFIN.
- *University of Miami reported on the status of their plans for construction of a catamaran.*
- *MBARI provided new information on the repairs necessitated when cracks were discovered in the struts of the SWATH WESTERN FLYER.*

The 1999 RVOC will be hosted by Harbor Branch Oceanographic Institution and is scheduled for 2-4 November.

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UNOLS COMMITTEES - News, Activities, Announcements

RVOC Report - continued…

In other RVOC activities, the Safety Committee has been fully occupied working on the revision of the RVOC Safety Standards. The committee has completed the revision and mailed it to RVOC members for review and comment. Once the review process is completed, the revision to the Safety Standards will be presented to the UNOLS Council.

An issue which the Safety Committee intends to tackle next is to obtain a clearer understanding of how the requirements contained in the CFRs apply to uninspected vessels. This has been highlighted of late with implementation of Standards of Training and Certification of Watchkeeping. In some instances the requirements contained there in are identified as applying to vessels over two hundred gross tons and in other sections they indicate the requirements apply to all vessels sailing beyond the boundary line. Other regulations set standards for equipment, but then contain wording limiting their application to commercial and/or documented vessels. The Safety Committee intends to seek clarification from the Coast Guard of their interpretation of particular regulations. The committee feels clarification of these regulations can best be addressed through the use of a consultant who is not only familiar with marine regulations, but is also familiar with the Coast Guard Marine Safety organization.

Deep Submergence Science News and Committee Activities

ALVIN Operates South of the Equator: The fall of 1998 was highlighted by ALVIN operations on the Southern East Pacific Rise. Four ALVIN cruises were conducted in this region. These cruises represent the first time that ALVIN has dove south of the Equator and the first NSF funded science using ALVIN on the Southern East Pacific Rise. Urabe et al., conducted a ridge flux project at 16-19°S, 112-114°W) that involved seafloor measurement using insitu sensors, fluid and rock sampling, and recovery of monitoring instruments. A Lilley/Von Damm et al., cruise investigated gas and fluid chemistry of hydrothermal systems on the superfast-spreading region of the Southern EPR. A third cruise carried out in December '98/January '99 by Vrijenhoek/Lupton conducted biological and water sampling at multiple sites on the southern EPR and geological reconnaissance. Sinton and Van Dover were the PIs on the last ALVIN cruise at SEPR. Sinton used both ALVIN and the DSL-120 vehicle for geological and petrological investigations of several sites from 17°S to 21°S. Cindy Van Dover's activities involved biological studies at the hydrothermal vents.

ROV and tethered vehicle operations since September, 1998 included the successful deployment of the H2O Observatory with Jason/Medea by Alan Chave, et al. Other operations included mapping of the Puna Ridge off the Big Island of Hawaii using DSL-120 and Argo II by D. Smith.

R/V ATLANTIS has been operating continuously throughout the northern and southern East Pacific Rise and

Hess Deep since fall of 1998. The ship's next planned maintenance period is scheduled for June in San Diego. WHOI circulated a questionnaire at the December DESSC meeting soliciting input from users regarding both vehicle and ATLANTIS facilities improvements. This input could be considered by the NDSF operator for future worklists. Copies of the questionnaire can be obtained from the UNOLS Office.

DESSC held its annual planning meeting in San Francisco on 5 December. The meeting began with a "change-of-command" ceremony for Mike Perfit, outgoing DESSC Chair. He was thanked for his contributions and leadership efforts over the past three years. Patty Fryer then stepped in as the new DESSC Chair. The meeting had a very full agenda with reports from users as well as reports from deep submergence facility operators (WHOI and others). The new archiving guidelines, which have been approved by the federal agencies, for data collected using National Deep Submergence Facility vehicles, were presented. A presentation on WHOI's Jason Upgrade Proposal was met with interested discussion and positive feedback from the attendees. At the end of the meeting the Chair announced plans for a UNOLS deep submergence science workshop for 1999. The focus of the workshop would be to address the compelling scientific problems that need to be addressed in the coming decade and beyond and the facilities needed to accomplish this work. The workshop is planned for 25-27 October 1999 (see announcement on page 12).

Proposal pressure and funded proposals for use of the NDSF vehicles continues to be strong. DESSC will continue to work with the community and the NDSF operator to foster deep submergence research.

UNOLS COMMITTEES - News, Activities, Announcements

Call for Nominations
DEep Submergence Science Committee

UNOLS is seeking nominations from the community to fill three seats rotating open on the DEep Submergence Science Committee (DESSC). DESSC is the UNOLS committee charged with providing the U.S. funding agencies with advice on matters pertaining to deep submergence science, and with advising the UNOLS National Deep Submergence Facility (DSF) Operator at Woods Hole Oceanographic Institution (WHOI). DESSC fulfills an ombudsman role for the deep submergence community; in promoting maximum participation in the use of the DSF, championing the utilization of deep submergence assets and facilitating long-term planning. It is also the responsibility of the DESSC to promote new technologies for the facility and deep submergence science in general.

The term of office for DESSC members is three years with the possibility of reappointment for a second term. The DESSC typically meets twice a year.

To submit a letter of interest to serve on the DESSC, or for more information please contact Patty Fryer, DESSC Chair, at <pfryer@soest.hawaii.edu> or the UNOLS Office <unols@gso.uri.edu>.

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Scientists interested in serving on the DESSC should send the following information:

1. Current C.V. (including current membership on other National advisory committees)

2. Statement of Interest, which should include your vision for Deep Submergence Science for the next decade.

3. Summary of Experience using deep submergence facilities

Copies of these materials should be sent to the UNOLS Office <unols@gso.uri.edu> by June 15, 1999 so they can be distributed to the DESSC for discussion at their summer meeting. The DESSC will give due consideration to the qualifications of the applicants, as well as maintenance of regional and disciplinary balance on the Committee. New DESSC members are appointed by the UNOLS Chair, Bob Knox, from recommendations made by DESSC. The current DESSC membership list is provided below.

DEEP SUBMERGENCE SCIENCE COMMITTEE DESSC

Patricia Fryer, U Hawaii, Chair

James Bellingham, MIT **

Robert Collier, OSU **

Robert Embley, NOAA

Marvin Lilley, U Washington

Dan Orange, U CA, Santa Cruz **

Anna-Louise Reysenbach, Rutgers

William Ryan, LDEO

Cindy Van Dover, College of William & Mary

Richard Pittenger, WHOI, (ex-officio)

Daniel Fornari, WHOI, (ex-officio)

** Second DESSC term ends in summer, 1999.

UNOLS COMMITTEES - News, Activities, Announcements

UNOLS Workshop Announcement

DEveloping Submergence SCiencE for the Next Decade: "DESCEND"

Scientific Challenges, Technology Developments, and Investigative Strategies

During the last two decades, investigators utilizing submergence technologies, 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 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. Announcements on how to participate in the workshop will be distributed from the UNOLS Office in May. Additionally, a website has been established to include the latest information regarding the workshop agenda http://www.gso.uri.edu/unols/descend/descend.htm. Stay tuned and mark your calendar:

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

Date: October 25-27, 1999

Location: Arlington, VA

UNOLS COMMITTEES - News, Activities, Announcements

Arctic Icebreaker Coordinating Committee

by James H. Swift, AICC Chair (excerpts from the UNOLS Council Meeting (2/99) Report)

Although the history of the AICC's interactions with the Coast Guard is not long, the principal accomplishment of the AICC is the much-improved dialogue with the Coast Guard regarding icebreaker construction and support of Arctic marine science. This close working relationship is immediately obvious to anyone attending an AICC/Coast Guard function. The Coast Guard deserves a large measure of credit. The appointment and retention of excellent leaders such as Capt. Johnson (head of HEALY construction oversight), Capt. Garrett (first Commanding Officer of HEALY), and CDR Dupree (Chief of Icebreaker Operations) is exactly the type of move that has brought about this relationship.

The AICC has asked the Coast Guard to model its relationships with user-scientists upon those carried out by UNOLS large ship operators. The AICC has been discussing with the Coast Guard various means to help ensure close ties with the UNOLS technical and scientific communities. The AICC notes as a positive step that Coast Guard Marine Science Technicians now participate on short UNOLS cruises as part of their training.

The AICC intends to continue its annual logistics assessment of Arctic Science-of-Opportunity (SOO) cruises by USCG icebreakers. Arctic SOO cruises are likely on one or more Coast Guard icebreakers each year. Each cruise will be preceded by a wide call for letter proposals for participation. The AICC is charged with assessing these 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. While up until now everyone has been accommodated one way or the other, this situation will likely change beginning in 1999. 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 is now accepting and 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 UNOLS vessels. The SOO ship time request form can be found on the UNOLS website at: <http://gso.uri.edu/unols/aiccsoo/sooform.htm>

A major goal for the AICC is to establish a mechanism for long-term Arctic expeditionary planning for the Coast Guard icebreakers.

Research Vessel Technical Enhancement Committee

by John Freitag, RVTEC Chair (excerpts from the UNOLS Council Meeting (2/99) Report)

The cooperative work between RVTEC, UNOLS, and AICC in the design and execution of the HEALY science trials continues as the delivery date draws closer. This effort is a great example of cooperation between governmental agencies, institutions and the UNOLS committees. The UNOLS community has responded enthusiastically in signing up to conduct these tests. A positive, cooperative atmosphere is evident at meetings of the test group, and progress on the test plans is excellent. The UNOLS based testing team will participate in the initial spin-up and acceptance for the multibeam Sonar, the ADCP and the Computer Data Network and will continue in the evaluation of all shipboard systems through the warm water trials and the dedicated science testing phase to follow. Plans for the testing procedures have been submitted to and evaluated by the AICC. Chief Scientists from the AICC has been designated for the various portions of the science testing. Part of the end product is a graphic presentation intended to show HEALY scientific capabilities to prospective scientists as the vessel begins its official scientific career in 2001.

Alaskan Science Mission Requirements have been Completed

In early 1998, the UNOLS Council recommended, based on the approaching retirement of ALPHA HELIX, the development of Science Mission Requirements (SMRs) for an Alaska regional vessel. Recognizing an interest in fisheries research in the Alaska region, the Council recommended that the SMRs address the fisheries needs of the NOAA National Marine Fisheries Service (NMFS). An SMR committee was established and included scientists who have been ship users in the Alaska region. Dr. Vera Alexander and Dr. Thomas Weingartner, both of the University of Alaska Fairbanks, co-chaired the committee. Other members included Dr. Larry Atkinson, Old Dominion University; Dr. John Christensen, Bigelow Laboratory; Dr. George Hunt, University of California, Irvine; and Dr. Ken Johnson, UNOLS. Dr. Jim Meehan of NMFS was also on the committee to provide fisheries research expertise. Additionally, Joe Coburn, Bob Elsner and Bob Dinsmore provided input to the review of the document.

The vessel described by the SMRs is proposed as a replacement within the UNOLS fleet for R/V Alpha Helix, the oldest currently operated research vessel in the fleet. The mission requirements call for the ship to be capable of conducting general oceanographic and fisheries investigations in high latitude open seas, near-shore regions, and seasonal sea ice. It will provide year-round ship support needs for the northern North Pacific Ocean and subarctic waters, as well as seasonal access to the Arctic. Since research operations will include multi-seasonal work, the vessel will need to be ice-strengthened sufficiently to work in seasonal sea ice. General oceanographic research and fisheries oceanography indicates the need for diverse platform capabilities including significant capability for over-the-side fisheries sampling as well as acoustic procedures. However, the ship is not intended for routine stock assessment surveys.

The following cruise activities may be expected to be included in typical research missions for the Alaskan vessel:

- Oceanographic disciplines (physical, chemical, geological, and biological) in North Pacific and Alaska regional seas, net tows, deep sampling, coring, instrument deployments and recoveries,

seismic investigations.
- Fisheries research, not including stock assessment.
- Coastal marine studies, sediment transport, pollution effects.
- Marine mammal and bird studies.
- Sea ice, water, and atmospheric interactions.
- Ocean engineering.
- Marine biology.
- Student training.

An intermediate size ship (Class III) is necessary to permit multidisciplinary cruises of long duration, since access to fuel and other services will be limited. Moderate draft will be needed for coastal operations. The ship is to provide a stable work platform in seas up to eight feet. These features involve optimal over-the-side equipment deployment, towing, and a stable, well-designed laboratory environment. The ship will accommodate moderately large scientific parties (18-20 berths). It must have flexible laboratory and deck space designed for multiple uses. The mission requirements call for approximately 2,000 sq. ft. of laboratory space including a main lab area, an analytical lab, a wet lab, an electronics/computer lab, freezers, and a climate control chamber. The ship is to be acoustically quiet according to the ICES-adopted noise curve as specified in ICES Cooperative Report #209. A flying bridge equipped with a windscreen and an unobstructed view of the sky and water is required.

The UNOLS Council approved the Alaska SMR document at their February 1999 meeting and encourages the University of Alaska to pursue the next step of concept design development. Development of the concept design normally requires consultation with a naval architect to define the ship parameters needed to meet the mission requirements.

Copies of the Alaskan SMRs can be obtained from the UNOLS Office.

Ship Construction/Replacement
AGOR 26 Construction Update

Progress on the AGOR 26 design and construction project has moved slowly. The budget for the entire design and construction was appropriated at $45M. Lockheed/Martin and Ingalls Shipyard were originally selected as the design and construction team. However, as the design progressed, Ingalls' estimate for construction exceeded the budget. As a result, Lockheed/Martin re-bid the construction portion of the project and American Marine Inc. (AMI) was selected. Construction estimates were due from AMI in March at which time the Navy and U.Hawaii would review it.

BLUE FIN Replacement Update

Construction of R/V SAVANNAH, BLUE FIN's replacement, is underway. The ship will be 91.5-feet length overall and is scheduled to be ready for service 1 January 2000.

CALANUS Replacement Plans are Progressing

Model tests for the CALANUS replacement vessel were completed over the summer. The replacement will be a catamaran. The design specifications indicate a length of 96 feet and a 40-foot beam. The ship is designed to carry 14 scientists. Staterooms are on the main deck with a few cabins in the hulls. It will have a diving platform and there are plans for a removable moon pool. There is 600-sq. ft. for laboratory space. A fiber optic network for shipboard computers is planned. The estimated dayrate for an operating year of 160 days is expected to be $5K to $5-1/2K per day.

The need for a replacement vessel is justified for a variety of reasons. CALANUS use has been high in the last couple of years. Additionally, there is high interest in restoration of the marine sanctuaries.

People in the News

Dr. Richard Spinrad Named Technical Director for the Oceanographer of the US Navy

Dr. Richard W. Spinrad has been named the new Technical Director to the Oceanographer of the Navy. He began this position on March 1, 1999 at the U.S. Naval Observatory. As Technical Director, Dr. Spinrad will be responsible for the oversight of all Naval operational meteorology and oceanography, mapping, charting, geodesy, precise time and time interval, and astrometry.

For the past four years, Dr. Spinrad has been the Executive Director for Research and Education at the Consortium for Oceanographic Research and Education (CORE). At CORE, he was Director of the Program Office of the National Oceanographic Partnership Program. He also oversaw several educational initiatives including the National Ocean Sciences Bowl for high school students. Prior to CORE, Dr. Spinrad had been with the Office of Naval Research as Director of the Modeling and Prediction Division of the Ocean, Atmospheric, and Space Department.

Gordon Wilkes and CDR Jim Trees Retire from NAVO

Gordon Wilkes and Jim Trees have retired from the Naval Oceanographic Office (NAVO). Both individuals were instrumental in coordinating NAVO ship time needs on UNOLS ships. Gordon is retiring after 45 years of employment. Paul Taylor, who has been with NAVO for 36 years, will be his replacement. UNOLS will greatly miss Gordon and Jim, and wish them well in their future ventures.

Norman Cherkis Retires from NRL

Norman Cherkis has retired from the Naval Research Laboratory. Norm was a familiar face at UNOLS meetings coordinating the NRL ship time needs with the academic fleet. His research experience spanned 36 years with work in seafloor topography and seabed characteristics as well as in marine geophysical studies.

Since retiring from NRL, Norm has joined Neptune Sciences, Inc (Slidell, MS) as a Senior Oceanographer/Bathymetrist in their Reston, VA office. His present work includes an analysis of continental shelf topography in Arctic regions.

People in the News

Robert S. Winokur Named Vice President and Executive Director of CORE

The Consortium for Oceanographic Research and Education (CORE) announced the appointment of Robert S. Winokur to the position of Vice President and Executive Director of CORE. He will officially assume his new responsibilities on May 3, 1999. Winokur will also serve as the Director of the National Oceanographic Partnership Program (NOPP) Office, under an award to CORE from the Office of Naval Research. NOPP was created by law in 1997 to coordinate and strengthen oceanographic efforts by supporting partnerships between the Federal agencies, academia and the private sector to address ocean science and technology priorities.

Winokur comes to CORE from the National Oceanic & Atmospheric Administration (NOAA) where he has served as Assistant Administrator for Satellite and Information Services since 1993 and in the collateral position of Acting Assistant Administrator for Weather Services from 1997 to 1998. Prior to his work at NOAA, Winokur held several positions in the Department of the Navy including: Technical Director to the Office of the Oceanographer of the Navy (1985-1993); Deputy Director for Anti-Submarine Warfare Development to the Office of the Assistant Secretary of the Navy (1989-1991); Assistant/Associate Technical Director for Ocean Science and International Programs to the Office of Naval Research (1980-1985); and Director for Planning and Assessment to the Office of Naval Research (1981-1982).

Winokur has received several awards of distinction throughout his career, including the Presidential Distinguished Executive Rank Award, two Presidential Meritorious Executive Rank Awards, the Department of Commerce Gold Medal, and the Department of the Navy Distinguished Civil Service Award. The National Academy of Public Administration most recently named him a recipient of a 1999 National Public Service Award.

Website: core.cast.msstate.edu

Rear Admiral William L. Stubblefield, Director of the NOAA Corps, Retires

On March 1st, Rear Admiral William L. Stubblefield retired as director of the National Oceanic and Atmospheric Administration Commissioned Corps and Office of NOAA Corps Operations. RADM Stubblefied had a distinguished, 35-year career in uniformed service, with 29 years at NOAA.

RADM Stubblefield became executive director for the Office of Oceanic and Atmospheric Research in 1990. He was promoted to the rank of Rear Admiral Lower Half in 1992 and assigned as deputy director of the Office of NOAA Corps Operations. In 1995 Stubblefield was promoted to Rear Admiral Upper Half and selected for the NOAA Corps' highest position of Director. This coincided with some of the toughest times for the NOAA Corps; it faced a four-year recruitment freeze and was targeted for dis-establishment. Under RADM Stubblefield's leadership, the Office of NOAA Corps Operations was streamlined to become more

cost efficient while increasing the level of program support. For his achievements, he recently received the Eagle Award from the Reserve Officers Association, which represents all seven of the uniformed services.

RADM Stubblefield plans to retire to his home in Shepherdstown, W.Va.

Job Announcement
National Science Foundation
Assistant Program Director or Associate Program Director, Ships Operations Program

NSF's Division of Ocean Sciences is seeking qualified applicants for the position of Assistant Program Director or Associate Program Director, in the Ships Operations Program.

The position is excepted from the competitive civil service and will be filled in early 1999 on a Permanent basis or a 1- or 2-year visiting scientist/temporary basis. Alternatively the position may be filled under the Intergovernmental Personnel Act (IPA). IPA applicants must be permanent, career employees of their current employer for at least 90 days prior to entering into a mobility assignment agreement with a federal agency. Reimbursement of salary and other related cost for IPA appointments are negotiated between NSF and the individual's institution.

The per annum salary range which includes locality pay adjustment, for the Assistant Program Director is from $40,714 to $75,433 per annum; and Associate Program Director is from $58,027 to $91,410 per annum.

Primary responsibilities involve proposal evaluation, project development and support, program planning and coordination, and related administrative duties.

Applicants for the Assistant Program Director position must have a Ph.D. in an appropriate field; or master's degree in an appropriate field; or equivalent experience. Applicant for the Associate Program Director must have a Ph.D. or equivalent experience in an appropriate field plus four or more years of successful research, research administration, and/or managerial experience pertinent to the position. Finally, broad understanding of the current status of the relevant United States academic scientific community and its interrelationship with NSF, other federal agencies, and international planning efforts are desirable. Previous involvement with research in ship operations is advantageous, but is not required.

Applicants interested in a 1- or 2-year appointment as a temporary position or under the provisions of the NSF Visiting Scientist Program or Intergovernmental Personnel Act must submit a letter of recommendation and employment application, resume or vita to the National Science Foundation, Division of Human Resource Management, Suite 315, 4201 Wilson Blvd., Arlington, VA 22230. Attn: Ms. Myra Loyd. Please refer to vacancy announcement EX99-35.

Applicants applying for the permanent vacancy should refer to vacancy announcement number EX99-34. For more information see the full description at http://www.nsf.gov/home/chart/work.htm#hrm. For application procedures and a copy of the applicant survey form, please contact Ms. Loyd at (703) 306-1185 x3027. For technical information, contact Ms. Dieter, Ocean Sciences Centers and Facilities, (703) 306-1577.

Hearing impaired individuals should call (703) 306-0189. NSF is an Equal Opportunity Employer committed to employing a highly qualified staff that reflects the diversity of our Nation.

UNOLS Fleet Operations in 1999

In 1999, there are 5,102 operating days scheduled for the UNOLS Fleet. This represents a decrease of 107 days from 1998. The table below provides a comparison of ship days between 1998 and 1999. It is interesting to note that the ship use of the large and small (Class V) ships has changed significantly. In 1999, large ship use is down 170 days from 1998, while small ship (Class V) use is up 117 days.

UNOLS Fleet Operating Days: 1998 and 1999

Vessel Class	1998 (Days)	1999 (Days)	Differential
Class I/II	1,746	1,576	-170 days
Class III	1,397	1,356	- 41 days
Class IV	1,435	1,422	- 13 days
Class <IV	631	748	+117 days
TOTAL	5,209	5,102	-107 days

(Note: Operating days are from the latest ship schedules posted as of 3/15/99.)

1999 Operations:

Large Ships (Class I/II):

ATLANTIS - ATLANTIS began 1999 with operations at the Southern East Pacific Rise in support of ALVIN and DSL-120 operations. In March, operations continued with work at Hess Deep using ALVIN and Argo II. ATLANTIS will operate at the North Pacific Rise in April through early June supporting ALVIN dives. After a maintenance period in June, work will resume at the Oregon Margin. In mid June, the ship will operate in the Gulf of Alaska using ALVIN in support of a NOAA/NURP program. This will be followed by work at Juan de Fuca in support of ALVIN operations from late August through September. One ALVIN program is scheduled off the California coast in October. The ship will spend the remainder of the year supporting ALVIN operations at the Northern EPR. ATLANTIS has a 283-day schedule. * MAURICE EWING – EWING has a full schedule with work around the globe, including the North Atlantic, Caribbean, Guatemala Basin, Juan de Fuca, Oregon Margin, Nankai Trough, and South Pacific. 329 days have been scheduled. *** KNORR - KNORR will**

operate for the first five months of the year in support of a Navy funded program in the Pacific. The ship will lay-up for the remainder of the year in Woods Hole. 74 days are scheduled. * MELVILLE - Operations are planned in the North and South Pacific, including work off Hawaii. SEA BEAM operations are planned in the early part of the year through mid May. Joint operations with MBARI's WETESTERN FLYER are planned in the Eel River Basin in August. A full schedule of 292 days is planned. *** MOANA WAVE – MOANA WAVE will operate off Hawaii through mid May at which time it will be taken out of UNOLS service. 61 days are scheduled. *** ROGER REVELLE – REVELLE began 1999 operations with work off California in support of NOAA programs. From mid February until late October the ship will work in the North Pacific and Sea of Japan. The schedule includes two large NAVO gravity survey programs totaling 150 days. In late October, REVELLE will tie-up for the remainder of the year. 277 days are planned. *** THOMAS G. THOMPSON - THOMPSON began the year with operations in the Bering Sea in support of NOAA's FOCI program. After a shipyard period in March, operations will continue with work in Puget Sound, Columbia River, off California, and at Juan de Fuca. THOMPSON will support Jason operations at Juan de Fuca. A late fall cruise is planned in the Bering Sea before returning to Puget Sound to end the year. 260 days are scheduled.**

Continued on page 19…

Intermediate Ships (Class III):

EDWIN LINK - Operations for EDWIN LINK are planned in the Atlantic, Bahamas, and Gulf of Mexico. Atlantic operations include GLOBEC programs. 163 days are scheduled. * ENDEAVOR – ENDEAVOR will spend the first half of the year supporting GLOBEC programs on Georges Bank. In July and August the ship will operate in the Sargasso Sea. This will be followed by a WOCE leg in the Atlantic to the Azores. The year will end with the ship back on Georges Bank for GLOBEC operations. 215 days are scheduled. *** GYRE - GYRE will operate the entire year in the Gulf of Mexico. 180 days are scheduled. *** NEW HORIZON - NEW HORIZON will operate primarily off California and Oregon. The schedule includes NAVO programs as well as a LWAD, Navy 6.2 program. One cruise is planned off Northwest Mexico. 246 days are scheduled. *** OCEANUS – OCEANUS will operate on Georges Bank through August. In the fall, operations will be carried out on the Continental Slope at 36^{o}N, in the Sargasso Sea, the Gulf of Maine, and the New York Bight. 178 days are scheduled. *** SEWARD JOHNSON – SEWARD JOHNSON's schedule includes operations in the North Atlantic, South Atlantic, Bahamas and Gulf of Mexico. A schedule of 190 days is planned. *** WECOMA – In 1999 WECOMA will devote much of its schedule for work off Oregon, Northern California, and Washington state. A NOAA program is also scheduled in the Bering Sea in May. In June, a vents program is planned at Juan de Fuca. 184 days are planned.**

Small Ships (Class IV):

ALPHA HELIX - ALPHA HELIX will operate throughout the year in the Gulf of Alaska, Resurrection Bay, Chukchi Sea, and the Bering Sea. Operations include support of GLOBEC programs, LEXAN, ECOHAB, and mammal studies. 188 days are planned. * CAPE HATTERAS - CAPE HATTERAS has operations planned along the East Coast shelf, Cape Lookout and in the Charleston Harbor. 148 days are scheduled. *** CAPE HENLOPEN - CAPE HENLOPEN will work primarily in the**

Chesapeake, Delaware Bay, off Virginia Beach, and off the Delaware Coast. A full schedule of 197 days is planned. * LONGHORN - LONGHORN has 26 days scheduled in the Gulf of Mexico. *** PELICAN – PELICAN has a full schedule of 258 days for work in the Northern Gulf of Mexico. This includes 108 Navy funded days to support NAVO, NRL, and ONR programs. *** POINT SUR – POINT SUR will work primarily off Central California and in Monterey Bay with 186 days scheduled. *** SEA DIVER - Operations are planned in the North Atlantic, Bahamas, and Florida Keys. 105 days are scheduled. *** SPROUL - SPROUL will work off Southern California with the exception of two programs, one at Columbia Frasier and the other off Farallon Island. 176 days are scheduled. *** WEATHERBIRD II - WEATHERBIRD II has 138 days scheduled for work off Bermuda.**

Small Ships (Class V):

BLUE FIN - Blue FIN will operate regionally in waters off Georgia. 136 days are scheduled. * CALANUS - CALANUS will operate in Florida Bay, Florida Straights, the Bahamas and off Ft Lauderdale. 138 days are scheduled. *** CLIFFORD A. BARNES - BARNES will spend most of the year in Puget Sound. Two large field programs are also scheduled in the Columbia River and off the Washington Coast during the late spring and summer months. 150 days are planned. *** LAURENTIAN - LAURENTIAN will operate in the Great Lakes with a full schedule of 215 days. Most of the operations will be in support of the CoOP program. *** URRACA - URRACA will work primarily in the Pacific off Panama. One program is scheduled for June through mid August in the Atlantic. The schedule ends in mid August with 109 days scheduled.**

UNOLS Calendar

MEETING LOCATION DATES

UNOLS Council Bermuda July 13-14, 1999

Ship Scheduling Committee NSF, Arlington, VA July 15, 1999

DESSC Woods Hole, MA Summer, 1999

Schedule Review NSF, Arlington, VA Sept, 1999

UNOLS Council NSF, Arlington, VA Sept 20, 1999

UNOLS Annual NSF, Arlington, VA Sept, 21, 1999

Winch and Wire Seminar To Be Determined Fall, 1999

RVTEC Pt. Aransas, TX Oct 20-22, 1999

DESCEND Workshop Arlington, VA Oct 25-27, 1999

RVOC Ft. Pierce, FL Nov 2-4, 1999

DESSC AGU, San Francisco, CA Dec 1999

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 summer, 1999.

Thank you,

Annette DeSilva, UNOLS News Editor

e-mail: unols@gso.uri.edu Telephone: (401) 874-6825 FAX: (401) 874-6167
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